



Illinois Environmental Protection Agency

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JB Pritzker, Governor

James Jennings, Acting Director

217/524-3301

CERTIFIED MAIL

RETURN RECEIPT REQUESTED

9589 0710 5270 2887 2254 74

APR 15 2026

PDV Midwest Refining, LLC
Attn: Jim Cristman,
Vice President and Plant Manager
135th Street and New Avenue
Lemont, Illinois 60439-3659

CITGO Petroleum Corporation
Attn: Breanna Browder,
Corrective Action & Waste Compliance Specialist
135th Street and New Avenue
Lemont, Illinois 60439-3659

Re: 1978030004 -- Will County
CITGO Lemont Refinery
ILD041550567
Log No. B-162R2
RCRA Permits Administrative Record – 24D
Permit Draft

Dear Mr. Cristman and Ms. Browder:

Attached is a draft Renewed Resource Conservation and Recovery Act (RCRA) Hazardous Waste Management Post-Closure Permit (draft permit) and fact sheet for The Lemont Refinery, CITGO Petroleum Corporation (CITGO). The draft permit decision is based on the administrative record contained in the Illinois EPA's files. The contents of the administrative record are described in Title 35 Illinois Administrative Code (IAC) 705.144.

Under the provisions of 35 IAC 705.141(d), this draft permit and administrative record must be publicly noticed and made available for public review and comment. The Illinois EPA must also provide an opportunity for a public hearing. Copies of the draft decision, fact sheet, and renewal application are available for review at: Lemont Township, 16300 Alba Street, Lemont, Illinois. The Illinois EPA has not scheduled a public hearing at the current time. However, any interested party may request a public hearing. The public comment period will close on June 8, 2026.

2125 S. First Street, Champaign, IL 61820 • 217-278-5800
1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 • 618-346-5120
595 S. State Street, Elgin, IL 60123 • 847-608-3131
412 SW Washington Street, Suite D, Peoria, IL 61602 • 309-671-3022

115 S. LaSalle Street, Suite 2203, Chicago, IL 60603
9511 Harrison Street, Des Plaines, IL 60016 • 847-294-4000
2309 W. Main Street, Suite 116, Marion, IL 62959 • 618-993-7200
4302 N. Main Street, Rockford, IL 61103 • 815-987-7760

Please print on recycled paper.

During the comment period, the applicant or any interested party may submit comments to the Illinois EPA on the draft permit. At the close of the comment period, the Illinois EPA will prepare a response to significant comments. Comments on the draft permit may be submitted to:

Illinois Environmental Protection Agency
Office of Community Relations (#5)
Attention: Ms. Sarah Brubaker
2520 West Iles Avenue
P.O. Box 19276
Springfield, Illinois 62794-9276

The Illinois EPA will issue a final renewed permit after the close of the public comment period, unless the Illinois EPA decides to reverse the tentative decision. All comments mailed to the Illinois EPA must include the Post Office Box number as shown in the above address. The appeal process and limitations are addressed in 35 IAC 705.212.

Any questions regarding groundwater issues in the draft permit must be addressed to Garrett Strittmatter at 217/557-9683 or garrett.strittmatter@illinois.gov. For all other questions concerning the draft permit, please contact Curtis Samson, P.E. at 217/524-8115 or curtis.samson@illinois.gov.

Sincerely,



Joshua L. Rhoades, P.G.
Permit Section Manager
Bureau of Land

Attachments: Fact Sheet
Draft Renewed RCRA Hazardous Waste Management Post-Closure Permit

JLR:CJS:1978030004-RCRA-B162R2-Draft.docx

TNH CS GLS AMB
cc: Alex Hibbard, TRC Environmental Corporation
James Lant, CITGO Petroleum Corporation

**FACT SHEET
FOR
DRAFT RENEWED RCRA HAZARDOUS WASTE MANAGEMENT POST-CLOSURE PERMIT
CITGO Petroleum Corporation, Lemont Refinery
Lemont, Illinois
STATE ID NO. 197803004
FEDERAL ID NO. ILD041550567
RCRA POST-CLOSURE PERMIT LOG NO. B-162R2**

This fact sheet was prepared pursuant to the requirements of Title 35 Illinois Administrative Code (35 IAC) 705.143. The fact sheet is intended to be a brief summary of the principal facts and significant factual, legal, methodological, and policy questions considered in preparing a draft renewed Resource Conservation and Recovery Act (RCRA) post-closure permit (draft permit).

This draft permit requires CITGO Petroleum Corporation, Lemont Refinery (CITGO) to provide at least 30 years of post-closure care, including groundwater monitoring, for a closed hazardous waste land treatment unit, known as the Land Treatment Facility (LTF), and to provide RCRA corrective action for several solid waste management units (SWMUs) at the facility. The post-closure care period for the LTF began on November 1, 2016, upon the Illinois EPA's approval of the Closure Documentation Report for the LTF (Log No. B-162R-M-6).

Pursuant to 35 IAC 705.143(a), this fact sheet is sent to the applicant and any other person who requests it.

I. INTRODUCTION

The draft permit for CITGO contains all the standard conditions required by 35 IAC Parts 702, 703, and 724, as well as the applicable conditions of 35 IAC Part 724 for post-closure care of a closed hazardous waste management unit (HWMU), the LTF, and monitoring of groundwater. It also contains requirements for conducting corrective action activities in accordance with 35 IAC 724.201.

The original RCRA permit was issued by the Illinois EPA for this facility on September 18, 1997 (Effective Date: October 23, 1997). Corrective action requirements at this facility are listed in Section IV of this draft permit.

II. DESCRIPTION OF FACILITY

A. General

CITGO is an operating petroleum refinery located in Lemont, Illinois. The facility, built in the 1920s, is currently owned by PDV Midwest Refining LLC and operated by CITGO Petroleum Corporation. Its major products include gasoline, diesel

fuels, aviation turbine fuels, petroleum coke, petrochemical solvents, and liquified petroleum gas.

In 1973, CITGO began treating refinery wastes in a small land treatment area. In 1980, three additional land treatment areas were added, totaling the LTF to 13.5 acres. A listed hazardous waste, American Petroleum Institute (API) separator sludge (K051) and other non-hazardous wastes were applied to the LTF until September 1981. Additionally, non-hazardous wastes were applied to the LTF between 1981 and 1989. The LTF was then not used until 1995, when the facility applied additional non-hazardous wastes to the unit.

In its entirety, the LTF area consists of approximately 28 acres, which includes the four land treatment areas, adjacent roadways, three former decant basins, and untilled buffer zones around each land treatment plot. The area used for land treatment was 13.5 acres. API separator sludge (K051) comprised less than 1% (by weight) of the total waste applied to the LTF. Non-hazardous wastes applied to the LTF include clear well sludge, cooling tower sludge, heavy oil sludge, stormwater basin dredgings, and water/wastewater sludge. Most of the wastes applied to the LTF were stormwater basin dredgings and water/wastewater treatment sludge.

The facility submitted a RCRA Closure Plan for the LTF and requested the previous permit modification request for designation of a Corrective Action Management Unit (CAMU) at the LTF be withdrawn. The facility submitted revisions to the RCRA Closure Plan in November 2013, July 2014, and July 2015 as "Revised RCRA Closure Plan for the Land Treatment Facility," which were considered as a final approved Closure Plan for the LTF by the Illinois EPA. The facility began closure construction efforts at the LTF on September 23, 2015. Closure was completed in accordance with the approved Closure Plan on August 31, 2016. On October 31, 2016, the facility submitted the Certification of Closure and the Closure Documentation Report for the Illinois EPA's review and approval. The Illinois EPA approved the closure on July 18, 2017 (Log No, B-162R-M-6). The Illinois EPA concluded that the LTF was certified closed on November 1, 2016 (the date the Illinois EPA received the Closure Documentation Report), which then initiated the 30-year post-closure period for the LTF.

B. Site Description

The CITGO facility is located on approximately 900 acres of land in Will County, Illinois. The facility's address is 135th Street and New Avenue, Lemont, Illinois 60439-3659. The facility is bordered to the west and north by the Illinois & Michigan (I&M) Canal, to the east by Smith Road, and south by 135th Street.

Land uses to the north are industrial, to the east are agricultural, those to the south are agricultural and residential.

III. HAZARDOUS WASTE MANAGEMENT ACTIVITIES

A. Post-Closure Care (Section II of the Draft Permit)

CITGO is required to provide post-closure care for the following four hazardous waste land treatment units:

Type of HWMU	Unit	Capacity	Wastes Contained
Closed Land Treatment Facility (D81)	Area I	5.5 acres	K051 –
	Area II	4.2 acres	API Separator
	Area III	1.2 acres	Sludge
	Area IV	2.6 acres	
	Total	13.5 acres	

The draft permit conditions require monitoring, inspections, maintenance, recordkeeping, notifications, certifications, and financial assurance for the HWMU, described above, in accordance with the provisions of the approved post-closure care plan. Section II of this draft permit contains conditions specific to post-closure care and implement the regulatory requirements of 35 IAC 724, Subpart G.

This draft permit requires the aforementioned closed LTF receives post-closure care for at least 30 years, or until risks to the human health and the environment no longer exists. Groundwater monitoring must continue, at minimum, through the post-closure care period for the established wells. Inspections during this post-closure period must identify any maintenance needed, including, but not limited to, the final cover system and vegetation of the closed LTF. A written record of all post-closure inspections and maintenance activities performed must be kept at the facility.

B. Groundwater Detection Monitoring Program (Section III of the Draft Permit)

1. Detection Monitoring

Section III of this draft permit implements the regulatory requirements of 35 IAC 724, Subpart F and outlines the groundwater monitoring requirements necessary to determine if groundwater impacts have occurred as a result of the regulated unit.

The Detection Monitoring Program has six groundwater monitoring wells: one upgradient well (which is unaffected by the regulated unit); five downgradient wells (that monitor groundwater movement beneath the regulated unit); and 16 piezometers (which only determine groundwater surface elevation).

The facility monitors groundwater in the uppermost aquifer, identified as the sandy silt, silty sand, sand, and gravel layers occurring in the lower part of the Lemont Drift, and the dolomite bedrock underlying the drift at depths between 86 and 107 feet below ground surface (ft bgs) and piezometers between 99 and 137 ft bgs, respectively.

a. Parameters

CITGO must determine groundwater quality at all six aforementioned groundwater monitoring wells, at both Upgradient and Point of Compliance locations, semi-annually during the active life of the four areas at the hazardous waste LTF facility, during completed closure and the post-closure care period.

Samples collected during the semi-annual sampling events of each year must be analyzed for the field parameters and indicator parameters listed below.

Field/Indicator Parameters	STORET	BGQ
pH	00400	Standard Units
Specific Conductance	00094	µmhos / cm
Temperature of Water Sample	00011	°F
Turbidity	45626	NTUs
Depth to Water (below land surface)	72019	Ft
Depth to Water (below measuring point)	72109	Ft
Elevation of Groundwater Surface	71933	Ft MSL
Elevation of Bottom of Well # (once per yr)	72020	Ft MSL

Elevation of Measuring Point (top of casing, every five yrs)	72110	Ft MSL
Total Organic Halides (TOX)	78115	µg / L
Total Organic Carbon (TOC)	00680	µg / L
Arsenic (dissolved)	01000	µg / L
Selenium (dissolved)	01145	µg / L

C. Corrective Action Activities (Section IV of the Draft Permit)

In accordance with Section 3004(u) and (v) of RCRA and 35 IAC 724.201, CITGO must institute such corrective action as necessary to protect human health and the environment from all releases of hazardous wastes or hazardous constituents from any SWMU at its facility. Section IV of this draft permit contains the conditions which must be followed to ensure these requirements are met.

1. Corrective Action for SWMUs

CITGO had previously identified the SWMUs at the facility and categorized them into Group 1 (Higher Priority) and Group 2 (Lower Priority) SWMUs to prioritize and streamline RCRA Facility Investigation (RFI) and corrective measure processes. CITGO has since conducted substantial investigation at the SWMUs of concern and Areas of Concern (AOCs) at this facility to date.

CITGO was required to conduct a site-wide sewer inspection and maintenance activities to address Process Sewers (SWMU 38), Storm Sewers (SWMU 39), and Open Flow Ditches (SWMU 40). CITGO initiated this work in 2003. As a result, (1) SWMU 40 has obtained a No Further Action (NFA) determination; (2) 16 sub-SWMUs of SWMU 38 have been identified; (3) 23 sub-SWMUs of SWMU 39 have been identified; and (4) majority of SWMUs 38 and 39 have been remediated.

Thus, the list of SWMUs that require corrective action at the facility in this draft permit are no longer categorized as Groups 1 and 2. Instead, Condition IV.B.1 provides a list of all SWMUs subject to RCRA corrective action in general identified to date. An additional list of the sub-SWMUs of SWMUs 38 and 39, which were identified during the site-wide Sewer Inspection and Maintenance activities, are included in Condition IV.D.3 of this draft permit. Condition IV.C summarizes corrective action efforts completed to date, and Condition IV.E specifies corrective action efforts

still to be completed. Condition IV.D include specific corrective action requirements associated with the sewer inspection and maintenance activities.

2. Corrective Action for Groundwater

Although the facility maintains a Groundwater Detection Monitoring Program, it is appropriate for the facility to address groundwater contamination at the SMWUs identified in this draft permit through a site-wide management approach. Therefore, the Groundwater Management Zone (GMZ) and Site-Wide Groundwater Monitoring Program (SWGMP) are currently being conducted as part of the Corrective Action Program. The GMZ, approved on April 11, 1994, was established as a result of groundwater monitoring associated with closure of the Storm Water Basins (SWB); it includes 14 wells and 15 piezometers. The SWGMP consists of 38 wells, which are used for fluid level gauging and groundwater quality sampling. The SWGMP includes eight background wells (sampled semi-annually), 15 boundary wells (sampled quarterly), and 15 wells within the refinery (sampled annually). An additional four wells and 12 piezometers are used only for gauging fluid levels and eight surface water gauges are used to monitor the surrounding I&M Canal (four gauges), Bruce Lake (one gauge), Santa Fe Quarry (one gauge), and the Chicago Sanitary and Ship (CSS) Canal (two gauges).

Samples collected for the SWGMP during the quarterly sampling events must be analyzed for the same field parameters and indicator parameters listed above in the Detection Monitoring Program.

3. No Further Action

A total of 53 SWMUs at the site (as identified in Condition IV.B.1 of the draft Permit) are subject to corrective action, not counting all sub-SWMUs of SWMUs 38 and 39. Of those SWMUs, 23 have obtained NFAs for both soil and groundwater, and 23 SMWUs have for obtained soil only NFAs. All remaining SWMUs, groundwater (SWMUs or site-wide) and any newly discovered SWMUs or AOCs that require corrective action must eventually obtain NFA determinations for both soil and groundwater.

As 35 IAC Part 742 was amended to include indoor inhalation exposure route, CITGO must be re-evaluated, as appropriate, all SWMUs that have obtained a no further action for corrective action to demonstrate the

requirements of 35 IAC Part 742 meet all updated remediation standards for the indoor inhalation pathway.

4. Climate Change Consideration

In addition to the afore-mentioned corrective action requirements, CITGO must incorporate, as necessary, climate change resilience, and adaption consideration into the corrective action required at this facility.

D. Standard Permit Conditions (Section V of the Draft Permit)

Section V of this draft permit contains standard permit conditions, regulatory requirements of 35 IAC Parts 702, 703, and 724.

These conditions are of a general nature and are applicable to all hazardous waste management facilities regulated pursuant to an Illinois EPA RCRA Post-Closure permit. These conditions include the effectiveness of the permit, permit actions, severability, permit expiration, monitoring and retention of records, transfer of permits, and compliance schedules.

E. Special Permit Conditions (Section VI of the Draft Permit)

Section VI of this draft permit contains special permit conditions and compliance schedules unique to the CITGO facility.

F. Reporting and Notification Requirements (Section VII of the Draft Permit)

Section VII of this draft permit contains a summary of the reporting and notification requirements of each section of this draft permit.

IV. CONSIDERED PERMIT ACTIONS OTHER THAN RCRA

A. Air

The air emissions from a hazardous waste management facility are regulated under RCRA, and the Clean Air Act (CAA), the Illinois Environmental Protection Act (Act), and State regulations of Title 35: Environmental Protection, Subtitle B: Air Pollution, as necessary. Under these statutes and regulations, a facility is required to obtain a permit to install or operate any process which is, or may be, a source of air pollutants. CITGO has a permit for sources for air emissions (CAA

Title V Air Permit No. 96030079) and other air permits appropriate for its operations. The closed LTF has no air emissions.

B. Water

Discharge of any waste waters from a hazardous waste management facility into the waters of the State is required to have a National Pollutant Discharge Elimination System (NPDES) permit, issued by the Illinois EPA under Section 39(b) of the Act. CITGO has an NPDES General Stormwater Permit (NPDES Permit # IL0001589) and other water permits appropriate for its operations. The closed LTF does not have discharges to any NPDES permitted outfalls.

V. **PROCEDURES FOR REACHING A FINAL DECISION**

Pursuant to 35 IAC 705.162(a)(2), the public is given 45 days to review the application and comment on the draft permit conditions prior to the Illinois EPA taking any final permitting action on the application for this draft permit. The comment period will begin on April 17, the date of the first publication of the public notice in a major local newspaper of general circulation in the area. The comment period will end on June 8, 2026.

Copies of the permit application, draft permit, and fact sheet are available for review at:

Lemont Township
16300 Alba Street
Lemont, Illinois 60439

The administrative record contains the permit application, draft permit, fact sheet, and other supporting documents and correspondence submitted to the Illinois EPA. The administrative record can be made available for public inspection by appointment only at the Illinois EPA's Springfield headquarters from 9:00 a.m. to 5:00 p.m., Monday through Friday. Inspection of the administrative record must be scheduled in advance by contacting Ms. Sarah Brubaker at the address listed below.

In response to requests received during the comment period, or at the discretion of the Illinois EPA, a public hearing may be held to clarify one or more issues concerning the permit application. A request for a public hearing to indicate opposition to this draft permit must be submitted in writing. Such request must clearly state the nature of the proposed issue(s) of this draft permit to be addressed at the hearing.

Public notice of a public hearing will be issued at least 45 days before the hearing date.

