

REPORT

2015 INITIAL ANNUAL LANDFILL INSPECTION
MITCHELL LANDFILL

Prepared for:



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d/b/a AMERICAN ELECTRIC POWER SERVICE CORPORATION
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Civil & Environmental Consultants, Inc.

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ENGINEER'S VERIFICATION STATEMENT

I hereby verify that a visual inspection of the Mitchell Landfill and its appurtenances owned by the Kentucky Power Company d/b/a American Electric Power Service Corporation was conducted under my direction on October 7, 2015. The attached inspection report documents the following:

- 1) A review of available site data;
- 2) The conditions observed at the site on October 7, 2015;
- 3) Any deficiencies noted during the inspection; and,
- 4) Recommended remedial actions or maintenance.



Anthony P. Amicon, P.E. - Principal
Civil & Environmental Consultants, Inc.

1.0 INTRODUCTION

Mitchell landfill is owned and operated by Kentucky Power Company, doing business as (d/b/a) American Electric Power Service Corporation (AEP) and is regulated by the West Virginia Department of Environmental Protection (DEP) under Solid Waste Permit No. WV0116742. The landfill is located along Gatts Ridge Road (Marshall County Road 72), approximately 2 miles north of the intersection with County Road 74 (about 2 miles due east of the Mitchell Power Generation Plant) in Marshall County, West Virginia. Overall, Mitchell Landfill has a maximum disposal capacity of about 10 million cubic yards for excess Coal Combustion Residuals (CCR) produced from the Mitchell Power Generating Plant that is not beneficially reused. The landfill boundary comprises about 169.6 acres with CCR being placed within a footprint of 57.6 acres. The landfill will be operated in 5 Phases with Phases 1 through 4 completing the maximum CCR Unit disposal footprint and Phase 5 comprising CCR placement atop the first four phases. Construction of Mitchell Landfill was initiated in 2013 and operation of the landfill began in May of 2014.

In accordance with Title 40, Chapter I, Part 257.84 (b) of the Code of Federal Regulations (CFR), Civil & Environmental Consultants, Inc. (CEC) has performed an annual inspection of Mitchell Landfill by a qualified professional engineer⁽¹⁾. This is the initial annual inspection of the landfill and was completed in accordance with the referenced regulation that pertains to disposal facilities and disposal practices for CCRs. This inspection included a review of available design and operational data and a site walk. The site walk was performed on October 7, 2015, by Mr. Timothy D. Mitchell, P.E. of CEC. As part of the site walk, CEC's representative visually observed the condition of the various landfill components and engineering systems in order to evaluate whether the design, construction, operation, and maintenance of the landfill is consistent with the design plans, WV DEP permit, and recognized or generally accepted engineering standards. Where deficiencies were observed, CEC documented the deficiencies and provided recommended remedial actions. Where applicable, CEC also provided recommended maintenance activities.

⁽¹⁾ An Engineer's inspection does not constitute a warranty or guarantee expressed or implied, nor does it relieve any other party of their responsibility to abide by contract documents, applicable codes, standards, regulations, or ordinances.

At the time of the site walk, Phase 1 and 2 (Phases 2A and 2B) waste disposal areas had been constructed. However, waste placement was occurring only in Phase 1. Additionally, the leachate pond, south pond, west pond, portions of the haul road, and various leachate management features were constructed and operational at the time of the site walk. No further investigation beyond visibly observing the conditions of these features was performed.

The following sections of this 2015 Initial Annual Landfill Inspection Report provide a summary of the operational data reviewed, observations made during the site walk, recommendations for remedial actions or maintenance, and supporting information.

2.0 REVIEW OF AVAILABLE INFORMATION

The 2015 Initial Annual Landfill Inspection included a review of available operational data, which included CCR tonnages placed in the landfill and recent topographic data. A summary of the data reviewed is included in the following subsections:

2.1 CCR PLACED IN THE LANDFILL

AEP has tracked CCR material produced at Mitchell Power Generation Plant that was transported to the Mitchell Landfill for disposal since the initial waste placement activities began on May 8, 2014. Correspondence from AEP documenting the CCR quantities (recorded in tons) is included in Appendix D of this report. Based on the provided records, CCR material transported to Mitchell Landfill between May 8, 2014 and June 30, 2015 are as follows:

CCR Description	CCR Quantities to Mitchell Landfill (tons)		
	2014	2015 ⁽¹⁾	Total ⁽¹⁾
Fly Ash	244,944	114,172	359,116
Bottom Ash	(2)	(2)	(2)
Gypsum	13,278	5,468	18,745
Combined	258,221	119,640	377,861

Notes:

- (1) Values represent tonnages from January through June 2015.
- (2) Bottom ash utilized was for construction and not considered part of the disposal quantities.

Based on the provided data, the total quantity of CCR material placed within Mitchell Landfill in 2104 was 258,221 tons and the anticipated total quantity of CCR that will be placed through the end of 2015 is about 240,000 tons (based on about twice the reported half year quantity for 2015).

From the Operating Record submitted with the WVDEP Solid Waste Permit Application, last revised April 2012, the following solid waste estimated maximum disposal quantities were as follows:

Solid Waste	Estimated Maximum Production Quantity (tons/year)	Estimated Maximum Disposal Quantity (tons/year)
Fly Ash	450,000	450,000
Bottom Ash	30,000	30,000
Gypsum ⁽¹⁾	450,000	6,000
CPS Filter Cake	50,000	50,000

Notes:

- (1) Due to the current beneficial reuse of gypsum, the planned disposal quantity will be minimal on an annual and average daily basis. However, any change to the current beneficial reuse outlet or percentage will require disposal in addition to the projected quantities of fly ash, bottom ash and CPS Filter Cake material noted in the table.

Overall, the total CCR disposal quantity in 2014 and the predicted quantity 2015 are less than the estimated maximum total yearly disposal quantities reported in the Operating Record. However, it is noted that the actual yearly disposal quantities for gypsum material are greater than the estimated maximum yearly disposal quantity of 6,000 tons reported in the Operating Record. Because the Operating Record allows for additional disposal of gypsum (refer to note 1 in the above table) and the total annual CCR disposal quantities for 2014 and 2015 are below the operational maximums, the current disposal quantities appear acceptable.

2.2 2015 TOPOGRAPHY

Annual topographic data for the site was obtained through aerial imaging methods on May 7, 2015. As evident in the topography and imagery, Phases 1 and 2 waste disposal areas have been constructed. Additionally, the leachate pond and the south and west ponds have been constructed. A review of the topographic data shows that waste placement is occurring in the Phase 1 area and to a limited extent in Phase 2 (mainly protective cover placement). Additionally, the waste placement is occurring within the limits identified on the WV DEP Solid Waste Permit Application Drawing set for the Phase 1 and 2 waste disposal areas. Also, comparing the 2015 topographic data to the aerial imagery, the south and west ponds, leachate pond, and CCR waste disposal area appear to be in the general locations identified in the referenced permit drawings and the Construction Drawings.

