Semiannual Progress Report Selection of Remedy – M.L. Kapp Generating Station

M.L. Kapp Generating Station
Clinton, Iowa

Prepared for:

Alliant Energy

SCS ENGINEERS

25221050.00 | March 13, 2023

2830 Dairy Drive
Madison, WI 53718-6751
608-224-2830

Table of Contents

Section Page

Tables

Figures

Attachments

I:\25221050.00\Deliverables\2023 KAP Semiannual - ACM\2023 March Semiannual Update\230313_KAP_Semiannual Remedy Selection_Final.docx

[This page left blank intentionally]

1.0 INTRODUCTION AND PURPOSE

The Semiannual Progress Report for remedy selection at the Interstate Power and Light Company (IPL) former M.L. Kapp Generating Station (KAP) was prepared to comply with U.S. Environmental Protection Agency (U.S. EPA) regulations regarding the Disposal of Coal Combustion Residuals (CCR) from Electric Utilities [40 CFR 257.50-107], or the "CCR Rule" (Rule). Specifically, the selection of remedy process was initiated to fulfill the requirements of 40 CFR 257.97.

1.1 BACKGROUND

The KAP Main Ash Pond CCR unit is a closed inactive surface impoundment. The KAP Main Ash Pond was closed and capped in 2017. A Notification of Completion of Closure pursuant to 40 CFR 257.102(d) was issued by Alliant Energy on January 17, 2018. The KAP generating station was decommissioned and then demolished in 2020.

Post-closure groundwater monitoring concentrations of molybdenum were found at a statistically significant level (SSL) above the Groundwater Protection Standard (GPS) in groundwater samples from downgradient monitoring wells MW-302, MW-304, and MW-305. In response, the Assessment of Corrective Measures (ACM) for the closed and capped Main Ash Pond was completed on March 11, 2021.

This Semiannual Progress Report summarizes data collected and remedy evaluation progress made since the ACM was completed in March 2021, and outlines planned future activities to complete the selection of remedy process. This semiannual progress report covers the 6-month period of September 2022 through February 2023.

1.2 SITE INFORMATION AND MAPS

The former KAP generating station is located along the west bank of the Mississippi River, in the city of Clinton, in Clinton County, Iowa (**Figure 1**). The KAP Main Ash Pond is located to the northwest of the former generating station at 3301 E. Highway 67 S, Clinton, Iowa. New monitoring wells were installed downgradient of the closed impoundment and northwest of the site, as seen on **Figure 2**. The former KAP generating station, the KAP Main Ash Pond, and all monitoring wells are provided on **Figure 2**.

Groundwater flow at the site is variable but generally to the south-east, and water levels fluctuate seasonally due to the proximity to the nearby creek and the Mississippi River. Depth to groundwater, as measured in the site monitoring wells, varies from 6 to 22 feet below ground surface due to topographic variation across the facility and seasonal variations in water levels.

2.0 SUMMARY OF WORK COMPLETED

Work completed to support remedy selection for the KAP Main Ash Pond is summarized in **Table 1**. Activities completed within the 6-month period covered by this semiannual report are discussed in more detail below.

2.1 MONITORING NETWORK CHANGES

A supplemental background monitoring well (MW-312) and one additional delineation monitoring well (MW-313) were added in February 2023. Supplemental bedrock background well MW-312 is located on the City of Clinton Regional Water Reclamation Facility (RWRF) property. It was installed to

provide supplemental background bedrock quality information to compare to the groundwater quality in the bedrock delineation monitoring wells MW-311 and MW-311A. Delineation monitoring well MW-313 was installed within the Highway 67 right-of-way to provide additional groundwater elevation and groundwater quality data west of the MW-311/MW-311A delineation monitoring well nest. The monitoring well locations are shown on **Figure 2**.

Access agreements are being pursued to install delineation monitoring wells on two downgradient properties (**Attachment A**). The ongoing attempts to negotiate access agreements with off-site property owners are documented in **Table 1**.

Properties not owned by IPL where off-site wells are targeted, are shown on the map provided in **Attachment A**.

