

Annual Coal Combustion Residuals (CCR) Landfill Inspection Report

H. W. Pirkey Power Plant
2400 FM 3251
Hallsville, Texas

Prepared for

**American Electric Power
1 Riverside Plaza
Columbus, Ohio 43215**

Professional Certification:

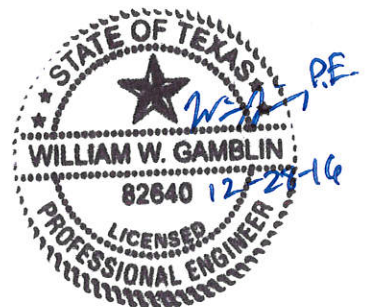
I hereby certify that this plan, specification or report
was prepared by me or under my direct supervision
and that I am a duly Licensed Professional Engineer
under the laws of the State of Texas.



William Gamblin, P.E.
Sr. Engineer
License Number: Texas PE #82640

Project B1606473
December 27, 2016

Braun Intertec Corporation
Texas P.E. Firm #12228



December 27, 2016

Project B1606473

Brett Dreger, P.E.
Civil Engineering
American Electric Power Services Corporation
1 Riverside Plaza
Columbus, Ohio 43215

Re: Annual Coal Combustion Residuals (CCR) Landfill Inspection Report
H. W. Pirkey Power Plant
2400 FM 3251
Hallsville, Texas 75650

Dear Mr. Dreger:

On behalf of American Electric Power Services Corporation (AEP), Braun Intertec Corporation (Braun Intertec) is pleased to submit the attached ***Coal Combustion Residuals (CCR) Landfill Inspection Report*** for the above-referenced property.

On September 28, 2016, the Braun Inspector, William Gamblin, P.E., mobilized to the site and met with AEP representative, Ron Franklin (Environmental Manager), at the H.W. Pirkey (Pirkey) Power Plant (hereafter referred to as the Site). Details of the past CCR landfill operations and past CCR Inspections were discussed.

Braun Intertec representative, William Gamblin, P.E., assisted by AEP representative Ron Franklin, conducted a comprehensive site inspection of the entire CCR landfill area. Photographic documentation of the inspection is included in the attached report.

The inspection of permanently capped areas was completed in the afternoon of September 28, 2016, while the active disposal areas and areas under construction were inspected in the morning of September 29, 2016.

The majority of the H.W. Pirkey Plant CCR Landfill is under permanent cover. In general, all permanent cover areas were in good condition with little sign of erosion and good vegetative cover. The vegetative cover was composed of consistent length grasses with almost no woody type bushes or trees evident in the landfill areas. Areas of concern (AOCs) in the permanent cover areas include "woody" vegetation noted on the "1984" and "1987" Cells. Denuded areas and erosional features were evident on the "1987", "1995", "1999", and "2005" Cells. Abandoned piping and debris was noted on the "1987" Cell and in the drainage between the "2012" and "2015" Cells.

The areas of the landfill that were active and/or under construction showed significant erosional activity with abundant rivulets and gully formation along slopes. However, all of the runoff from the active and/or under construction areas is contained in an onsite pond and then recycled onsite. The exposed CCR hardens after coming in contact with rainwater and the evident erosion appeared to be a short-lived phenomenon. The slopes appear to remain relatively stable (if left undisturbed) after one or two rain events. Some of more recently constructed landfill slopes have a temporary cover of red soil that also

showed signs of significant erosion. The advantage of the temporary cover appears to be that while the red soil eroded, sufficient rainwater infiltrated the temporary cover to harden the CCR underneath.

A particular concern with the active and/or under construction landfill areas is the storage capacity of the retention pond designed to hold the runoff from these areas in addition to the leachate from the CCR landfill. Interviews with AEP personnel revealed that in April 2016, flooding conditions caused the storage capacity of the retention pond to be exceeded and contact water passed over the emergency spillway. Since the April 2016 event, additional landfill cap and cover work was undertaken to direct stormwater away from the active landfill. It would be prudent for AEP to continue putting a permanent cover over the areas of the active landfill as soon as it is deemed that final grades have been obtained and route the runoff from those areas to non-contact drainage. Additional pond capacity through dredging or pond expansion could accomplish a similar goal.

We appreciate the opportunity to have provided you with our environmental consulting services. If you have any questions concerning this report, or if we may be of further assistance, please contact our office.

This CCR landfill inspection report was prepared on behalf of and for use by AEP. No other party has a right to rely on the contents of this report without the written authorization of Braun Intertec.

We appreciate the opportunity to provide our professional services to you for this project. If you have any questions or comments regarding this report or the project in general, please contact William Gamblin at 512.484.2033 or by email at wgamblin@braunintertec.com.

Sincerely,

BRAUN INTERTEC CORPORATION



William Gamblin, P.E.
Sr. Engineer - Environmental/Water Resources Manager



Susannah Duly, P.G.
Senior Geologist

Attachment: CCR Landfill Inspection Report

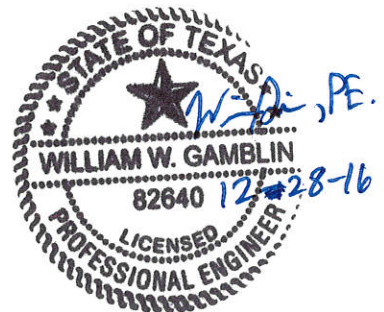


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- 1: Site Location Map
- 2: CCR Landfill Boundary Map

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A. Introduction

A.1. Authorization

Braun Intertec Corporation (Braun Intertec) received authorization from Julia Klingenberg of American Electric Power Service Corporation (AEP) to conduct annual Coal Combustion Residuals (CCR) landfill inspections at the Pirkey Landfill – Pirkey Power Plant, Hallsville, Texas (TX) in accordance with 40 CFR part 257.

Information regarding the project site location and the users of this report is provided below:

| | Description |
|-------------------------------------|---|
| Site Name | AEP H. W. Pirkey Power Plant Property |
| Location (Street, City, State) | 2400 FM 3251, Hallsville, Texas (hereafter referred to as the Site) |
| County | Harrison |
| Person Requesting Inspection (User) | Julia Klingenberg and Mr. Brett A. Dreger, P.E. of AEP |
| User Address | 1 Riverside Plaza, Columbus, Ohio 43215 |
| Additional User of Report | AEP SWEPCO |
| Additional User Address | 1 Riverside Plaza, Columbus, Ohio 43215 |

This Annual CCR Landfill Report was prepared on behalf of and for use by AEP in accordance with the contract between AEP and Braun Intertec. No other party has a right to rely on the contents of this report without the written authorization of Braun Intertec.