3.0 SITE WALK

As part of the 2015 Initial Annual Landfill Inspection, a site walk was performed to visually observe and evaluate the various landfill components and engineering systems. A summary of the observations made during the site walk and the associated details pertaining to the inspection are included in the following subsections.

3.1 DATE AND PERSONNEL PARTICIPATING IN THE SITE WALK

The site walk was performed on October 7, 2015 and included the following personnel:

- AEP
 - Dennis Henderson – Mitchell Landfill Site Manager (Escort)
 - Danielle Roski – Environmental Compliance Manager (Escort)
- CEC
 - Timothy D. Mitchell, P.E. – Project Manager

3.2 WEATHER CONDITIONS DURING AND PRIOR TO THE SITE WALK

A calendar showing recent weather history leading up to the October 7, 2015 site walk is included in Appendix C of this report. Rainfall for the 7 days prior to the site walk totaled 0.6 inches with a majority of that total (0.57 inches) occurring on October 3, 2015, 4 days prior to the site walk. Weather conditions during the site walk were partly cloudy with temperatures ranging from 60° to 70° Fahrenheit. Also, some dew was present on vegetation throughout the site.

3.3 SITE WALK OBSERVATIONS

The CEC engineer performed a site walk/inspection of the entire Mitchell Landfill site (along with AEP personnel). As part of the site walk and associated reconnaissance, observations were made and recorded regarding the overall condition and operation of the various landfill

components (i.e., cut/fill/waste permanent and temporary slopes, stormwater collection/conveyance/storage structures, erosion and sediment controls, leachate management system, waste placement, etc.). The site observations were limited to the areas of the site and structures that could be readily observed, and did not include invasive inspection, investigation or exploration of the site, structures or equipment. A summary of the observations made during the site walk were documented and reported on the Mitchell Landfill - Annual Landfill Inspection Checklist contained in Appendix A of this report. Representative photographs obtained during the site walk along with a Photograph Location Plan are included in Appendix B of this report.

A summary of general observations and applicable deficiencies noted during the site walk, separated by area or structure, are as follows:

3.3.1 Coal Combustion Residual (CCR) Waste Placement Area

General Observations:

- At the time of the inspection, no CCR waste was being disposed of in the landfill. Rather, AEP's contractor onsite R.B. Jergens, Inc. (RBJ) was placing clay material for a new phasing berm along the southern portion of the Phase 1 phasing berm.
- The waste placement area appeared to be graded such that surface water drained to the interior of the active landfill area, creating a "bowl" shape. With the exception of one small-localized area, no ponding of water was observed.
- Several existing chimney drains were located in the waste area and provided drainage for contact surface water. The chimney drains appeared functional without blockage from debris or sediment build-up.
- A majority of the waste in the active disposal area was smooth, hard, and unyielding, and provided a firm surface to walk on (appeared to have been compacted). However, AEP did identify a few areas, specifically near the chimney drains, that were "soft." This could possibly be attributed to localized saturation in these areas as surface water infiltrates into the chimney drain drainage media. No signs of settlement or tension cracks were observed.
- The composite liner system previously constructed in the non-active landfill disposal areas included a protective cover material comprised of fly ash (north slope) and bottom ash (east slope). A sacrificial geotextile had been placed over a portion of the protective cover material in the eastern slope to prevent erosion. Because the protective cover

material was beneath the geotextile in these areas of the site and not visible at the time of the inspection, an assessment could not be made as to the success of this sacrificial geotextile in preventing erosion.

- AEP had graded in two access/haul roads, the first extending from the perimeter haul road on the northern side of the site extending in a southeast direction towards the Phase 1 phasing berm, and the second spurring off of the first haul road and bordering the west, downslope limit of the sacrificial geotextile described above. The haul roads consisted of an embankment constructed from CCR materials ranging in thickness from a few feet to approximately 10 feet, placed over the protective cover atop the liner system.

Deficiencies noted:

- Excessive erosion of the composite liner protective cover material was observed in the non-active landfill areas. The erosion was more prevalent on the northern slope as compared to the eastern slope (Refer to Photograph Nos. 13, 14, 15, and 16 in Appendix B).
- The haul roads observed traversing the composite liner protective cover materials within the landfill (Refer to Photograph No. 11 in Appendix B) may cause instability of the liner system.

3.3.2 CCR Waste Clay Cover (Exterior Slope of Waste Placement Area)

General Observations:

- The exterior slope surrounding the west, south and east side of Phase 1 and 2 had a good stand of vegetation on it with approximately 80% vegetative coverage.
- No scarps, cracks, subsidence, sloughs or seeps were observed.
- Localized erosion rills were observed on the eastern side of the Phase 1 exterior slope, between the slope toe and the riprapped drainage channel.
- There were no observed signs of CCR material or contact water on the slopes.
- Several Erosion rills were observed near the toe of the west Phase 1 exterior slope.

Deficiencies noted:

- Localized erosion and erosion rills were observed (Refer to Photograph Nos. 2 and 10 in Appendix B).

3.3.3 West Pond

General Observations:

- The west pond had a relatively low water level, which covered a majority of the floor area. A staff gauge was not observed, and thus, the water level was unable to be determined.
- The sediment level (below the water level) was well below the clean out marking.
- The inlet culverts, headwalls and channels appeared free flowing without blockage.
- The outlet to the west pond was provided by a skimmer and vertical riser pipe that appeared to be unclogged and free of debris.
- The pond interior slopes and inlet channels were well armored with riprap: no observed sign of excessive erosion.
- No settlement, bulges, tension cracks, sloughs or seeps were observed around the perimeter embankments, dam and exterior slopes.
- The areas surrounding around the immediate pond limits were newly vegetated. Most areas appeared to have sufficient vegetative growth; however, several sparse areas were observed (approximately 30% of the area).
- A culvert pipe was noted in the southeast quadrant of the west pond that outlets near the top of the very steep cut slope bordering the north and east sides of the pond. Riprap at the outlet of the culvert extends about 10 feet and then transitions to the steep, newly vegetated slope. Sparse vegetation is present where water flows down the steep slope toward the pond.

Deficiencies noted:

- The outlet of the culvert pipe noted in the southeast quadrant of the pond (near top of the cut slope) is causing erosion of the newly vegetated steep slope (Refer to Photograph No. 18 in Appendix B).
- Some of the newly seeded areas around the pond did not establish full vegetative growth (Refer to Photograph No. 17 in Appendix B).
- The west pond did not have a staff gauge to readily determine the water elevation in the pond.