2.2 GROUNDWATER MONITORING

Since the September 2022 semiannual update, groundwater samples were collected during one event in November 2022. The November monitoring event was part of the routine semiannual assessment monitoring program. The wells sampled included the wells in the original monitoring program (MW-301 through MW-306); delineation wells MW-304A, MW-308, and MW-309; MW-311, MW-311A, and background monitoring wells MW-307 and MW-310.

A summary of groundwater samples collected since submittal of the ACM is provided in **Table 2**.

2.3 STATISTICAL EVALUATION

Statistical evaluation of sampling results during the period covered by this update will be discussed in the 2022 Annual Groundwater Monitoring and Corrective Action Report.

Based on the statistical evaluation of the November 2022 monitoring results, completed on March 6, 2023, the parameters at an SSL above the GPS included:

- Arsenic: MW-303
- Lithium: MW-306
- Molybdenum: MW-301, MW-302, MW-304, MW-305

This was the first event for which arsenic was determined to be at an SSL above the GPS at a compliance well. The notification will be posted within 30 days of the determination.

For the delineation wells, the only SSL above the GPS was identified for the following well:

- Molybdenum: MW-311A

Supplemental background well MW-310 is currently being evaluated for comparison purposes and is not incorporated into the statistical evaluation. A similar evaluation will be completed for new supplemental background well MW-312.

2.4 EVALUATION OF CORRECTIVE MEASURE ALTERNATIVES

A qualitative assessment of potential Corrective Measure Alternatives using the selection criteria in 40 CFR 257.97(b) and (c) was provided in the March 2021 ACM.

IPL is currently evaluating treatment options for molybdenum and lithium. Groundwater sampling and analysis have been ongoing. The evaluations of data from previous and future groundwater investigations will be utilized in the development and evaluation of groundwater corrective action alternatives. If an alternative source demonstration (ASD) is not completed for the newly identified arsenic SSL above the GPS, the ACM will be updated to address arsenic.

An updated assessment of the potential Corrective Measure Alternatives using the selection criteria in 40 CFR 257.97(b) and (c) will be provided in the required Selection of Remedy Report after updates to the conceptual site model, delineation of the nature and extent of impacts, and collection of additional data relevant to remedy selection are completed.

3.0 PLANNED ACTIVITIES

Planned activities related to the remedy selection process include the following:

- Continue semiannual assessment monitoring for the existing monitoring well network and new monitoring wells.
- Perform the initial sampling of the supplemental background bedrock monitoring well MW-312 and additional delineation monitoring well MW-313.
- Continue to pursue access agreements to install delineation monitoring wells on the two downgradient off-site properties. As soon as each of the access agreements is signed, permitting, well installation, and sampling will be initiated at each property.
- Evaluate the southern property line of the closed impoundment for the potential to install on-site delineation wells.
- Continue to evaluate treatment options for molybdenum and lithium.
- Complete an ASD for arsenic at well MW-303, or update the ACM to address arsenic.
- Update the conceptual site model based on findings of nature and extent investigation.
- Revisit potential corrective measures identified in the ACM based on the updated conceptual site model and prepare an ACM addendum, if warranted.
- Conduct public meeting (40 CFR 257.96(e)).

[This page left blank intentionally]

Tables

Table 1. Timeline for Completed Work - Selection of Remedy
M. L. Kapp Generating Station / SCS Engineers Project #25221050.00