For further information regarding the permit process, to submit written comments on the draft permit, or to request a public hearing, please contact:

Illinois Environmental Protection Agency
Office of Community Relations (#5)
Attention: Ms. Sarah Brubaker
2520 West Iles Avenue
P.O. Box 19276
Springfield, Illinois 62794-9272
(217) 786-0790

When the Illinois EPA makes its final permit decision, notice will be given to the applicant and each person who has submitted written comments or requested notice of the final permit decision. The permit will become effective 35 days after service of notice of the decision, or at a later date if stated in the permit, unless the decision is appealed.



Illinois Environmental Protection Agency

2520 West Iles Avenue • P.O. Box 19276 • Springfield, Illinois • 62794-9276 • 217-782-3397

JB Pritzker, Governor

James Jennings, Acting Director

RCRA HAZARDOUS WASTE MANAGEMENT POST-CLOSURE PERMIT

1978030004 -- Will County
CITGO, Lemont Refinery
USEPA ILD041550567
Permit Log No. B-162R2
RCRA Permits Administrative Record – 24D

Issue Date: **DRAFT**
Effective Date: **DRAFT**
Expiration Date: **DRAFT**

OWNER

PDV Midwest Refining, LLC
135th Street and New Avenue
Lemont, Illinois 60439-3659

OPERATOR / PERMITTEE

CITGO Petroleum Corporation
135th Street and New Avenue
Lemont, Illinois 60439-3659

A renewed Resource Conservation and Recovery Act (RCRA) Post-Closure Hazardous Waste Permit (Permit) is hereby issued to PDV Midwest Refining, LLC as Owner and CITGO Petroleum Corporation (CITGO) as both Operator and Permittee pursuant to Section 39(d) of the Illinois Environmental Protection Act (Act) and Title 35 Illinois Administrative Code (35 IAC) Subtitle G.

PERMITTED HAZARDOUS WASTE ACTIVITY

This Permit requires CITGO to conduct the following hazardous waste activities in accordance with the approved permit application and the conditions of this Permit.

1. **Post-Closure Care** of four closed land treatment areas which comprise the Land Treatment Facility (LTF) Hazardous Waste Management Unit (HWMU) (D81)
2. **Groundwater Monitoring** Groundwater Detection Monitoring and Corrective Action Program
3. **Corrective Action** for several Solid Waste Management Units (SWMUs)

This Permit consists of the conditions contained herein and those in the sections and attachments in this Permit. The Permittee must comply with all terms and conditions of this Permit and the applicable regulations contained in 35 IAC Parts 702, 703, 705, and 720 through 729 in effect on the effective date of this Permit.

This Permit is issued based on the information submitted in the approved permit application identified in Attachment A of this Permit and any subsequent amendments. Any inaccuracies found in the information provided in the permit application may be grounds for the termination or modification of this Permit (see 35 IAC 702.186 and 702.187) and potential enforcement action (415 ILCS 5/44(h)).

DRAFT

Joshua L. Rhoades, P.G.
Permit Section Manager
Bureau of Land

JLR: CS: 1978030004-RCRA-B162R2-Draft.docx

RCRA HAZARDOUS WASTE MANAGEMENT POST-CLOSURE PERMIT

ISSUED TO:

CITGO PETROLEUM CORPORATION LEMONT REFINERY

Lemont, Illinois

STATE ID NO. 1978030004

FEDERAL ID NO. ILD041550567

PERMIT LOG NO. B-162R2

RCRA HAZARDOUS WASTE MANAGEMENT POST-CLOSURE PERMIT

Log No. B-162R2

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE(S)</u>
I. General Facility Description	I-1 to I-2
II. Post-Closure Care	II-1 to II-11
III. Groundwater Detection Monitoring Program	III-1 to III-12
IV. Corrective Action	IV-1 to IV-38
V. Standard Conditions	V-1 to V-8
VI. Special Conditions	VI-1 to VI-1
VII. Reporting and Notification Requirements	VII-1 to VII-6

<u>LIST OF ATTACHMENTS</u>	<u>PAGE(S)</u>
Attachment A -- Approved Permit Application	A-1 to A-1
Attachment B -- Facility Maps	B-1 to B-4
Attachment C -- Inspection Schedule & Inspection Forms	C-1 to C-11
Attachment D -- Certification of Completion of Post-Closure Care	D-1 to D-1
Attachment E -- Groundwater Monitoring Well Locations	E-1 to E-2
Attachment F -- Chronological Summary of RCRA Corrective Action Activities	F-1 to F-48
Attachment G -- Guidance for Conducting a RCRA Facility Investigation	G-1 to G-28
Attachment H -- Corrective Measures Program Requirements	H-1 to H-12
Attachment I -- Subset Parameters	I-1 to I-3

SECTION I – GENERAL FACILITY DESCRIPTION

A. OWNER

The CITGO Lemont Refinery (facility) owner is PDV Midwest Refining, LLC, herein referred to as the "Owner." [Title 35 Illinois Administrative Code (35 IAC) 702.123 and 703.181]

PDV Midwest Refining, LLC
135th Street & New Avenue
Lemont, IL 60439-3659

B. OPERATOR

The facility operator is the CITGO Petroleum Corporation (CITGO), herein referred to as the "Permittee." [35 IAC 702.121, 702.123, and 703.181]

The Lemont Refinery, CITGO Petroleum Corporation
135th Street & New Avenue
Lemont, IL 60439-3659

The facility contact is the Corrective Action & Waste Compliance Specialist, who may be reached at 630/257-4912

C. LOCATION

1. Location of Facility

The facility is located in Will County in Illinois. The facility is situated on approximately 900 acres at this location; approximately 13.5 acres were once devoted to the management of hazardous waste in four areas in the hazardous waste land treatment facility (LTF). The CITGO Lemont Refinery is located at:

The Lemont Refinery, CITGO Petroleum Corporation
135th Street & New Avenue
Lemont, IL 60439-3659

The general phone number for this facility is: 630/257-4000.

2. Facility Layout Map

The general location of the facility and the location of the four (4) hazardous waste land treatment areas as the LTF (D81) are shown the drawings in Attachment B of this Permit.

D. DESCRIPTION OF HAZARDOUS WASTE MANAGEMENT ACTIVITIES

Operations began at the Land Treatment Facility (LTF) when a small land treatment area (LTA), Area I, was opened in 1973. The remaining 3 areas were opened in 1980, for a total land treatment facility of 13.5 acres. In its entirety, the LTF area consists of approximately 28 acres, which includes the four LTAs, adjacent roadways, three closed decant basins, and untilled buffer zones around each land treatment plot.

Wastes were either directly applied to the soil or were dewatered in adjacent decant basins. After dewatering, the solids were then placed on the LTAs. After waste was applied, it was incorporated into the soil. API separator sludge (listed hazardous waste K051) and non-hazardous wastes were applied to the LTF through September 1981. Between 1981 and 1995 only non-hazardous wastes were applied to the LTAs. These nonhazardous wastes applied to the LTF included: clear well sludge, cooling tower sludge, heavy oil sludge, stormwater basin dredgings, and water/wastewater treatment sludges. Most wastes applied to the LTF were stormwater basin dredgings and water/wastewater treatment sludge. The LTF has been inactive since 1995, when several piles of sludge, generated during the closure of the storm water basin, on Area I. These piles were incorporated into the closure of the LTF.

The initial RCRA post-closure permit was issued to CITGO on September 18, 1997 (RCRA Log No. B-162); this permit became effective on October 23, 1997 and was renewed on April 8, 2011 (RCRA Log No. B-162R).

In the document titled "Closure Documentation Report for the Land Treatment Facility," received by the Illinois EPA on November 1, 2016, the Permitted described final closure activities at the above-mentioned hazardous waste management units. This report was approved by the Illinois EPA under Log No. B-162-M-6. Thus, these 4 units were closed and subject to post-closure care.

The Refinery does not currently operate any other RCRA-permitted units. Hazardous wastes generated at the site are managed in central accumulation and satellite accumulation areas and are sent off-site for proper treatment and disposal.

SECTION II – POST-CLOSURE CARE**A. SUMMARY**

The general location of the Land Treatment Facility (LTF) is shown in Attachment B of this Permit. The LTF is approximately 28 acres in total and includes four Land Treatment Areas (LTAs), adjacent roadway, three closed decant basins, and untilled buffer zones around each land treatment plot.

For the purpose of implementing remedies under 35 IAC 724.380, the Illinois EPA has designated the LTAs as an LTF, as defined in 35 IAC 720.110. The design, construction, operation, and maintenance of the LTF must be conducted in accordance with the approved permit application, the requirements contained in this Permit, and the regulations of 35 IAC 724, Subpart M.

Hazardous waste management units (HWMUs), where waste is left in place, must receive post-closure care for at least 30 years after completion of closure. Pursuant to 35 IAC Part 724, activities that require post-closure care include, but are not limited to: (1) maintaining the final cover; (2) monitoring of the groundwater; and (3) providing financial assurance for post-closure activities. The LTF was certified closed on October 31, 2016 (Log No. B-162R-M-6).

B. UNIT IDENTIFICATION

1. The Permittee must provide post-closure care for the following four areas of the hazardous waste LTF, as described in the approved permit application, subject to the terms and conditions of this Permit:

Type of Waste Unit	Unit Name	Size	Hazardous Waste Contained in Unit
Land Treatment	Area I	5.5 acres	API Separator Sludge (K051)
Land Treatment	Area II	4.2 acres	API Separator Sludge (K051)
Land Treatment	Area III	1.2 acres	API Separator Sludge (K051)
Land Treatment	Area IV	2.6 acres	API Separator Sludge (K051)
Total Acres =		13.5 acres	

Approximately 27,237 dry tons of waste was applied to the LTF. Approximately 18 dry tons of this waste was hazardous waste, API Separator Sludge (K051).

2. The graphical extents and location of the closed LTF are identified in the maps included in the Appendix E of the approved permit application and Attachment B of this Permit.
3. A survey plat indicating the location and dimensions of the LTF and any other hazardous waste disposal units with respect to permanently surveyed benchmarks was prepared and certified by a professional land surveyor and included in the approved permit application in Appendix E.9. The notes on the plat state the owner's and operator's obligation to restrict disturbance of the LTF in accordance with 35 IAC 724 Subpart G. The Permittee must adhere to the following:
 - a. The waste materials contained in the LTAs are considered RCRA hazardous wastes. The wastes in the LTAs include API Separator Sludge (K051).
 - b. Any material removed from the LTAs during future activities must be managed as a hazardous waste in accordance with 35 IAC 724 Subtitle G: Waste Disposal.
 - c. All land treatment areas must maintain a vegetative cover and storm water controls to prevent the transport of sediment beyond the area boundaries.
 - d. The use of this area is restricted to the post-closure care activities required in this Permit.

C. POST-CLOSURE CARE PERIOD

1. The post-closure care period for the LTF began on November 1, 2016, the date of completion of closure of the final portion of the LTAs, as listed in Condition II.B.1 of this Permit. Post-closure care for the LTF must continue for at least 30 years after that date.
2. The Illinois EPA may include restrictions upon the future use of the site, if necessary, to protect human health and the environment. Such restrictions include permanent prohibition of the use of the site for purposes which may create an unreasonable risk to human health or the environment. After administrative and judicial challenges to such restrictions have been exhausted, the Illinois EPA must file such restrictions of record in the Will County Office of the Recorder, the county in which the hazardous waste disposal site is located.

3. The Permittee must not allow the property, where the LTF areas identified in Condition II.B.1 are located, to be used in a way that could disturb the integrity of any of the systems included in Attachment C of this Permit, or function of the facility's monitoring systems, unless the Illinois EPA finds, via permit modification, that such use is necessary for the following reasons:
 - a. It is necessary to the proposed use of the property, and will not increase the potential hazard to the public health or the environment; or
 - b. It is necessary to reduce a threat to human health or the environment.
4. The Illinois EPA may require, at partial or final closure, continuation of the security requirements during part or the duration of the post-closure care period.
5. The Permittee must request a permit modification to authorize a change in this Permit or the approved Post-Closure Plan. This request must be in accordance with applicable requirements of 35 IAC Parts 702, 703, and 724 and must include a copy of the amended Post-Closure Plan for review and approval by the Illinois EPA.

D. INSPECTIONS

1. The Permittee must inspect the components, structures, and equipment at the site in accordance with the inspection schedule in Attachment C and the conditions in this Permit.
2. The Permittee must inspect the closed LTAs identified in Condition II.B.1, including the vegetative cover system, security system and benchmarks, Stormwater Control System, Groundwater Monitoring Systems, and emergency equipment in accordance with the approved permit application.
3. The Permittee must inspect the LTF at least quarterly and within 24 hours of any precipitation event of four or more inches of rain in a 24-hour period in accordance with Tables D-2 and D-3 of the approved permit application and Attachment C of this Permit. The Permittee must note evidence of any of the following:
 - a. Deterioration, malfunctions, or improper operation of run-on and run-off systems; and
 - b. Any deterioration of the cover systems.

4. The Permittee must document the results of all inspections of the LTF in accordance with the inspection and log forms located in Appendix D.3.1 of the approved permit application. The results of all inspections must be maintained in the Inspection Log, which must be maintained in the facility's Environmental Department File Room.
5. The Permittee must take appropriate action if problems, including erosion, blockage of channels, slope failure, etc., are observed at any time. If corrective action is taken, the Permittee must reinspect the area one month following completion of the work to ensure the corrective actions have adequately corrected the problem(s).
6. The Permittee must document the results and provide a thorough description of any remedial action taken. The Permittee must maintain all such records in the facility's operating record for the entire duration of the post-closure care period.

E. MONITORING, MAINTENANCE, AND RECORDKEEPING

1. The Permittee must implement the approved Post-Closure Plan contained in the approved permit application. All post-closure care activities must be conducted in accordance with the provisions of the approved Post-Closure Plan and the conditions in this Permit.
2. The Permittee must keep and maintain a written operating record that includes all records, reports, notifications, monitoring data, testing and analytical data, and corrective action data as required by 35 IAC 724.173 and the conditions in this Permit for the entirety of the post-closure care period. This operating record must be kept on-site at the facility and available for the Illinois EPA review.
3. Throughout the post-closure period, the Permittee must comply with the requirements for the land treatment units, as described in the approved permit application and the conditions, in this Permit as follows:
 - a. Continue all operations (e.g., pH control) necessary to enhance degradation and transformation, and to sustain immobilization of hazardous constituents in the treatment zone to the extent such measures are consistent with other post-closure care activities.
 - b. Maintain the integrity and effectiveness of the final cover over the closed portions of the unit as necessary (e.g., repairs to the vegetative cover) to correct the effects of settling, subsidence, erosion, and other events that may impact the LTF.

- c. Maintain the run-on control system in accordance with the requirements of 35 IAC 724.373(c).
 - d. Maintain the run-off management system in accordance with the requirements of 35 IAC 724.373(d).
 - e. Control wind dispersal of hazardous waste in accordance with the requirements of 35 IAC 724.373(f).
 - f. Continue to comply with any prohibitions or conditions concerning growth of food-chain crops on LTF cover system in accordance with the requirements of 35 IAC 724.376.
 - g. Continue unsaturated zone monitoring in accordance with the approved permit application, 35 IAC 724.378, and the conditions in this Permit.
4. The Permittee must maintain and monitor the LTF groundwater detection monitoring system in accordance with the approved permit application and the conditions in this Permit, as well as comply with other applicable regulations of 35 IAC 724 Subpart F (Groundwater Protection) during the post-closure period.

F. UNSATURATED ZONE MONITORING

1. The Permittee must monitor the soils below the treatment zone in the LTF in accordance with the Unsaturated Zone Monitoring Plan (UZM) Plan, Unsaturated Zone Monitoring Plan Addendum, and Unsaturated Zone Monitoring Plan Addendum Addendum, as provided in Appendix E.7 of the approved permit application and the conditions in this Permit to determine if any hazardous constituents have migrated out of the treatment zone. Post-closure monitoring activities include both groundwater and UZM programs.
2. Sample Locations: The Permittee must randomly select soil core samples in accordance with the UZM Plan in the approved permit application. A minimum of eight below treatment zone (BTZ) soil samples must be collected and analyzed from the four LTAs as specified below:

Area	Area Size	No. Of Samples
Area I	5.5 acres	3
Area II	4.2 acres	2
Area III	1.2 acres	1
Area IV	2.6 acres	2
TOTAL	13.5 acres	8

3. Sampling Depth: The Permittee must collect the BTZ soil core samples immediately below the treatment zone in accordance with the procedures in the UZM Plan in the approved permit application and the conditions in this Permit.

The treatment zone at the permitted units is defined as a depth of the historically applied waste plus no more than an additional five feet below the original land surface. The elevations of the surveyed land treatment areas are identified in the approved permit application, as Figures B-2 through B-9, dated November 12, 2020.

4. Sampling and Analysis Procedures: The Permittee must follow the sampling and analysis procedures in Appendix E.7 of the approved permit application and the conditions in this Permit.
 - a. The analytical methods used must be in accordance with USEPA's Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition (SW-846), and finalized updates. The analytical methods must utilize reporting limits equal to or less than the monitoring limits for the parameters specified in this Permit. Practical quantitation limits (PQLs) may be used as monitoring limits in cases where the laboratory is unable to reach the monitoring limits. The laboratory report must clearly identify all instances when a PQL was used in place of a monitoring limit specified in this Permit.
 - b. The SW-846 test methods, sample holding times, containers, and preservatives specified in Table 4-3 (Sample Container and Preservative Specifications) in the approved permit application must be used when collecting and analyzing soil samples required by the UZM program in the approved permit application and the conditions in this Permit.
5. Sampling Frequency and Schedule: The Permittee must collect soil core samples annually in the fourth quarter of each calendar year throughout the post-closure care period.
6. Analytical Parameters: The soil core samples must be analyzed for the following parameters as specified below:
 - a. The soil samples collected every fifth year must be analyzed for the parameters listed in Table 1 of Appendix I of this Permit.
 - b. Soil samples collected during all other years must be analyzed for the parameters listed in Table 2 of Appendix I of this Permit.

- c. If a sampling event required by Condition II.F.6.a (every fifth year) identifies any compound(s) that are not included in Condition II.F.6.b, the Permittee must add those compounds to the list of compounds in Condition II.F.6.b.

The Permittee must subsequently submit a permit modification to the Permit to the Illinois EPA for review and approval to reflect the addition of the compound(s) to Condition II.F.6.b.

