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FIFTH FIVE-YEAR REVIEW REPORT FOR CENTRAL ILLINOIS PUBLIC SERVICE CO. SUPERFUND SITE CHRISTIAN COUNTY, ILLINOIS

Prepared by

U.S. Environmental Protection Agency
Region 5
Chicago, Illinois

6/24/2019

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Superfund & Emergency Management Div.
Signed by: DOUGLAS BALLOTTI

Table of Contents

LIST OF ABBREVIATIONS & ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CD	Consent Decree
CFR	Code of Federal Regulations
COCs	Contaminants of Concern
IAC	Illinois Administrative Code
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Differences
FS	Feasibility Study
FYR	Five-Year Review
IEPA	Illinois Environmental Protection Agency
ICs	Institutional Controls
LTS	Long-term Stewardship
MCL	Maximum Contaminant Level
MW	Monitoring Well
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
PAH	Polynuclear Aromatic Hydrocarbon
ppb	parts per billion
PRP	Potentially Responsible Party
RA	Remedial Action
RAO	Remedial Action Objectives
RD	Remedial Design
RI	Remedial Investigation
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act of 1986
Site	Central Illinois Public Service Co. Superfund Site
TBCs	To Be Considereds
UU/UE	Unlimited Use and Unrestricted Exposure
SVOC	Semi-Volatile Organic Compound
UECA	Uniform Environmental Covenants Act
VOC	Volatile Organic Compound

I. INTRODUCTION

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The United States Environmental Protection Agency (EPA) is preparing this FYR pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP)(40 CFR Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the fifth FYR for the Central Illinois Public Service (C.I.P.S.) Co. (a.k.a. Ameren) Superfund Site (Site). The triggering action for this statutory review was the completion of the fourth FYR report. The FYR has been prepared due to the fact that hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure (UU/UE). The Site consists of one (1) Operable Unit (OU), which will be addressed in this FYR. OU1 addresses the soil and groundwater remedy.

The C.I.P.S. Superfund Site FYR was led by David Linnear, Remedial Project Manager with EPA, in affiliation with the Illinois Environmental Protection Agency (IEPA). Participants included Michael Haggitt (IEPA) and Janet Pope (EPA Community Involvement Coordinator). The relevant entities such as the Potentially Responsible (PRP) were notified of the initiation of the FYR on 8/10/2018. The review began on 8/10/2018.

Site Background

The C.I.P.S. Site property is located in Christian County at 917 South Webster Street in Taylorville, Illinois. It is 2.4 acres in size. The property is bordered on the north by a residential area. On the south, it is bounded by Seaman Estates subdivision, which consists of eight large wooded tracts with several single family residences. All of the tracts surround Seaman Estates Pond. To the east is Manners Park, which is the City's main multi-use facility. The Site is bounded immediately on the west by the Ameren C.I.P.S. pole yard and railroad tracks. (See Figure 1)

A manufactured gas plant operated on the property from 1883 to 1932. In 1932, the plant was closed and most of the above ground structures were torn down and the below ground tanks were filled with debris and left in place. A septic tank contractor discovered coal tar contamination at the site in October 1985. Coal tar is a byproduct of the coal gasification process and is comprised mainly of polynuclear aromatic hydrocarbons (PAHs) such as naphthalene and benzo(a)anthracene as well as volatile organic compounds (VOCs) such as benzene and toluene.

Groundwater flows from the northeast to southwest direction through a fairly well sorted sand and gravel unconfined aquifer. The aquifer extends 90 feet below ground surface and is underlain by bedrock comprised of limestone and dolomite. The water table lies approximately 15 feet beneath the surface of the Site.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Central Illinois Public Service Company Site		
EPA ID: ILD981781065		
Region: 5	**State:** IL	**City/County:** Taylorville/Christian County

SITE STATUS	
NPL Status: Final	
Multiple OUs? No	**Has the site achieved construction completion?** Yes

REVIEW STATUS
Lead agency: State
Author name (Federal or State Project Manager): David Linnear
Author affiliation: EPA
Review period: 8/10/2018 - 3/26/2019
Date of site inspection: 3/12/2019
Type of review: Statutory
Review number: 5
Triggering action date: 6/13/2014
Due date *(five years after triggering action date)*: 6/13/2019

II. RESPONSE ACTION SUMMARY

The C.I.P.S. Site has been in the monitoring phase since 1995. Site-related contaminants have declined in the groundwater, however, there are still some exceedances of the state standards in groundwater. City of Taylor staffing contract issues resulted in the Site's groundwater pump and treat system being shut down in September 2017. Ameren Illinois Company (Ameren), a successor to Ameren CIPS, and which is a Potentially Responsible Party (PRP), plans to test and restart the pump and treat system in July 2019, to remain compliant with the selected remedy. Monitoring has continued. Regular operation and maintenance (O&M) activities remain and are on-going.

Basis for Taking Action

The Site investigation conducted by IEPA in 1986 concluded soil at the C.I.P.S. property and sediments in the river downgradient from the property were contaminated with PAHs. Groundwater at the Site was contaminated with PAHs and VOCs. The contaminants of concern (COCs) identified in the groundwater

included PAHs (8676 ug/L), benzene (4500 ug/L), toluene (7000 ug/L), ethyl benzene (680 ug/L), and total xylenes (5000 ug/L).

Response Actions

Following the Site investigation, Ameren conducted a removal action at the Site under IEPA's oversight in January 1987, to excavate and dispose of approximately 12,000 cubic yards of contaminated soil down to the water table and sediments in the drainage swale. Ameren backfilled and regraded these areas, and resurfaced them with gravel or vegetation. Ameren also implemented a groundwater and surface water/pond monitoring program. In addition, it provided a permanent alternative water supply to approximately 20 residents in October 1987, and plugged and abandoned associated private drinking water wells. Following the 1987 removal action, IEPA conducted the Remedial Investigation (RI) and Feasibility Study (FS) in 1991.

On September 30, 1992, IEPA issued a Record of Decision (ROD), which EPA concurred with, that selected the following cleanup remedy: constructing an on-site groundwater pump and treat system; O&M of the system until groundwater cleanup objectives were met; expanding the monitoring for groundwater and treatment system effluent; erecting a Site fence with signage; and placing land-use and deed restrictions (institutional controls (ICs)) on the property. IEPA executed a Consent Decree with Ameren in March 1994, under which Ameren agreed to perform the Remedial Design/Remedial Action (RD/RA) for the Site (the March 1994 CD). IEPA oversees the RD/RA.