Date	Activity
Activities Completed During Previous Semiannual Reporting Periods	
April 2020	Background monitoring well installed to provide additional information on groundwater flow direction in the site vicinity and to provide natural background groundwater conditions.
April 2020	Conduct Semiannual assessment monitoring event
July and August 2020	conducted assessment monitoring event for background monitoring well and resampling event for select parameters.
October 2020	Conduct Semiannual assessment monitoring event
November 2020 - September 2021	Negotiated access agreement for future off-site, downgradient monitoring well nest on an off-site property.
February 2021	Installed additional piezometer MW-304A to investigate vertical gradient flow and groundwater quality.
February 2021	Conducted a supplemental groundwater sampling event of assessment well MW-304A and new background monitoring well MW-307.
March 2021	Completed Assessment of Corrective Measures (ACM).
April 2021	Installed off-site monitoring wells MW-308 and MW-309 to investigate downgradient groundwater flow and quality.
May 2021	Completed the well documentation report for piezometer MW-304A.
May - August 2021	Evaluated future Alliant Clinton-Perrin Substation property as a location for a future off-site bedrock monitoring well location.
June 2021	Conducted a supplemental groundwater sampling event for the two newly installed monitoring wells (MW-308 and MW-309) and the new background monitoring well (MW-307).
June 2021	Completed statistical evaluation and results letter for February 2021 groundwater monitoring event.
June 2021	Completed the 2020 Annual Groundwater Monitoring and Corrective Action Report.
July 2021	Completed the well documentation report for monitoring wells MW-308 and MW-309.
July 2021	Conducted a supplemental groundwater sampling event for the new background monitoring well MW-307.
August 2021	Completed Statistical Evaluation and result letter for the April 2021 groundwater monitoring event.
August 2021	Completed groundwater monitoring system certification update.
September 2021	Completed Semiannual Progress Report for the Selection of Remedy.
September 2021	Installed off-site monitoring well MW-310 to investigate upgradient groundwater flow and quality.
October 2021	Conducted an initial groundwater sampling event for the new background monitoring well, MW-310. Complete the semiannual groundwater assessment monitoring event for all wells.
November 2021	Performed property boundary survey at the American Water off-site property to confirm the proper location of proposed monitoring wells MW-311 and MW-311A.

Table 1. Timeline for Completed Work - Selection of Remedy
M. L. Kapp Generating Station / SCS Engineers Project #25221050.00

Date	Activity
December 2021	Installed off-site and downgradient monitoring wells MW-311 and MW-311A to investigate downgradient groundwater flow and quality.
December 2021	Conducted an initial groundwater sampling event for the new monitoring wells, MW-311 and MW-311A.
January 2022 - February 2022	Prepared the 2021 Annual Groundwater Monitoring and Corrective Action Report.
January 2022	Performed hydraulic conductivity tests on monitoring wells MW-307, MW-308, MW-311, and MW-311A.
January 2022	Provided additional information to the Iowa Department of Transportation related to the right-of-way permit application for a proposed monitoring well installation to be located southwest of the site and adjacent to Highway 67.
February 2022	Iowa Department of Transportation approved right-of-way permit for proposed monitoring well along Highway 67 to provide additional nature and extent information.
February 2022	Prepared bedrock contour map needed to select location for potential additional background bedrock monitoring well.
February 2022	Measured groundwater elevations at all on-site and off-site monitoring wells for additional groundwater elevation and flow mapping.
February 2022	Conducted additional sampling event at monitoring wells MW-310, MW-311, and MW-311A.
March 2022	Completed Semiannual Progress Report for the Selection of Remedy.
March 2022	Completed the well documentation report for monitoring wells MW-310, MW-311, and MW-311A.
April 2022	Completed the semiannual groundwater assessment monitoring event for all wells.
April 2022	Completed statistical evaluation and result letter for the December 2021 groundwater monitoring event.
May 2022	Contacted two downgradient off-site property owners again requesting access agreements to install delineation monitoring wells on their properties.
June 2022	Completed statistical evaluation and result letter for the February 2022 groundwater monitoring event.
June 2022	Contacted two downgradient off-site property owners again requesting access agreements to install delineation monitoring wells on their properties.

Table 1. Timeline for Completed Work - Selection of Remedy
M. L. Kapp Generating Station / SCS Engineers Project #25221050.00