A.2. Regulatory Guidance

The United States Environmental Protection Agency (USEPA) published a final Rule to regulate the disposal of CCR as solid waste under Subtitle D of the Resource Conservation Recovery Act (RCRA) (hereafter referred to as the Final Rule). A Preamble to the Final Rule and the Final Rule were published in the Federal Register, Volume 80, No. 74, Part II on April 17, 2015 and the Rule falls under 40 CFR Part 257. The Pirkey Power Plant CCR Landfill falls under Scope and Purpose of the Rule. Accordingly, an initial annual inspection of the CCR landfill was performed in accordance with §257.84(b) and other pertinent references to the Rule

B. Site Background

B.1. Site Location and Description

The AEP Pirkey Power Plant site (Site) is located at 2400 FM 3251, Hallsville, Harrison County, Texas (see Figure 1). The Site is an active power generation facility utilizing locally sourced lignite coal as fuel. The Pirkey Power Plant has a rated generating capacity of 721 megawatts (MW).

B.2. Previous CCR Landfill Inspection Reports

The initial annual CCR landfill report inspection was conducted in September 2015. In general, the CCR landfill area was in good condition with good vegetative cover on the areas of permanent cover. Some minor erosional issues and the need for removal of larger “woody” vegetation was noted in the report. It was recommended that accumulated sediment be removed from leachate drainage outlets and the storage capacity of retention pond be addressed.

C. Scope of Services

Braun was tasked to provide an annual CCR landfill inspection at the power plant. A qualified Braun Professional Engineer (P.E.) was to perform the annual inspection and document the findings in a comprehensive, signed and sealed report.

C.1. Site Walk Down

The scope of work (SOW) included a Site walk down inspection of the entire permitted boundary of the landfill including areas under construction, active disposal areas, and capped areas. Observations of signs of instability, insufficient vegetation, stormwater run on and runoff management features, the proper functioning of CCR containment features, visible portions of the leachate management system for precipitate, and signs of damage to the component parts of the landfill were to be documented, if present, as directed in the SOW .

Photographic documentation of the areas and features observed during the walk down inspection were scoped and the photographs needed to include overview shots of the landfill from various vantage points as directed in the SOW. The scope of the overview photographs included covering the entire perimeter of the landfill. Specific features, points of interest, issues and deficiencies were to be photographically documented and included in the report

C.2. Reporting

The reporting SOW included the following documentation details:

- Braun Intertec's inspector(s);
- Plant Personnel and AEP Personnel participating in the inspection;
- Weather conditions during the inspection plus rainfall total for the seven days preceding the inspection;
- An estimate of the volume of waste placed in the landfill to-date (as provided by AEP);
- A description of pertinent observations made during the inspection;
- A basic planimetric sketch of the facility, attached to this report at Figure 2. The sketch was to be developed by Braun Intertec and utilizing AEP-provided document(s); and
- Recommendations for any remedial actions along with general maintenance and monitoring.

D. Landfill Inspection

The following provides detailed information regarding the field activities completed at the Site during the CCR landfill inspection. The weather during the permanent cover landfill inspection was partly cloudy, warm temperatures (~80°F), with a light west to southwest breeze. The weather during the active landfill inspection was partly cloudy, mild temperatures (~70°F), with a light north to northeast breeze. Records indicated that for seven days prior to the inspection the only rain event occurred on September 26th and was light (~0.28 inches) in nature.

D.1. Personnel

The following personnel were instrumental in the completion of this project. Their duties are identified as follows:

| Function | Description/Title/Company |
|-----------------------------------|--|
| Landfill Inspector | William Gamblin, P.E., Sr. Engineer, Environmental Director, Braun Intertec Corporation |
| AEP Environmental Representatives | Ron Franklin, Environmental Manager, and W. Greg Carter, P.E., Senior Engineer, AEP - SWEPCO |

D.2. Field Inspection Activities

On September 28, 2016, the Braun Intertec Inspector, William Gamblin, P.E., mobilized to the site and met with AEP representative Ron Franklin in the parking lot of the Pirkey Power Plant. Details of the past CCR landfill operations were discussed.

Braun representative William Gamblin, assisted by AEP representative Ron Franklin, conducted a comprehensive site inspection of the entire CCR landfill area. The inspection of permanently capped areas was completed in the afternoon of September 28, 2016, while the active disposal areas and areas under construction were inspected in the morning of September 29, 2016. Photographic documentation of the inspection is included in **Appendix A**.

E. Inspection Results

E.1. Leachate Collection Outlets

Three outlets, identified as leachate collection outlets, were evident along the southern edge of the active and under construction landfill areas. Existing drainage letdown piping on the east, north, and west sides of the landfill allow for non-contact runoff from permanent cover areas to be routed to non-retention pond drainage. A drainage conduit under the liner of the 2012 cell also allows for non-contact seepage to be routed to non-retention pond drainage.

E.2. Coal Combustion Residuals Volume

In accordance with §257.84(b) the approximate total volume of CCR stored in the Pirkey landfill as of September 2016 was estimated by AEP Engineers to be approximately 13.4 million cubic yards [yd³]. The remaining capacity of the existing landfill is estimated to be 2.2 million yd³ for the 2015 cell and 1.9 million yd³ for the future 2019 cell.

E.3. Inspection Findings

The majority of the H.W. Pirkey Plant CCR Landfill is under permanent cover. In general, all permanent cover areas were in good condition with little sign of erosion and good vegetative cover. The vegetative cover was composed of consistent length grasses with almost no woody type bushes or trees evident in the landfill areas. Areas of concern (AOCs) in the permanent cover areas include “woody” vegetation noted on the “1984” and “1987” Cells. Denuded areas and erosional features were evident on the “1987”, “1995”, “1999”, and “2005” Cells. Abandoned piping and debris was noted on the “1987” Cell and in the drainage between the “2012” and “2015” Cells.

The areas of the landfill that were active and/or under construction showed significant erosional activity with abundant rivulets and gully formation along slopes. However, all of the runoff from the active and/or under construction areas is contained in an onsite pond and recycled onsite. The exposed CCR hardens after coming in contact with rainwater and the evident erosion appeared to be a short-lived phenomenon. The slopes appear to remain relatively stable (if left undisturbed) after one or two rain events. Some of more recently constructed landfill slopes have a temporary cover of red soil that also showed signs of significant erosion. The advantage of the temporary cover appears to be that while the red soil eroded, sufficient rainwater infiltrated the temporary cover to harden the CCR underneath.