The remedial action objectives for the Site were to treat the Site-related constituents contained in the groundwater to meet cleanup levels to protect future potential residential users of groundwater. Residual subsurface Site-related constituents should be prevented from migrating off-site. Access to the Site and performance of intrusive work on the property should be restricted. Accomplishing this specific objective, accomplishes the general objective to mitigate the endangerment to the public health, welfare, and the environment.

On September 6, 2005, IEPA issued an Explanation of Significant Differences (ESD), which EPA concurred with, that allowed Ameren to conduct a pilot for alternative treatment methods and revised clean-up objectives. The ESD revised the clean-up objective for benzo(a)pyrene and other COCs.

Ameren recorded an Environmental Covenant on August 30, 2012, which granted IEPA and EPA access to the C.I.P.S. Site and restricted the installation of wells, use and handling of groundwater, and handling of soils on the property.

Status of Implementation

Ameren completed all construction activities; and IEPA approved a final O&M Plan in February 1995. Ameren has continued to conduct O&M activities at the Site. Ameren stopped operating the groundwater pump and treat system, placing the system in stand-by mode status in September 2017. Contract difficulties between the City of Taylorville and their contractor led to loss of personnel to man and operate the Site pump and treat system in September 2017. Groundwater and surface water monitoring has continued without interruption. The pump and treat system ran without any problems prior to its shutdown. The PRP (Ameren) plans to test the pump and treat system to resume operation consistent with remedy implementation. Ameren is currently obtaining services of a certified operator to

provide O&M of the system. Anticipated startup is scheduled for July 1, 2019. Ameren continues to conduct quarterly groundwater sampling and sampling of Seaman Estate Pond. Recent data indicated that benzene and naphthalene still exceed groundwater cleanup objectives by several orders of magnitude in two monitoring wells. This monitoring indicates no contaminants have migrated off-site or outside of the capture zone.

Institutional Controls

ICs are non-engineered instruments, such as administrative and/or legal controls, that help minimize the potential for exposure to contamination and protect the integrity of the remedy. Compliance with ICs is required to assure long-term protectiveness for any areas which do not allow for UU/UE. Table 1 summarizes ICs for these restricted areas.

Table 1: Summary of Implemented ICs

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Soil	Yes	Yes	Area of soil covered to prevent direct contact with waste and infiltration of water to the waste	To prevent direct contact with residual hazardous waste and infiltration of water through the waste by prohibiting the residential use of the property	Uniform Environmental Covenants Act (UECA) Environmental Covenant signed August 20, 2012 and recorded August 30, 2012 applies to 2.4 acres.
Groundwater	Yes	Yes	Groundwater underlying the Site property	To prohibit groundwater use until cleanup standards are achieved	UECA Environmental Covenant signed August 20, 2012 and recorded August 30, 2012 applies to 2.4 acres.
Soil	Yes	Yes	Area of the Site property	To prohibit activities and uses which may interfere with work performed	UECA Environmental Covenant signed August 20, 2012 and recorded August 30, 2012 applies to 2.4 acres.
Groundwater	Yes	Yes	Pump and treat system including related equipment	To prohibit interference with remedy component	UECA Environmental Covenant signed August 20, 2012 and recorded August 30, 2012 applies to 2.4 acres.

Groundwater	Yes	Yes	Contaminated groundwater outside Site property	To prohibit groundwater use until cleanup standards are achieved	UECA Environmental Covenant signed August 20, 2012 and recorded August 30, 2012 applies to 2.4 acres.

A map showing the area in which the ICs apply is included in Attachment B and depicts the current conditions of the Site and areas which do not allow for UU/UE.

Status of Access Restrictions and ICs: Effective ICs are in place for the Site. An Illinois UECA restrictive covenant was signed on August 20, 2012, and recorded in Christian County, Illinois on August 30, 2012. The Site achieved Sitewide Ready for Anticipated Use status on September 26, 2012.

Current Compliance: Based on the site inspections, and discussions with the PRP and IEPA, the ICs and required use restrictions are being complied with. EPA is not aware of Site or media uses, such as groundwater or surface water, which are inconsistent with the stated objectives to be achieved by the ICs. The remedy appears to be functioning as intended. No Site uses which are inconsistent with the implemented ICs or remedy IC objectives were noted during the Site inspection. The PRP provides a status of ICs in the quarterly O&M report.

IC Follow up Actions Needed: Currently ICs are being monitored on a quarterly basis, however, a Long-term Stewardship (LTS) Plan does not exist and has not been included in an amendment to the Site O&M Plan. An LTS Plan, or an amendment to the O&M Plan, will need to be completed to include procedures for monitoring and tracking compliance with existing ICs, communicating with EPA/IEPA, and providing an annual certification to EPA/IEPA that the ICs remain in place and are effective.

Long Term Stewardship:
Long-term protectiveness requires continued compliance with the ICs consisting of land use and groundwater use restrictions to ensure that the remedy continues to function as intended. LTS will ensure that the ICs are maintained, monitored and enforced.

Systems Operations/Operation & Maintenance

Ameren has been conducting O&M activities at the Site since September 6, 1995, when the Preliminary Close Out Report was completed. All O&M activities are enforced under the March 1994 CD. The groundwater treatment system at the Site consists primarily of two carbon units operating in series. Bag filters for solids removal are installed prior to groundwater entering the first carbon unit. The system has provisions to backwash the carbon units, as necessary.

Raw groundwater entering the facility is analyzed for several compounds including organics twice per month. Ameren samples water between the carbon units twice per month to monitor organic breakthrough. The treated water is continuously discharged and will be sampled weekly for various compounds including organics. Ameren submits sample results and flow information to IEPA. Since the startup of the treatment system in early 1995 until its shutdown in September 2017, a total of 1,270,137,692 gallons of groundwater have been treated.

Ameren has been conducting long-term monitoring of groundwater, surface water and fish in the Seaman Estate's pond to ensure there is no risk to human health and the environment. Ameren provides

annual O&M reports to the agencies to document the work conducted, as well as any problems, corrective actions taken, and changes to reporting requirements.