Date	Activity
July 2022	Completed the 2021 Annual Groundwater Monitoring and Corrective Action Report.
July 2022	Evaluated treatment alternatives for molybdenum and lithium impacted groundwater.
July 2022	Contacted two downgradient off-site property owners again requesting access agreements to install delineation monitoring wells on their properties.
August 2022	Completed statistical evaluation and result letter for the April 2021 groundwater monitoring event.
August 2022	Contacted downgradient off-site property owners, Clysar and Vertex Chemical again requesting access agreements to install delineation monitoring wells on their properties.
August 2022	Conducted additional sampling event at monitoring wells MW-311 and MW-311A along with site-wide water level measurements.
August 2022	Received a signed access agreement from the City of Clinton to install a background monitoring well on the City of Clinton regional wastewater reclamation facility (RWRF) property.
Activities Completed During Current Semiannual Reporting Period	
September 2023	Completed Semiannual Progress Report for the Selection of Remedy.
September 2022 - February 2023	Monthly correspondence and negotiations with off-site property owners to obtain an access agreement for the installation of delineation wells on their property.
September 2022 - February 2023	Corresponded with the City of Clinton regional wastewater reclamation facility (RWRF) staff to identify an exact location for the supplemental background bedrock monitoring well and to coordinate utility locate and drilling logistics.
September 2022	Received drilling bid for the installation of a background monitoring well on the City of Clinton regional water reclamation facility (RWRF) property.
November 2022	Completed the semiannual groundwater assessment monitoring event for all wells.
November 2022	Requested and received extension of the Iowa Department of Transportation permit to install a monitoring well within a state right-of-way.
November 2022	Completed screening of planned monitoring well locations at RWRF site and in right-of-way for utility conflicts.
December 2022	Notified by the driller that due to several drillers with COVID, the December 2022 drilling date needs to be rescheduled to January 2023.
December 2022	Notified by the driller that, due to work delays related to severe winter weather, the January 20th drilling date needs to be rescheduled to February 6th.
December 2022	Completed lower confidence interval evaluation and results letter for the August 2022 groundwater monitoring event.
January 2023	Formal proposal submitted to Hawkins, Inc., owner of Vertex Chemical Corporation adjacent to KAP impoundment for the installation of a delineation monitoring well nest on their property.

Table 1. Timeline for Completed Work - Selection of Remedy
M. L. Kapp Generating Station / SCS Engineers Project #25221050.00

Date	Activity
January 2023	Notified by driller that the February 6th well installation start date for the WWTP well and Highway 67 ROW well must again be postponed due to bad weather causing schedule backups. Contracted with a new driller to install the supplemental background well and Hwy 67 delineation well during February 2023.
January 2023	Requested and received approval from the Iowa Department of Transportation to relocate the planned Highway 67 right-of-way well to the opposite side a walking path to avoid conflict with an underground gas line.
January 2023 - February 2023	Prepared the draft 2022 Annual Groundwater Monitoring and Corrective Action Report.
January 2023 - February 2023	Evaluated potential locations on the M.L. Kapp closed impoundments property for the installation of additional delineation wells.
February 2023	Installed and developed supplemental background bedrock well MW-312 on the City of Clinton RWRF property
February 2023	Installed and developed delineation well MW-313 in the Highway 67 ROW.

Created by: NDK Date: 8/4/2021
Last revision by: TK Date: 2/18/2023
Checked by: MDB Date: 2/22/2023

I:\25221050.00\Deliverables\2023 KAP Semiannual - ACM\2023 March Semiannual Update\Tables\[Table 1_Timeline_ACM_KAP.xlsx]Timeline