E.3.a. Inspection Findings by Cell Designation

"1984" Cell

The "1984" Cell is under permanent cover and in good shape with a well-established grassy vegetative cover over its entirety (Photographs #18, #20, #22, #23, #24, #25, and #26). The "1984" Cell is shown on **Figure 2**. The north and east sides of the cell slope relatively steeply down to the natural grade while the rest of the cell is relatively flat. Some "woody" vegetation was beginning to become established near the toe of the northeast corner of the cell (Photograph #21). No concerns or issues with erosion were noted.

"1987" Cell

The "1987" Cell is predominantly under permanent cover and in good shape with a well-established grassy vegetative cover over its entirety (Photographs #18, #23, #35, #37, and #38). The "1987" Cell is shown on **Figure 2**. The southwestern corner of the cell is in the active portion of the landfill and has no cover (photograph #43). The north, west, and south sides of the cell are on the flatter plateau of the landfill. A mound of dirt with "woody" vegetation beginning to become established was noted on the southern plateau of cell (Photograph #42) as well as around the let-down outlet of the southern section (Photograph #48). Denuded areas are evident in two separate locations on the "1987" Cell, one in the middle of the "1987" Cell plateau area (Photograph #29) and one on the eastern slope of the southern section (Photograph #39). Abandoned drainage pipe/debris (Photograph #36) was noted as well. An oil/gas well, which existed prior to the landfill being constructed, with associated tanks and appurtenances exists along the east edge of the landfill and the "1987" Cell wraps around the well site (Photographs #27 and #30). The cell topography slopes relatively steeply down from all directions toward this well pad (Photograph #28). Erosion and some woody brush is evident along the toe of the steep slopes around the oil/gas well (Photographs #31, #32, #33, and #34).

"1993" Cell

The eastern half of "1993" Cell under permanent cover and in good shape with well-established grassy vegetative cover over its entirety (Photograph #40). The "1993" Cell is shown on **Figure 2**. The western half of the cell is not covered and is in the active area of the landfill (Photographs #41). A drainage divide runs north/south through middle of the cell and divides the two halves of the cell. The northern corner of the cell is on the landfill plateau and is relatively flat while the rest of the cell slopes steeply to the east or the west. No concerns or issues with erosion besides those noted in the active landfill (hardened CCR material) were noted (Photographs #46, #47, #51, #52, #53, #54, #55, #56, #57, #58 and #59)

"1995" Cell

The "1995" Cell is under permanent cover and in good shape with a well-established grassy vegetative cover over its entirety (Photographs #17, #19, and #44). The "1995" Cell is shown on **Figure 2**. The north side of the cell slopes relatively steeply down to the natural grade while the rest of the cell is relatively flat. A road is evident on the northern slope and may be a point of erosion in the future. A denuded area is evident on the north slope (Photograph #14).

"1997" Cell

The "1997" Cell is in the middle of the landfill. The "1997" Cell is shown on **Figure 2**. The majority of the cell is not covered and is in the active area of the landfill (Photograph #70) while the northern portion is under permanent cover and in good shape with a well-established grassy vegetative cover. The northern section of the cell is on the landfill plateau and is relatively flat and slopes off to the east while the rest of the cell slopes to the south. The installation of permanent cover was being completed during the time of inspection. No concerns or issues with erosion were noted (Photograph #17).

"1999" Cell

The northern two thirds of the "1999" Cell is under permanent cover and in good shape with a well-established grassy vegetative cover (Photographs #12, #13, and #16). The "1999" Cell is shown on **Figure 2**. The southern third of the cell is in the active portion of the landfill and is not covered. The northern edge of the cell slopes steeply down to the natural grade while the middle section of the cell is on the landfill plateau and is relatively flat and slopes off to the north. The southern portion is in the active portion of the landfill and slopes to the southwest. A denuded area with evidence of erosion was noted on the north slope of the "1999" Cell (Photograph #15).

"2005" Cell

The northern two thirds of the "2005" Cell is under permanent cover and in good shape with a well-established grassy vegetative cover (Photographs #1, #2, #3, #4, #6, #7, #8, #9, #10, #11, and #13). The "2005" Cell is shown on **Figure 2**. The southern third of the cell is in the active portion of the landfill and is not covered. The northern and western edges of the cell slopes steeply down to the natural grade while the middle section of the cell is on the landfill plateau and is relatively flat and slopes off to the north. A small portion of the cell slopes to the south along the southern edge. A small denuded area with evidence of erosion was noted on the plateau of the "2005" Cell (Photograph #5).

"2012" Cell

The "2012" Cell is in the active portion of the landfill and is not covered (Photographs #53, #55, #63, #64, #64, #67, #68 and #69). The "2012" Cell is shown on **Figure 2**. The western and southern slopes of the cell have a temporary cover of red soil (Photograph #62). The center along with the northern and eastern portions of the cell are relatively flat and are being utilized to stage CCR. The western edge slopes steeply to the west and the southern edge slopes steeply to the south. No concerns or issues with erosion besides those noted in the active landfill (hardened CCR material) were noted.

"2015" Cell

The "2015" Cell is in the active portion of the landfill and is not covered (Photograph #69). The "2015" Cell is shown on **Figure 2**. The cell is relatively flat and is under construction or being utilized to stage CCR. No concerns or issues with erosion besides those noted in the active landfill (hardened CCR material) were noted.

F. Conclusions, Opinions, and Recommendations

It is recommended that normal maintenance include a vegetation control program to mow and maintain the vegetative cover grasses on the permanently covered areas. Undesirable "woody" vegetation such as trees and shrubs need to be removed. Denuded areas as well as areas where erosional features have been repaired need to be covered with topsoil and reseeded with grasses.

Non-CCR debris/trash should be removed from within the designated landfill area and the general maintenance of the landfill unit needs to include debris removal.

Leachate Collection

The leachate drainage outlets need to be inspected regularly and if any soil accumulates around and in the outlets, the soil should be removed periodically to prevent restriction of flow.

Retention Pond

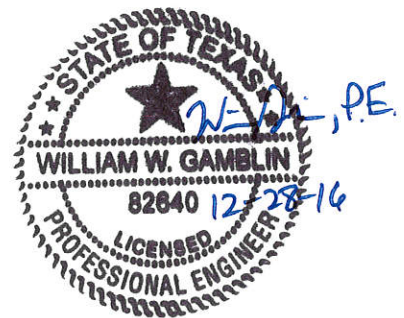
A particular concern with the active and/or under construction landfill areas is the storage capacity of the retention pond designed to hold the runoff from these areas and the leachate from the CCR landfill. Interviews with AEP personnel revealed that in April 2016, flooding conditions caused the storage capacity of the retention pond to be exceeded and contact water passed over the emergency spillway. Since the April 2016 event, additional landfill cap and cover work was undertaken to direct stormwater away from the active landfill. It would be prudent for AEP to continue putting a permanent cover over the areas of the active landfill as soon as it is deemed that final grades have been obtained and route the runoff from those areas to non-contact drainage. Additional pond capacity through dredging or pond expansion could accomplish a similar goal.