3.3.4 South Pond and Forebay

General Observations:

- The forebay contained water that was above the sediment cleanout level and the sediment level appeared to be well below the designated cleanout level.
- The forebay inlet channel was constructed with grouted riprap that was intact.
- The riprap in the forebay outlet channel leading to the south pond had locally eroded and exposed the underlying geotextile.
- The water level in the south pond was at Elevation 1031 feet.
- The interior slopes of the south pond and the forebay were well covered with riprap and there were no signs of erosion.
- The sediment level and sediment cleanout marker in the south pond was unable to be observed, likely due to the current water level.
- The primary and emergency outlet structures for the south pond appeared to be functional and free of blockage or debris.
- The skimmer in the south pond was floating and free of debris.
- The outlet and energy dissipation structure positioned at the toe of the slope was observed to extend above the ground surface and surrounded by the riprapped slope toe.
- The long fill slope south of the pond (exterior slope of the south pond) appeared to be uniformly graded with intermediate benches. There was good vegetative coverage throughout and there were no signs of significant erosion, localized seepage, ponded water, slope instability or surficial sloughing.
- The riprapped stormwater channels bounding the east and west sides of the long fill slope were well armored with no signs of erosion.

Deficiencies noted:

- An area of the forebay outlet/south pond inlet channel had been eroded of the protective riprap (Refer to Photograph No. 8 in Appendix B).
- The sediment cleanout marking was unable to be identified.

3.3.5 Stormwater Run-On and Run-Off Management Features

General Observations:

- Most of the designated stormwater channels were armored with riprap and free flowing with limited signs of ponded water, blockage or erosion. Where present, the check dams had accumulated some sediment build-up, but not to a significant thickness.
- The catch basin inlet located opposite the haul road from the south pond was partially blocked with aggregate and soil.
- The designated stormwater channels located between the toe limits of Phase 1 and 2 and the south pond forebay had locally developed sediment build up within the channels.
- Three culverts had been observed crossing various stormwater channels that were not on the construction plans including: 1) at southern edge of Phase 1 to the catch basin near the west pond; 2) on the eastern side of the exterior slope of the phasing berms; and 3) at the entrance of a temporary haul road entrance into the waste area on the northern side of Phase 1. At each location, the culverts did not contain inlet and outlet protection, did not appear to be fully free flowing, and the surrounding areas contained limited vegetation or armored surface.
- The drainage areas near the base of the Phase 1 and 2 exterior slopes did not appear to have a designated channel. These areas appeared to have been stabilized in the past (grass); however, the stormwater flow in these areas had eroded a significant amount of the vegetation and had created erosion rills.

Deficiencies noted:

- Partial blockage of the catch basin near the south pond was noted (Refer to Photograph No. 7 in Appendix B).
- Erosion of vegetated and development of erosion rills have developed in the drainage arears positioned near the base of the Phase 1 exterior slope (Photograph Nos. 2, 9, and 10 in Appendix B).
- Localized areas of the stormwater channels located between the toe limits of Phase 1 and 2 and the south pond forebay contained sediment build up (Refer to Photograph Nos. 3, 4, 5, and 6 in Appendix B).
- The three referenced culverts (Refer to Photograph Nos. 1, 5, and 12 in Appendix B) were not included in the construction drawings and are functioning properly.

3.3.6 Leachate Collection and Management System

General Observations:

- The aboveground pipes, including the gravity drainpipes from the waste disposal area and the forcemain pipes from the leachate lift station to the leachate pond, appeared free of damage with no signs of leakage or precipitate build-up.
- The concrete vault for the lift station appeared to contain some leachate but the actual liquid level was appeared to be low and was unable to be determined.
- The pump controls appeared to be operational with no alarms noted.
- There was no observed ponded water, leakage or overflow noted around the leachate pump station.

Deficiencies noted:

- None.

3.3.7 Leachate Pond

General Observations:

- The leachate pond liquid level was low near the pump station in-take pipes.
- Previous water levels, as indicated by water stains on the liner system, appeared to provide adequate freeboard near the crest of the leachate pond and the emergency pipe outlet.
- The liner system was exposed without ballast. Based on observations of the areas above the water level, no damage to the liner system was noted.
- No blockage or debris was noted around the inlet pipe to the leachate pond and leachate was not flowing from the inlet pipe. However, the surface of the liner immediately downslope of the pipe was wet indicating that leachate had recently been flowing from the inlet pipe.
- No blockage or debris was noted around the in-take pipes in the leachate pond.
- No evidence of leakage was observed near the truck filling area or the pump station.

Deficiencies noted:

- None.

4.0 RECOMMENDED REMEDIAL ACTIONS AND MAINTENANCE ACTIVITIES

As described in Site Walk Observation section (Section 3.3), several deficiencies have been identified with respect to the operation and maintenance of the landfill. These deficiencies can be corrected through maintenance or by performing remedial actions. The following sections provide our recommendations to address the noted deficiencies as remedial actions or maintenance.

4.1 RECOMMENDED REMEDIAL ACTIONS

Below is a list of recommended remedial actions to correct deficiencies noted during the October 7, 2015 site walk.

- It is recommended that the eroded composite liner protective cover materials on the north and east sides of the non-active waste disposal areas be repaired or re-established (Refer to Photograph Nos. 13, 14, 15, and 16 in Appendix B). New cover materials should be used to fill in the depressions and the exposed surface regraded to the design thickness. AEP should also consider using bottom ash for the protective cover material and/or should consider means to limit erosion in the future (i.e., sacrificial geotextile, Posi-shell application, etc.).
- It is recommended that AEP obtain confirmation that the liner stability is sufficient to accommodate the two haul roads extending from the northern end of the waste limits through Phases 1 and 2 (Refer to Photograph No. 11 in Appendix B).
- It is recommended that a designated armored channel be constructed from the inlet pipe headwall located in the southeast quadrant of the west pond (near the top of the steep slope) to the west pond (Refer to Photograph No.18 in Appendix B).
- It is recommended that the riprap armoring for the channel from the south pond forebay to the south pond be repaired (Refer to Photograph No. 8 in Appendix B). New riprap material should be placed as required to re-establish the design thickness.
- It is recommended that the three culverts noted in Section 3.3.5 (Refer to Photograph Nos. 1, 5, and 12 in Appendix B) be evaluated to determine if adequate flow capacity in the channels exists. It is also recommended that inlet/outlet protection be constructed and that existing sediment and blockages be removed from the upstream and downstream ends. Subsequent to final repairs, it is recommended that the ground surface near these structures be stabilized.