- 7. The Permittee must submit to the Illinois EPA the results of each soil sampling event by January 15 of the calendar year following the sampling event.
- 8. After each soil core monitoring event, the Permittee must determine whether a statistically significant change over background values has occurred for the hazardous constituents listed in Condition II.F.6. This determination must be made in accordance with the statistical procedures described in the Post-Closure Monitoring Plan, Section E.7 of the approved permit application and the conditions of this Permit. The Permittee must make this determination within 30 days after receipt of laboratory analytical results.

Concentrations greater than the Monitoring Limit for each compound specified in Table 3 in Appendix I of this Permit must be considered a statistically significant increase (SSI).

- 9. If the Permittee determines, pursuant to Condition II.F.8, an SSI of hazardous constituents below the treatment zone has occurred, then:
 - a. The Permittee must notify the Illinois EPA, in writing, of this finding within seven days. This notification must identify each constituent which exhibited an SSI, and
 - b. Within 90 days of the determination, the Permittee must apply for a permit modification with the Illinois EPA to propose revisions of the post-closure practices at the facility. This permit modification must include a plan to maximize the success of degradation, transformation, or immobilization processes in the treatment zone; or
 - c. The Permittee may demonstrate to the Illinois EPA that a source other than the regulated units caused the SSI, or that the increase resulted from an error in sampling, analysis, or evaluation. The Permittee must complete the following to make this demonstration:

- i. Notify the Illinois EPA, in writing, within seven days of the SSI determination. This notification must state the Permittee intends to make the demonstration under 35 IAC 724.378(h);
- ii. Within 90 days of the SSI determination, the Permittee must submit a report to the Illinois EPA demonstrating that a source other than the regulated units caused the increase or that the increase resulted from an error in sampling, analysis, or evaluation;
- iii. Within 90 days of the SSI determination, the Permittee must submit to the Illinois EPA an application for a permit modification to propose appropriate changes to the UZM program at the facility; and
- iv. Continue monitoring of the treatment zone in accordance with the UZM program, established under this Permit, and 35 IAC 724 Subpart M.

G. NOTICES AND CERTIFICATION

1. The Permittee must submit a request to change the Post-Closure Plan in the form of a permit modification request to the Illinois EPA for review and approval. Such requests must be submitted in accordance with the applicable requirements of 35 IAC Parts 702, 703, and 724. The Permittee must also include a copy of the amended Post-Closure Plan in such requests for approval by the Illinois EPA.
2. If the Permittee seeks to remove hazardous wastes, hazardous waste residues, the liner, or contaminated soils from the LTF, the Permittee (or any subsequent owner or operator of the land upon which the LTF listed in Condition II.B.1 is located) must submit a request to modify this Permit to the Illinois EPA for review and approval in accordance with the applicable requirements of 35 IAC Parts 703, 705, and 724. At minimum, the owner or operator must demonstrate to the Illinois EPA that the removal of hazardous wastes will satisfy the requirements of 35 IAC 724.217(c).
3. If the Permittee seeks to demonstrate the LTF should be allowed to end the post-closure care period (e.g., all wastes have been removed; and leachate and groundwater monitoring results no longer indicate any potential for migration of wastes at levels which may be harmful to human health and the environment), the Permittee must submit a draft Environmental Covenant (EC) for the future land use and management of the property on which the LTF is located. The draft EC must be submitted at least one year prior to the date the Permittee expects to

submit the Certification of Completion of Post-Closure and be approved by the Illinois EPA.

Pursuant to Section 39(g) of the Act and the Uniform Environmental Covenant Act (UECA), the purpose of the EC is to place restrictions upon future use of the site necessary to protect public health and the environment, including permanent prohibition of the use of the site for purposes which may create an unreasonable risk of injury to human health or the environment.

4. If the Permittee seeks to exit post-closure care, the Permittee must submit the following documents to the Illinois EPA, by registered mail, no later than 60 days after completion of the established post-closure care period for the LTF listed in Condition II.B.1 of this Permit:
 - a. A properly completed Certification of Post-Closure Care Form, provided in Attachment D to this Permit, that states the post-closure care for the LTF was performed in accordance with the specifications in the approved Post-Closure Plan and the conditions of this Permit. The owner and operator, as well as a qualified Illinois licensed Professional Engineer must sign the certification form.
 - b. A Post-Closure Documentation Report that documents the post-closure care conditions and activities at this facility during the post-closure care period. The Post-Closure Documentation Report must include the following:
 - i. Background information about the facility and the unit subject to the Post-Closure Certification. The background information must also include a description of the facility and the RCRA permit history for the unit.
 - ii. A detailed description of the unit subject to the post-closure care certification that include:
 - 1) A description of the unit's design, including descriptions of stormwater run-off and run-on controls. This information must be provided in both narrative form and scale drawings.
 - 2) A description of how the LTF was operated and how it was closed.
 - 3) When the unit was operated and when it was closed.

- 4) A description of all wastes disposed in the LTF (include waste codes).
 - 5) A scaled map that clearly identifies the location of each unit within the facility boundary. The map must also include and clearly identify each well in the groundwater monitoring system for the unit.
 - 6) Surveys of the unit: (1) when it was certified closed; and (2) at the time the Post-Closure Documentation Report is submitted. The surveys must be certified by a professional land surveyor.
- iii. A general discussion on the inspection and maintenance of, and repairs to, the cover system, stormwater run-off and run-on controls, wells in the groundwater monitoring system, and any corrective action system required for the unit or groundwater contamination associated with it. Describe any problems and/or repairs to these systems that were addressed over the post-closure care period in chronological order. Show the locations of each of the repairs to these systems during post-closure care on a scaled drawing of the unit.
- iv. A discussion on the groundwater monitoring program. Include all corrective measures that were completed during the post-closure care period, and a summary of the three most recent years of groundwater data. Identify the horizontal and vertical extent of any groundwater contaminant plume from the unit that existed at the beginning of the post-closure period and then every five years. The facility must have complied with all requirements of 35 IAC Parts 620 and 724, Subpart F, in order to certify completion of post-closure care activities.
- v. Colored photos of unit(s) at post-closure completion. Photo documentation of the unit should include at least one aerial (satellite) photo and photos of all design features of the unit.
- vi. Completed Illinois EPA LPC-PA23 and 39i Forms.
- c. Documentation that the EC approved by the Illinois EPA has been placed on the deed to the property on which the LTF is located and has been filed with the Will County Recorder's Office.

5. The certification of completion of post-closure care cannot be approved by the Illinois EPA until the Permittee demonstrates that the EC required by Condition II.G.4.c has been properly filed with the appropriate governmental office (e.g. State of Illinois, or Will County Recorder's office).
6. Within 60 days after receiving certification from the owner or operator and a qualified Illinois licensed Professional Engineer that the post-closure care period has been completed for the units listed in Condition II.B.1 of this Permit in accordance with the approved post-closure plan, the Illinois EPA shall notify the owner or operator that it is no longer required to maintain financial assurance for post-closure care of that unit.
7. If the Illinois EPA determines that post-closure care has not been conducted in accordance with the approved post-closure plan, the Illinois EPA shall provide the owner or operator with a detailed written statement of such determination that post-closure care has not been in accordance with the approved post-closure plan and the conditions of this Permit.

H. FINANCIAL ASSURANCE

1. The Permittee must maintain financial assurance for post-closure care of the LTF listed in Condition II.B.1 of at least \$4,506,150 (current approved post-closure care estimate in 2025 dollars). This amount was calculated by multiplying the total annual post-closure cost (in 2025 dollars) by 30 years, plus any one-time costs. The financial assurance maintained by the facility must be sufficient to meet the requirements of 35 IAC 724, Subpart H.
2. The Permittee must provide to the Illinois EPA an updated post-closure care cost estimate annually, either with an inflation factor or by recalculation of the maximum cost of closure, in current US dollars. The Permittee must also provide an updated post-closure care cost estimate whenever a change to the current cost estimate results from changing site conditions (i.e., changes not due solely to the result of inflation).

SECTION III – GROUNDWATER DETECTION MONITORING PROGRAM

A. SUMMARY

Groundwater parameters monitored in the uppermost aquifer below the facility located at 135th Street & New Avenue, Lemont, County of Will, State of Illinois indicate that, at the present time, no groundwater impacts have occurred. Therefore, a Groundwater Detection Monitoring Program meeting the requirements of 35 IAC 724.198 must be implemented at the facility.

The CITGO Lemont Refinery has six existing wells to monitor groundwater in the lower portion of the Lemont Drift aquifer and are utilized for the Groundwater Detection Monitoring Program. The average depth to groundwater in the wells is approximately 74 feet. The Groundwater Detection Monitoring Program shall consist of five downgradient wells, one upgradient well, and 16 piezometers for determining groundwater surface elevation only.

B. IMPLEMENTATION

1. The Permittee must implement the Groundwater Detection Monitoring Program upon the effective date of this Permit. On that date, the groundwater monitoring requirements set forth in this Permit shall supersede those previously established.
2. The Permittee must carry out the detection monitoring specified in this Permit on the groundwater beneath the CITGO Land Treatment Facility in Lemont, Illinois. The uppermost aquifer in the vicinity of the facility has been identified as the lower portion of the Lemont Drift. For the purpose of this Permit and in accordance with the 35 IAC Part 620 regulations, the uppermost aquifer has been designated Class I: Potable Resource Groundwater. "Uppermost Aquifer" refers to the Geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically connected with this aquifer in the vicinity of the facility.
3. The Point of Compliance, defined as the vertical surface located at the hydraulically downgradient limit of the waste management area that extends down into the uppermost aquifer underlying the regulated unit, is delineated by the wells identified as the point of compliance wells in Condition III.C.1 and illustrated in Figure B-9 of the approved permit application.

C. WELL LOCATIONS AND CONSTRUCTION

1. The Permittee must install and maintain groundwater monitoring wells and piezometers at the locations specified in the table below to allow for the collection of groundwater samples and elevations from the shallow zone and uppermost aquifer. The locations of these wells are specified in Figure B-9 of the approved permit application.

IEPA Well No.	Facility Well No.	Well Depth (Ft bgs)	Boring Depth Elevation (Ft MSL)	Well Screen Interval (Ft MSL)		State Plane Coordinates	
						Northing	Easting
G01D	UA-1 *	106.90	611.90	92.1	– 102.1	1814994.052	1067251.092
G02D	UA-2 **	86.60	605.64	70.0	– 80.0	1815300.384	1065138.334
G03D	UA-3 **	89.55	608.18	74.7	– 84.7	1815303.462	1065465.755
G04D	UA-4 **	87.00	608.98	72.1	– 82.1	1815671.828	1065600.18
G05D	UA-5 **	92.60	602.24	72.1	– 82.1	1815975.92	1065545.905
G06D	UA-6 **	96.10	605.55	79.0	– 89.0	1815991.229	1066014.841

* Denotes Upgradient Wells

** Denotes Point of Compliance Wells

Piezometers IEPA Well No.	Facility Well No.	Well Depth (Ft bgs)	Boring Depth Elevation (Ft MSL)	Well Screen Interval (Ft MSL)		State Plane Coordinates	
						Northing	Easting
P01D	B-1 ***	111.10	584.10	101.90	– 106.90	1815974.811	1065531.484
P02D	B-2	110.20	586.86	100.90	– 105.90	1815836.101	1065889.961
P03D	B-3	125.00	587.07	116.00	– 121.00	1815994.363	1066327.811
P04D	B-4	99.25	584.09	90.30	– 95.30	1815771.417	1065119.712
P05D	B-5	103.10	585.39	94.77	– 99.77	1815554.035	1065396.883
P07D	B-7	117.42	587.70	107.67	– 112.67	1815548.517	1066126.152
P08D	B-8	118.25	589.20	108.51	– 113.51	1815482.54	1066473.714
P09D	B-9	105.89	588.67	100.89	– 105.89	1815283.441	1065144.079
P11D	B-11	131.85	589.24	122.92	– 127.92	1815408.41	1066878.734
P12D	B-12	135.10	588.19	126.20	– 131.20	1814992.869	1066429.631
P13D	B-13	128.00	590.26	119.70	– 124.70	1814654.649	1065949.29
P14D	B-14	99.50	586.58	91.00	– 96.00	1816077.937	1064986.549
P15D	B-15	136.93	584.61	127.50	– 132.50	1816465.167	1066272.476
P16D	B-16	124.15	595.48	115.90	– 120.90	1814695.518	1066899.39
P17D	B-17	127.05	599.97	122.90	– 127.90	1814241.554	1066368.159
P18R	B-18	120.25	586.23	110.00	– 120.00	1814612.46	1065104.407

*** Denotes Upgradient Piezometer

Note: "Ft bgs" refers to feet below ground surface and "Ft MSL" refers to feet above mean seal level

2. Construction of each monitoring well/piezometer must be in accordance with the "Monitoring Well Diagram" and "Well Completion Report" forms located on the Illinois EPA website, unless otherwise approved in writing by the Illinois EPA. All new monitoring wells/piezometers to be installed must be continuously sampled and logged on Illinois EPA boring logs contained in the "Field Boring Log" form on the Illinois EPA website, unless otherwise approved by the Illinois EPA.
3. The Permittee must notify the Illinois EPA within 30 days in writing if any of the wells identified in Condition III.C.1 are damaged, or the structural integrity has been compromised. A proposal for the replacement of the subject well must accompany this notification. The well shall not be plugged until the new well is on-line and monitoring data has been obtained and verified unless the well is extremely damaged and would create a potential route for groundwater contamination. Prior to replacing the subject well, the Permittee must obtain written approval from the Illinois EPA regarding the proposed installation procedures and construction.
4. Should any well become consistently dry or unserviceable, a replacement well must be provided within 10 feet of the existing well. This well must monitor the same geologic zone as the existing well and be constructed in accordance with the current Illinois EPA groundwater monitoring well construction standards at the time the wells are replaced. A well which is more than 10 feet from the existing well or does not monitor the same geologic zone must be approved by the Illinois EPA and designated as a new well.
5. Monitoring well and piezometer construction must comply with the minimum standards set forth in 77 IAC Part 920 regulations. The Permittee must submit boring logs, construction diagrams, and data sheets from installation and development of a new or replacement well to the Illinois EPA at the address below within 30 days of the date that installation of the well is completed. In addition, the Permittee must submit certification that plugging and abandonment of a well was carried out in accordance with the approved procedures to the Illinois EPA at the address below within 30 days of the date that the well is plugged and abandoned. All information should be submitted to the appropriate State Agencies.

Illinois Environmental Protection Agency
Bureau of Land - #33
Permit Section
2520 West Iles Avenue
Post Office Box 19276
Springfield, Illinois 62794-9276

6. All wells/piezometers must be clearly identified and must be equipped with protective caps and locks. Monitoring wells or piezometers located in high traffic areas must be protected with bumper guards or other alternate barriers.
7. All groundwater monitoring wells and piezometers not utilized in the approved groundwater monitoring system, but retained by the facility, must be constructed, and maintained in accordance with 77 IAC Part 920 regulations. Monitoring wells and piezometers that are improperly constructed must be abandoned in accordance with Condition III.C.3.

D. MONITORING PARAMETERS

1. The Permittee must determine groundwater quality at each groundwater monitoring well identified in Condition III.C.1, at both background and point of compliance locations, semi-annually during the active life (including closure and post-closure care period) of the four areas in the hazardous waste LTF (D81). Samples collected during the semi-annual and annual sampling events of each year must be analyzed for the field parameters and hazardous waste constituents listed below. Total (unfiltered) values must be used for comparison with background quality standards. Dissolved (filtered) must be used for statistical analysis.

Semi-Annual Groundwater Sampling

Field Parameters	STORET Number	BQG	Reporting Units
pH	00400	6.13-8.63	Standard Units
Specific Conductance	00094	1331.35	µmhos/cm
Temperature of Water Sample	00011	-	(°F)
Turbidity	45625	-	NTUs
Depth to Water (below land surface)	72019	-	Ft
Depth to Water (below measuring point)	72109	-	Ft
Elevation of Groundwater Surface	71993	-	Ft MSL
Elevation of Bottom of Well #	72020	-	Ft MSL
Elevation of Measuring Point (top of casing) ##	72110	-	Ft MSL

Shall be determined during the second sampling event each year.

Shall be surveyed once every five years, at the request of the Illinois EPA, or whenever the elevation changes are required in accordance with Condition III.F.2.

Indicator Parameters	STORET Number	BQG	Reporting Units
TOX	78115	0.06	µg/L
TOC	00680	4.02	µg/L
Arsenic (dissolved)	01000	LLOQ	µg/L
Selenium (dissolved)	01145	LLOQ	µg/L

NOTE: All parameters with the "(dissolved)" label shall be determined via groundwater samples filtered through a 0.45-micron filter. These parameters must be used for statistical purposes with TOX and TOC.

- The permitted Background Groundwater Quality (BGQ) values for those constituents listed in Condition III.D.1 were previously established using a minimum of four quarters of monitoring data.

3. The Permittee must establish and maintain established background values in accordance with the procedures specified in Section E of the approved permit application as well as the following procedures:
 - a. The BGQ for a monitoring parameter or constituent must be based on data from four consecutive sampling events of upgradient groundwater monitoring wells for two (2) years.
 - b. For those monitoring parameters not detected above the Lower Limit of Quantitation (LLOQ) during background gathering, the LLOQ must be the established background value.
 - i. Detected shall mean a concentration equal to or above the LLOQ listed in the most current version of USEPA's "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," Third Edition (SW-846) and finalized updates for the applicable analytical methods specified in the approved Sampling Procedures, which are incorporated by reference in Condition III.G of this Permit.
 - c. To develop the database used to determine a background value for each parameter or constituent, the Permittee must collect and analyze a minimum of four replicate samples from each upgradient well during each of the four semi-annual background sampling events. The Permittee must collect and analyze an equal number of replicate samples from each upgradient well to ensure an equal statistical weighted average.
4. The Permittee may establish alternate concentration limits in accordance with 35 IAC 724.194(b), where the Permittee can demonstrate a constituent will not pose a substantial hazard to human health or the environment. Any alternate concentration limit must be proposed to the Illinois EPA for review and approval.
 - a. Where a hazardous constituent has a standard in 35 IAC Part 620, the facility must apply for an adjusted standard in accordance with Section 28.1 of the Act.
 - b. For those hazardous constituents without a 35 IAC Part 620 standard, the alternative concentration limit(s) proposed by the facility must be approved by the Illinois EPA.