G. Signature of Professional Engineer

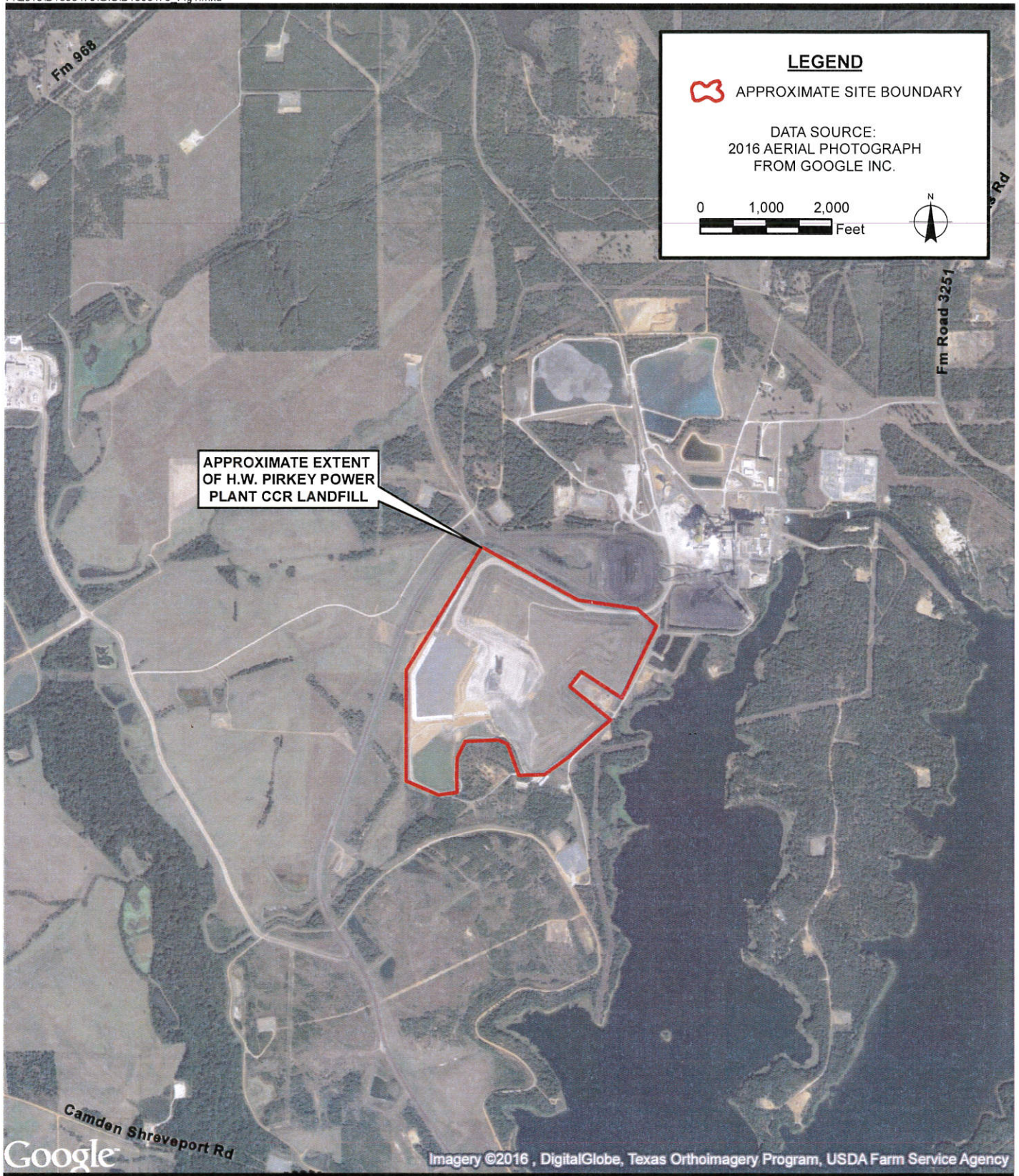
This investigation and report has been prepared under the direction and supervision of the Professional Engineer, undersigned below.



William Gamblin, P.E.
Sr. Engineer - Environmental/Water Resources Manager



Figures



Sheet:
1 of 1

Fig. 1

Project No: B1606473

Drawing No. B1606473 Fig1

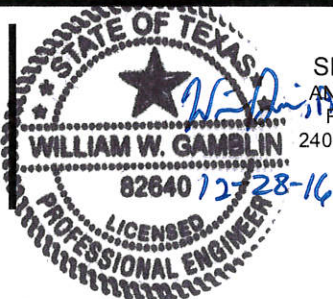
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Drawn By: CMF