Annual O&M Costs
Central Illinois Public Service Company

	2014	2015	2016	2017	2018
Total	$ 503,252	$ 386,269	$ 339,900	$ 322,421	$ 231,624

III. PROGRESS SINCE THE LAST REVIEW

This section includes the protectiveness determination and statements from the last FYR as well as the recommendations from the last FYR and the current status of those recommendations.

Table 2: Protectiveness Determinations/Statements from the 2014 FYR

OU	Protectiveness Determination	Protectiveness Statement
OU1/Site-wide	Protective	The remedy is protective of human health and the environment because the removal of the contaminated soil and the Site fence effectively prevent exposure to residual soil contaminants and operation of the groundwater pump and treat system, in conjunction with the alternative water supply and ICs, limits exposure to contaminated groundwater. The August 2012 Restrictive Environmental Covenant ensures that the Site remedy components, including ICs, are maintained, monitored, and enforced to ensure long-term protectiveness.

There were no issues and recommendations identified which affected the protectiveness of the remedy during the 2014 FYR.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

The results of the review and the report will be made available at the Site information repository. The information repository for the Site is located at the Taylorville Public Library, 121 W. Vine St., Taylorville, IL. Copies of the FYR reports can also be obtained at http://www.epa.gov/superfund/central-illinois-publicservice.

During the FYR process, EPA conducted interviews with the PRP and IEPA to document any perceived problems or successes with the remedy that has been implemented to date. Results of these interviews indicated that no significant changes have occurred since the last FYR.

Data Review

The C.I.P.S. Site has been in the environmental monitoring phase since 1995. Site-related contaminants have declined in the groundwater and cleanup goals for environmental media have not been met for all COCs. Ameren regularly conducts groundwater monitoring at the Site. Ameren monitors 11 wells on-site and eight wells off-site associated to the plume quarterly. Ameren also monitors nine additional off-site wells annually because of the proximity to the baseball field across the street. Additionally, the monitoring program includes the Seaman Estates' Pond for surface water, fish tissue, and sediments.

Surface water, sediment, and fish tissue samples show concentrations of PAHs and pesticides are sporadic and show no apparent trends. Concentrations of PAHs in surface water within the pond were below practical quantitation limits. There were no reportable detections of any PAHs at any sediment sampling location for 2018. There were no reportable detections of any PAHs at either water sampling location in 2018. There were no PCBs or pesticides detected above PGLs in fish tissue samples from Seaman Estate Pond in 2018.

Several VOCs and SVOCs remain above cleanup criteria in the groundwater monitoring wells system. GW-3 and GW-4R historically have remained above cleanup levels. The COCs are benzene and naphthalene. Since the 2017 pump and treat shutdown, levels dropped significantly but are trending upward as expected (see chart below).

	2015	2016	2017	2018	2019
Benzene GW 3 5 µg/L	22.8	34.6	18.7	2.55	3.71
Benzene GW 4R 5 µg/L	1380	1110	1750	979	1300
Naphthalene GW 3 21 µg/L	334	921	554	8.12	26.9
Naphthalene GW 4R 21 µg/L	3140	3390	2220	3970	4580

Site Inspection

The agencies inspected the Site on 3/12/2019. David Linnear (EPA), Michael Haggitt (IEPA), Paul Lake (IEPA) and Donald Richardson (Ameren Illinois Company) attended the inspection. The purpose of the inspection was to gather data to use in the assessment of the protectiveness of the remedy, including

condition of the fencing and posted signs to restrict access, and condition of the Site. Fencing was in good condition with appropriate signage. Site access continues to be adequately restricted.

The inspection revealed changes since the last FYR. On February 4, 2019, Ameren discovered the floor of the pump and treat facility was filled with about six-inches of water due to a potable water line rupture over the weekend. The city turned off the potable water to the facility. Ameren submitted a sample of the water on the floor to Teklab for analyses. Since the groundwater pumps were offline, no untreated groundwater was mixed in the potable water spill. Approximately 40,000-gallons of potable water had been spilled. Analytical results were compared to the discharge limits contained in the RODThese results were sent to Mike Haggitt of IEPA on February 8, 2019. Later that day, Mike Haggitt approved discharge of the water. The water was discharged on February 15, 2019.

Staffing contract difficulties between the City of Taylorville, who assumed a portion of the O& M responsibilities, and their contractor led to loss of personnel to man and operate the Site pump and treat system in September 2017. The City of Taylorville was unable to maintain the staffing contract due to fiscal budget difficulties. Groundwater and surface water monitoring continued without interruption. The pumping system ran without any problems before it shut down in September 2017. The PRP (Ameren) plans to test and restart the pump and treat system in July 2019. If testing of the system shows any issues, EPA expects repairs would be made to address them. The team looked at monitoring wells, and found them to be in good condition with no signs of vandalism or tampering evident.

Interviews

During the 3/12/2019 interviews, Ameren and IEPA stated they have maintained annual visits at the Site and indicated that no problems have occurred regarding site security and no concerns have been raised by the local commercial and residential population. Further, no telephone calls have been received regarding the Site.

V. TECHNICAL ASSESSMENT

Question A: Is the remedy functioning as intended by the decision documents?

No. The required groundwater pump and treat system has been shut down since September 2017 and the remedy is therefore not functioning as intended by the decision documents. Ameren plans to test and restart the system in July 2019. Review of the available information indicates the remedy will again function as it was intended once the restart occurs. The remedy included soil excavation, a pump and treat system, groundwater monitoring, installation of site access controls, and ICs. The Site has been in the monitoring phase since 1995. Site-related contaminants have declined in groundwater although cleanup goals for environmental media have not been met for all COCs. Because levels remain above cleanup goals, the selected remedy must continue operating. No further remedial or removal actions are necessary.

Effective ICs are in place for the Site. An Illinois UECA restrictive covenant was signed on August 20, 2012, and recorded in Christian County, Illinois on August 30, 2012. Discussions with Site O&M personnel indicate that no issues or problems have arisen with respect to enforcing the restrictive covenants for the Site. However, a LTS Plan or amendment to the O&M Plan to include LTS procedures, needs to be developed and implemented.

<u>Question B:</u> Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of remedy selection still valid?

Yes. There have been no major changes in the physical conditions of the site that would affect the protectiveness of the remedy. The Site is being used as anticipated, i.e., it is not being used, so the exposure assumptions that were made do not need to be changed.