E. DETECTION MONITORING PROGRAM

1. The Permittee must determine groundwater quality at each monitoring well at the Point of Compliance, identified in Condition III.C.1, during the active life of a regulated unit (including the closure and post-closure care periods) for constituents found in Condition III.D.1. The Permittee must express the groundwater quality at each monitoring well in a form necessary for the determination of SSIs (i.e. means, variances, etc.).
2. The Permittee must determine the groundwater flow rate and direction in the uppermost aquifer, at least annually, and report this data to the Illinois EPA, at least annually, from the monitoring wells and piezometers identified in Condition III.C.1.
3. The Permittee must determine whether an SSI (or decrease in the case of pH) has occurred above the background values of each parameter, identified in Condition III.D.1, each time groundwater quality is determined at each well. In determining whether such a change has occurred, the Permittee must compare the groundwater quality at each monitoring well specified in Condition III.C.1 to the background value derived in accordance with the statistical procedures specified in the approved permit application.

F. GROUNDWATER ELEVATION

1. In accordance with Condition III.I.4, the Permittee must determine and report to the Illinois EPA the groundwater surface elevation, referenced to mean sea level (MSL), at each well during each groundwater sampling event.
2. In accordance with Condition III.I.5, the Permittee must determine and report to the Illinois EPA the surveyed elevation of "stick-up," referenced to MSL, whenever a well is installed (with as-built diagrams) and every five years, or at the request of the Illinois EPA or whenever an elevation change has occurred.

"Stick-up" refers to the height of the reference survey datum. This point is determined within ± 0.01 foot in relation to MSL, which is established by reference to an established National Geodetic Vertical Datum.

3. The Permittee must record and report to the Illinois EPA the elevation, referenced to MSL, of the bottom of each monitoring well (STORET 72020) at least annually. The mandatory annual measurement must be recorded during the second semi-annual sampling event. The report must be submitted to the Illinois EPA by July 15 of each year.

G. SAMPLING ANALYTICAL PROCEDURES

The Permittee must use the following techniques and procedures, described in Section E of the approved permit application (except as modified) to collect and analyze samples from the groundwater monitoring wells described in Condition III.C.1:

1. Samples must be collected using the techniques described in Section E of the approved permit application.
2. Samples must be preserved, shipped, and handled in accordance with the procedures specified in Section E of the approved permit application.
3. Samples must be analyzed in accordance with the procedures specified in Section E of the approved permit application. Groundwater analysis must be carried out in accordance with the most current version of the applicable methods found in U.S. EPA's "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," Third Edition (SW-846) and finalized updated.
4. Samples must be tracked and controlled using the chain of custody procedures specified in Section E of the approved permit application.

H. STATISTICAL PROCEDURES

The Permittee must use the procedures as described in Section E of the approved permit application; except as modified herein, when evaluating results in accordance with Condition III.E. The facility must evaluate monitoring results in compliance with USEPA "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance" (March 2009).

I. REPORTING AND RECORDKEEPING

1. The Permittee must enter into the operating record all monitoring, testing, and analytical data obtained in accordance with Conditions III.D., III.E., III.F., III.G., and III.H. The data must include all computations, calculated means, variances, t-statistic values, and t-statistic results or the results of statistical testing that the Illinois EPA has previously determined to be equivalent.
2. The Permittee must collect samples in accordance with the requirements of the Groundwater Monitoring Program described in Conditions III.D., III.E., III.F., III.G., and III.H. Results of and additional information required by the Groundwater Monitoring Program (as specified in Conditions III.D, III.E, III.F, III.G, and III.H) must be submitted to the Illinois EPA at the address listed in Condition III.C.5 in accordance with the following schedule.

Sampling Event of Calendar Year:	Samples to Be Collected During the Months of:	Submit Results to Illinois EPA by the Following:
Second Quarter	April – June	July 15
Fourth Quarter	October – December	January 15

3. In accordance with Condition III.E.2, the Permittee must, during each second semi-annual sampling event, determine the groundwater flow rate and direction in the uppermost aquifer. The report must be submitted to the Illinois EPA by July 15 of each year in accordance with the schedule provided in Condition III.I.2.
4. The Permittee must semi-annually collect the groundwater surface elevation data as required in Condition III.F.1.
5. In accordance with Condition III.F.2, the Permittee must determine and report the surveyed elevation of the well casing "stick-up," referenced to MSL, with the following schedule:
 - a. Wells identified in Condition III.C.1: Every five years during the second semi-annual sampling event, at the request of the Illinois EPA, or whenever this elevation changes.
 - b. Each new well: At the time of installation and reported in the as-built diagrams. Measurements must then be made every five years during the second semi-annual sampling event, at the request of the Illinois EPA, or whenever the elevation changes.
6. In accordance with Condition III.F.3, the Permittee must, at least annually, measure the elevations of the bottom of each monitoring well identified in Condition III.C.1. These measurements, referenced to MSL, must be taken during the second semi-annual sampling event (STORET 72020) each year. Results must be submitted to the Illinois EPA by July 15 each year in accordance with the schedule provided in Condition III.I.2.
7. The Permittee must submit to the Illinois EPA the information required in Conditions III.I.2, III.I.3, III.I.5, and III.I.6 in an electronic format and in accordance with the schedule provided in Condition III.I.2.

This information must be submitted as fixed-width text files and formatted in accordance with the form "Formatting Requirement for the 01 (and 02) Record of the Electronically Submitted Groundwater and Leachate Data" (LPC-160) located

on the Illinois EPA website titled “Electronic Reporting of Groundwater Data,” and in accordance with schedule provided in Condition III.I.2. Additional guidance regarding the requirements of the electronic reporting of groundwater data in an electronic format can be found on the Illinois EPA website.

8. The Permittee must submit, for identification purposes, a completed “RCRA Facility Groundwater, Leachate, and Gas Reporting Form” (LPC-592) as a cover sheet for any notices or reports required by this Permit. Note, this form is not to be used for permit modification requests.

The Permittee must accompany this cover sheet with one original (with “wet” signatures) and, at minimum, two additional copies of each notice or report (exclude the groundwater and leachate monitoring results submitted in an electronic format). Additional paper and electronic copies must be provided upon the Illinois EPA’s request.

9. The Permittee must report all information to the Illinois EPA in a form which can be easily reviewed. All submittals must contain tables of data, drawings, and text (as necessary) to accurately describe the information contained in the submittal.
10. If the Permittee determines, pursuant to Condition III.E.3, an SSI has occurred for any of the parameters specified in Condition III.D.1, at any monitoring well at the point of compliance, the Permittee must:
 - a. Notify the Illinois EPA in writing. The Permittee must identify the parameters and wells which have shown an SSI and provide all statistical calculations. This notification must be submitted to the Illinois EPA within seven days of the date that the increases are discovered.
 - b. Sample the groundwater in all wells listed in Condition III.C.1. The Permittee must determine the concentrations of all constituents identified in 35 IAC 724, Appendix I and 35 IAC Part 620. The results must be included in the permit modification request required in accordance with Condition III.I.10.d.
 - c. If the Permittee detects any compounds listed in 35 IAC 724, Appendix I and 35 IAC Part 620 during sampling analysis pursuant to this Condition, the Permittee may resample within one month and repeat the analysis for those compounds detected. If the results of the second analysis confirm the initial results, then these constituents will form the basis for compliance monitoring. If the Permittee does not resample the compounds pursuant to this Condition, the hazardous constituents found

during the initial Appendix I analysis will form the basis for compliance monitoring.

- d. Submit to the Illinois EPA an application for a permit modification to establish a compliance monitoring program that meets the requirements of 35 IAC 724.199. The application must be submitted to the Illinois EPA within 90 days of the date that the increase is discovered. This application must include the following:
 - i. Identification of the concentrations of all 35 IAC 724, Appendix I and 35 IAC Part 620 constituents found in the groundwater at each monitoring well at the point of compliance;
 - ii. Proposed changes necessary to the groundwater monitoring system at the facility to meet the requirements of 35 IAC 724.199;
 - iii. Proposed changes necessary to the monitoring frequency, sampling, and analysis procedures or methods or statistical procedures used at the facility to meet the requirements of 35 IAC 724.199; and
 - iv. Proposed concentration limits under 35 IAC 724.194(a)(1) or 724.194(a)(2) for each hazardous constituent found at the compliance point. The Permittee may also submit a notice of intent to seek an alternative concentration limit for a hazardous constituent under 35 IAC 724.194(b).
- e. Submit to the Illinois EPA a corrective action feasibility plan to meet the requirements of 35 IAC 724.200, unless the concentrations of all hazardous constituents identified under Condition III.I.10.b are listed in 35 IAC 620.410 and their concentrations do not exceed the respective Groundwater Quality Standards, or the Permittee has sought an alternative concentration limits under Condition III.I.10.d.iv for every hazardous constituent identified under Condition III.I.10.b. This plan must be submitted to the Illinois EPA within 180 days of the date the increase is discovered.
- f. Submit to the Illinois EPA all data necessary to justify an alternate concentration limit for a hazardous constituent sought under Condition III.I.10.b. This plan must be submitted to the Illinois EPA within 180 days of the date the increase is discovered.

11. If the Permittee determines, pursuant to Condition III.E.3, that an SSI above the background value for the parameters specified in Condition III.D.1 has occurred, the Permittee may demonstrate that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis, or evaluation. The Permittee must submit a permit modification application in accordance with Condition III.I.10.d, unless the demonstration successfully shows that a source other than the regulated unit caused the increase or that the increase resulted from errors in sampling, analysis, or evaluation and the Illinois EPA concurs.

To make this demonstration, the Permittee must:

- a. Notify the Illinois EPA in writing of the intention to make this demonstration. This notification must be submitted to the Illinois EPA within seven days of the date that the increase was discovered.
- b. Submit a report to the Illinois EPA which demonstrates that a source other than a regulated unit caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation. This report must be submitted within 90 days of the date that the increase is discovered.
- c. Submit to the Illinois EPA an application to make any appropriate changes to the Groundwater Detection Monitoring Program. This application must be submitted within 90 days of the date that the increase is discovered.
- d. Continue monitoring in accordance with the detection monitoring program.

J. REQUEST FOR PERMIT MODIFICATION

1. If the Permittee determines that the Groundwater Detection Monitoring Program no longer satisfies the requirements of 35 IAC 724.198, the Permittee must, within 90 days of this determination, submit an application for a permit modification to Illinois EPA for review and approval of the appropriate changes that will satisfy the regulation.
2. In accordance with 35 IAC 705.128, conditions in this section of the Permit may be modified if there is cause for such modification, as defined in 35 IAC 702.184. Causes for modification identified in this section include, but are not limited to, alterations to the permitted facility, additional information which would have justified the application of different permit conditions at the time of issuance, and new regulations.

SECTION IV – CORRECTIVE ACTION**A. INTRODUCTION**

1. In accordance with Section 3004(u) and (v) of RCRA and 35 IAC 724.201, the Permittee must institute such corrective action, also referred to as hazardous waste cleanup, as necessary to protect human health and the environment from all releases of hazardous wastes or hazardous constituents from any solid waste management unit (SWMU) and areas of concern (AOCs) at the facility in Lemont, Illinois. This section contains the conditions which must be followed to ensure these requirements are met.
2. Additional effort remains to be carried out to complete corrective action at the SWMUs and AOCs still of concern at this facility.
3. The Permittee must conduct, as appropriate: (1) a RCRA Facility Investigation (RFI) to characterize each AOC or SWMU of concern at the facility; (2) determine whether a release of hazardous wastes and hazardous constituents has occurred, and if so, the nature and extent of the release(s); (3) gather other data, as necessary, to use to determine the need, scope, and design of a Corrective Measures Program (CMP); and (4) develop and implement a CMP to protect human health and the environment from any SWMUs or AOCs at the facility. The CMP must describe necessary corrective action(s) and be submitted to the Illinois EPA for review and approval prior to implementation.
4. The Permittee must provide hazardous waste cleanups, as appropriate, for: (1) any newly discovered SWMUs and AOCs; and/or (2) future releases for existing SWMUs at the facility.
5. The Permittee must carry out interim measures in accordance with the terms, conditions, and requirements of this Permit, as appropriate, to address existing contamination at the facility until such time as a final corrective measure can be developed and implemented.
6. The requirements of 35 IAC Parts 620 and 742 must be satisfied, when applicable, in establishing remediation objectives for hazardous waste cleanup. In addition, all hazardous waste cleanup efforts must meet the requirements of 35 IAC 724.201.
7. The Permittee must incorporate, as necessary, climate change resilience and adaption consideration into the corrective action required at this facility.

8. All Illinois EPA final decisions, regarding corrective action, at this facility are subject to the appeal provisions of the Act.
9. The original RCRA permit was issued by Illinois EPA for this facility on September 18, 1997 (Effective Date: October 23, 1997). Section IV of that Permit contained corrective Action requirements for the solid waste management units at the facility.
10. The facility has completed a substantial amount of investigation and, as necessary, remediation at select SMWUs. This Permit summarizes the corrective action activities completed to date and identifies the efforts yet to be performed to complete corrective action for the SWMUs of concern at the facility.
11. As 35 IAC Part 742 was amended to include indoor inhalation exposure route, all SWMUs that have obtained a no further action for corrective action must be re-evaluated, as appropriate, to demonstrate the requirements of 35 IAC Part 742 meet all updated remediation standards for the indoor inhalation pathway.
12. Unless there is a desire to modify specific requirements set forth in this Section, information submitted to the Illinois EPA regarding the corrective action requirements set forth in this Section is not a request to modify this Permit nor subject to the requirements of 35 IAC 703, Subpart G.
13. The Permittee must conduct and complete an Inspection and Maintenance Program for the stormwater sewer and the process wastewater sewer systems in accordance with the approved plans.

B. CORRECTIVE ACTION REQUIREMENTS

1. The Permittee must conduct and complete corrective action, as necessary, to determine the nature and extent of releases of hazardous wastes and hazardous constituents from SWMUs/AOCs, identified below at the facility.

SWMU No.	Unit Name	Unit Description
1	Former Empty Drum Storage Area	Container Storage Area
2 A-E	Sumps Along Former Process Wastewater Line ("Big Inch")	Wastewater Treatment Unit

3	Former North Plant API Separator and Current Above Ground Corrugated-Plate Separator	Wastewater Treatment Unit
4	Hot Oil Line, Seneca Petroleum Storage Tank	Other
5	Former Dump Area for Lime Sludge, Seneca Tank Location	Waste Pile
7	Interceptor Trench; Canal Dock	Other
10	North Plant Heat Exchanger Bundle Cleaning Pad	Other
11A	Recycle Tank: 11A – Mobile Interface Tank 436	Waste Recycling Operations
11B	Recycle Tank: 11B – 301	Waste Recycling Operations
12	Proximate Area to Tank 201	Waste Pile
13	Sludge Drying Area	Waste Pile
15 A-B	Wastewater Treatment Sludge Decant Basin within Land Treatment Facility	Surface Impoundment
15C	Wastewater Treatment Sludge Decant Basin within Land Treatment Facility	Surface Impoundment
16	Sludge Application Area	Landfarm
17	Intermittent Stream/ Stormwater Conveyance	Other
18	Waste Staging Area	Waste Pile
19A	Former Sludge Drying Area	Waste Pile
19B	Former Sludge Drying Areas	Waste Pile
19C	Former Sludge Drying Areas	Waste Pile
19D	Former Sludge Drying Areas	Waste Pile
20	Active Drum Staging Area	Container Storage Area
21	Vertical Oil Storage Tanks at the Stormwater Basin (SWB)	Wastewater Treatment Unit

25A	Heat Exchanger Bundle Cleaning Pads	Other
25B	Heat Exchanger Bundle Cleaning Pads	Other
25C	Supplementary Heat Exchanger Bundle Cleaning Pads - Cleaning Building	Waste Treatment (Detoxification)
30	Former Primary Light Oil (PLO) Underground Storage Tank (UST) at Fuels Loading Rack Area	Underground Storage Tank (UST)
31A	Former Underground Storage Tanks located at Active Solvent Loading Rack Area	UST
31B	Former Underground Storage Tanks located at Former Service Station	UST
31C	Former Underground Storage Tanks located at Former Service Station	UST
31D	Former Underground Storage Tanks located at Former Service Station	UST
31E	Former Underground Storage Tanks located at Former Service Station	UST
32	Former Process Blending UST at the Process Blend Center	UST
33	Groundwater Monitoring Zone (GMZ) above and beneath the stormwater basins	GMZ
34	French Drain System	Other
35	Red Dye Spill Area	Other
36	Former USTS Located at South Plant Maintenance Area	UST
37	Former USTS Located near WWTP Outfall to Chicago Sanitary & Ship Canal	UST
38	Process Sewers	Process Sewer- see Condition IV.D.3
39	Storm Sewers	Storm Sewer- - see Condition IV.D.3
40	Open Flow Ditches	Other
43A	Canal Dock Piping	Other

43B	Primary Light Oil Pump	Other
43C	Refinery Flare	Other
43D	Barge	Other
43E	Above Ground Tank	Other
43F	Life Station Pump	Other
43G	Process Drain System	Other
43H	Pipeline Primary Light Oil	Other
43I	Condenser (Sulphur Dioxide)	Other
43J	Pipeline Release near Tanks 92 and 108	Other
44	Spill at the Gasoline Transfer Line	Other
45	Contaminated Fill Area	Other
46	Former Separator #3	Former Oil Water Separator

2. Condition IV.D.3 of this Permit identifies the additional SWMUs of SWMUs 38 and 39. These SWMUs are associated with the requirements of the Site-Wide Sewer Inspection and Maintenance Plan.
3. The Groundwater Management Zone (GMZ) Monitoring Program and Site-Wide Groundwater Monitoring Program (SWGMP) are currently being conducted as part of the Corrective Action Program.
 - a. The GMZ, originally approved by Illinois EPA on April 11, 1994, was identified as SWMU 33. The current GMZ program, implemented at a portion of the south plant, includes: 14 monitoring wells, 15 bedrock piezometers, two staff gauges located in the I&M Canal, and the Green Coke Storage Area (GCSA) sump (which controls the groundwater via inward gradient control pumping).