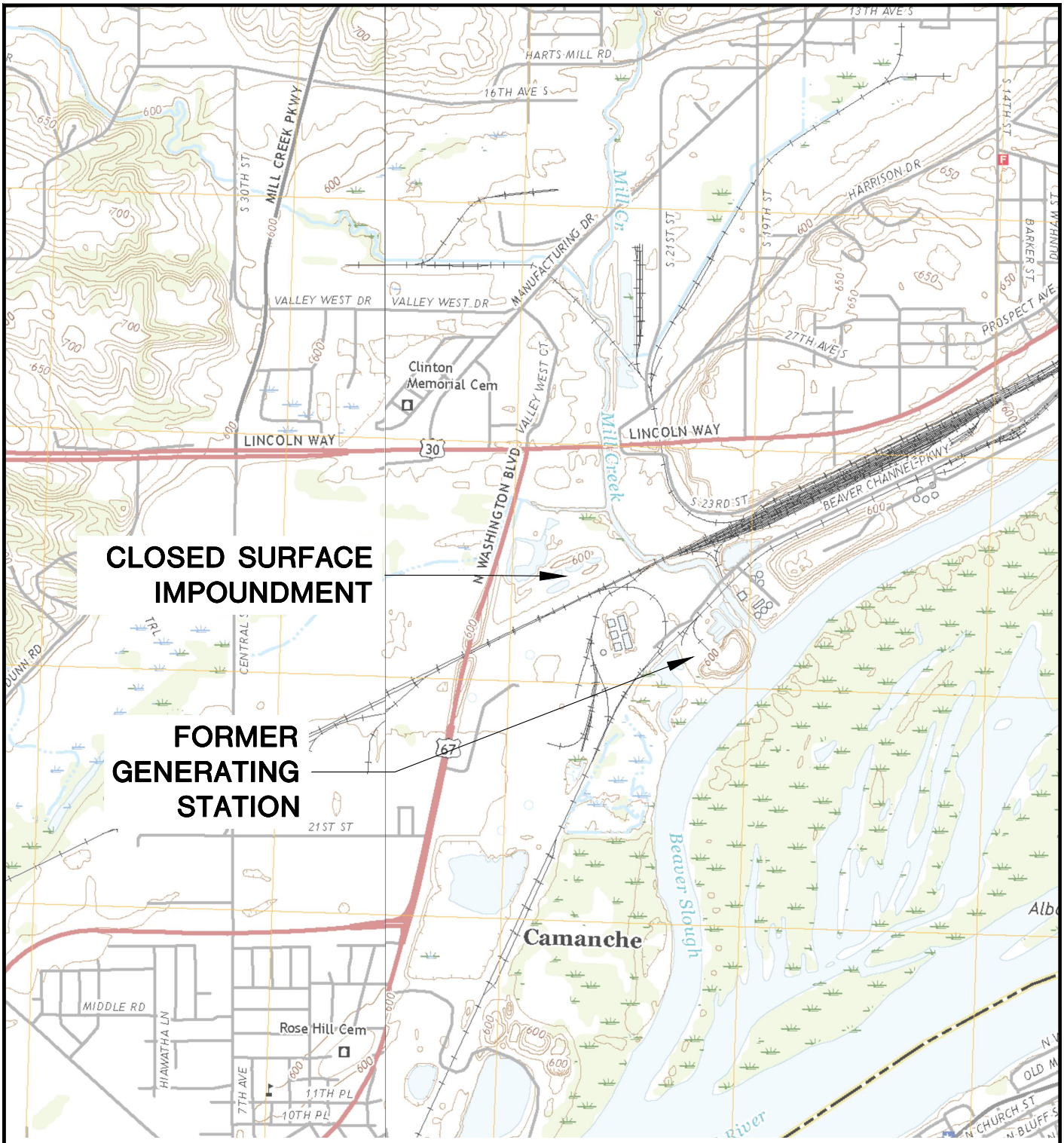
Table 2. Groundwater Sample Summary
M.L. Kapp Generating Station / SCS Engineers Project #25221050.00

Sample Dates	Compliance Wells						Delineation Wells					Background Wells	
	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	MW-304A	MW-308	MW-309	MW-311	MW-311A	MW-307	MW-310
4/5/2021	A	A	A	A	A	A	A	NI	NI	NI	NI	A	NI
6/17/2021	--	--	--	--	--	--	--	A	A	NI	NI	A	NI
7/22/2021	--	--	--	--	--	--	--	--	--	NI	NI	A	NI
10/5/2021	--	--	--	--	--	--	--	--	--	NI	NI	--	A
10/18-19/2021	A	A	A	A	A	A	A	A	A	NI	NI	A	A
12/29/2021	--	--	--	--	--	--	--	--	--	A	A	--	--
2/21/2022	--	--	--	--	--	--	--	--	--	A	A	--	A
4/18-19/2022	A	A	A	A	A	A	A	A	A	A	A	A	A
8/22/2022	--	--	--	--	--	--	--	--	--	Add.	Add.	--	--
11/1-3/2022	A	A	A	A	A	A	A	A	A	A	A	A	A
Total Samples	4	4	4	4	4	4	4	4	4	5	5	6	5