There has been no change to the standardized risk assessment methodology or contaminant characteristics that would affect the protectiveness of the remedy. There have been no changes in toxicity factors or cleanup levels. As per the ICs, the property is currently zoned for industrial use; however, there is currently no formal use of the property. No unacceptable risks would be sustained.

<u>Question C:</u> Has any other information become available that could call into question the protectiveness of the remedy?

No. There is no new information that has come to light that could affect the protectiveness of the remedy. No other events have affected the protectiveness of the remedy and there is no other information which calls into question the protectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

Issues and Recommendations Identified in the Five-Year Review:

OU(s): 1/Sitewide	**Issue Category: Remedy Performance**			
	Issue: Groundwater pump and treat system has not operated since September 2017.			
	Recommendation: Restart the groundwater pump and treat system.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	PRP	EPA/State	8/2/2019

OU(s): 1/Sitewide	**Issue Category: Institutional Controls**			
	Issue: Lack of formal LTS procedures.			
	Recommendation: An LTS Plan, or an amendment to the O&M Plan to include LTS procedures, should be developed and implemented.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	PRP	EPA/State	6/19/2020

VII. PROTECTIVENESS STATEMENT

OU1 & Sitewide Protectiveness Statement
Protectiveness Determination: Short-term Protective
Protectiveness Statement: The remedy is currently protective of human health and the environment because the removal of the contaminated soil and the site fence effectively prevent exposure to residual soil contaminants, and the provision of an alternative water supply and implementation of ICs limit exposure to contaminated groundwater. Effective ICs in the form of an Illinois UECA restrictive covenant are in place. However, in order for the remedy to be protective in the long-term, the following actions need to be taken to ensure protectiveness: restart the groundwater pump and treat system, and develop an LTS Plan or amend the O&M Plan to include LTS procedures.

VIII. NEXT REVIEW

The next FYR report for the C.I.P.S. Co. Superfund Site is required five years from EPA's signature date of this review.

APPENDIX A – REFERENCE LIST

Previous FYR

4th FYR, dated June 13, 2014

O&M Report

O&M Report, dated January 2014
O&M Report, dated January 2015
O&M Report, dated January 2016

O&M Report, dated January 2017
O&M Report, dated January 2018

Annual Report

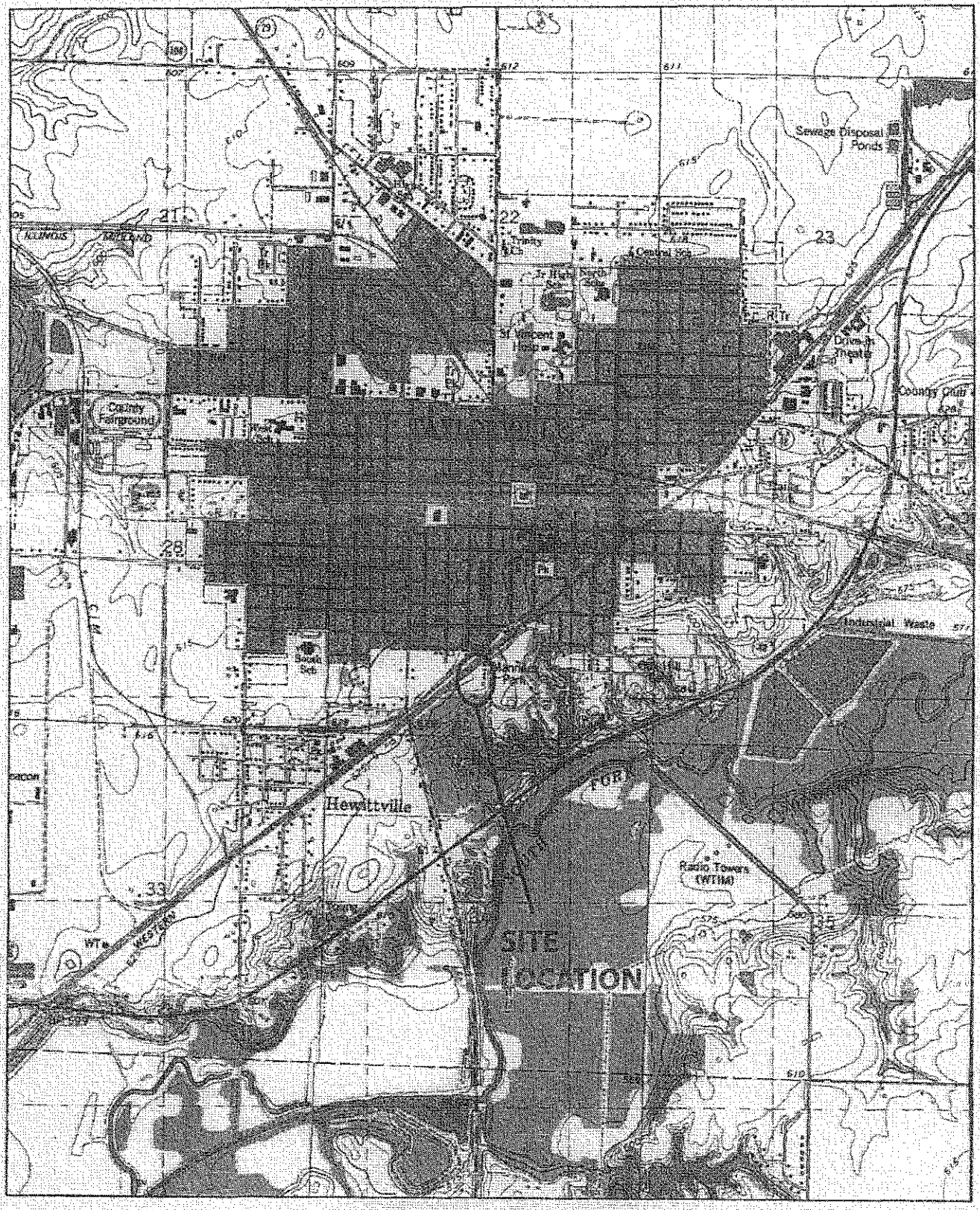
2018 Seaman Estate Pond Study, dated March 2018

Decision Document(s)

ROD, dated September 1992
CD, dated March 1994
Closeout Report, dated September 1995

APPENDIX B – MAPS

Site Location Map
Site Map showing well locations



Data Source: USDA

AMEREN CIPS SITE

FIGURE 1

Barr Footer: ArcGIS 10.3, 2015-04-27 15:35 File: I:\Projects\13\11\002\GIS\Maps\2015\Transition_Assessment_FS_Addendum\Fig05 Proposed Monitoring Wells White.mxd User: mbs2