4.2 RECOMMENDED MAINTENANCE ACTIVITIES

- CEC recommends that AEP perform regular maintenance of clay cover and associated low volume drainage swales that have been subjected to erosion. This includes: 1) identification and correction/redirection of concentrated stormwater flow; 2) construction of designated drainage swales with appropriate armoring; 3) backfilling of erosion rills with clay cover material; 4) regrading repaired areas to promote positive surface drainage; and, 4) placing topsoil and/or fertilizer as needed to re-establish vegetation. Specific locations noted during the site walk that require maintenance include:
 - Localized erosion and erosion rills on the eastern side of the Phase 1 exterior slope, between the slope toe and the riprapped drainage channel (Refer to Photograph No. 2 in Appendix B).
 - Erosion and erosion rills along the toe of the western exterior slope of the Phase 1 exterior slope (Refer to Photograph Nos. 9 and 10 in Appendix B).
- CEC recommends that AEP maintain vegetation and limit soil erosion throughout the facility in accordance with the requirements established in the Operations Plan for the site, which includes: 1) repair and reseeding of areas containing sparse vegetation; 2) redirect stormwater runoff; and, 3) perform mowing of vegetated slopes every other month between April and October to control vegetation height. Specific locations noted during the site walk that require maintenance include:
 - Sparsely vegetated areas outside the immediate limits of the of the west pond (Refer to Photograph No. 17 in Appendix B).
 - The areas near the base of the Phase 1 exterior slope (Refer to Photograph No. 9 in Appendix B).
- It is recommended that staff gauges and/or sediment cleanout markers be installed and monitored as part of the regular inspections. Specific locations where a staff gauge and/or sediment cleanout marker was not observed include:
 - A staff gauge was not observed in the west pond and should be installed.
 - A sediment cleanout marker was not observed in the south pond and should be installed.
- It appears that the south pond is being operated more as a retention pond than a detention pond with periodic operation of the skimmer. This was evident with the observed water several days after the most recent storm event. It is suggested that the skimmer remain functional on a regular basis in order to provide the design storage capacity for the anticipated significant storm events.
- It is recommended that designated stormwater channels and associated inlet/outlet structures be maintained to remove accumulated sediment to remain free flowing. Where necessary the channel alignment and armoring should be repaired following the sediment removal. Specific locations where an accumulation of sediment was observed and require maintenance include:

- The catch basin located across the haul road from the south pond (Refer to Photograph No. 7 in Appendix B).
 - The culvert located on the eastern side of the Phase 1 exterior slope (Refer to Photograph No. 1 in Appendix B).
 - The channels located between the toe of the exterior slope of the Phase 1 and 2 and the south pond forebay (Refer to Photograph Nos. 3, 4, 5, and 6).
 - Continue the routine landfill inspections weekly and annually in accordance with the Operations Plan and CCR Rule §257.84.
- Perform regular maintenance of the temporary cover over the landfill liner system that has been subjected to erosion.
 - Continue to monitor the inclinometers located on the fill embankment slope south of the south pond.
 - Increase the operational time of the stormwater pond skimmer devices to minimize the prolonged storage of stormwater in the ponds that exceeds the maximum sediment accumulation level.
 - Continue to monitor sediment accumulation in the stormwater ponds (including forebay) and perform maintenance as needed.

5.0 SUMMARY AND CONCLUSIONS

CEC provided qualified personnel to perform the 2015 Initial Annual Landfill Inspection of Mitchell Landfill. Based on our observations of the landfill, the site features and engineering systems appeared to be constructed and/or operating in general accordance with the design plans, Operations Plan, WV DEP Solid Waste/NPDES Permit, and generally accepted industry standards. No signs of site instability or significant operational concerns were observed. While several deficiencies were observed and noted in Section 3.0 of this report, the deficiencies are not critical to the overall operation, stability or safety of the landfill. However, through remedial actions and maintenance, CEC recommends that the noted deficiencies be addressed. The recommended remedial actions and/or maintenance for Mitchell Landfill, based on this inspection, are summarized in Section 4.0 of this report.

We trust this report and supporting data are sufficient for your needs at this time. The services provided for this project were performed with the care and skill ordinarily exercised by reputable members of the profession practicing under similar conditions at the same time and the same or similar locality. No warranty, expressed or implied, is made or intended by rendition of these consulting services or by furnishing oral or written reports of the findings made. This report has been prepared for exclusive use by AEP.

APPENDIX A

ANNUAL LANDFILL INSPECTION CHECKLIST



Civil & Environmental
Consultants, Inc.

MITCHELL LANDFILL ANNUAL LANDFILL INSPECTION CHECKLIST

PROJECT INFORMATION

PROJECT NAME: Mitchell Landfill Inspection CEC PROJECT NO.: 152-698
 DATE OF INSPECTION: October 7, 2015 ARRIVE: 8:00 a.m. DEPART: 12:45 p.m.
 WEATHER: Sunny TEMP. RANGE (°F): 60 TO 70
 CEC FIELD REPRESENTATIVE: Timothy D. Mitchell, P.E. CEC ENGINEER: Anthony P. Amicon, P.E.
 OTHER ATTENDEES: Dennis Henderson [American Electric power (AEP)]; Danielle Roski (AEP)

COAL COMBUSTION RESIDUAL (CCR) WASTE PLACEMENT:

GENERAL DESCRIPTION:

No waste was being placed within Phase 1 of the landfill on this date; rather AEP's contractor, R.B. Jergens (RBJ), was placing clay material to increase the height of the interior phasing berm along the south side of Phase 1. The waste placement area appeared to be graded such that surface water drained to the interior of the operating phase, towards several existing chimney drains. A majority of the waste was smooth and provided a firm surface to walk on; leading me to believe that it had been rolled with a smooth drum compactor. However, AEP did identify a few areas, near the chimney drains that had not been rolled recently and could be soft. The chimney drains appeared to be operating correctly without sediment build up. Other than one localized area, no ponding of water was observed.

Excessive erosion was observed in the exposed protective cover material within the non-active areas of Phase 1 and 2. There were numerous erosion rills in the exposed protective cover for the liner system on the northern side of the site. Some erosion rills, though not nearly as prevalent, were observed in the exposed protective cover on the northeastern side of the site. Speaking with Dennis, he observed that this erosion occurs more in the fly ash protective cover material rather than the bottom ash protective cover material. Based on the current conditions seen at the site, I would agree with Dennis's observation.

In an attempt to prevent erosion of the exposed protective cover along the eastern in-active slope (Phase 2), AEP had installed a sacrificial geotextile over the protective cover. Because the exposed surface of the protective was not visible beneath the geotextile at the time of the inspection, an assessment could not be made as to the success of the sacrificial geotextile in preventing protective cover erosion.

Also, AEP had graded in two access roads in the waste, the first extending from the perimeter haul road near the main entrance and progressed southeast toward the Phase 1 containment berm and the second road spurring off of the first towards Phase 2B and progressing along the western limits of the sacrificial geotextile described above. The access roads consisted of an embankment constructed from CCR materials ranging in thickness from a few feet to approximately 10 feet, placed over the protective cover atop the liner system.