Abbreviations:
A = Assessment Monitoring Program NI = Not Installed Add. = Additional Sampling Event
-- = Not Applicable

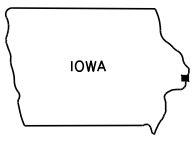
Created by: RM Date: 2/1/2021
Last revision by: TK Date: 2/18/2023
Checked by: MDB Date: 2/27/2023

Figures



N

CLINTON QUADRANGLE
IOWA–ILLINOIS
7.5 MINUTE SERIES (TOPOGRAPHIC)
2018
SCALE: 1" = 2,000'



CLIENT	ALLIANT ENERGY ML–KAPP GENERATING STATION 2001 BEAVER CHANNEL PKWY CLINTON, IA 52732	SITE	M.L. KAPP GENERATING STATION 3301 HIGHWAY 67 S CLINTON, IA 52732

SITE LOCATION MAP

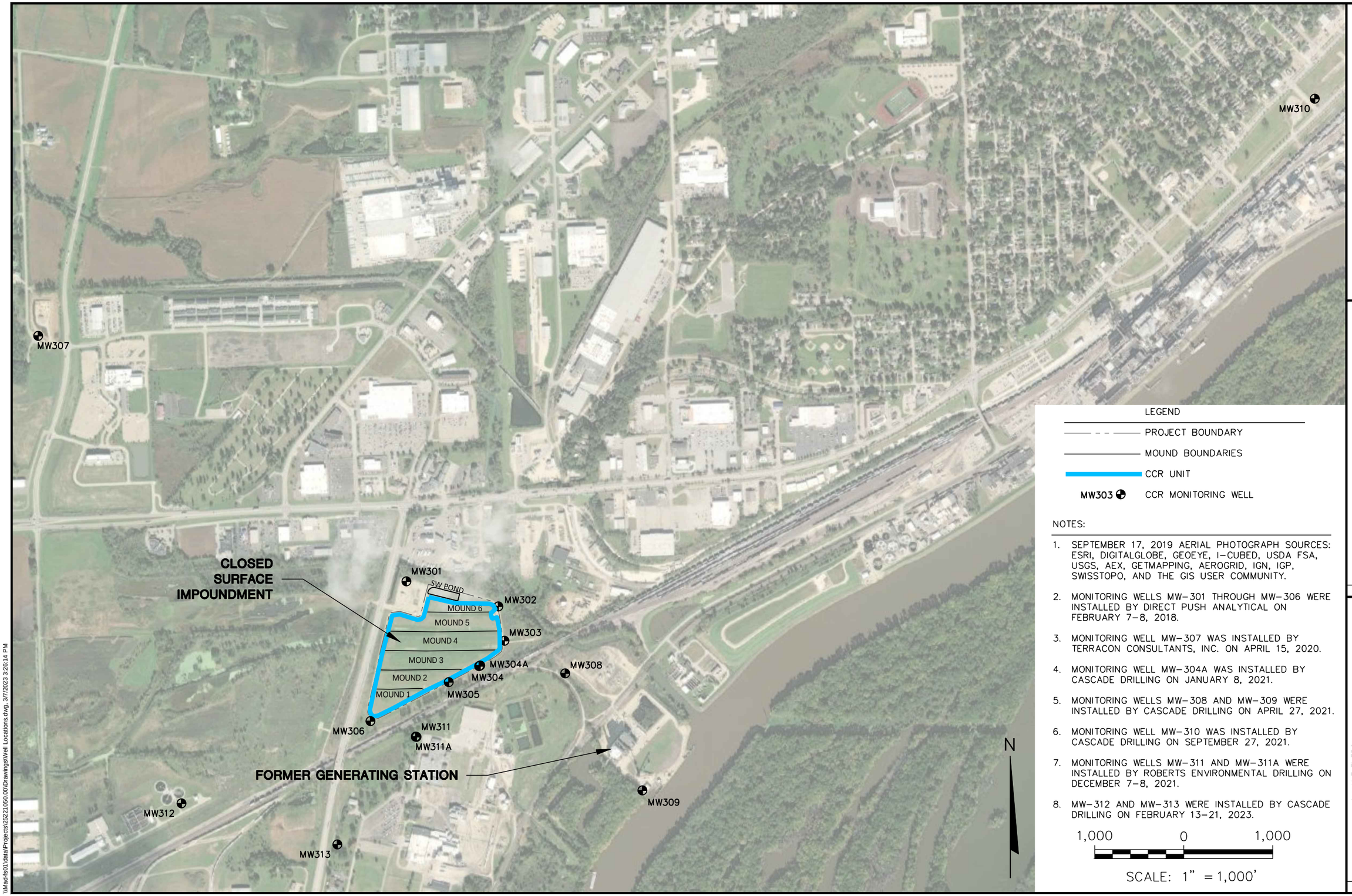
PROJECT NO.	25220077.00	DRAWN BY:	BSS
DRAWN:	11/20/2019	CHECKED BY:	NDK
REVISED:	09/04/2020	APPROVED BY:	TK, 3/10/2023

ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718–6751
PHONE: (608) 224–2830

FIGURE 1

I:\25220077.00\Drawings\Site Location Map.dwg, 8/31/2021 8:27:09 AM



LEGEND

- PROJECT BOUNDARY
- MOUND BOUNDARIES
- CCR UNIT
- MW303 CCR MONITORING WELL

NOTES:

1. SEPTEMBER 17, 2019 AERIAL PHOTOGRAPH SOURCES: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, USDA FSA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY.
2. MONITORING WELLS MW-301 THROUGH MW-306 WERE INSTALLED BY DIRECT PUSH ANALYTICAL ON FEBRUARY 7-8, 2018.
3. MONITORING WELL MW-307 WAS INSTALLED BY TERRACON CONSULTANTS, INC. ON APRIL 15, 2020.
4. MONITORING WELL MW-304A WAS INSTALLED BY CASCADE DRILLING ON JANUARY 8, 2021.
5. MONITORING WELLS MW-308 AND MW-309 WERE INSTALLED BY CASCADE DRILLING ON APRIL 27, 2021.
6. MONITORING WELL MW-310 WAS INSTALLED BY CASCADE DRILLING ON SEPTEMBER 27, 2021.
7. MONITORING WELLS MW-311 AND MW-311A WERE INSTALLED BY ROBERTS ENVIRONMENTAL DRILLING ON DECEMBER 7-8, 2021.
8. MW-312 AND MW-313 WERE INSTALLED BY CASCADE DRILLING ON FEBRUARY 13-21, 2023.

1,000 0 1,000

SCALE: 1" = 1,000'