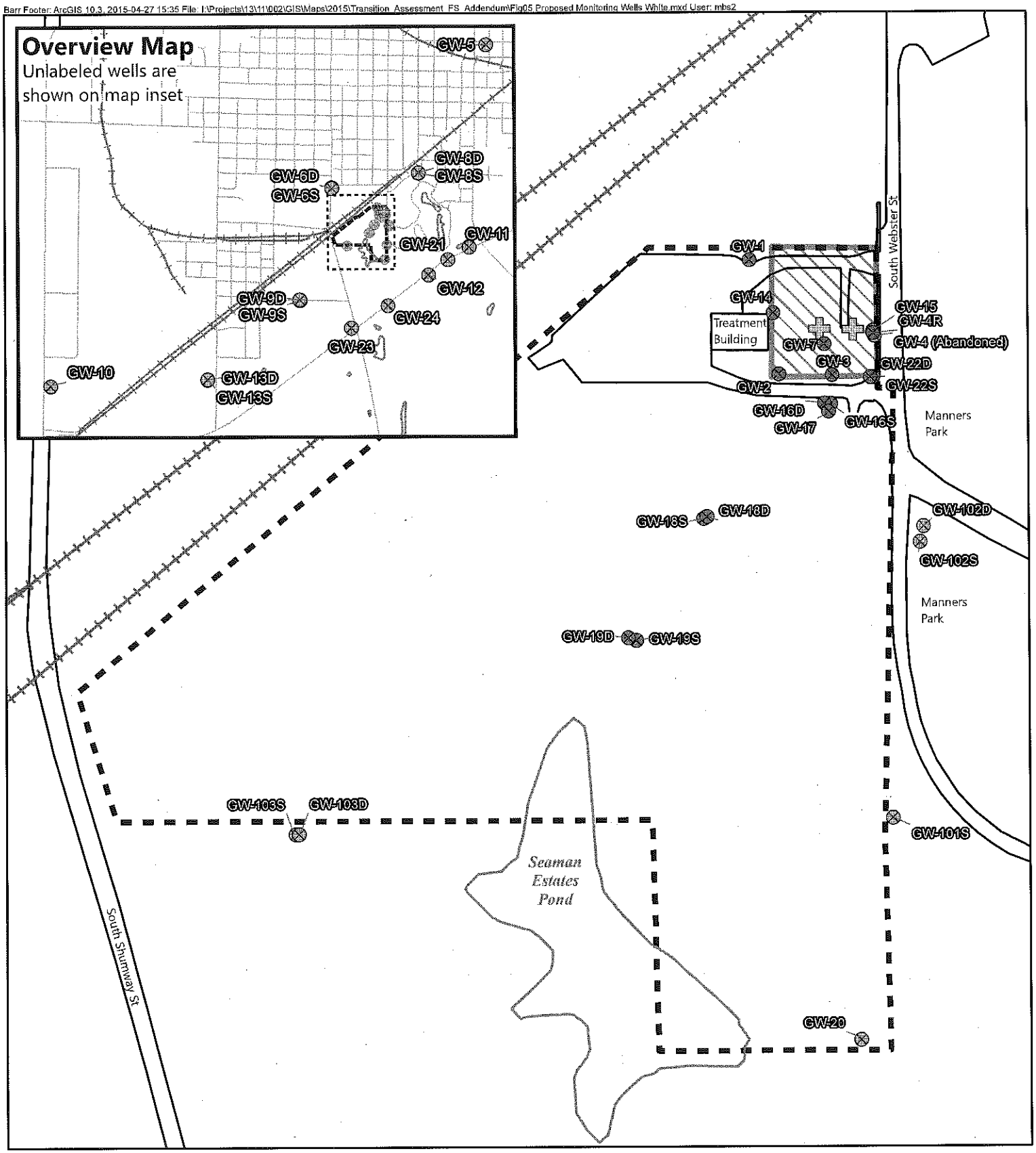


Figure 5

PROPOSED MONITORING WELL LOCATION MAP
Former CIPS MGP Site
Taylorville, Illinois

APPENDIX C – Site Inspection Checklist and Photographs

Site Inspection Checklist
Site Inspection Photographs

Info. by March 31

Insurance, Taxes and Licenses - This includes items such as liability and sudden and accidental insurance, real estate taxes on purchased land or right-of-way, licensing fees for certain technologies, and permit renewal and reporting costs.

Other Costs - This includes all other items which do not fit into any of the above categories.

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Please note that "O&M" is referred to throughout this checklist. At sites where Long-Term Response Actions are in progress, O&M activities may be referred to as "system operations" since these sites are not considered to be in the O&M phase while being remediated under the Superfund program.

Five-Year Review Site Inspection Checklist (Template)

(Working document for site inspection. Information may be completed by hand and attached to the Five-Year Review report as supporting documentation of site status. "N/A" refers to "not applicable.")

C.I.P.S.

I. SITE INFORMATION

Site name: Centra / Ill. Public Service	**Date of inspection:** March 12, 2019
Location and Region: Taylorville Il. / Reg. 5	**EPA ID:** ILD 981781065
Agency, office, or company leading the five-year review: U.S. EPA	**Weather/temperature:** Partly Cloudy Windy 43°

Remedy Includes: (Check all that apply)

- ☐ Landfill cover/containment
- ☑ Access controls
- ☑ Institutional controls
- ☑ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☐ Monitored natural attenuation
- ☑ Groundwater containment
- ☐ Vertical barrier walls
- ☐ Other TOP SOIL / VEGETATION

Attachments: ☐ Inspection team roster attached ☑ Site map attached (Ameren)

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** Don (Name) — Proj Mgr (Title) — 3/12/2019 (Date)

Interviewed ☑ at site ☐ at office ☐ by phone Phone no.

Problems, suggestions; ☐ Report attached Loss of personnel manning site & by water main break flooded bldg - ERM conducting test water for containment - Water was safe to discharge

Fencing repairs / Pumps ran 9/2017 w/o any problems. Currently, PRPs will test Pumping sys. before restart approx. 7/2019.

2. **O&M staff** N/A _____ _____ _____
Name Title Date

Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____

Problems, suggestions; ☐ Report attached _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency IEPA

Contact Mike _____ _____ _____ _____
Name Title Date Phone no.