Any scarps, cracks, or significant subsidence?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any damp areas or seeps?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any excessive erosion?	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>	YES
Any visible misalignments?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any excessive erosion, deterioration or blockage for the chimney drains?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any visible deficiencies noted with the inside portion of the temporary containment berms?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES



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Any observed functional problems with the chimney drains?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any observed CCR or contact water beyond containment berms surrounding the waste placement area?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any observed excessive fugitive dusting of the waste surface?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any visible deficiencies noted with temporary cover on the liner system?	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>	YES

SUGGESTED REMEDIAL ACTIONS:

1) The protective cover materials that have eroded should be repaired (Photograph Nos. 13, 14, 15, and 16). To correct these erosion rills in the protective cover, it is suggested that new cover materials be placed to fill in the depressions and the exposed surface be regraded. Additionally, AEP should consider means to protect the exposed surface in order to limit erosion in the future (i.e., sacrificial geotextile, Posi-shell application, etc.).

2) The current site access roads, which traverse across the protective cover material, were not included in the phasing plans for the site (Photograph No. 11). Because these roads include an embankment ranging from a few feet to approximately 10 feet of CCR material placed on the sloping liner without a toe buttress, it is suggested that AEP obtain confirmation that the temporary stability of the embankment atop the liner cover layer is suitable.

CLAY COVER (EXTERIOR SLOPE OF WASTE PLACEMENT AREA):

GENERAL DESCRIPTION:

As mentioned above, at the time of the inspection RBJ was placing clay material to increase the height of the interior phasing berm along the south side of Phase 1. At the time of observation, the clay material was placed to about a 1 foot height.

The perimeter slopes surrounding the south side of Phase 1 and 2 (below the new berm construction) appeared to have been constructed with a similar soil type as the current berm construction described above. The sloping surface was relatively uniform and new vegetative growth was present. Overall, it appeared that the vegetation coverage was greater than about 80 percent. A few minor erosion rills were observed on the eastern side of the Phase 1 containment berm slope near the existing drainage swale. These erosion rills were limited and localized.

Any scarps, cracks, or significant subsidence?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any damp areas or seeps?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any excessive erosion?	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>	YES
Any visible deficiencies noted with the outside portion of the temporary containment berms?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any visible signs of CCR not covered or contained by the phasing berms and/or cover?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES

SUGGESTED REMEDIAL ACTIONS:

1) CEC suggests that AEP identify and correct the source of concentrated stormwater flow that is creating the erosion rills on the east and west side of the Phase 1 containment berm slope near the existing drainage swale (Photograph No. 2 and 10). Additionally, these erosion rills should be backfill with clay cover material, then covered with topsoil and/or fertilizer as needed to re-establish vegetation.



ANNUAL LANDFILL INSPECTION CHECKLIST

WEST POND:

GENERAL DESCRIPTION:

Overall, the west pond appeared to be functioning well. The west pond had some water in the pond, but there was no staff gauge in the west pond to determine water elevation. Inlet and outlet features appeared to be unclogged and free of debris. The interior slopes of the pond were well covered with riprap and there were no signs of erosion. The areas immediately surrounding west pond and positioned above the riprap interior pond slopes appeared to have been recently seeded with new vegetation present. The vegetation growth coverage was generally good; however, sparse vegetation growth was noted in several localized areas.

A culvert pipe with a headwall was noted in the southeast quadrant of the pond that outlets near the top of the very steep cut slope that borders the north and east side of the pond. There is riprap that extends about 10 feet beyond the outlet that transitions to a steep newly vegetated slope. Sparse vegetation and erosion has occurred where water flows down the steep slope toward the pond.

The pond had a cleanout marker, which was a 4" x 4" wooden post. The post was above the current water elevation, so the pond sediment level was not of concern.

Any scarps, cracks, bulges or signs of instability on steep cut slopes?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any scarps, cracks, bulges or signs of instability for the embankment slopes?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any signs of seepage on the exterior embankment slopes?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any signs of significant changes in vegetation type/color/growth on the exterior embankment slopes?	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>	YES
Any excessive erosion on interior pond slopes?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any excessive erosion on exterior pond slopes?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any visible problems with the inlet pipe or headwall structures?	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>	YES
Any blockage at or near the inlet pipe or headwall structures?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any deficiencies with the inlet channel flow or armoring?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any visible problems with the outlet skimmer?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any visible problems or blockage with the primary outlet structure?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any visible problems or blockage with the pond emergency spillway?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any visible problems with the staff gauge?	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>	YES
Is the water level in the pond too high?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any visible problems with sediment cleanout marking?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Is the sediment level above the cleanout level?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES

SUGGESTED REMEDIAL ACTIONS:

- 1) It is suggested that a designated armored channel be constructed between the inlet pipe headwall (Photograph No.18) located in the northeast quadrant of the pond (near the top of the steep slope) and the west pond.
- 2) It is suggested that the localized sparsely vegetated areas (Photograph No. 17) be fertilized and reseeded.
- 3) Add a staff gauge to the west pond so that the water elevation in the pond can easily be determined.



ANNUAL LANDFILL INSPECTION CHECKLIST

SOUTH POND:

GENERAL DESCRIPTION:

Both the south pond and the forebay contained water. The water level in the forebay was just above the sediment cleanout level and the south pond water level was near Elevation 1031 feet. It appeared that the liquid in the forebay contained less suspended solids than the south pond. The grouted riprap channel leading into the forebay and the forebay interior riprapped slopes of the forebay were in good condition with no signs of erosion. The riprapped channel extending from the forebay to the south pond had experienced some erosion of the riprap in the channel bottom that had locally exposed the geotextile. The interior slopes of the south pond were well covered with riprap and there were no signs of erosion. The primary and emergency outlet structures appeared to be in good working conditions and free of blockage or debris. The skimmer in the south pond was floating and free of debris. The outlet and energy dissipation structure positioned at the toe of the slope appeared to be in good working condition. Overall, the south pond and forebay appeared to be functioning well.

The long fill slope south of the pond (exterior slope of the south pond) appeared to be uniformly graded with intermediate benches. There was good vegetative coverage throughout and there was no sign of significant erosion, localized seepage, ponded water, slope instability or surficial sloughing. The riprapped stormwater channels bounding the east and west sides of the long fill slope were in good condition with no signs of erosion.

Staff gauge was partially submerged to Elevation 1031. No cleanout markings were observed, therefore, an assessment as to whether the sediment level was below the cleanout level could not be made.