The current GMZ monitoring requirements include:

- i. Semi-annual groundwater and surface water elevation measurements;
- ii. Semi-annual groundwater sampling and analysis for volatile organic compounds (VOCs);

- iii. No sampling of monitoring wells in which there is a presence of evidence of light non-aqueous phase liquid (LNAPL); and
- iv. Semi-annual and annual monitoring reports submitted to the Illinois EPA.

Note that any changes to the above monitoring requirements are subject to the Illinois EPA's approval under the Corrective Action Program.

- b. The SWGMP consists of a network of wells to determine the quality of groundwater as it relates to multiple SWMUs. The facility has proposed to address the groundwater exposure route at the SWMUs that are required to address groundwater contamination during the Phase I/II RFI at each SWMU through the SWGMP.
- c. The facility's "Site-Wide Groundwater Monitoring and Investigation Workplan" submitted to Illinois EPA on January 31, 2007 was approved with conditions and modifications on May 31, 2007 (Log Nos. B-162-CA-54 and B-162-CA-66).
- d. The facility's "Current Conditions Report and Proposed Workplan for Future Groundwater Management" was submitted to Illinois EPA on September 15, 2008. This workplan was approved with conditions and modifications on April 26, 2010 (Log No. B-162-CA-102) and approved the site-wide groundwater management approach.
- e. The Permittee may address groundwater contamination at SWMUs required to address groundwater via the site-wide groundwater management approach.

Should the Permittee pursue an NFA determination from the Illinois EPA for groundwater on a SWMU-by-SWMU basis, the facility must address groundwater contamination at the identified SWMU(s).

- 4. The Permittee must conduct additional investigations and remediation, as necessary, to address any on-site contamination and any off-site contamination which has migrated beyond the property boundaries due to operations of the facility. Groundwater investigations must be conducted in accordance with the approved SWGMP.

SWMU No.	Unit Name	CA Status
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33	Groundwater Monitoring Zone (GMZ) around and beneath the storm water basins	Continued GMZ operation is required.
39w	Storm Sewer Line, 2015 Defects SL-244	Phase II RFI Work Plan, dated 1/31/2020 under Illinois EPA review.
46	Former Separator #3	Approximately 70% of the East Cell is complete. Areas 1A, 1B, 1C, 1D, and 1E have pending NFA status under Illinois EPA review. Excavation at Areas 1F, 1G, 1H, and Area 2 are to follow completion of the East Cell.

5. The Permittee must obtain NFA determinations from the Illinois EPA for the SMUWs/AOCs/facility and any other impacted areas identified during corrective action activities where contamination has migrated off-site from the former operation of the facility and after sufficient information has been provided by the Permittee to the Illinois EPA that the media of interest has been adequately remediated for the SWMUs and other identified AOCs.
6. The Permittee must meet the requirements of 35 IAC Part 742, Tiered Approach to Corrective Action Objectives (TACO), and 35 IAC Part 620, Groundwater Quality, as applicable, in the establishment of remediation objectives regarding corrective action. Corrective action efforts must also meet the requirements of 35 IAC 724.201.
7. The historically identified SWMUs/HWMUs/AOCs are listed below:

Designation	Description	Current Status
HWMU	SWMU 15C – Wastewater Treatment Sludge Decant Basin	Clean closed.

8. The Permittee must gather other necessary data to determine the need, scope, and design of a CMP and implement such CMP as necessary to complete corrective action. Any CMP must be submitted to the Illinois EPA for review and approval prior to implementation.
9. The Permittee must meet the applicable indoor inhalation remediation objectives, both on-site and any impacted off-site properties, in accordance with 35 IAC Part 742. Additional evaluation for the indoor inhalation exposure route

requirements must be met for all SWMUs listed in Condition IV.B.1 and Condition IV.D associated with Sewer Inspection and Maintenance activities.

10. To date, the facility has conducted a substantial amount of investigation at the SWMUs of concern and AOCs at this facility. Condition IV.C provides a summary of the facility's corrective action efforts completed to date. Condition IV.E includes the corrective actions that must still be completed at the facility.

C. CORRECTIVE ACTION EFFORTS COMPLETED TO DATE

A document entitled Phase I RFI Work Plan was submitted to the Illinois EPA to address SWMU 33 on March 30, 2006. The subsequent Re-Evaluation of Groundwater Management Zone report was approved by the Illinois EPA on May 8, 2007.

This work plan detailed the historic and current operations of the GMZ. The Illinois EPA approved, with conditions and modifications, the work plan in a letter dated July 17, 2006 (Log No. B-162-CA-35 thru 47). The Illinois EPA had requested the Refinery submit a GMZ re-evaluation report. The initial Re-Evaluation of Groundwater Management Zone report was submitted to the Illinois EPA on October 2, 2006 and approved by Illinois EPA in a letter dated May 17, 2007 (Log No. B-162-CA-53). The subsequent Re-Evaluation of GMZ reports were submitted to the Illinois EPA on September 12, 2011; September 23, 2016; and November 29, 2021. The Illinois EPA approved the reports in letters dated November 3, 2011 (Log No. B-162R-CA-7), March 10, 2020 (Log No. B-162R-CA-65), and May 23, 2022 (Log No. B-162R-CA-94).

1. The facility had previously identified SWMUs at the facility and categorized them into Group 1 (Higher Priority) and Group 2 (Lower Priority) SWMUs in order to prioritize and streamline RFI and corrective measure processes. As the Permittee has conducted a substantial amount of investigation at the SWMUs of concern and AOCs at this facility, the list of SWMUs that require corrective action at the facility are identified in Condition IV.B.1 and Condition IV.B.4 are no longer categorized as Groups 1 and 2.
2. Environmental Land Use Controls (ELUCs) listed in Condition IV.C.3 E have been established as part of completed corrective action at this facility. These ELUCs place certain restrictions on future activities at the facility. The Permittee must manage the remainder of the SWMUs after receipt of an NFA letter as if the required ELUC was in place until such time as the ELUC is formally recorded on the property deed.
3. The following table identifies the status of corrective action completed at each SWMU to date. It also identifies the SWMUs which have received NFA determinations from the Illinois EPA. A more detailed summary for corrective

action activities completed for each SWMU/AOC is provided in Appendix F of this Permit. Note that the individual sewer segments of concern identified during the Sewer Investigation for SWMUs 38 and 39 are identified in Condition IV.D.3.

Note that the following abbreviations are used in the table below:

CM = Corrective Measures

NFA = No Further Action

CMP = Corrective Measures Plan

TBD = To Be Determined

ELUC = Environmental Land Use Control

I/C = Industrial/Commercial

CWPP = Construction Worker Precaution Plan

SWMU	Name	CA Status
1	Former Empty Drum Storage Area	NFA issued on 6/01/2004 (Log No. B-162-CA-11). The NFA requires an I/C land use restriction ELUC.
2 A-E	Former Process Wastewater Line (Big Inch)	NFA for <u>soil only</u> issued on 1/31/2006 (Log No. B-162-CA-25). SWMUs 2a-c: NFA for <u>soil only</u> issued on 8/24/2005 (Log No. B-162-CA-13, 15 thru 22). A supplemental investigation report was received on 11/23/2009 (Log No. B-162-CA-134) as a request for an NFA for groundwater. It was withdrawn in a letter dated 9/05/2012, as it will be addressed as part of the Site-Wide Groundwater Monitoring Program.
3	Former North Plan API Separator and Above Ground Corrugated Plate Separator	NFA for <u>soil only</u> issued on 8/24/2005 (Log No. B-162-CA-13, 15 thru 22). Groundwater investigation must be conducted.
4	Hot Oil Line, Seneca Petroleum Storage Tank	NFA issued on 4/12/2007 (Log No. B-162-CA-55 and CA-61).

5	Former Dump Area for Lime Sludge Seneca Tank Location	NFA issued on 11/04/2010 (Log No. B-162-CA-103 through 113). The NFA requires an I/C land use restriction ELUC.
7	Interceptor Trench; Canal Dock	NFA for <u>soil only</u> was issued on 7/25/2013 (Log No. B-162R-CA-29 and 30). Groundwater in the vicinity of this SWMU must be addressed as part of the Site-Wide Groundwater Monitoring Program.
10	North Plant Heat Exchanger Bundle Cleaning Pad	NFA was issued on 2/23/2016 (Log No. B-162R-CA-52). The NFA requires an engineered barrier, I/C land use restriction, groundwater restriction, and an BCT ELUC. Portions of this unit have engineered barriers in place (asphalt over concrete) and a Construction Work Precaution Plan (CWPP).
11A	Recycle Tank; 11A – Mobile Interface Tank 436	This unit was granted an NFA for <u>soil only</u> in a letter dated 1/24/2012 (Log No. B-162R-CA-122, 123, & 124). The soil component of the groundwater ingestion route must be addressed as part of the Site-Wide Groundwater Program. The NFA letter requires the implementation of an I/C land use restriction ELUC. A portion of this unit has an engineered barrier of the existing soil in place and a CWPP.
11B	Recycle Tank; 301 Tank	This unit was granted an NFA for <u>soil only</u> in a letter dated 1/24/2012 (Log No. B-162R-CA-122, 123, & 124). The soil component of the groundwater ingestion route must be addressed as part of the Site-Wide Groundwater Program. The NFA letter requires the implementation of an I/C land use restriction ELUC.

12	Tank 201 and Proximate Area	NFA on <u>soil only</u> (TACO Tier 2) issued on 10/4/2010 (Log No. B-162R-CA-126, 128). Groundwater and soil component of groundwater ingestion exposure route in the vicinity must be addressed through the Site-Wide Groundwater Program. The NFA letter requires the implementation of an engineered barriers and implementation of an I/C ELUC to restrict property and groundwater use and to maintain engineered barriers.
13	Sludge Drying Area	NFA for <u>soil only</u> was issued on 7/25/13 (Log No. B-162R-CA-29 and 30). Groundwater in the vicinity of this SWMU must be addressed as part of the Site-Wide Groundwater Monitoring Program.
15A-B	Wastewater Treatment Sludge Decant Basin within Land Treatment Facility	This unit was granted an NFA for <u>soil only</u> in a letter dated 10/04/2011 (Log No. B-162R-CA-5 & 6). Groundwater in the vicinity of this SWMU must be addressed as part of the Site-Wide Groundwater Monitoring Program. The NFA letter requires the implementation of an I/C land use restriction ELUC.
16	Sludge Application Area	This unit was granted an NFA for <u>soil only</u> in a letter dated 11/27/2006 (Log No. B-162R-CA-5 & 6).
17	Intermittent Stream/ Stormwater Conveyance	This unit was granted an NFA in a letter dated 12/17/2007 (Log No. B-162-CA-69 thru 72). The NFA letter requires the implementation of access controls. This area is surrounded by a fence along the facility property line with an access-controlled gate.

18	Waste Staging Area	This unit was granted an NFA (SWMUs 18/19A) for <u>soils only</u> in a letter dated 2/23/2016 (Log No. B-162R-CA-57). The NFA letter requires the implementation of an ELUC that addresses I/C land use restriction, restriction for groundwater from use as a potable supply of water, and a BCT.
19A	Former Sludge Drying Area	This unit was granted an NFA (SWMUs 18/19A) for <u>soils only</u> in a letter dated 2/23/2016 (Log No. B-162R-CA-57). The NFA letter requires the implementation of an ELUC that addresses I/C land use restriction, restriction for groundwater from use as a potable supply of water, and a BCT.
19B	Former Sludge Drying Area	This unit was granted an NFA for <u>soils only</u> in a letter dated 10/04/2017 (Log No. B-162R-CA-75). The NFA letter requires the implementation of an I/C land use restriction, groundwater restriction, and a CWPP.
19C	Former Sludge Drying Area	This unit was granted an NFA for <u>soils only</u> in a letter dated 2/26/2016 (Log No. B-162R-CA-58). The NFA requires an engineered barrier, I/C land use restriction, groundwater restriction, and an BCT ELUC.
19D	Former Sludge Drying Areas	This unit was granted an NFA for <u>soils only</u> in a letter dated 12/18/2008 (Log No. B-162-CA-114). The migration to groundwater exposure route is addressed through the GMZ at this facility (this unit is located within the GMZ's boundaries). The NFA letter requires the implementation of an I/C land use restriction.

20	Active Drum Staging Area	This unit was granted an NFA for <u>soils only</u> in a letter dated 1/12/2012 (Log No. B-162-CA-149, 150, and 151). The NFA letter requires the implementation of an I/C land use restriction.
21	Vertical Oil Storage Tanks at the Stormwater Basin (SWB)	This unit was granted an NFAs in a letter dated 4/12/2007 (Log No. B-162-CA-55 and CA-61). The NFA letter requires the implementation of an I/C land use restriction.
24	Former API Separator	Under RCRA Corrective Action. Determination of further CA work be completed as part of the facility's GMZ (SWMU 33) made on 8/24/05 (Log No. B-162-CA-13, 15 thru 22).
25A	Heat Exchanger Bundle Cleaning Pad	This unit was granted an NFA in a letter dated 06/16/2009 (Log No. B-162-CA-116 thru 118). The land use of the area surrounding this unit must remain I/C only. Appropriate closure activities must be conducted when the facility ceases operations at this unit.
25B	Heat Exchanger Bundle Cleaning Pad	This unit was granted an NFA in a letter dated 01/12/2012 (Log No. B-162-CA-149, 150, and 151). The NFA letter requires the implementation of an I/C land use restriction.
25C	Supplementary Heat Exchanger Bundle Cleaning Pad -- Cleaning Building	This unit was granted an NFA in a letter dated 11/04/2010 (Log No. B-162-CA-103 thru 114). The NFA letter requires the implementation of an I/C land use restriction.
30	Former Primary Light Oil (PLO) Underground Soil/Groundwater	This unit was granted an NFA in a letter dated 06/21/2017 (Log No. B-162-CA-71).

		Groundwater must be addressed as part of the Site-Wide Groundwater Program. The NFA letter requires the implementation of an I/C land use restriction, engineered barriers, human exposure limitation, and/or exclusion of exposure routes. There are asphalt and concrete pavement engineered barriers and a CWPP associated with the closure of this SWMU.
31A	Former Underground Storage Tanks located at Active Solvent Loading Rack Area	This unit was granted an NFA for <u>soil only</u> in a letter dated 12/17/2007 (Log No. B-162-CA-69 thru 72). Migration to groundwater in the vicinity of this area must be investigated. The NFA letter requires the implementation of an I/C land use restriction, engineered barriers, human exposure limitation, and/or exclusion of exposure routes. There are asphalt and concrete pavement engineered barriers and a CWPP associated with the closure of this SWMU.
31B, 31C, 31D, 31E	Former Underground Storage Tanks located at Former Service Station	NFA for <u>soil only</u> issued on 08/24/2005 (Log No. B-162-CA-13, 15 thru 22). Groundwater investigation must be conducted. The facility prepared an ELUC, which was approved by IEPA, and recorded on the property deed, restricting the area to I/C land use. A recorded copy of the ELUC was submitted to IEPA on 10/10/2018.
32	Former Process Blending UST at the Process Blend Center	NFA for <u>soil only</u> issued on 07/17/2006 (Log. No. B-162-CA-35 thru 47). Groundwater contamination must be addressed as part of the Site-Wide Groundwater Program.
33	Groundwater Monitoring Zone (GMZ) around and beneath the storm water basins	Under RCRA Corrective Action GMZ Re-evaluation reports were approved on 11/03/2011 (Log No. B-162-CA-7), 3/10/20 (Log No. B-162-CA-65), and

		05/23/2022 (Log No. B-162R-CA-94). Continued GMZ operation is required.
34	French Drain System	NFA for <u>soil only</u> issued on 01/13/2012 (Log No. B-162-CA-138). The soil component of groundwater ingestion pathway must be addressed separately as part of the Site-Wide Groundwater Program. The NFA letter requires the implementation of an I/C land use restriction ELUC. The French Drain continues to operate.
35	Red Dye Spill Area	NFA issued on 11/04/2010 (Log No. B-162-CA-103 through 114). The NFA letter requires the implementation of an I/C land use restriction ELUC.
36	Former USTs located at South Plant Maintenance Area	NFA issued on 07/17/2006 (Log No. B-162-CA-35 thru 47).
37	Former USTs located near WWTP Outfall to Chicago Sanitary & Ship Canal	NFA issued on 07/17/2006 (Log No. B-162-CA-35 thru 47).
40	Open-Flow Ditches	In letters dated June 8, 2006 and July 18, 2016, Illinois EPA concurred with the inspections completed and noted the overflow ditches are subject to ongoing visual inspection
43A	Suspected Spill Location Along the Produce Pipeline: Canal Dock Piping	NFA issued on 01/24/2012 (Log No. B-162-CA-122, 123, and 124). The NFA letter requires the implementation of an I/C land use restriction ELUC.
43B	Suspected Spill Location Along the Produce Pipeline: Primary Light Oil Pump	NFA issued on 01/24/2012 (Log No. B-162-CA-122, 123, and 124). The NFA letter requires the implementation of an I/C land use restriction ELUC.
43C	Suspected Spill Location Along the Produce Pipeline: Refinery Flare	NFA for soil only issued on 06/30/2015 (Log No. B-162R-CA-42 and 43). The NFA letter requires the implementation of an I/C land use restriction ELUC. And must prohibit use of

		groundwater for potables uses and require BCT ensure indoor inhalation exposure route requirements are met.
43D	Suspected Spill Location Along the Produce Pipeline: Barge	NFA issued on 01/24/2012 (Log No. B-162-CA-122, 123, and 124). The NFA letter requires the implementation of an I/C land use restriction ELUC.
43E	Suspected Spill Location Along the Produce Pipeline: Above Ground Tank	NFA issued on 01/24/2012 (Log No. B-162-CA-122, 123, and 124). The NFA letter requires the implementation of an I/C land use restriction ELUC.
43F	Suspected Spill Location Along the Produce Pipeline: Lift Station Pump	NFA issued on 01/23/2017 (Log No. B-162R-CA-69). Post-excavation soil samples meet the Tier 1 soil remediation objectives in 35 IAC 742.
43G	Suspected Spill Location Along the Produce Pipeline: Process Drain System	NFA issued on 01/24/2012 (Log No. B-162-CA-122, 123, and 124). The NFA letter requires the implementation of an I/C land use restriction ELUC.
43H	Suspected Spill Location Along the Product Pipeline: Pipeline Primary Light Oil	NFA issued on 01/24/2012 (Log No. B-162-CA-122, 123, and 124). The NFA letter requires the implementation of an I/C land use restriction ELUC.
43I	Suspected Spill Location Along the Product Pipeline: Condenser (Sulfur Dioxide)	NFA issued on 01/24/2012 (Log No. B-162-CA-122, 123, and 124). The NFA letter requires the implementation of an I/C land use restriction ELUC.