Problems; suggestions; ☐ Report attached _____

Agency IEPA

Contact Don _____ _____ _____ _____
Name Title Date Phone no.

Problems; suggestions; ☐ Report attached _____

Agency _____

Contact _____ _____ _____ _____
Name Title Date Phone no.

Problems; suggestions; ☐ Report attached _____

Agency _____

Contact _____ _____ _____ _____
Name Title Date Phone no.

Problems; suggestions; ☐ Report attached _____

4. **Other interviews** (optional) ☐ Report attached.

N/A

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**
   - ☑ O&M manual — ☑ Readily available — ☑ Up to date — ☐ N/A
   - ☑ As-built drawings — ☑ Readily available — ☑ Up to date — ☐ N/A
   - ☑ Maintenance logs — ☑ Readily available — ☑ Up to date — ☐ N/A

   Remarks

2. **Site-Specific Health and Safety Plan** — ☑ Readily available — ☑ Up to date — ☐ N/A
   - ☑ Contingency plan/emergency response plan — ☑ Readily available — ☑ Up to date — ☐ N/A

   Remarks

3. **O&M and OSHA Training Records** — ☑ Readily available — ☑ Up to date — ☐ N/A

   Remarks

4. **Permits and Service Agreements**
   - ☐ Air discharge permit — ☐ Readily available — ☐ Up to date — ☑ N/A
   - ☐ Effluent discharge — ☐ Readily available — ☐ Up to date — ☑ N/A
   - ☑ Waste disposal, POTW — ☑ Readily available — ☑ Up to date — ☐ N/A
   - ☐ Other permits N/A — ☐ Readily available — ☐ Up to date — ☐ N/A

   Remarks

5. **Gas Generation Records** — ☐ Readily available — ☐ Up to date — ☑ N/A

   Remarks

6. **Settlement Monument Records** — ☐ Readily available — ☐ Up to date — ☑ N/A

   Remarks

7. **Groundwater Monitoring Records** — ☑ Readily available — ☑ Up to date — ☐ N/A

   Remarks

8. **Leachate Extraction Records** — ☐ Readily available — ☐ Up to date — ☑ N/A

   Remarks

9. **Discharge Compliance Records**
   - ☐ Air — ☐ Readily available — ☐ Up to date — ☑ N/A
   - ☑ Water (effluent) — ☑ Readily available — ☑ Up to date — ☐ N/A

   Remarks

10. **Daily Access/Security Logs** — ☑ Readily available — ☐ Up to date — ☐ N/A

    Remarks Prior to Pump Shut down – Yes

IV. O&M COSTS

1. **O&M Organization**
   - ☐ State in-house
   - ☐ Contractor for State
   - ☑ PRP in-house
   - ☐ Contractor for PRP
   - ☐ Federal Facility in-house
   - ☐ Contractor for Federal Facility
   - ☐ Other _____

2. **O&M Cost Records**
   - ☑ Readily available ☑ Up to date
   - ☑ Funding mechanism/agreement in place
   - Original O&M cost estimate _____ ☐ Breakdown attached

   Amended to supply EPA

   Total annual cost by year for review period if available

   From _____ To _____ _____ ☐ Breakdown attached
   Date Date Total cost

   From _____ To _____ _____ ☐ Breakdown attached
   Date Date Total cost

   From _____ To _____ _____ ☐ Breakdown attached
   Date Date Total cost

   From _____ To _____ _____ ☐ Breakdown attached
   Date Date Total cost

   From _____ To _____ _____ ☐ Breakdown attached
   Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**
   Describe costs and reasons: _____
   No

V. ACCESS AND INSTITUTIONAL CONTROLS ☑ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☑ Gates secured ☐ N/A
   Remarks Tree falling access not impacted

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☐ N/A
   Remarks Signs are posted & visual. Signs are in good condition

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented ☐ Yes ☒ No ☐ N/A

Site conditions imply ICs not being fully enforced ☐ Yes ☒ No ☐ N/A

Type of monitoring (*e.g.*, self-reporting, drive by) Self reporting / Drive-by

Frequency Qtrly & Monthly

Responsible party/agency PRP

Contact Don

Name	Title	Date	Phone no.

Reporting is up-to-date ☒ Yes ☐ No ☐ N/A

Reports are verified by the lead agency ☒ Yes ☐ No ☐ N/A

Specific requirements in deed or decision documents have been met ☒ Yes ☐ No ☐ N/A

Violations have been reported ☐ Yes ☒ No ☐ N/A

Other problems or suggestions: ☐ Report attached

No PRP will supply IC report

2. **Adequacy** ☒ ICs are adequate ☐ ICs are inadequate ☐ N/A

Remarks

D. General

1. **Vandalism/trespassing** ☐ Location shown on site map ☒ No vandalism evident

Remarks

2. **Land use changes on site** ☒ N/A

Remarks

3. **Land use changes off site** ☒ N/A

Remarks

VI. GENERAL SITE CONDITIONS

A. Roads ☐ Applicable ☒ N/A

1. **Roads damaged** ☐ Location shown on site map ☐ Roads adequate ☒ N/A

Remarks

B. Other Site Conditions

Remarks None

VII. LANDFILL COVERS ☐ Applicable ☒ N/A

A. Landfill Surface

1. **Settlement** (Low spots) ☐ Location shown on site map ☐ Settlement not evident
   Areal extent _____ Depth _____
   Remarks _____

2. **Cracks** ☐ Location shown on site map ☐ Cracking not evident
   Lengths _____ Widths _____ Depths _____
   Remarks _____

3. **Erosion** ☐ Location shown on site map ☐ Erosion not evident
   Areal extent _____ Depth _____
   Remarks _____

4. **Holes** ☐ Location shown on site map ☐ Holes not evident
   Areal extent _____ Depth _____
   Remarks _____

5. **Vegetative Cover** ☐ Grass ☐ Cover properly established ☐ No signs of stress
   ☐ Trees/Shrubs (indicate size and locations on a diagram)
   Remarks _____

6. **Alternative Cover (armored rock, concrete, etc.)** ☐ N/A
   Remarks _____

7. **Bulges** ☐ Location shown on site map ☐ Bulges not evident
   Areal extent _____ Height _____
   Remarks _____