FOREBAY:

Any scarps, cracks, bulges or signs of instability with the interior slopes?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any excessive erosion on interior pond slopes?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any deficiencies noted for the vegetation on non-armored slopes and surrounding areas?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any deficiencies noted for the inlet and outlet channel armoring or flow?	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>	YES
Any visible problems with cleanout marking?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Is the sediment level above the cleanout level?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES

SOUTH POND:

Any scarps, cracks, bulges or signs of instability with the interior slopes?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any excessive erosion on interior pond slopes?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any deficiencies noted for the vegetation on non-armored slopes and surrounding areas?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any deficiencies noted for the inlet channels armoring and flow?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any deficiencies noted for the inlet channel from the forebay?	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>	YES
Any visible problems with the inlet pipe or headwall structures?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any blockage at or near the inlet pipe or headwall structures?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any visible problems with the outlet skimmer?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any visible problems or blockage with the primary outlet weir structure?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES



ANNUAL LANDFILL INSPECTION CHECKLIST

Any visible problems or blockage with the pond emergency spillway?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any visible problems with staff gauge?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Is the water level in the pond too high?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any visible problems with sediment cleanout marking?	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>	YES
Is the sediment level below the cleanout level?	<input type="checkbox"/>	NO	<input type="checkbox"/>	YES

SOUTH POND EMBANKMENT SLOPE:

Any scarps, cracks, bulges or signs of instability with the embankment slope.	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any excessive erosion on embankment slopes and benches?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any signs of standing water, seepage or significant changes in vegetation?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any deficiencies noted for the stormwater channels armoring or flow?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any visible problems with the energy dissipation/outlet structure?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any visible problems with the riprapped toe of the embankment?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any visible problems with the underdrain outlet?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES

SUGGESTED REMEDIAL ACTIONS:

- 1) It is suggested that riprap be restored in areas along the channel connecting the forebay and south pond where erosion has occurred (Photograph No. 8).
- 2) It appears that the south pond is being operated more as a retention pond than a detention pond with periodic operation of the skimmer. It is suggested that the skimmer remain functional on a regular basis in order to provide the design storage capacity for the anticipated significant storm events.
- 3) A sediment cleanout marking should be included on the water level gauge or on a separate structure. CEC notes that this marking may have been submerged under water at the time of the inspection.

STORMWATER RUN-ON AND RUN-OFF MANAGEMENT FEATURES:

GENERAL DESCRIPTION:

The stormwater run-on and run-off management features observed as part of this annual landfill inspection not included as part of the other sections included: 1) stormwater conveyance (e.g., channels, culverts, and catch basins) features on the eastern side of the exterior slope of the phasing berms; 2) stormwater conveyance features leading to the South Pond; 3) stormwater conveyance features adjacent to roadways; and 4) check dams. Evaluations of the stormwater features associated with specific structures, (e.g., channels bounding the south pond exterior slope, west pond inlet channels, etc.) are included in those specified sections. At the time of the inspection, a majority of the stormwater conveyance features did not have water. Partial blockages were noted at the inlets of a catch basin near the south pond and at the outlet of a culvert on the east side of the Phase 1 exterior slope of the phasing berms. Additionally, drainage on the slope immediately west of the Phase 1 exterior slope, outside the limits of waste, showed some signs of erosion. Also, sediment build up occurred near the toe of the Phase 1 exterior slope of the phasing berms at the beginning of the channel leading from the southern edge of Phase 1 to the catch basin near the south pond. Three culverts locations were noted that did not appear on the construction plans that included: 1) the channel leading from the southern edge of Phase 1 to the catch basin near the west pond; 2) on the eastern side of the exterior slope of the Phase 1 phasing berms; and 3) at the entrance of the access road



ANNUAL LANDFILL INSPECTION CHECKLIST

on the northern side of the site.

Generally, the designated and armored channels were functioning well without ponding, blockage, or erosion observed. The exception being the above referenced observations. Several check dams were in the channels with low sediment levels.

Any excessive erosion, deterioration or blockage for site ditches or swales?	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>	YES
Any excessive erosion, blockage, or sediment build-up for check dams?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Are culvert inlet and outlet structures obstructed or blocked?	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>	YES
Any excessive erosion or deterioration of inlet/outlet or catch basin structures?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any excessive sediment buildup in channels?	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>	YES

SUGGESTED REMEDIAL ACTIONS:

1) It is suggested that the localized collection of soil and riprap at the above noted catch basin near the south pond (Photograph No. 7) and at a culvert on the eastern side of the Phase 1 phasing berms exterior slope (Photograph No. 1), should be removed to eliminate the current partial blockages. Following removal, channel linings should be reestablished as necessary.

2) It is suggested that AEP identify and correct the source of concentrated stormwater flow that is creating the erosion rills near the tow of the west exterior slope of the phasing berm (Photograph Nos. 9 and 10). Additionally, these erosion rills should be backfilled with clay cover material, then covered with topsoil and/or fertilizer as needed to re-establish vegetation. If needed, an armored channel should be constructed.

3) Sediment has accumulated near the toe of the exterior slope of the phasing berms at the beginning of the channel leading from the southern edge of Phase 1 to the catch basin near the south pond forebay (Photograph Nos. 3, 4, 5, and 6). This sediment should be removed and channel linings should be re-established.

4) Culverts noted during the inspection, including one leading from the southern edge of Phase 1 to the catch basin near the south pond (Photograph No. 5), a second culvert on the eastern side of the exterior slope of the phasing berms (Photograph No. 1), and a culvert at the crossing of the access road on the northern side of the site (Photograph No. 12), appear to be not included on the permit or construction plans. These existing culverts should be reviewed to determine if adequate flow capacity exists and adequate inlet/outlet protection should be constructed. Approximate ground stabilization should also be established around these structures.

LEACHATE COLLECTION AND MANAGEMENT SYSTEM:

GENERAL DESCRIPTION:

The exposed leachate conveyance features and management system observed as part of this annual landfill inspection was limited to: 1) the aboveground pipes positioned between Phase 1 and 2 and the leachate pump station; 2) the aboveground portion of the leachate pump station; and, 3) the aboveground force main pipes positioned between leachate pump station and the leachate pond. The leachate pond observations are included in a separate section. Regarding the aboveground pipes, including the gravity drain pipes from the waste disposal area and the forcemain pipes from the leachate lift station to the leachate pond, no signs of leakage, damage, or precipitate were observed. The concrete vault for the lift station appeared to contain some leachate but the actual liquid level appeared to be low and was unable to be determined. The pump controls appeared to be operational with no alarms noted. There was no observed ponded water, leakage or overflow noted around the leachate pump station. The pumps were not running at the time of the observation.

Is there excessive precipitate build up for visible portions of leachate pipes? ☒ NO ☐ YES



ANNUAL LANDFILL INSPECTION CHECKLIST

Is there any damage or irregularities for visible portions of leachate pipe?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any visible current or past leakage of the exposed leachate conveyance pipes and connections?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any visible current or past overflow or leakage of leachate around the pump station vault?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any observed problems with the leachate pump station or operation?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES

SUGGESTED REMEDIAL ACTIONS:

No remedial actions are required at this time.