Date Drawn: 12/21/2016

Checked By: WG

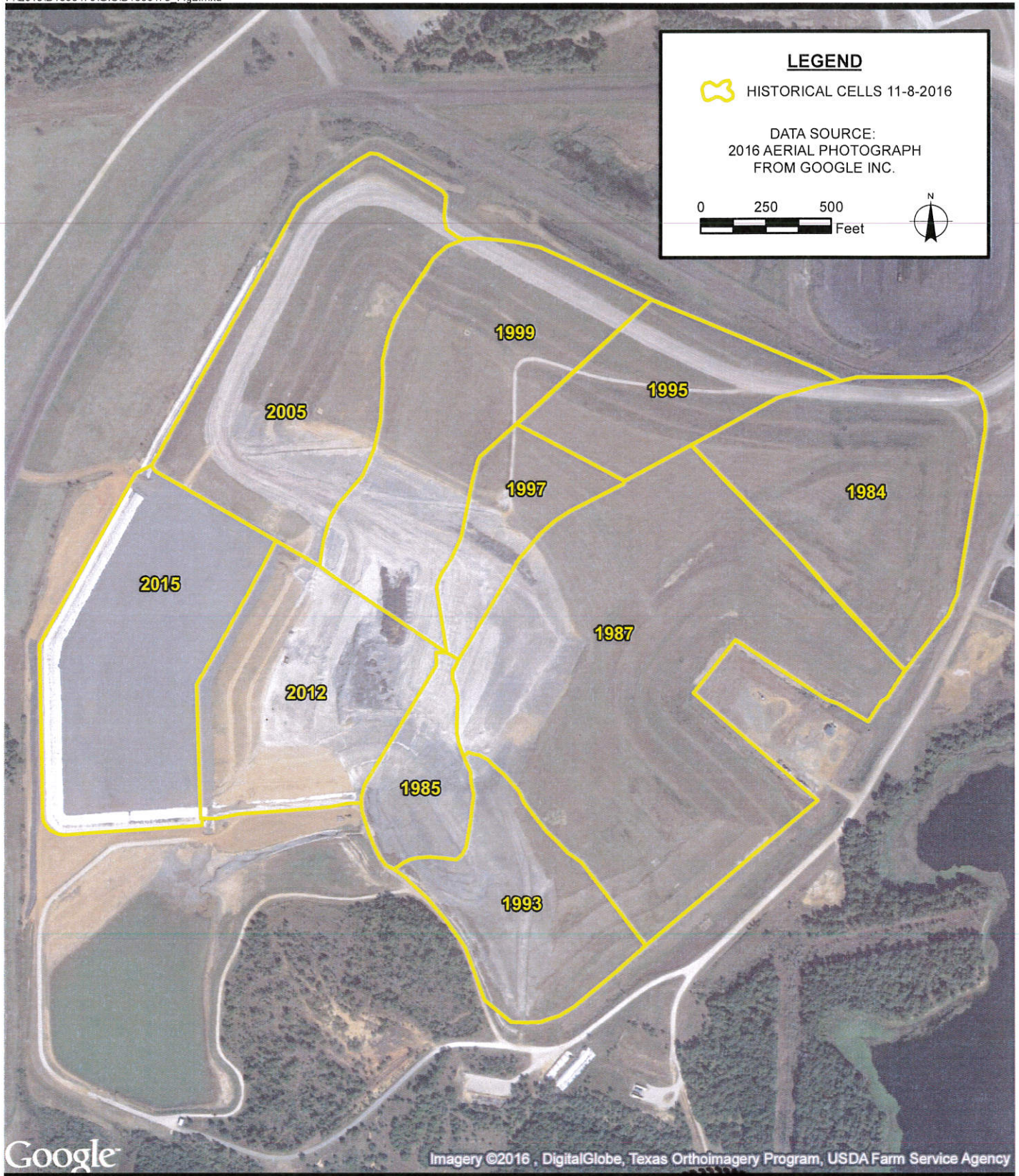
Last Modified: 12/22/16



SITE LOCATION MAP
ANNUAL CCR INSPECTION
PIRKEY POWER PLANT
2400 FARM TO MARKET 3251
HALLSVILLE, TEXAS

**BRAUN
INTERTEC**

2120 Brandon Drive
Tyler, TX 75703
PH. (903) 581-8080
FAX (855) 581-8081

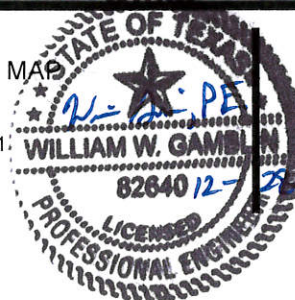


Google

Imagery ©2016, DigitalGlobe, Texas Orthoimagery Program, USDA Farm Service Agency

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| Sheet: 1 of 1 Fig. 2 | Project No: | B1606473 |
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| | Scale: | 1 in = 500 ft |
| | Drawn By: | CMF |
| | Date Drawn: | 12/21/2016 |
| | Checked By: | WG |
| | Last Modified: | 12/22/16 |

CCR LANDFILL BOUNDARY MAP
ANNUAL CCR INSPECTION
PIRKEY POWER PLANT
2400 FARM TO MARKET 3251
HALLSVILLE, TEXAS



BRAUN
INTERTEC
2120 Brandon Drive
Tyler, TX 75703
PH. (903) 581-8080
FAX (855) 581-8081

Appendix A

Photographs



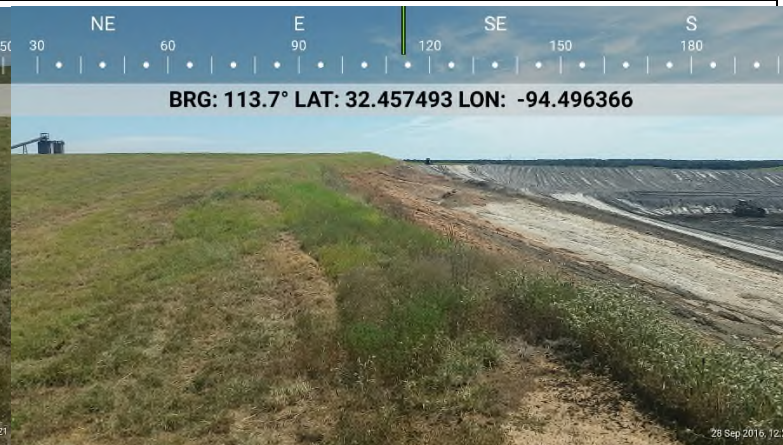
| | |
|---------------|---|
| Photograph #1 | September 28, 2016 |
| Direction: | Facing northwest |
| Description: | SW corner of the 2005 cell permanent cover. |



| | |
|---------------|--|
| Photograph #2 | September 28, 2016 |
| Direction: | Facing north northeast |
| Description: | Berm slope along west edge of 2005 cell permanent cover. |



| | |
|---------------|---|
| Photograph #3 | September 28, 2016 |
| Direction: | Facing northeast |
| Description: | Let-down inlet and vegetative cover on 2005 cell. |



| | |
|---------------|--|
| Photograph #4 | September 28, 2016 |
| Direction: | Facing east southeast |
| Description: | Southern edge of permanent cover on 2005 cell. |



| | |
|---------------|--|
| Photograph #5 | September 28, 2016 |
| Direction: | Facing east |
| Description: | Slight erosion evident on top of 2005 cell denuded area. |



| | |
|---------------|-----------------------------|
| Photograph #6 | September 28, 2016 |
| Direction: | Facing north |
| Description: | Western slope of 2005 cell. |



| | |
|---------------|-----------------------------|
| Photograph #7 | September 28, 2016 |
| Direction: | Facing southwest |
| Description: | Western slope of 2005 cell. |



| | |
|---------------|--|
| Photograph #8 | September 28, 2016 |
| Direction: | Facing south |
| Description: | Let-down piping and inlet on western slope of 2005 cell. |



| | |
|---------------|---|
| Photograph #9 | September 28, 2016 |
| Direction: | Facing east southeast |
| Description: | Toe of the northern slope of 2005 and 1999 cells. |



| | |
|----------------|--|
| Photograph #10 | September 28, 2016 |
| Direction: | Facing east southeast |
| Description: | Northern slope of 2005 and 1999 cells. |



| | |
|----------------|---------------------------------|
| Photograph #11 | September 28, 2016 |
| Direction: | Facing northeast |
| Description: | Vegetation on top of 2005 cell. |



| | |
|----------------|---------------------------------|
| Photograph #12 | September 28, 2016 |
| Direction: | Facing east |
| Description: | Vegetation on top of 1999 cell. |