SITE PLAN AND MONITORING WELL LOCATION MAP

SITE
M.L. KAPP
3301 HIGHWAY 67 S, CLINTON, IA 52732

CLIENT
ALLIANT ENERGY
ML-KAPP GENERATING STATION
2001 BEAVER CHANNEL PKWY
CLINTON, IA 52732

ENGINEER
SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

FIGURE 2

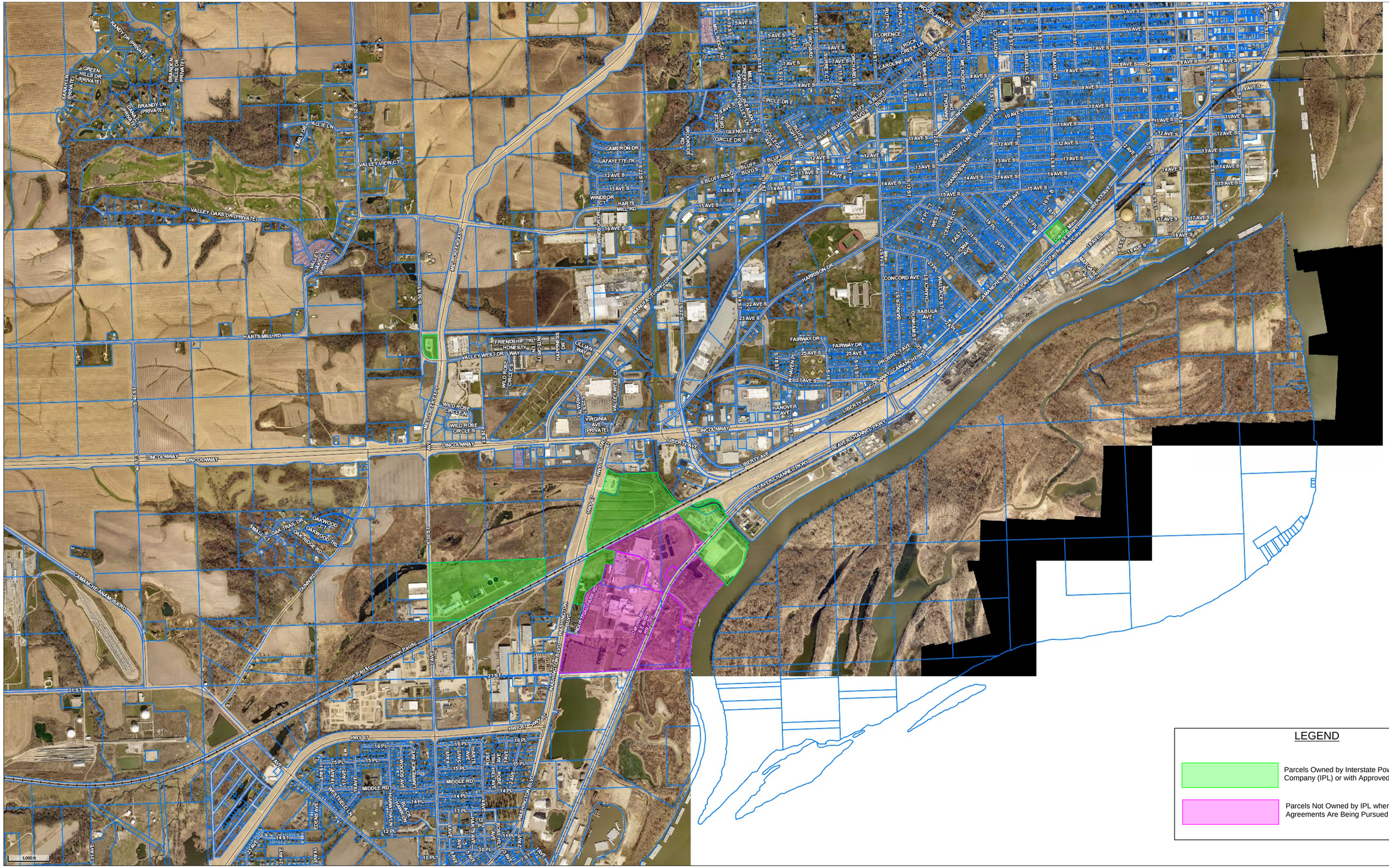
DRAWN BY:	KP/ZTW
CHECKED BY:	RM
APPROVED BY:	TK 03/07/2023
PROJECT NO.	25221050.00
DRAWN:	09/04/2020
REVISED:	03/06/2023

\\Madfs01\data\Projects\25221050.00\Drawings\Well Locations.dwg, 3/7/2023 3:26:14 PM

Attachment A

Target Properties for Off-Site Monitoring Wells

Beacon™ Clinton County, IA


Overview
Legend
Parcels
Condo Parcels
Railroad Centerlin
Road Centerlines
Road Right of Way
Railroad Right of Way
LEGEND
Parcels Owned by Interstate Power and Light Company (IPL) or with Approved Access Agreement
Parcels Not Owned by IPL where Access Agreements Are Being Pursued
N
1,000 ft
LINCOLNWAY
HARTS MILL RD
MIDDLE RD
HWY 67
21 ST
Union Pacific
Mill Creek Park Rd
Duck Creek Park
Duck Creek Golf Course
Mill Creek Park
Mill Creek Park Golf Course
Mill Creek Park Trout Farm Rd
Duck Creek Trail
Duck Creek Pkwy
Duck Creek Pkwy Trail
Duck Creek Pkwy Golf Course
Duck Creek Pkwy Golf Course Trail
Duck Creek Pkwy Golf Course Trail
Duck Creek Pkwy Golf Course Trail