43J	Pipeline Release Near Tanks 92 and 108	NFA for soil only issued on 2/24/2010 (Log No. B-162-CA-129). The soil component of the groundwater ingestion exposure route must be addressed through the Site-Wide Groundwater Program. The NFA letter requires the implementation of an I/C land use restriction, groundwater use restriction, three engineered barriers, and a CWPP.
44	Spill at the Gasoline Transfer Line	This unit was granted an NFA for <u>soil only</u> in a letter dated 10/04/2011 (Log No. B-162R-CA-5 & 6). Groundwater in the vicinity of this SWMU must be addressed as part of the Site-Wide Groundwater Monitoring Program. The NFA letter requires the implementation of an I/C land use restriction ELUC.
45	Contaminated Fill Area	Under RCRA corrective action The Permittee must address hazardous lead impacted soil and quarterly groundwater sampling.

46	Former Separator #3	This unit was granted a <u>partial NFA</u> for soil only in a letter dated 7/21/2023 (Log No. B-162R-CA-92 and CA-93). The partial NFA is required for Areas 1A, 1B, 1C, and the Former West Cell at SWMU 46. Additional soil samples must be collected along the south and east edges of Area 1D. The western side of Area 1E and Area 1F will require a soil investigation workplan. A workplan for Areas 1F and 1G must be submitted to Illinois EPA once backfilling and relocation of Western Ave. or after completion of remedial activities for SWMU 46 (East Cell and Area 2) are complete. Area 1H must be excavated after the road is relocated. A comprehensive NFA will not be issued until corrective action is complete at all subareas of SWMU 46 and necessary institutional controls are established.
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4. The GMZ Monitoring Program and SWGMP are currently being conducted as part of the Corrective Action Program, as noted in Condition IV.B.3 of this Permit.
5. The Permittee has continued required sewer inspection and maintenance work at Process Sewers (SWMU 38), Storm Sewers (SWMU 39), and Open Flow Ditches (SWMU 40) in accordance with the workplan, initially approved by the Illinois EPA on February 21, 2003. Further details on this effort and requirements are included in Condition IV.D.
 - a. As a result of this on-going investigation, the Illinois EPA has determined some of the segments/structures of the Process and Storm Sewers require further corrective action investigation. The table in Condition IV.D.2 identifies the sewer-related SWMUs where more formal investigations are required. Note, the table in Condition IV.D.2 is not the complete list of required investigation. The facility must update the list of Storm and Process Sewer related SWMUs in its annual sewer report, as required in Condition IV.D.4.
 - b. The Permittee has completed the inspection and maintenance activities for Open Flow Ditches (SWMU 40) in 2005, approximately 26,000 linear feet of open ditches at the facility. The 2005 RCRA Sewer Investigation Report documented the inspection of SWMU 40 was approved on June 8,

2006 (Log No. B-162-CA-14 & 34). SWMU 40 ditches are subject to ongoing visual inspection and results must be included in the required Annual Sewer Inspection and Maintenance Report.

6. The Permittee is required to establish ELUCs for the SWMUs listed in Condition IV.B.1, as necessary. The Permittee must develop and record all ELUCs in accordance with 35 IAC 742, Subpart J and all applicable Illinois EPA letters regarding RCRA corrective action.
7. The facility has initiated, in accordance with the requirements of Attachment G of this Permit, RFIs at each SWMU. The current status of the RFIs for each SWMU is described in the table provided in Appendix F of this Permit.

Following a submittal of an RFI Phase I/II report, the Illinois EPA will review the submitted data. The Illinois EPA will offer the Permittee an opportunity to meet with the Illinois EPA staff to discuss the results of the review prior to finalization of the review comments. The Illinois EPA will then notify the Permittee, in writing, of the results of the review. This notification will discuss the status of each of the SWMUs evaluated as part of the Phase I/II RFI.

D. SEWER INSPECTION AND MAINTENANCE REQUIREMENTS

1. The facility's initial workplan for the multi-year phased investigations of the sewer systems, Sewer Inspection and Maintenance RFI Work Plan, was approved by Illinois EPA on February 21, 2003 (Log No. B-162-CA-41). This initial workplan provided an inspection and maintenance plan for the following SWMUs: (1) Process Sewer System (SWMU 38); (2) Storm Sewer System (SWMU 39); and (3) Open Flow Ditches (SWMU 40).
 - a. The Sewer Inspection and Maintenance Plan commenced in 2004 (Year 1). The facility developed a 10-year plan for the sewer inspection program, which divided the facility into seven areas: Area 1; Area 2; Area 3; Area 4A; Area 4B; Area 5; and Area 6.
 - b. Inspection and maintenance of sewer segments in each area is conducted in accordance with the approved workplan.
 - c. The facility must rate all discovered defects found during the sewer inspections in accordance with workplans approved by the Illinois EPA.

2. The Permittee has concluded Year 2024 of the ongoing Sewer Investigation and Maintenance Program (I&M Program) and Maintenance and Repair Plan (M&R Plan) efforts. The M&R Plan addresses the continued monitoring of the process sewer, storm sewers, and open flow ditches after completion of the initial 10-Year sewer inspection effort.
- a. The storm sewer is completed.
 - b. Each of the identified SWMUs 38a through 38p locations have received NFAs from Illinois EPA.
 - c. SWMU 40 is subject to ongoing visual inspections and corrective action.
 - d. The Permittee must continue the inspection effort to include inaccessible sewer and sewers requested by the facility.
3. The following table lists the status of corrective action completed at individual sewer segments of concern identified during the Sewer Investigation for SWMUs 38 and 39. Unless specifically stated otherwise, the facility must continue to address any groundwater issues in the vicinity of the subject SWMU in accordance with the approved Site-Wide Groundwater Program for the site.

SWMU No.	Line Segment ID/ Sewer Investigation Area	CA Status
38a	Process Sewer – Line Segment: 31-MH8-DP-01 to 31-MH8-DP-02	NFA for <u>soil only</u> was issued on 3/15/2010 (Log No. B-162R-CA-127). The NFA requires an ELUC to restrict the property to I/C use only, groundwater restriction, and a Construction Work Precaution Plan (CWPP).
38b	Process Sewer – Line Segment: 31-MH5-DP-03 to 31-MH5-DP-01	NFA was issued on 10/04/2010 (Log No. B-162R-CA-126, 128). The NFA requires an ELUC to restrict the property to I/C use only and place a groundwater restriction.

38c	Process Sewer – Structure: Line Segment: 31-MH5-DP-01	NFA (TACO Tier 2 RO for construction worker inhalation exposure route for benzene) for <u>soil only</u> was issued on 10/04/2010 (Log No. B-162R-CA-126, 128). The soil component of groundwater ingestion exposure route must be addressed through the Site-Wide Groundwater Monitoring Program or further investigation to define the vertical extent of contamination. The NFA requires an ELUC to restrict the property to I/C use only, groundwater restriction, and a Construction Work Precaution Plan (CWPP).
38d	Coker Road Process Sewer – 2007 Defects – Area 2: (7) Line Segments: 52-LS51-DP-01 to 52-MH34-DP-01	NFA for <u>both soil and groundwater</u> was issued on 4/08/2014 (Log No. B-162R-CA-25). The NFA requires an ELUC to restrict the property to I/C use only.
38e	Process Sewer Line, 2007 Defects	NFA for <u>both soil and groundwater</u> was issued on 4/08/2014 (Log No. B-162R-CA-125).
38f	Process Sewer Line, 2007 Defects Area 6	NFA for <u>soil only</u> was issued on 7/01/2015 (Log No. B-162R-CA-49 and 50). Groundwater to be addressed by Site-Wide Groundwater Monitoring Program. The NFA requires I/C land use restriction, groundwater restriction, and an BCT ELUC.

38g	Process Sewer Line, 2007 Defects Area 15 (joined with SWMU 39e – Area 16)	NFA (Tier 2 soil RO) for <u>soil only</u> was issued on 8/05/2014 (Log No. B-162R-CA-37). Groundwater to be addressed by Site-Wide Groundwater Monitoring Program. The NFA requires I/C land use restriction, groundwater restriction, and an BCT ELUC.
38h	Process Sewer Line, 2008 Defects Area 18	NFA for <u>both soil and groundwater</u> was issued on 4/08/2014 (Log No. B-162R-CA-25). The NFA requires an ELUC to restrict the property to I/C use only.
38i	Process Sewer Line, 2008 Defects Area 21	NFA was issued on 8/05/2014 (Log No. B-162R-CA-37). Groundwater to be addressed by Site-Wide Groundwater Monitoring Program. The NFA requires I/C land use restriction, groundwater restriction, and an BCT ELUC.
38j	Process Sewer Line, 2008 Defects Area 26	NFA was issued on 7/31/2018 (Log No. B-162R-CA-77). Groundwater to be addressed by Site-Wide Groundwater Monitoring Program. The NFA requires point of exposure at a location other than the source, and/or exclusion of exposure route, and I/C land use restriction, engineered barriers, groundwater restriction, and CWPP ELUC.
38k	Process Sewer Line, 2009 Defects Area 39	NFA for was issued on 4/08/2014 (Log No. B-162R-CA-25). The NFA requires an ELUC to restrict the property to I/C use only.

38l	Process Sewer Line, 2009 Defects Area 40	NFA for was issued on 4/08/2014 (Log No. B-162R-CA-25). The NFA requires an ELUC to restrict the property to I/C use only.
38m	Process Sewer Line, 2010 Defects Area 48	NFA for <u>soil only</u> was issued on 10/04/2013 (Log No. B-162R-CA-49 and 50). Groundwater to be addressed by Site-Wide Groundwater Monitoring Program. The NFA requires an ELUC to restrict the property to I/C use only, groundwater restriction, and CWPP requirement.
38n	Process Sewer Line, 2010 Defects Area 49	NFA for <u>soil only</u> was issued on 7/01/2015 (Log No. B-162R-CA-49 and 50). Groundwater to be addressed by Site-Wide Groundwater Monitoring Program. The NFA requires an ELUC to restrict the property to I/C use only, groundwater restriction, and BCT requirement.
38o	Process Sewer Line, 2010 Defects Area 57	NFA for <u>soil only</u> was issued on 10/04/2013 (Log No. B-162R-CA-49 and 50). Groundwater to be addressed by Site-Wide Groundwater Monitoring Program. The NFA requires an ELUC to restrict the property to I/C use only, groundwater restriction, and CWPP requirement.
38p	Process Sewer Line, 2007 Defects Area 5	NFA for <u>soil only</u> was issued on 1/30/2014 (Log No. B-162R-CA-32). Groundwater to be addressed by Site-Wide Groundwater Monitoring Program.

39a	Storm Sewer – Line Segment: 130-MH79-DRC-01 to 130-MH75-DRC-02	NFA (Tier 2) for <u>soil only</u> was issued on 3/06/2014 (Log No. B-162R-CA-344 and 35). Groundwater to be addressed by Site-Wide Groundwater Monitoring Program. Indoor air inhalation exposure route must be evaluated.
39b	Storm Sewer – Line Segment: 130-MH75-DRC-05 to 130-MH75-DRC-32; and Structure 130-MH75-DRC-05	NFA (Tier 2) for <u>soil only</u> was issued on 3/06/2014 (Log No. B-162R-CA-344 and 35). Groundwater to be addressed by Site-Wide Groundwater Monitoring Program. Indoor air inhalation exposure route must be evaluated.
39c	Storm Sewer Line, 2007 Defects Area 11	NFA on <u>soil only</u> (TACO Tier 2) issued on 2/23/2016 (Log No. B-162R-CA-55). The NFA letter requires the establishment of an I/C ELUC which restricts (1) the property to I/C use only; (2) groundwater under the property from use of a potable supply of water; and (3) any building located in the area must have a BCT that meets 35 IAC 742, Subpart L to ensure the indoor inhalation exposure route requirement is met.
39d	Storm Sewer Line, 2007 Defects Area 12	NFA for <u>both soil and groundwater</u> was issued on 4/08/2014 (Log No. B-162R-CA-25). The NFA requires an ELUC to restrict the property to I/C use only.

39e	Storm Sewer Line, 2007 Defects Area 16 (joined with SWMU 38g – Area 15)	NFA (Tier 2 soil RO) for <u>soil only</u> was issued on 8/05/2014 (Log No. B-162R-CA-37). Groundwater to be addressed by Site-Wide Groundwater Monitoring Program. The NFA requires I/C land use restriction, groundwater restriction, and an BCT ELUC.
39f	Storm Sewer Line, 2008 Defects Area 19	NFA for was issued on 4/08/2014 (Log No. B-162R-CA-25). The NFA requires an ELUC to restrict the property to I/C use only.
39g	Storm Sewer Line, 2008 Defects Area 22	NFA for <u>both soil and groundwater</u> was issued on 4/08/2014 (Log No. B-162R-CA-25). The NFA requires an ELUC to restrict the property to I/C use only.
39h	Storm Sewer Line, 2008 Defects Area 23	NFA for was issued on 4/08/2014 (Log No. B-162R-CA-25). The NFA requires an ELUC to restrict the property to I/C use only.
39i	Storm Sewer Line, 2008 Defects Area 24	NFA for was issued on 4/08/2014 (Log No. B-162R-CA-25). The NFA requires an ELUC to restrict the property to I/C use only.
39j	Storm Sewer Line, 2008 Defects Area 25	NFA for was issued on 4/08/2014 (Log No. B-162R-CA-25). The NFA requires an ELUC to restrict the property to I/C use only.

39k	Storm Sewer Line, 2008 Defects Area 27	NFA for was issued on 4/08/2014 (Log No. B-162R-CA-25). The NFA requires an ELUC to restrict the property to I/C use only.
39l	Storm Sewer Line, 2008 Defects Area 28	NFA for was issued on 4/08/2014 (Log No. B-162R-CA-25). The NFA requires an ELUC to restrict the property to I/C use only.
39m	Storm Sewer Line, 2008 Defects Area 29	NFA for was issued on 4/08/2014 (Log No. B-162R-CA-25). The NFA requires an ELUC to restrict the property to I/C use only.
39n	Storm Sewer Line, 2008 Defects Area 32	NFA for was issued on 4/08/2014 (Log No. B-162R-CA-25). The NFA requires an ELUC to restrict the property to I/C use only.
39o	Storm Sewer Line, 2008 Defects Area 33	NFA for was issued on 4/08/2014 (Log No. B-162R-CA-25). The NFA requires an ELUC to restrict the property to I/C use only.
39p	Storm Sewer Line, 2008 Defects Area 34	NFA for was issued on 4/08/2014 (Log No. B-162R-CA-25). The NFA requires an ELUC to restrict the property to I/C use only.
39q	Storm Sewer Line, 2009 Defects Area 41	NFA for was issued on 4/08/2014 (Log No. B-162R-CA-25). The NFA requires an ELUC to restrict the property to I/C use only.

39r	Storm Sewer Line, 2009 Defects Area 42	NFA for was issued on 4/08/2014 (Log No. B-162R-CA-25). The NFA requires an ELUC to restrict the property to I/C use only.
39s	Storm Sewer Line, 2010 Defects Area 51	NFA for <u>soil only</u> was issued on 10/04/2013 (Log No. B-162R-CA- 49 and 50). Groundwater to be addressed by Site-Wide Groundwater Monitoring Program. The NFA requires an ELUC to restrict the property to I/C use only, groundwater restriction, and CWPP requirement.
39t	Storm Sewer Line, 2010 Defects Area 58	NFA for <u>soil only</u> was issued on 10/04/2013 (Log No. B-162R-CA- 49 and 50). Groundwater to be addressed by Site-Wide Groundwater Monitoring Program. The NFA requires an ELUC to restrict the property to I/C use only, groundwater restriction, and CWPP requirement.
39u	Storm Sewer Line, 2010 Defects Area 60	NFA for <u>soil only</u> was issued on 10/04/2013 (Log No. B-162R-CA- 49 and 50). Groundwater to be addressed by Site-Wide Groundwater Monitoring Program. The NFA requires an ELUC to restrict the property to I/C use only, groundwater restriction, and CWPP requirement.

39v	Storm Sewer Line, 2011 & 2012 Defects Area 67 (SL-220)	NFA for <u>soil only</u> was issued on 5/9/2017 (Log No. B-162R-CA-63). Groundwater to be addressed by Site-Wide Groundwater Monitoring Program. The NFA requires an ELUC to restrict the property to I/C use only and include BCT requirement.
39w	Storm Sewer Line, 2015 Defects SL-244	A report and work plan were submitted EPA on 1/31/2020 for Illinois EPA review and approval (Log No. B-162R-CA-85).

4. The Permittee must prepare a report which summarizes the results of the approved inspection and maintenance plan each calendar year. This report must be developed in accordance with the procedures set forth in the approved plan and be submitted to the Illinois EPA by March 31 of the following year.
5. All defects discovered during the RCRA sewer inspection and maintenance program must be evaluated and rated for structural and environmental concern in accordance with the procedures approved by the Illinois EPA for potential release to the surrounding environment.

A workplan must be developed and submitted to the Illinois EPA for review and approval to address any defect determined to require additional investigation for further corrective action.

E. CORRECTIVE ACTION EFFORTS TO BE COMPLETED

1. As 35 IAC Part 742 was amended to include indoor inhalation exposure route, the Permittee must reevaluate all SWMUs that have previously obtained a no further action (NFA) for corrective action, as appropriate, to demonstrate the requirements of 35 IAC Part 742 meet all updated remediation standards for the indoor inhalation pathway. Thus, additional evaluation to address the indoor inhalation exposure route requirements must be met for all SWMUs listed in Condition IV.B.1 of this Permit.
2. Corrective action activities at SWMU 24 must be completed to meet the following requirements and to obtain an NFA determination for this unit by the Illinois EPA. SWMU 24 is the Former API Separator, located the northwest

portion of the facility, west of Center Street between 9th Street and 11th Street at the South Plant, and directly south of the I&M Canal Trail Passage.

- a. Former API Separator (SWMU 24) at the wastewater treatment plant (WWTP) was a below ground concrete structure used to separator oil and solids (K051) from process water before the water was sent to the WWTP. The sludge wastes accumulated in this unit were listed hazardous wastes (K051); the quantity of wastes managed in this unit is unknown.
- b. This unit is located within a larger unit already addressed under the corrective action program of the facility's RCRA Permit, the GMZ.