LEACHATE POND:

GENERAL DESCRIPTION:

Overall, the leachate pond appeared to be functioning well. The leachate pond liquid level was low and observed to be below the intake pipes for the pump station. The previous maximum liquid level, as evident from watermarks on the liner system, appeared to be several feet below the emergency outlet pipe. No blockage or debris was noted around the inlet pipe from the leachate lift station or emergency outlet pipe. At the time of the inspection, leachate was not flowing into the leachate pond from the inlet pipe; however, it appeared that water had recently been flowing from the end of the pipe down the liner surface into the pond. No damage to the liner system was visually observed. No evidence of leakage was observed near the truck filling area or the pump station. The pump system to remove leachate from this pond was not being utilized during the inspection (low liquid level did not require pumping).

Any visible signs of subsidence?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Are there any deficiencies noted with the leachate pond inlet features?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any irregularities or damage noted with the exposed leachate pond polypropylene liner?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Are leachate levels in the pond abnormally high?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Are the sediment levels in the leachate pond too high?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Are there any noted deficiencies for the leachate pond outlet structure?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any blockage noted around the pump station intake pipe?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any noted deficiencies for the pump station?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES
Any noted deficiencies for the leachate pond loadout facility?	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	YES

SUGGESTED REMEDIAL ACTIONS:

No remedial actions required at this time.

APPENDIX B

PHOTOGRAPHIC DOCUMENTATION

APPENDIX B

SECTION 1

PHOTOGRAPHS OF NOTED DEFICIENCIES

APPENDIX B – SECTION 1
PHOTOGRAPHS OF NOTED DEFICIENCIES



PHOTOGRAPH NO. 1

View of stormwater culvert on the east side of the exterior slope of the phasing berms with an outlet partially blocked with aggregate and soil.



PHOTOGRAPH NO. 2

View of localized erosion rill on the east side of the Phase 1 phasing berm exterior slope.

APPENDIX B – SECTION 1
PHOTOGRAPHS OF NOTED DEFICIENCIES



PHOTOGRAPH NO. 3

View of stormwater drainage swale south of Phase 1 waste disposal area leading to south pond forebay. Some sediment build-up and washout was observed.



PHOTOGRAPH NO. 4

View of accumulated sediment and un-stabilized soil at beginning of southern toe of Phase 1 toe berm slope.

APPENDIX B – SECTION 1
PHOTOGRAPHS OF NOTED DEFICIENCIES



PHOTOGRAPH NO. 5

View of accumulated sediment near entrance to a drainage culvert approximately 150 feet from the toe of the Phase 1 temporary covered slope. Soil material shown in the photograph needs stabilized.



PHOTOGRAPH NO. 6

View of accumulated sediment and un-stabilized soil beyond the Phase 1 toe berm slope.

APPENDIX B – SECTION 1
PHOTOGRAPHS OF NOTED DEFICIENCIES



PHOTOGRAPH NO. 7
View of catch basin inlet near the south pond, with a partially blocked inlet.



PHOTOGRAPH NO. 8
View of exposed geotextile at the riprap lined inlet channel to the south pond main settling chamber.

APPENDIX B – SECTION 1
PHOTOGRAPHS OF NOTED DEFICIENCIES



PHOTOGRAPH NO. 9

View of the temporary cover vegetated slope of the Phase 1 exterior slope. Area in background depicts drainage and vegetation deficiencies in Photograph Nos. 4, 5, and 6.



PHOTOGRAPH NO. 10

View of erosion rills along toe of the west exterior slope of the active Phase 1 waste disposal area.

APPENDIX B – SECTION 1
PHOTOGRAPHS OF NOTED DEFICIENCIES



PHOTOGRAPH NO. 11

View of Phase 1 waste disposal operations looking east. Note the embankment constructed for the temporary access road mid-slope of Phase 2. A second access road is also shown on the Phase 2 slope.



PHOTOGRAPH NO. 12

View of entrance to the Phase 1 waste disposal area from haul road with culvert crossing over inboard ditch. This culvert or roadway was not in the permit of construction drawings.

APPENDIX B – SECTION 1
PHOTOGRAPHS OF NOTED DEFICIENCIES



PHOTOGRAPH NO. 13

View of erosion rills in the protective cover material near the northern end of the landfill.



PHOTOGRAPH NO. 14

View of erosion rills in the protective cover material near the northern end of the landfill.

APPENDIX B – SECTION 1
PHOTOGRAPHS OF NOTED DEFICIENCIES



PHOTOGRAPH NO. 15

View of erosion rills in the protective cover material near the northern end of the landfill.



PHOTOGRAPH NO. 16

View of erosion rills in the protective cover material near the northeastern end of the landfill.

APPENDIX B – SECTION 1
PHOTOGRAPHS OF NOTED DEFICIENCIES



PHOTOGRAPH NO. 17

Overall view of the west pond. Some vegetation “bare spots” were noted.