8. **Wet Areas/Water Damage** ☐ Wet areas/water damage not evident
☐ Wet areas ☐ Location shown on site map Areal extent_____
☐ Ponding ☐ Location shown on site map Areal extent_____
☐ Seeps ☐ Location shown on site map Areal extent_____
☐ Soft subgrade ☐ Location shown on site map Areal extent_____
Remarks_____

9. **Slope Instability** ☐ Slides ☐ Location shown on site map ☐ No evidence of slope instability
Areal extent_____
Remarks_____

B. Benches ☐ Applicable ☐ N/A
(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)

1. **Flows Bypass Bench** ☐ Location shown on site map ☐ N/A or okay
Remarks_____

2. **Bench Breached** ☐ Location shown on site map ☐ N/A or okay
Remarks_____

3. **Bench Overtopped** ☐ Location shown on site map ☐ N/A or okay
Remarks_____

C. Letdown Channels ☐ Applicable ☐ N/A
(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)

1. **Settlement** ☐ Location shown on site map ☐ No evidence of settlement
Areal extent_____ Depth_____
Remarks_____

2. **Material Degradation** ☐ Location shown on site map ☐ No evidence of degradation
Material type_____ Areal extent_____
Remarks_____

3. **Erosion** ☐ Location shown on site map ☐ No evidence of erosion
Areal extent_____ Depth_____
Remarks_____

4. **Undercutting** ☐ Location shown on site map ☐ No evidence of undercutting
Areal extent_____ Depth_____
Remarks_____

5. **Obstructions** Type_____ ☐ No obstructions
☐ Location shown on site map Areal extent_____
Size_____
Remarks_____

6. **Excessive Vegetative Growth** Type_____
☐ No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks_____

D. Cover Penetrations ☐ Applicable ☐ N/A

1. **Gas Vents** ☐ Active ☐ Passive
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance
☐ N/A
Remarks_____

2. **Gas Monitoring Probes**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

3. **Monitoring Wells** (within surface area of landfill)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

4. **Leachate Extraction Wells**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

5. **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☐ N/A
Remarks_____

E. Gas Collection and Treatment ☐ Applicable ☒ N/A

1. **Gas Treatment Facilities**
   ☐ Flaring ☐ Thermal destruction ☐ Collection for reuse
   ☐ Good condition ☐ Needs Maintenance
   Remarks _____

2. **Gas Collection Wells, Manifolds and Piping**
   ☐ Good condition ☐ Needs Maintenance
   Remarks _____

3. **Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings)
   ☐ Good condition ☐ Needs Maintenance ☐ N/A
   Remarks _____

F. Cover Drainage Layer ☐ Applicable ☒ N/A

1. **Outlet Pipes Inspected** ☐ Functioning ☐ N/A
   Remarks _____

2. **Outlet Rock Inspected** ☐ Functioning ☐ N/A
   Remarks _____

G. Detention/Sedimentation Ponds ☐ Applicable ☒ N/A

1. **Siltation** Areal extent _____ Depth _____ ☐ N/A
   ☐ Siltation not evident
   Remarks _____

2. **Erosion** Areal extent _____ Depth _____
   ☐ Erosion not evident
   Remarks _____

3. **Outlet Works** ☐ Functioning ☐ N/A
   Remarks _____

4. **Dam** ☐ Functioning ☐ N/A
   Remarks _____

H. Retaining Walls ☐ Applicable ☑ N/A

1. **Deformations** ☐ Location shown on site map ☐ Deformation not evident
   Horizontal displacement_____ Vertical displacement_____
   Rotational displacement_____
   Remarks_____

2. **Degradation** ☐ Location shown on site map ☐ Degradation not evident
   Remarks_____

I. Perimeter Ditches/Off-Site Discharge ☐ Applicable ☑ N/A

1. **Siltation** ☐ Location shown on site map ☐ Siltation not evident
   Areal extent_____ Depth_____
   Remarks_____

2. **Vegetative Growth** ☐ Location shown on site map ☐ N/A
   ☐ Vegetation does not impede flow
   Areal extent_____ Type_____
   Remarks_____

3. **Erosion** ☐ Location shown on site map ☐ Erosion not evident
   Areal extent_____ Depth_____
   Remarks_____

4. **Discharge Structure** ☐ Functioning ☐ N/A
   Remarks_____

VIII. VERTICAL BARRIER WALLS ☐ Applicable ☑ N/A

1. **Settlement** ☐ Location shown on site map ☐ Settlement not evident
   Areal extent_____ Depth_____
   Remarks_____

2. **Performance Monitoring** Type of monitoring_____
   ☐ Performance not monitored
   Frequency_____ ☐ Evidence of breaching
   Head differential_____
   Remarks_____

IX. GROUNDWATER/SURFACE WATER REMEDIES ☑ Applicable ☐ N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines ☑ Applicable ☐ N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
   ☑ Good condition ☐ All required wells properly operating ☐ Needs Maintenance ☐ N/A
   Remarks Were in good condition prior to shut down

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
   ☑ Good condition ☐ Needs Maintenance
   Remarks See above

3. **Spare Parts and Equipment**
   ☑ Readily available ☑ Good condition ☐ Requires upgrade ☐ Needs to be provided
   Remarks

B. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable ☒ N/A

1. **Collection Structures, Pumps, and Electrical**
   ☐ Good condition ☐ Needs Maintenance
   Remarks

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
   ☐ Good condition ☐ Needs Maintenance
   Remarks

3. **Spare Parts and Equipment**
   ☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
   Remarks

C. Treatment System ☑ Applicable ☐ N/A

1. **Treatment Train** (Check components that apply)
   ☑ Metals removal ☐ Oil/water separation ☐ Bioremediation
   ☐ Air stripping ☑ Carbon adsorbers
   ☑ Filters Back Flow
   ☐ Additive (*e.g.*, chelation agent, flocculent)
   ☐ Others
   ☑ Good condition ☐ Needs Maintenance
   ☑ Sampling ports properly marked and functional
   ☑ Sampling/maintenance log displayed and up to date
   ☑ Equipment properly identified
   ☐ Quantity of groundwater treated annually American Ho supply
   ☐ Quantity of surface water treated annually N/A
   Remarks

2. **Electrical Enclosures and Panels** (properly rated and functional)
   ☐ N/A ☑ Good condition ☐ Needs Maintenance
   Remarks

3. **Tanks, Vaults, Storage Vessels**
   ☐ N/A ☑ Good condition ☐ Proper secondary containment ☐ Needs Maintenance
   Remarks