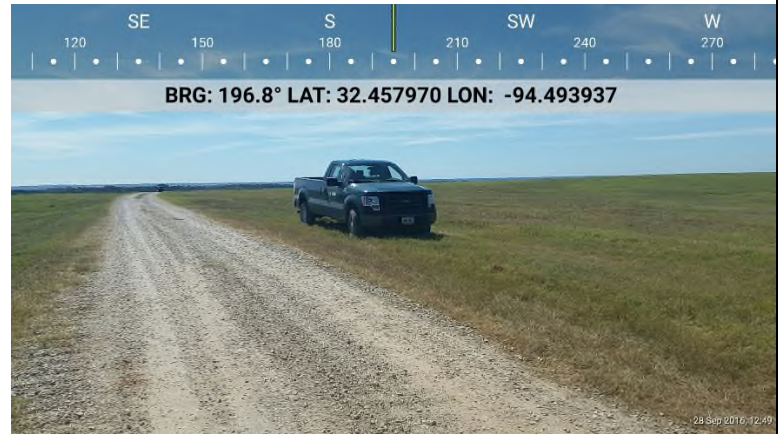
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|----------------|--|
| Photograph #13 | September 28, 2016 |
| Direction: | Facing west northwest |
| Description: | Northern slope of 1999 and 2005 cells. |



| | |
|----------------|---|
| Photograph #14 | September 28, 2016 |
| Direction: | Facing east |
| Description: | Northern toe of the slope of 1995 and 1984 cells with denuded area. |



| | |
|----------------|---|
| Photograph #15 | September 28, 2016 |
| Direction: | Facing northwest |
| Description: | Erosional feature on northern slope of 1999 cell. |



| | |
|----------------|-----------------------------|
| Photograph #16 | September 28, 2016 |
| Direction: | Facing south |
| Description: | Top of 1999 and 1995 cells. |



| | |
|----------------|------------------------------------|
| Photograph #17 | September 28, 2016 |
| Direction: | Facing southeast |
| Description: | Top of 1995, 1997, and 1987 cells. |



| | |
|----------------|-----------------------------|
| Photograph #18 | September 28, 2016 |
| Direction: | Facing east |
| Description: | Top of 1984 and 1987 cells. |



Photograph #19 September 28, 2016
Direction: Facing west northwest
Description: Northern slope of 1995 cell.



Photograph #20 September 28, 2016
Direction: Facing southwest
Description: Top of 1984 cell.



Photograph #21 September 28, 2016
Direction: Facing east southeast
Description: Evidence of "woody" vegetation on toe of northern slope of 1984 cell.



Photograph #22 September 28, 2016
Direction: Facing south
Description: Eastern slope and top of 1984 cell.



Photograph #23 September 28, 2016
Direction: Facing northeast
Description: Top of 1984 and 1987 cells.



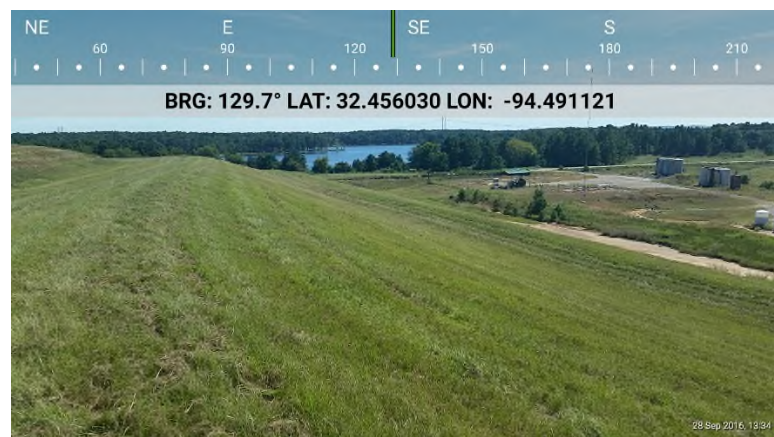
Photograph #24 September 28, 2016
Direction: Facing east
Description: Top of 1984 cell with let-down inlet.



| | |
|----------------|-----------------------------|
| Photograph #25 | September 28, 2016 |
| Direction: | Facing north northeast |
| Description: | Eastern slope of 1984 cell. |



| | |
|----------------|--|
| Photograph #26 | September 28, 2016 |
| Direction: | Facing east southeast |
| Description: | Eastern slope of 1984 cell with a slope drainage let-down inlet and let-down outlet. |



| | |
|----------------|--|
| Photograph #27 | September 28, 2016 |
| Direction: | Facing southeast |
| Description: | Slope of 1987 cell down to oil/gas well. |



| | |
|----------------|--|
| Photograph #28 | September 28, 2016 |
| Direction: | Facing southwest |
| Description: | Slope of 1987 cell down to oil/gas well. |



| | |
|----------------|---|
| Photograph #29 | September 28, 2016 |
| Direction: | Facing northeast |
| Description: | Denuded area on the plateau of the 1987 cell northwest of oil/gas well. |



| | |
|----------------|--|
| Photograph #30 | September 28, 2016 |
| Direction: | Facing east southeast |
| Description: | Slope of 1987 cell down to oil/gas well. |



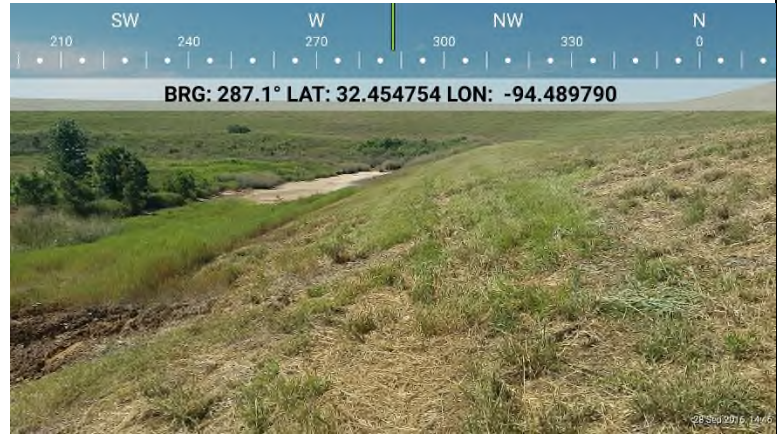
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| Photograph #31 | September 28, 2016 |
| Direction: | Facing northwest |
| Description: | "Woody" vegetation evident at toe of slope of 1987 cell near oil/gas well. |