In a letter dated August 24, 2005 from the Illinois EPA (Log No. B-162-CA-13, 15 through 22), the Illinois EPA stated that any further investigation or remediation of this SWMU must be carried out as part of the overall effort of the GMZ.

- c. The Permittee must meet the remediation objectives of investigation of industrial/commercial property use. Thus, the Permittee must eventually establish institutional controls that meet the requirements of 35 IAC 742, Subpart J to ensure the land usage does not change.
3. In accordance with plans approved by the Illinois EPA, the Permittee must complete all corrective action activities and meet the following requirements at SWMU 33, the GMZ around and beneath the Storm Water Basin, to obtain an NFA determination for this unit from the Illinois EPA. The GMZ around and beneath the Storm Water Basin (SWMU 33) was established in response to analytical results from a groundwater monitoring program associated with the closure of the Storm Water Basin (SWB), is defined in Condition IV.B.3 in this Permit.
- a. In accordance with Condition IV.B.3.a, of this Permit, the Permittee must collect and analyze semi-annual samples at the GMZ. The results must be submitted to the Illinois EPA for review and approval in accordance with the schedule included in this Permit.
 - b. The Permittee must review the on-going adequacy of controls and continued management at the site if concentrations of chemical constituents, as specified in 35 IAC 620.450(a)(4)(B), remain in groundwater. The review must take place no less often than once every five years and the results must be submitted to the Illinois EPA in a written report for review and approval.

- c. Pursuant with 35 IAC 620.250(c), the GMZ will expire upon the Illinois EPA's receipt of appropriate documentation that confirms the completion of the action taken and which confirms the attainment of applicable standards as set forth in Subpart D of 35 IAC Part 620.
 - d. In accordance with Condition IV.D of this Permit, corrective action activities at SWMUs 38 and 39 must be completed to meet the following requirements to obtain an NFA determination for this unit by the Illinois EPA in accordance with 35 IAC Part 742.
 - e. An institutional control which meets the requirements of 35 IAC 742, Subpart J must eventually be established to ensure the land usage does not change.
4. Corrective action activities at SWMU 45 must be completed to meet the following requirements and to obtain an NFA determination for this unit by the Illinois EPA. This SWMU is an undeveloped parcel of land located on leased property between the Chicago Sanitary and Ship Canal and the Burlington Northern and Santa Fe Railroad tracks west of the I&M Canal.
- a. In a letter dated April 21, 2020 (Log No. B-162R-CA-86), in response to a letter from CITGO, "SWMU 45 Monitoring Well Installation and 4Q2019 Groundwater Monitoring Report," submitted by CITGO, dated February 25, 2020 (and received March 3, 2020), the Permittee must continue groundwater corrective actions in accordance with the facility's RCRA Permit and the Illinois EPA's October 7, 2016 letter (Log No. B-162R-CA-59).
- The October 7, 2016 letter from the Illinois EPA approved delineation of lead contaminated soil.
- b. The Permittee must meet the remediation objectives of investigation of industrial/commercial property use. Thus, the Permittee must eventually establish institutional controls that meet the requirements of 35 IAC 742, Subpart J to ensure the land usage does not change.
5. Corrective action activities at SWMU 46 must be completed to meet the following requirements and to obtain an NFA determination for this unit by the Illinois EPA. This SWMU is identified as Former Separator #3, located between SWMU 2A-E ("Former Process Wastewater Line" or Big Inch) sumps 2B and 2C and adjacent to SWMU 43G ("Process Drain System"). The Big Inch is a 78-inch diameter sewer line, which was installed through the former separator along the southeastern edge of the structure after it was decommissioned. This SWMU is

located primarily on Tract A of Parcel XXIX, is leased from the Illinois Department of Natural Resources.

- a. In a letter dated April 21, 2020 (Log No. B-162R-CA-86), in response to a letter from CITGO, "SWMU 45 Monitoring Well Installation and 4Q2019 Groundwater Monitoring Report," submitted by CITGO, dated February 25, 2020 (and received March 3, 2020), the Permittee must continue groundwater corrective actions in accordance with the facility's Part B Permit and Illinois EPA's October 7, 2016 letter (Log No. B-162R-CA-59).

Soil and fill have been excavated and disposed, most of which were characteristically hazardous lead soil (D008) or listed separator sludge (F037). After excavation, the facility submitted a request, dated September 25, 2019, to backfill to facilitate further excavation and relocation of a roadway in preparation for excavation of the east cell of the former separator. Illinois EPA approved this request in a later dated February 3, 2020 (Log No. B-162R-CA-84).

- b. Pursuant to Conditions IV.B.2 and IV.B.3.b of this Permit, groundwater at SWMU 46 is to be managed as part of the SWGMP.
 - c. The Permittee must continue remediation and meet the remediation objectives of investigation of industrial/commercial property use. Thus, the Permittee must eventually establish institutional controls that meet the requirements of 35 IAC 742, Subpart J to ensure the land usage does not change.
6. The Permittee must provide hazardous waste cleanup for the following proposed SWMUs until the Illinois EPA determines they meet applicable remediation objectives:
 - a. SWMU 47 (Unit 123 Pump Can) in accordance with a submittal entitled Proposed SWMU 47, Field Investigation Results and Evaluation, dated February 23, 2021 (B-162R-CA-90).
 - b. SWMU 48 (Caustic Release Area) in accordance with a submittal entitled Notification of New SWMU Identification and SWMU Assessment Report, dated April 4, 2024 and received April 5, 2024 (Log No. B-162R-CA-99).
 7. The Permittee may request changes to the approved corrective action program for any SWMU. Such requests must be submitted to the Illinois EPA for review and approval and contain detailed information and justification concerning the proposed modifications.

8. Additional corrective action activities must be carried out and additional information must be submitted to the Illinois EPA, as necessary, to ensure all SWMUs and AOCs are properly remediated in accordance with 35 IAC Parts 742 and 620, as appropriate.

F. CORRECTIVE MEASURES REQUIREMENTS

If the Illinois EPA determines that corrective measures must be taken at a SWMU or AOC, the Permittee must implement a CMP. The CMP must be developed in general accordance with the procedures set forth in Attachment G to this Permit. The corrective measures implemented by the Permittee must be sufficient to ensure the appropriate requirements of 35 IAC Parts 302, 620, 724, and 742 are met.

1. The Permittee must implement a type of corrective measure which includes, but is limited to:
 - a. Removal of the contaminants or the contaminated media so that the remaining media meets remediation objectives developed in accordance with 35 IAC Part 742;
 - b. Closure of the SWMU as a landfill by establishing a proper final cover over the SWMU and providing proper long-term monitoring, maintenance, and management of: (1) leachate; (2) subsurface gas; (3) final cover system; and (4) groundwater;
 - c. Establishment of engineered barriers to restrict exposure of the remaining contaminants in the SWMU or AOC (necessary of certain remediation objectives developed in accordance with 35 IAC Part 742);
 - d. Establishment of institutional controls to restrict activities at the facility, as necessary, to support remediation objectives established in accordance with 35 IAC Part 742.
2. The CMP described in Attachment G consists of five phases:
 - a. Phase I -- conceptual design of the selected corrective measure;
 - b. Phase II -- development of the final design plans for the corrective measure, including installation and operation/maintenance plans;
 - c. Phase III -- actual construction/installation/implementation of the corrective measure;

- d. Phase IV -- operation/maintenance/monitoring, as necessary, of the corrective measure to ensure it is being properly implemented and properly protecting human health and the environment.
- e. Phase V -- demonstration/verification that the corrective measure has been completed and that the established remediation objectives have been achieved.

Phases may be combined or skipped, depending on the actual corrective measure selected. The overall CMP implemented at a given SWMU must: (1) be logical in nature; and (2) allow for the Illinois EPA oversight and approval throughout the entire process. Thus, the Permittee must submit workplans/reports regarding all aspects of corrective measures for the Illinois EPA review and approval prior to carrying out any corrective measure activity.

- 3. The Permittee must submit to the Illinois EPA for review and approval a Phase I CMP report, or its equivalent within 90 days of the date that the Illinois EPA notifies the Permittee of the need for a CMP.
- 4. The Permittee must submit to the Illinois EPA for review and approval subsequent CMP reports in accordance with a schedule approved by the Illinois EPA.
- 5. Once all corrective measures have been completed, the Permittee must submit a report to the Illinois EPA for review and approval that documents all efforts and results associated with the completed measure. The report must include, as appropriate, information demonstrating the approved remediation objectives for the project were achieved.

G. REQUIREMENTS FOR ADDRESSING NEWLY IDENTIFIED SWMU(s) AND AREAS OF CONCERN (AOCs)

- 1. The Permittee must notify the Illinois EPA, in writing, of any newly identified SWMU and/or AOC discovered during groundwater monitoring, field investigations, environmental audits, or other means, no later than 30 days after discovery. The notification must provide the following information, as available:
 - a. The location of the newly identified SWMU and/or AOC, in relation to other SWMUs, on a scaled map or drawing;
 - b. The types of past and present functions of the unit;

- c. The general dimensions, capacities, and structural description of the unit (provide available drawings and specifications);
 - d. The period of time the unit operated;
 - e. The specifics on all materials, including but not limited to, wastes and hazardous constituents that have been or are currently managed at the SWMU/AOC, to the extent available; and
 - f. The results of any available sampling and analysis which may aid in determination if releases of hazardous wastes or hazardous constituents have occurred or are occurring from the unit.
2. If the submitted information demonstrates a potential for a release of hazardous waste or hazardous waste constituents from the newly identified SWMU/AOC, the Illinois EPA may request, in writing, that the Permittee prepare a SWMU Assessment Plan (Plan). This Plan must propose a schedule of implementation and completion of the Plan for any additional SWMU(s) discovered subsequent to the issuance of this Permit.

This Plan must also propose investigations, including field investigations, if necessary, to determine the release potential to specific environmental media for the newly identified SWMU/AOC. The Plan must demonstrate that the sampling and analysis program, if applicable, can yield representative samples. This Plan must also include parameters sufficient to identify migration of hazardous waste and hazardous constituents from the newly identified SWMU/AOC to the environment.
3. The Permittee must submit the Plan to the Illinois EPA within 90 days of such request for review and approval.
4. The Illinois EPA shall approve, conditionally approve, or disapprove the Plan in writing. If the Plan is approved, the Permittee must implement the Plan within 60 days of receipt of such notification, or by a date specified by the Illinois EPA. If the Plan is disapproved, the Illinois EPA shall notify the Permittee in writing of deficiencies and specify a due date for submittal of a revised Plan.
5. The Permittee must submit a report documenting the results of the approved Plan to the Illinois EPA in accordance with the schedule in the approved Plan. The SWMU Assessment Report must describe all results obtained from the implementation of the approved Plan.

6. The Permittee must submit additional investigation plans and reports to the Illinois EPA for review and approval, as necessary, to ensure the nature and extent of the contamination at the SWMU/AOC is adequately characterized. Once the contamination is characterized, the Permittee must develop remedial objectives for the SWMU/AOC in accordance with 35 IAC Parts 742 and 620; such objectives are subject to the Illinois EPA review and approval.
7. The Permittee must implement a CMP, as necessary, to properly address any contamination encountered during the assessment. The Illinois EPA will provide such guidance to the Permittee regarding the implementation of this program.

H. FUTURE RELEASES FROM SWMUs

A potential of a future release exists from the SWMUs, identified in the RCRA Facility Assessment (RFA) that did not require any corrective action when the RFA or RFI was completed. If the Permittee discovers that a release has occurred from such SWMU, the Permittee must notify the Illinois EPA, within 30 days of discovery.

Upon written request from the Illinois EPA, the Permittee must determine the nature and extent of the contamination in accordance with Condition IV.D and Attachment G of this Permit. This determination must begin on a date approved by the Illinois EPA. The results of all corrective action efforts required by this condition must meet the requirements of 35 IAC 724.201.

I. INTERIM MEASUREMENT/STABILIZATION

The Permittee must carry out interim measures/stabilization activities to prevent or mitigate the migration of a release of hazardous substance(s) into the environment, and to provide adequate protection to human health and the environment.

At any time during the corrective action process, the Permittee may initiate interim measures for the purpose of preventing continuing releases and/or mitigating the results of releases and/or mitigating the migration of hazardous wastes or hazardous constituents. It shall not be necessary to conduct all phases of a RFI or a CMP prior to implementing an interim measure if the Illinois EPA and the Permittee agree that a problem can be corrected, or a release cleaned up, without additional study and/or without a formal CMS.

1. Prior to implementing any interim measures, the Permittee must submit detailed information regarding the proposed interim measure to the Illinois EPA for review and approval. This information must include, at a minimum:

- a. Objectives of the interim measures and how the measure is mitigating a potential threat to human health and the environment and/or is consistent with and integrated into any long-term solution at the facility;
 - b. Design, construction, and maintenance requirements;
 - c. Schedules for design and construction; and
 - d. Schedules for progress reports.
2. If the Illinois EPA determines that a release cannot be addressed without an additional study and/or a formal CMS, then the Permittee will be notified these must be performed. Any proposal made under this provision, or any other activity resulting from such proposal, including the invocation of dispute resolution, shall not affect the schedule for implementation of the other corrective action efforts being carried out at the facility or of any other portion of this Permit.
3. If the Illinois EPA determines that interim measures are necessary to protect human health or the environment, the Permittee will be notified by way of a permit modification.
4. Consistent with the annual reporting requirements of this Permit, the Permittee must submit a report to which assesses the effectiveness of any interim measures being carried out in accordance with this Permit. Based on a review of this report, the Illinois EPA reserves the right to require additional interim measures if the interim measure is unable to protect human health and the environment. This annual report should, at a minimum, contain the following information regarding each system which comprises the interim measure:
 - a. A discussion of the operation of each system throughout the previous year. This discussion should address: (1) actual daily, weekly and monthly flow rates through each system; (2) all periods when any system was not operating; and (3) all deviations from the design operating procedures for the system (e.g., problems with drawing an adequate vacuum, downtime due to equipment failure, etc.);
 - b. Results of all monitoring efforts throughout the previous year;
 - c. A discussion of the effectiveness of the system supported, as appropriate with data and calculations; and
 - d. Recommended changes, if any, which should be made to the system to improve its effectiveness.

5. The Illinois EPA reserves the right to require the Permittee to remove or treat soils if the Illinois EPA determines that contaminants are present in the soils at levels such that the remediation system is unable to protect human health and the environment. Remediation objectives for corrective measures will be established by the Illinois EPA at a later date.
6. The interim measure approved for a SWMU may be insufficient to meet the final requirements of corrective action for remediation for the unit. The adequacy of the interim measure will be addressed upon the Illinois EPA review and approval of the RFI reports and the CMP, as required by this Permit. Thus, the Permittee may be required to expand this interim measure as necessary to address existing or additional contamination detected through RFI investigations.
7. The Illinois EPA reserves the right to require revisions and modifications of the interim measures, should the Illinois EPA determine, through information obtained from facility monitoring, that the interim measures approved by this portion of the Permit are ineffective in protecting human health and the environment.

J. FINANCIAL ASSURANCE FOR CORRECTIVE ACTION

In accordance with 35 IAC 724.201, financial assurance must be established while completing required corrective actions at solid waste management units:

1. The Permittee must maintain financial assurance for the completion of corrective action at this facility of at least \$11,163,659 (the approved cost estimate in 2025 dollars), as submitted in the approved permit application, for completing corrective action at this facility. This approved value is based upon cost estimates of various required/known efforts required as part of the corrective action program at this facility.

The Permittee must annually update these estimates to reflect recent results of the corrective action efforts and to evaluate the impacts of these results to determine the next course(s) of action to complete corrective action at the facility. For example, a cost estimate for a given SWMU would initially be based upon the cost to investigate potential contamination at the unit. However, this estimate will eventually need to be revised to reflect any required corrective measures for the unit.

2. The Permittee must prepare an updated cost estimate each year for the completion of any corrective measure(s) required under this Permit to provide financial assurance for the completion of corrective action, as required under 35 IAC 724.201(b). Such cost estimate must be based upon the cost of contamination investigations and assessments for the SWMU(s), design,

construction, operation, inspection, monitoring, and maintenance of the corrective measure(s) to meet the requirements of 35 IAC 724.201 and this Permit.

These estimates must be based upon third party costs. These cost estimate must be submitted to the Illinois EPA as a Class 1* permit modification request no later than December 31 of each year.

3. The Permittee must demonstrate continuous compliance with 35 IAC 724.201 and provide documentation of financial assurance, using a mechanism specified in 35 IAC 724.243, in at least the amount of the cost estimate required under Condition IV.J.1. The words "completion of corrective action" must be substituted for "closure and/or post-closure," as appropriate in the financial instrument specified in 35 IAC 724.251.

This documentation must be submitted to the Illinois EPA within 60 days of the Illinois EPA's approval of the initial, or revised, cost estimate, required under Conditions IV.J.1 or IV.J.2 of this Permit. The Illinois EPA may accept financial assurance for completion of corrective action in combination with another financial mechanism that is acceptable under 35 IAC 724.246 at its discretion.

4. The Permittee must also provide cost estimates and financial assurance for the operation of the groundwater remediation system, required by Section III of this Permit, as such a system is necessary to meet the requirements of 35 IAC 724.201.

SECTION V – STANDARD CONDITIONS**GENERAL REQUIREMENTS**

1. **EFFECT OF PERMIT.** The existence of a RCRA permit must not constitute a defense to a violation of the Environmental Protection Act (Act) or Subtitle G, except for prohibitions against development, modification or operation without a Permit. Issuance of this Permit does not convey property rights or any exclusive privilege. Issuance of this Permit does not authorize any injury to persons or property or invasion of other private rights, or infringement of State or local law or regulations. (35 IAC 702.181)
2. **PERMIT ACTIONS.** This Permit may be modified, reissued, or revoked for cause as specified in 35 IAC 703.270 through 703.273 and Section 702.186. The filing of a request by the Permittee for a permit modification or reissuance, or a notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition. (35 IAC 702.146)
3. **SEVERABILITY.** The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Permit must not be affected thereby. (35 IAC 705.202)
4. **PERMIT CONDITION CONFLICT.** In case of conflict between a special permit condition and a standard condition, the special condition will prevail. (35 IAC 702.160)
5. **DUTY TO COMPLY.** The Permittee must comply with all conditions of this Permit except for the extent and for the duration such noncompliance is authorized by an emergency permit. Any Permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; permit revocation or modification; or for denial of a permit renewal application. (35 IAC 702.141 and 35 IAC 703.242)
6. **DUTY TO REAPPLY.** If the Permittee wishes to continue an activity allowed by this Permit after the expiration date of this Permit, the Permittee must apply for a new Permit at least 180 days before this Permit expires, unless permission for a later date has been granted by the Illinois EPA. (35 IAC 702.142 and 35 IAC 703.125)
7. **PERMIT EXPIRATION.** This Permit and all conditions herein will remain in effect beyond the Permit's expiration date if the Permittee has submitted a timely, complete application (see 35 IAC 703.181-703.209) and through no fault of the Permittee, the Illinois EPA has not issued a new Permit as set forth in 35 IAC 702.125.