4. **Discharge Structure and Appurtenances**
   ☐ N/A ☑ Good condition ☐ Needs Maintenance
   Remarks

5. **Treatment Building(s)**
   ☐ N/A ☑ Good condition (esp. roof and doorways) ☐ Needs repair
   ☑ Chemicals and equipment properly stored
   Remarks

6. **Monitoring Wells** (pump and treatment remedy)
   ☑ Properly secured/locked ☑ Functioning ☑ Routinely sampled ☑ Good condition
   ☑ All required wells located ☐ Needs Maintenance ☐ N/A
   Remarks

D. Monitoring Data

1. Monitoring Data
   ☑ Is routinely submitted on time ☑ Is of acceptable quality

2. Monitoring data suggests:
   ☑ Groundwater plume is effectively contained ☑ Contaminant concentrations are declining

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
   ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
   ☐ All required wells located ☐ Needs Maintenance ☒ N/A
   Remarks

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction. No

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

Remedy is effectively operating as designed.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

Remedy is providing long-term protectiveness

C.	Early Indicators of Potential Remedy Problems
	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future. No early indicators of problems
D.	**Opportunities for Optimization**
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. Stop P&T replace w/ Long-term monitoring leave System in place. likely.

Figure 1 – Overflow Pump

Figure 2 – Site Entrance

Figure 3 – Monitoring Wells

Figure 4 – Monitoring Wells

Figure 5 – Monitoring Wells

Figure 6 – Monitoring Wells

Figure 7 – Monitoring Wells

Figure 8 – Pump and Treat Facility

Figure 9 – Monitoring Wells

Figure 10 – Pump and Treat Facility

Figure 11 – Pump and Treat Facility

Figure 12 – Pump and Treat Facility

Figure 13 – Pump and Treat Facility

Figure 14 – Pump and Treat Facility

Figure 15 – Pump and Treat Facility

Figure 16 – Pump and Treat Facility

Figure 17 – Pump and Treat Facility

Figure 18 – Pump and Treat Facility

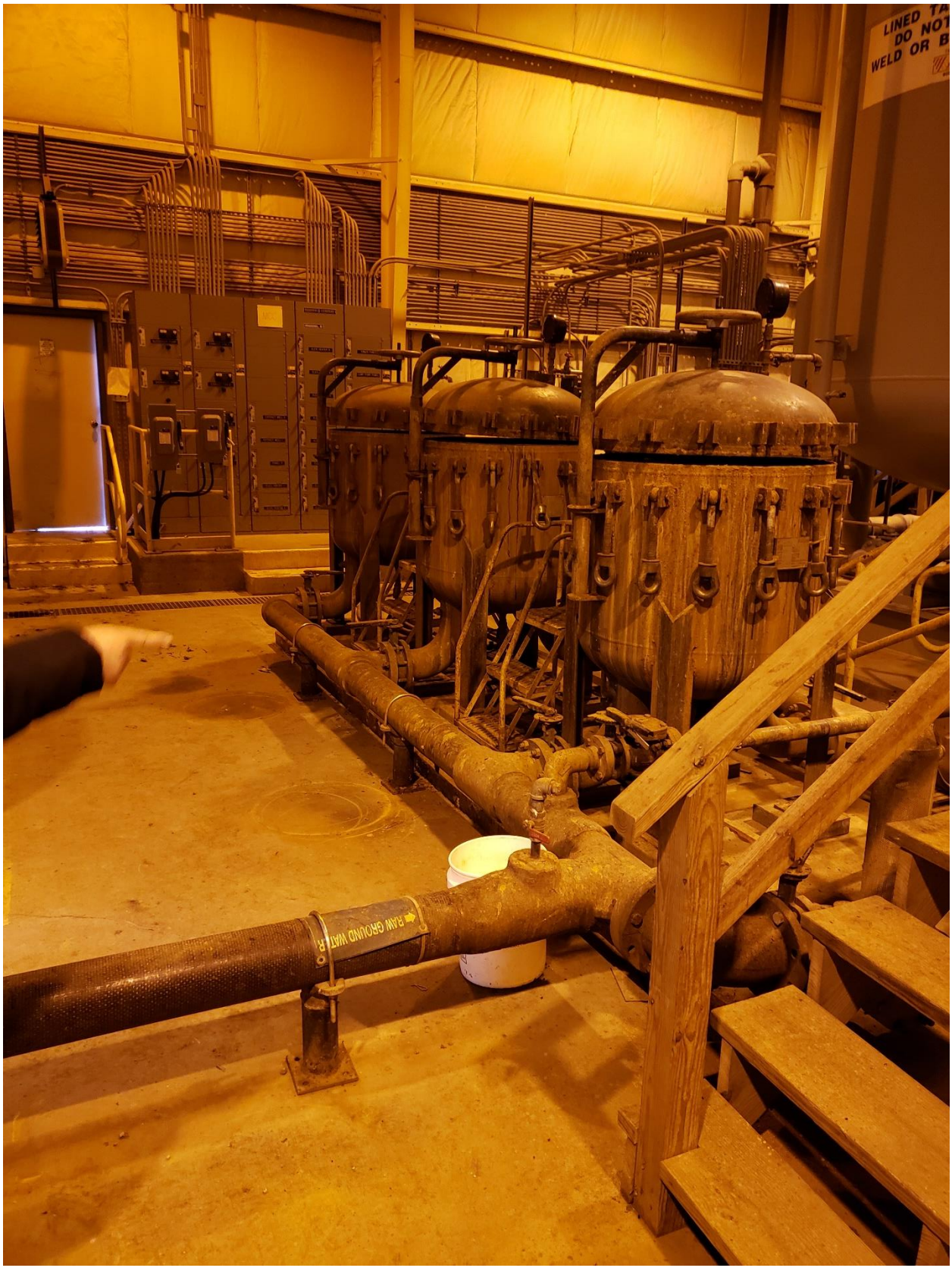

Figure 19 – Pump and Treat Facility

Figure 20 – Pump and Treat Facility

Figure 21 – Pump and Treat Facility

Figure 22 – Pump and Treat Facility

Figure 23 – Pump and Treat Facility

Figure 24 – Pump and Treat Facility and Wells

Figure 25 – Pump and Treat Facility and Wells

Figure 26 – Pump and Treat Facility and Wells