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| Photograph #32 | September 28, 2016 |
| Direction: | Facing northeast |
| Description: | "Woody" vegetation at toe of slope of 1987 cell near oil/gas well. |



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| Photograph #33 | September 28, 2016 |
| Direction: | Facing south |
| Description: | Erosion evident at toe of slope of 1987 cell near oil/gas well. |



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| Photograph #34 | September 28, 2016 |
| Direction: | Facing northeast |
| Description: | Toe of slope of 1987 cell near oil/gas well. |



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| Photograph #35 | September 28, 2016 |
| Direction: | Facing northwest |
| Description: | Top of the southern section of the 1987 cell. |



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| Photograph #36 | September 28, 2016 |
| Direction: | Facing south southwest |
| Description: | Let-down inlet and pipe debris on eastern slope of the southern section of 1987 cell. |



Photograph #37 September 28, 2016
Direction: Facing south
Description: Eastern slope of the southern section of 1987 cell with let-down inlet.



Photograph #38 September 28, 2016
Direction: Facing northeast
Description: Mounded area on southern section of 1987 cell.



Photograph #39 September 28, 2016
Direction: Facing southwest
Description: Denuded area at the toe of the eastern slope of the southern section of 1987 cell.



Photograph #40 September 28, 2016
Direction: Facing south
Description: South tip of 1993 cell. Permanent cover and active area.



Photograph #41 September 28, 2016
Direction: Facing north northwest
Description: Active area and permanent cover on 1993 cell.



Photograph #42 September 28, 2016
Direction: Facing north northwest
Description: Top of 1987 cell. Mound with woody vegetation.



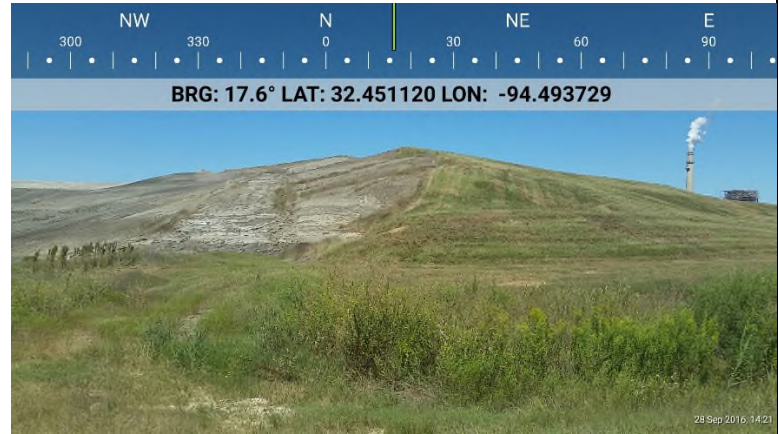
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| Photograph #43 | September 28, 2016 |
| Direction: | Facing northeast |
| Description: | Active area and permanent cover on 1987 cell. |



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| Photograph #44 | September 28, 2016 |
| Direction: | Facing northeast |
| Description: | Active area and permanent cover on 1997 and 1999 cells. |



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| Photograph #45 | September 28, 2016 |
| Direction: | Facing east southeast |
| Description: | Active area and permanent cover transition on 1999 and 2005 cells. |



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| Photograph #46 | September 28, 2016 |
| Direction: | Facing north |
| Description: | Active area and permanent cover transition on 1993 cell. |



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| Photograph #47 | September 28, 2016 |
| Direction: | Facing northeast |
| Description: | Toe of east slope of the 1993 and 1987 cells. |



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| Photograph #48 | September 28, 2016 |
| Direction: | Facing north |
| Description: | Toe east slope and let-down outlet on southern section of 1987 cell. Woody vegetation evident. |



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| Photograph #49 | September 28, 2016 |
| Direction: | Facing northeast |
| Description: | Let-down outlet and toe of east slope of 1984 cell. |



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| Photograph #50 | September 28, 2016 |
| Direction: | Facing north northeast |
| Description: | Berm slope along east edge of 1984 cell. |



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| Photograph #51 | September 29, 2016 |
| Direction: | Facing north |
| Description: | Southern slope of active areas of 1993 and 1985 pond cells. |



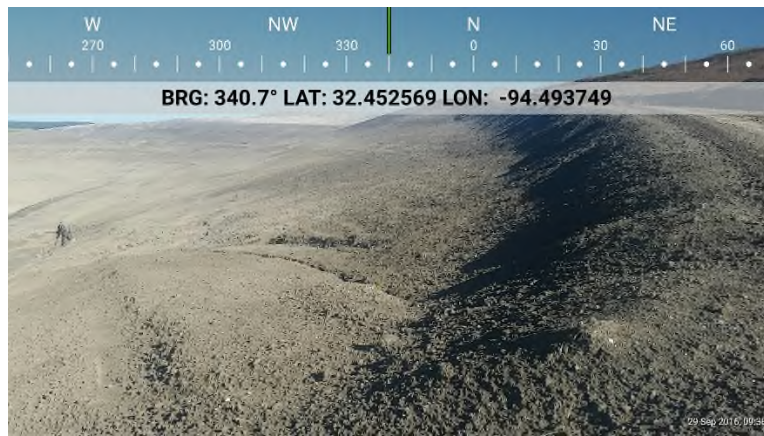
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| Photograph #52 | September 29, 2016 |
| Direction: | Facing north |
| Description: | Southern slope of active areas of 1993 and 1985 pond cells. |



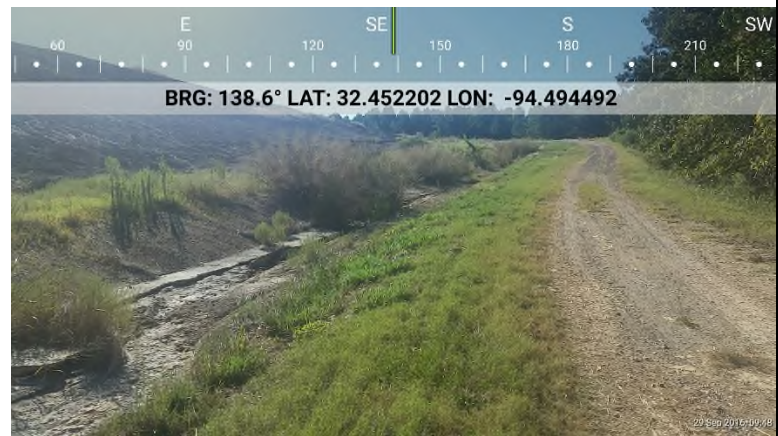
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| Photograph #53 | September 29, 2016 |
| Direction: | Facing northwest |
| Description: | Southern slope of active areas of 1993, 1985 pond, and 2012 cells. |