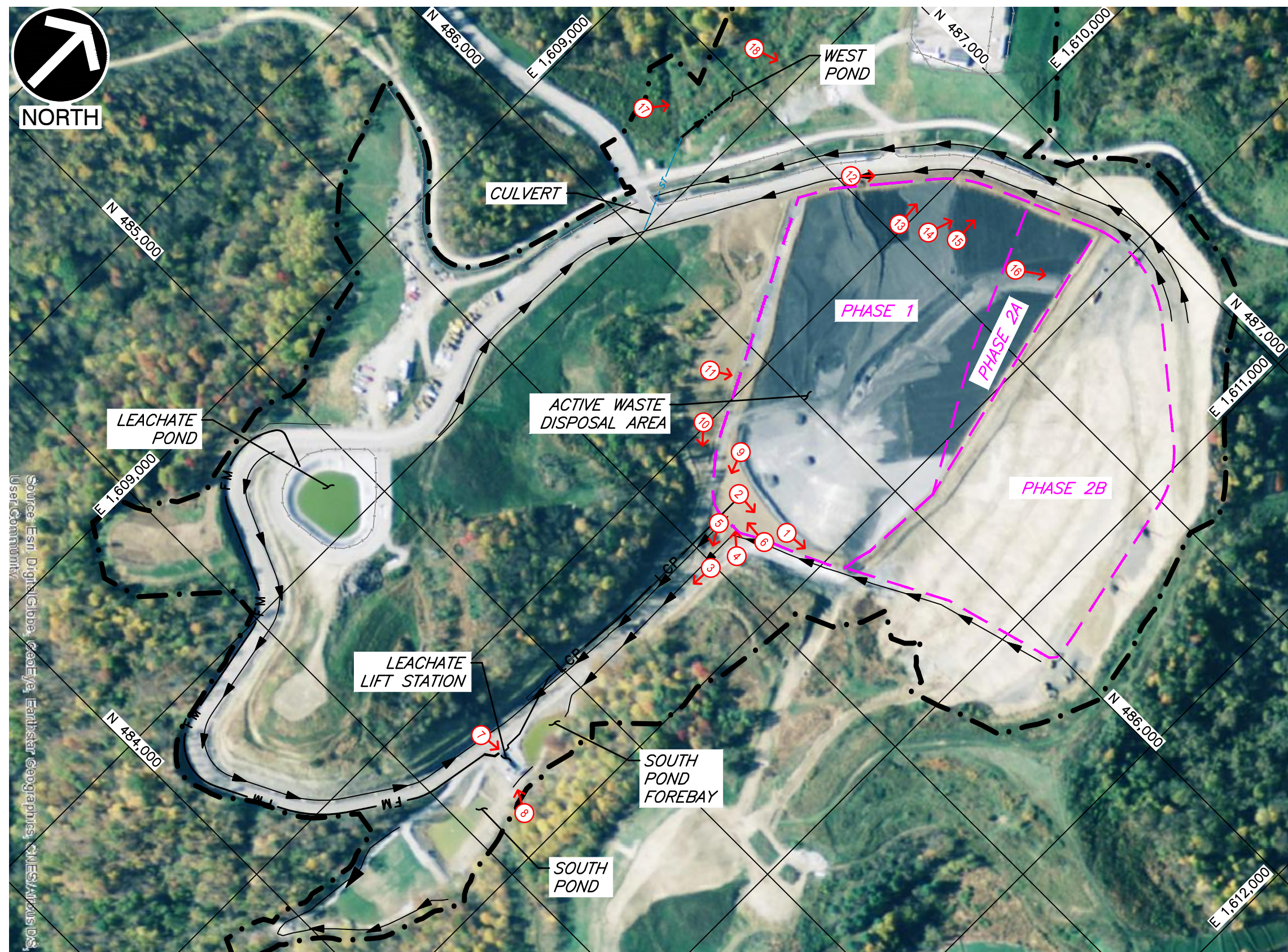
PHOTOGRAPH NO. 18

View of culvert discharge point above the west pond. Culvert discharge onto the very steep slope is eroding the vegetation.

APPENDIX B

SECTION 2

PHOTOGRAPH LOCATION PLAN



APPENDIX C
































RECENT WEATHER HISTORY FOR THE SITE

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Weather History for KHLG - October, 2015

 Today
  Forecast

October Precip Stats: Actual Month to Date: 0.91 in | Average Month to Date: 1.05 in | Average Month Total: 2.55 in

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1  Actual: 63° 52° 0.00 in Average: 68° 49° 0.10 in	2  Actual: 56° 45° 0.03 in Average: 68° 48° 0.09 in	3  Actual: 55° 44° 0.57 in Average: 68° 48° 0.08 in
4  Actual: 65° 50° 0.00 in Average: 67° 48° 0.08 in	5  Actual: 71° 48° 0.00 in Average: 67° 47° 0.08 in	6  Actual: 76° 49° 0.00 in Average: 66° 47° 0.08 in	7  Actual: 73° 55° 0.00 in Average: 66° 47° 0.08 in	8  Actual: 76° 51° 0.00 in Average: 66° 46° 0.08 in	9  Actual: 71° 54° 0.15 in Average: 65° 46° 0.08 in	10  Actual: 63° 45° 0.00 in Average: 65° 46° 0.09 in
11  Actual: 69° 39° 0.00 in Average: 65° 45° 0.09 in	12  Actual: 73° 49° 0.15 in Average: 64° 45° 0.08 in	13  Actual: 64° 53° 0.01 in Average: 64° 45° 0.08 in	14  Actual: 60° 48° 0.00 in Average: 63° 44° 0.08 in	15  Forecast: 64° 44° 0.0 in Average: 60° 42° 0.07 in	16  Forecast: 59° 37° 0.0 in Average: 63° 44° 0.09 in	17  Forecast: 49° 31° 0.0 in Average: 62° 43° 0.08 in
18  Forecast: 50° 29° 0.0 in Average: 62° 43° 0.09 in	19  Forecast: 57° 38° 0.0 in Average: 62° 43° 0.08 in	20  Forecast: 65° 45° 0.0 in Average: 61° 43° 0.09 in	21  Forecast: 66° 48° 0.0 in Average: 61° 42° 0.08 in	22  Forecast: 63° 44° 0.16 in Average: 60° 42° 0.08 in	23  Forecast: 60° 37° 0.0 in Average: 60° 42° 0.08 in	24  Record: 78° 28° 0.86 in Average: 60° 42° 0.08 in
25  Record: 82° 32° 0.76 in Average: 59° 41° 0.08 in	26  Record: 77° 25° 0.88 in Average: 59° 41° 0.08 in	27  Record: 75° 30° 0.50 in Average: 59° 41° 0.09 in	28  Record: 77° 30° 0.56 in Average: 58° 40° 0.08 in	29  Record: 74° 28° 1.09 in Average: 58° 40° 0.08 in	30  Record: 75° 26° 0.82 in Average: 58° 40° 0.07 in	31  Record: 78° 31° 0.70 in Average: 57° 40° 0.07 in

Calendar Legend



Sunny
Clear



Mostly Cloudy



Partly Cloudy



Cloudy



Rain



Snow



Hail Flurries



Thunderstorms



Hazy
Fog



Sleet



'?' denotes
'chance of'



Unknown

report this ad

APPENDIX D

ANNUAL WASTE ACCEPTANCE DATA
(PROVIDED BY AEP)

Timothy W Howdyshell

From: Tim Howdyshell <thowdysh@columbus.rr.com>
Sent: Saturday, July 04, 2015 10:56 PM
To: Timothy W Howdyshell
Subject: FW: Flyash / Gypsum Disposed at Mitchell Landfill

This is an EXTERNAL email. STOP. THINK before you CLICK links or OPEN attachments.

From: Jeffrey W Palmer [<mailto:jwpalmer@aep.com>]
Sent: Thursday, July 2, 2015 11:33 AM
To: Tim Howdyshell (thowdysh@columbus.rr.com)
Subject: Flyash / Gypsum Disposed at Mitchell Landfill

Here are the Flyash / Gypsum numbers which were disposed at the Mitchell Landfill through June 2015

Flyash 2014 – 244943.57 tons (Started 5/18/2014)
Gypsum / Cookie Material 2014 – 13277.42 tons

Flyash 2015 – 114172.21 tons
Gypsum / Cookie Material 2015 – 5467.97 tons

Flyash Total – 359115.78 tons
Gypsum / Cookie Material Total – 18,745.39 tons

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