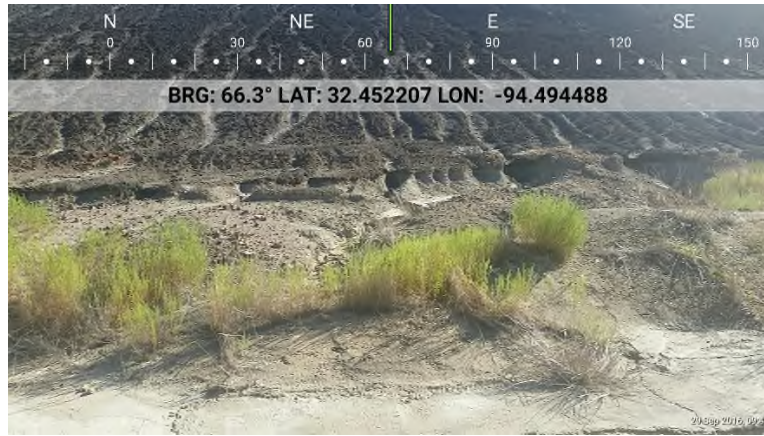
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| Photograph #54 | September 29, 2016 |
| Direction: | Facing northeast |
| Description: | Hardened CCR with evidence of past erosion on 1993 cell. |



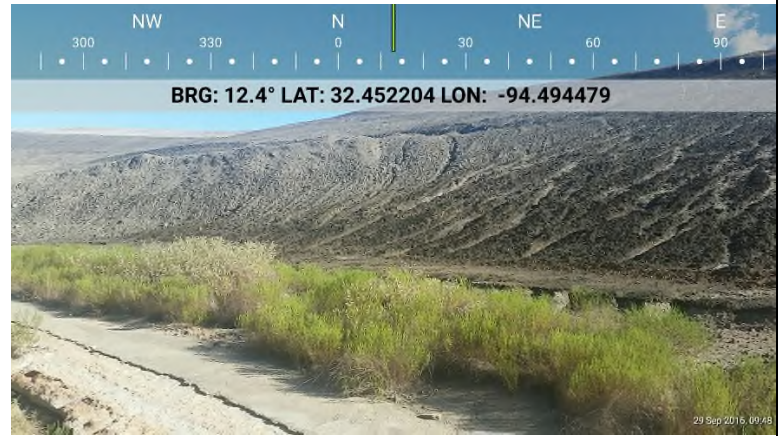
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| Photograph #55 | September 29, 2016 |
| Direction: | Facing north northwest |
| Description: | Hardened CCR and erosion on 1993, 1985 pond, and 2012 cells. |



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| Photograph #56 | September 29, 2016 |
| Direction: | Facing southeast |
| Description: | Toe of slope of 1993 cell active area. Hardened CCR and erosion. |



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| Photograph #57 | September 29, 2016 |
| Direction: | Facing east northeast |
| Description: | Toe of slope of 1993 cell active area. Hardened CCR and erosion. |



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| Photograph #58 | September 29, 2016 |
| Direction: | Facing north |
| Description: | Toe of slope of 1993 cell active area. Hardened CCR and erosion. |



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| Photograph #59 | September 29, 2016 |
| Direction: | Facing south |
| Description: | Hardened CCR and erosion at toe of 1993 slope. |



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| Photograph #60 | September 29, 2016 |
| Direction: | Facing west |
| Description: | Southern slope of 1985 pond, 2012, and 2015 cells. |



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| Photograph #61 | September 29, 2016 |
| Direction: | Facing east northeast |
| Description: | Hardened CCR and erosion on slope of 1985 pond cell. |



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| Photograph #62 | September 29, 2016 |
| Direction: | Facing south southeast |
| Description: | Drainage swale liner at toe of 2012 cell. |



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| Photograph #63 | September 29, 2016 |
| Direction: | Facing east |
| Description: | Drainage swale liner at toe of 2012 cell and southern slope of 1985 pond cell. |



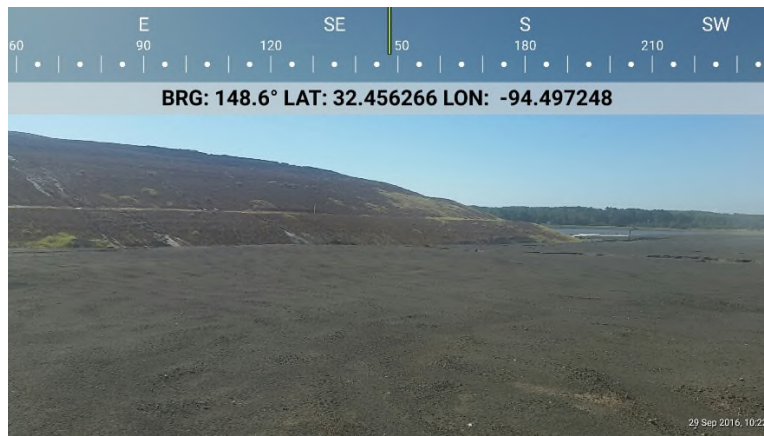
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| Photograph #64 | September 29, 2016 |
| Direction: | Facing west |
| Description: | Leachate collection outlets from 2012 cell. |



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| Photograph #65 | September 29, 2016 |
| Direction: | Facing north northwest |
| Description: | Drainage between 2012 and 2015 cells with an abandoned pipe. |



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| Photograph #66 | September 29, 2016 |
| Direction: | Facing north |
| Description: | Leachate collection outlet from 2015 cell. |



Photograph #67 September 29, 2016

Direction: Facing southeast

Description: 2015 and 2012 cells.



Photograph #68 September 29, 2016

Direction: Facing south

Description: Erosion on 2015 cell and slope of 2012 cell.



Photograph #69 September 29, 2016

Direction: Facing east

Description: Active areas of 2015, 2012, 2005, and 1999 cells.



Photograph #70 September 29, 2016

Direction: Facing southwest

Description: Permanent cover being installed on 1997 cell.



Photograph #71 September 29, 2016

Direction: Facing south

Description: 2012 cell.



Photograph #72 September 29, 2016

Direction: Facing north northeast

Description: Non-contact leachate outlet south of 2015 cell. Iron staining.