8. **NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE.** It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Permit. (35 IAC 702.143)
9. **DUTY TO MITIGATE.** In the event of noncompliance with the Permit, the Permittee must take all reasonable steps to minimize releases to the environment, and must carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. (35 IAC 702.144)
10. **PROPER OPERATION AND MAINTENANCE.** The Permittee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance include effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory, and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the Permit. (35 IAC 702.145)
11. **DUTY TO PROVIDE INFORMATION.** The Permittee must furnish to the Illinois EPA, within a reasonable time, any relevant information which the Illinois EPA may request to determine whether cause exists for modifying, revoking, and reissuing or terminating this Permit, or to determine compliance with this Permit. The Permittee must also furnish to the Illinois EPA, upon request, copies of records required to be kept by this Permit. (35 IAC 702.148)
12. **INSPECTION AND ENTRY.** The Permittee must allow an authorized representative of the Illinois EPA, upon the presentation of credentials and other documents as may be required by law, to:
 - a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Permit;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and
 - d. Sample or monitor, at reasonable times, for the purposes of assuring permit

compliance or as otherwise authorized by the appropriate Act, any substances or parameters at any location. (35 IAC 702.149)

13. MONITORING AND RECORDS. (35 IAC 702.150)

- a. Samples and measurements taken for the purpose of monitoring must be representative of the monitored activity. The method used to obtain a representative sample of the waste must be the appropriate method from 35 IAC 721, Appendix A. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition (SW-846), and finalized updates; Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, latest versions; or an equivalent method as specified in the approved waste analysis plan.
- b. The Permittee must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this Permit, and records of all data used to complete the application for this Permit for a period of at least three years from the date of the sample, measurement, report, or application. These periods may be extended by request of the Illinois EPA at any time. The Permittee must maintain records from all groundwater monitoring wells and associated groundwater surface elevations, for the active life of the facility, and for disposal facilities for the post-closure care period as well.
- c. Records of monitoring information shall include:
 - i. The date(s), exact place, and time of sampling or measurements;
 - ii. The individual(s) who performed the sampling or measurements;
 - iii. The date(s) analyses were performed;
 - iv. The individual(s) who performed the analyses;
 - v. The analytical technique(s) or method(s) used; and
 - vi. The result(s) of such analyses. (35 IAC 702.150)

14. REPORTING PLANNED CHANGES. The Permittee must give written notice to the Illinois EPA as soon as possible of any planned physical alterations or additions to the permitted facility. In general, proposed changes to the facility will need to be submitted to the Illinois EPA as permit modification request that complies with the requirements of 35 IAC 703.280. (35 IAC 702.152(a))

15. **CONSTRUCTION CERTIFICATION.** For a new hazardous waste management (HWM) facility, the Permittee must not commence treatment, storage or disposal of hazardous waste; and for a facility being modified the Permittee may not treat, store, or dispose of hazardous waste in the modified portion of the facility, until:
 - a. The Permittee has submitted to the Illinois EPA by certified mail or hand delivery a letter signed by the Permittee and a qualified Illinois licensed professional engineer stating that the facility has been constructed or modified in compliance with the Permit; and
 - b. The Illinois EPA has inspected the modified or newly constructed facility and finds it is in compliance with the condition of the Permit; or

If, within 15 days of the date of submission of the letter in paragraph (a), the Permittee has not received notice from the Illinois EPA of its intent to inspect, prior inspection is waived, and the Permittee may commence treatment, storage, or disposal of hazardous waste. (35 IAC 703.247)
16. **ANTICIPATED NONCOMPLIANCE.** The Permittee must give advanced notice to the Illinois EPA of any planned changes in the permitted facility or activity which may result in noncompliance with Permit requirements, regulations, or the Act. (35 IAC 702.152(b))
17. **TRANSFER OF PERMITS.** This Permit may not be transferred by the Permittee to a new owner or operator unless the Permit has been modified or reissued pursuant to 35 IAC 703.260(b) or 35 IAC 703.272. Changes in the ownership or operational control of a facility must be made as a Class 1 modification with the prior written approval of the Illinois EPA. The new owner or operator must submit a revised permit application no later than 90 days prior to the scheduled change. (35 IAC 703.260)
18. **MONITORING REPORTS.** Monitoring results must be reported at the intervals specified in the Permit. (35 IAC 702.152(d))
19. **COMPLIANCE SCHEDULES.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Permit must be submitted no later than specified in 35 IAC 702.162. (35 IAC 702.152(e))
20. **TWENTY-FOUR HOUR REPORTING** (35 IAC 702.152 (f) and 35 IAC 703.245).
 - a. The Permittee must report to the Illinois EPA any noncompliance with the Permit which may endanger health or the environment. Any such information must be reported orally within 24 hours from the time the Permittee becomes aware of the following circumstances. This report must include the following:

- i. Information concerning the release of any hazardous waste that may cause an endangerment to public drinking water supplies.
 - ii. Information concerning the release or discharge of any hazardous waste or of a fire or explosion at the HWM facility, which could threaten the environment or human health outside the facility.
 - b. The description of the occurrence and its cause must include:
 - i. Name, address, and telephone number of the owner or operator;
 - ii. Name, address, and telephone number of the facility;
 - iii. Date, time, and type of incident;
 - iv. Name and quantity of material(s) involved;
 - v. The extent of injuries, if any;
 - vi. An assessment of actual or potential hazards to the environment and human health outside the facility, where applicable; and
 - vii. Estimated quantity and disposition of recovered material that resulted from the incident.
 - c. A written submission must also be provided within five days of the time the Permittee becomes aware of the circumstances. The written submission must contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and times and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Illinois EPA may waive the five day written notice requirement in favor of a written report within 15 days.
21. **OTHER NONCOMPLIANCE.** The Permittee must report all instances of noncompliance not otherwise required to be reported under Standard Conditions 18, 19, and 20, at the time monitoring reports, as required by this Permit, are submitted. The reports must contain the information listed in Standard Condition 20. (35 IAC 702.152(g))
22. **OTHER INFORMATION.** Where the Permittee becomes aware that it failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit

application or in any report to the Illinois EPA, the Permittee must promptly submit such facts or information. (35 IAC 702.152(h))

23. SUBMITTAL OF REPORTS OR OTHER INFORMATION. All written reports or other written information required to be submitted by the terms of this Permit must be sent to:

Illinois Environmental Protection Agency
Bureau of Land #33
Permit Section
2520 West Iles Avenue
P.O. Box 19276
Springfield, Illinois 62794-9276

24. SIGNATORY REQUIREMENT. All permit applications, reports or information submitted to the Illinois EPA must be signed and certified as required by 35 IAC 702.126. (35 IAC 702.151)
25. CONFIDENTIAL INFORMATION. Any claim of confidentiality must be asserted in accordance with 35 IAC 702.103 and 35 IAC Part 161.
26. DOCUMENTS TO BE MAINTAINED AT FACILITY SITE. The Permittee must maintain at the facility, until post-closure is complete, the following documents and amendments, revisions, and modifications to these documents:
- a. Post-closure plan as required by 35 IAC 724.218(a) and this Permit.
 - b. Cost estimate for post-closure care as required by 35 IAC 724.244(d) and this Permit.
 - c. Operating record as required by 35 IAC 724.173 and this Permit; and
 - d. Inspection schedules as required by 35 IAC 724.115(b) and this Permit.

GENERAL FACILITY STANDARDS

27. GENERATOR REQUIREMENTS. Any hazardous waste generated at this facility must be managed in accordance with the generator requirements at 35 IAC Part 722.
28. SECURITY. The Permittee must comply with the security provisions of 35 IAC 724.114(b) and 35 IAC 724.114(c).
29. GENERAL INSPECTION REQUIREMENTS. The Permittee must follow the approved inspection schedule. The Permittee must remedy any deterioration or malfunction

discovered by an inspection as required by 35 IAC 724.115(c). Records of inspections must be kept as required by 35 IAC 724.115(d).

30. **CLOSURE REQUIREMENTS FOR ACCUMULATION AREAS.** The Permittee must close containers storage areas, tanks, drip pads, or containment buildings used for the accumulation of on-site generated hazardous waste in accordance with the requirements identified at 35 IAC 722.117(a)(8).

PREPAREDNESS AND PREVENTION

31. **DESIGN AND OPERATION OF FACILITY.** The Permittee must maintain and operate the facility to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment. (35 IAC 724.131)

RECORD KEEPING

32. **OPERATING RECORD.** The Permittee must maintain a written operating record at the facility in accordance with 35 IAC 724.173.

POST-CLOSURE

33. **CARE AND USE OF PROPERTY.** The Permittee must provide post-closure care for the facility as required by 35 IAC 724.217 and in accordance with the approved post-closure plan.
34. **AMENDMENT TO CLOSURE PLAN.** The Permittee must amend the post-closure plan whenever a change in the facility operation plans or facility design affects the post-closure plan or when an unexpected event has occurred which has affected the post-closure plan pursuant to 35 IAC 724.218(d).
35. **COST ESTIMATE FOR POST-CLOSURE CARE.** The Permittee's original post-closure cost estimate, prepared in accordance with 35 IAC 724.244, must be:
- a. Adjusted for inflation either 60 days prior to each anniversary of the date on which the first post-closure cost estimate was prepared or if using the financial test or corporate guarantee, within 30 days after close of the firm's fiscal year. This Permit condition is applicable throughout the entirety of the post-closure care period.
 - b. Revised whenever there is a change in the facility's post-closure plan increasing the cost of closure.

- c. Kept on record at the facility and updated. (35 IAC 724.244)
 - d. Maintained at the value approved by the Illinois EPA with annual adjustment for inflation during the post-closure care period and cannot be decreased unless approved by the Illinois EPA in a permit modification.
36. FINANCIAL ASSURANCE FOR POST-CLOSURE CARE. The Permittee must demonstrate compliance with 35 IAC 724.245 and 703.241(a)(2) by providing documentation of financial assurance, as required by 35 IAC 724.251, in at least the amount of the cost estimates required by Standard Condition 35. This financial assurance must be maintained at such value throughout the post-closure care period and must be adjusted accordingly pursuant to Standard Condition 35. Changes in financial assurance mechanisms must be approved by the Illinois EPA pursuant to 35 IAC 724.245.

Financial assurance documents submitted to the Illinois EPA should be directed to the following address:

Illinois Environmental Protection Agency
Bureau of Land #24
Financial Assurance Program
2520 West Iles Avenue
P.O. Box 19276
Springfield, IL 62794-9276

37. INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS. The Permittee must comply with 35 IAC 724.248 whenever necessary.

SECTION VI – SPECIAL CONDITIONS

1. The Permittee must provide a completed permit application form LPC-PA23 with all additional information, permit modifications, and permit applications that are submitted to the Illinois EPA.
2. The Permittee must submit a current 39(i) certification and supporting documentation with all applications for a permit.
3. Due to the amendments made in 35 IAC Part 742 associated with indoor air inhalation exposure route requirements, all SWMUs that have received NFAs prior to 2013 must conduct an evaluation and investigation, as necessary, to demonstrate that the remediation objectives for indoor air inhalation exposure route are met at each SWMU in accordance with 35 IAC Part 742. A plan to address this requirement for indoor inhalation exposure route at the facility must be submitted to the Illinois EPA for review and approval within 90 days of the effective date of this Permit.

SECTION VII – REPORTING AND NOTIFICATION REQUIREMENTS

The reporting and notification requirements of each section of the RCRA Permit are summarized below. This summary is provided to highlight the various reporting and notification requirements of this Permit.

II. POST-CLOSURE CARE

<u>Condition</u>	<u>Submittal</u>	<u>Due Date</u>
II.F.7	Submit the results of each annual soil sampling event to the Illinois EPA.	By January 15 of the following calendar year
II.F.9.a	Notify the Illinois EPA of any statistically significant increase (SSI) of hazardous constituents below the treatment zone in the LTF.	Within seven days of discovery of the SSI.
II.F.9.b	Submit to the Illinois EPA an application for a permit modification to modify post-closure care practices.	Within 90 days of discovery of the SSI.
II.F.9.c.i	Notify the Illinois EPA of any statistically significant increase (SSI) of hazardous constituents below the treatment zone in the LTF <u>and</u> the Permittee intends to demonstrate the SSI is due to a source other than the regulated units.	Within seven days of discovery of the SSI.
II.F.9.c.ii	Submit to the Illinois EPA a demonstration that the SSI is not due to regulated units.	Within 90 days of discovery of the SSI.
II.F.9.c.iii	Submit to the Illinois EPA a permit application to modify the unsaturated zone monitoring program, as appropriate.	Within 90 days of discovery of the SSI.
II.G.4	Submit certification to the Illinois EPA that the post-closure care for the LTF was performed in accordance with the specifications in the approved Post-Closure Plan.	Within 60 days after completion of post-closure care.

II.H.2	The Permittee must provide to the Illinois EPA an updated post-closure care cost estimate annually, either with an inflation factor or by recalculation of the maximum cost of closure, in current US dollars. The Permittee must also provide an updated post-closure care cost estimate whenever a change to the current cost estimate results from changing site conditions (i.e., changes not due solely to the result of inflation).	
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III. GROUNDWATER DETECTION MONITORING PROGRAM

<u>Condition</u>	<u>Submittal</u>	<u>Due Date</u>
III.C.3	Submit notification to the Illinois EPA if any wells are damaged or the structural integrity has been damaged.	Within 30 days of discovery.
III.C.5	Submit notification to the Illinois EPA of new or replacement well.	Within 30 days of the date of well completion.
	Submit certification to the Illinois EPA that plugging and abandonment of a well.	Within 30 days of the date the well is plugged and abandoned.
III.I.2	Submit to the Illinois EPA the required semi-annual Groundwater Monitoring data and statistical calculations. <u>Samples collected during the months of:</u> April – June October – December	July 15 January 15
III.I.3	Submit to the Illinois EPA the required annual Groundwater Flow Rate and Direction data (must be recorded during the second semi-annual sampling event).	By July 15 of the following calendar year (with groundwater data).

III.I.4	Submit to the Illinois EPA the required semi-annual Groundwater Elevation data. <u>Samples collected during the months of:</u> April – June October – December	July 15 January 15
III.I.5	Submit to the Illinois EPA Surveyed Elevations (of the top of the well casing “stick-up”)	Every five years, <u>or</u> at the request of Illinois EPA, or whenever the elevations changes; and All new wells at the time of installation.
III.I.6	Submit to the Illinois EPA Elevations of the bottom of the well.	By July 15 of the following calendar year (with groundwater data)
III.I.10.a	Notify the Illinois EPA of any SSI of hazardous constituents.	Within seven days of discovery of the SSI.
III.I.10.b	Sample groundwater in all wells for Appendix I constituents.	Immediately after any increase is discovered.
III.I.10.d	Submit to the Illinois EPA an application for a permit modification to establish a compliance monitoring program.	Within 90 days of discovery of the SSI.
III.I.10.e	Provide to the Illinois EPA a corrective action feasibility plan.	Within 180 days of discovery of the SSI.
III.I.11.a	Notify the Illinois EPA, in writing, of intent to make a determination that a source other than a regulated unit caused the increase, or the increase resulted from error.	Within seven days of discovery of the SSI.
III.I.11.b	Submit to the Illinois EPA a report which demonstrates a source other than a regulated unit caused the increase, or the increase resulted from error.	Within 90 days of discovery of the SSI.
III.I.11.c	Submit to the Illinois EPA an application to change the detection monitoring program.	Within 90 days of discovery of the SSI.

III.J.1	Submit to the Illinois EPA an application for a permit modification of changes to the Groundwater Detection Monitoring Program if it no longer satisfies the requirements of 35 IAC 724.198.	Within 90 days of determination.
---------	--	----------------------------------

IV. CORRECTIVE ACTION

<u>Condition</u>	<u>Submittal</u>	<u>Due Date</u>
IV.D.4	Submit to the Illinois EPA the Annual Sewer Inspection and Maintenance Report.	By March 31 of the following calendar year.
IV.F.3	Phase I CMP Report.	Within 90 days of receipt of notification that corrective measures are necessary.
IV.G.1	Submit to the Illinois EPA Notification of Newly Discovered SWMU.	Within 30 days of discovery.
IV.G.3	Submit to the Illinois EPA a SWMU Assessment Plan for review and approval if such request is made from Illinois EPA.	Within 90 days of the date the Illinois EPA notifies the Permittee of the need for a CMP.
IV.G.4	Implementation of Assessment for the Newly Discovered SWMU.	Within 60 days after notification of approval of the Assessment plan, or by a date specified by the Illinois EPA.
IV.J.2	Submit to the Illinois EPA an Updated Corrective Action Cost Estimate.	By December 31 of each year.
IV.J.3	Submit to the Illinois EPA a demonstration of continual compliance with the required financial assurance requirements for corrective action.	Within 60 days after notification of approval of the corrective action cost estimate.

V. STANDARD CONDITIONS FOR POST-CLOSURE

<u>Condition</u>	<u>Submittal</u>	<u>Due Date</u>
V.6	Submit to the Illinois EPA a completed renewal permit application.	Minimum of 180 days prior to expiration of this Permit.

V.11	Provide to the Illinois EPA any requested information and copies of records required to be kept by this Permit.	Reasonable time.
V.14	Notify the Illinois EPA of any planned physical alteration or additions to the permitted facility.	At least 15 days prior to planned change.
V.15	Provide to the Illinois EPA construction certification of a new hazardous waste management facility, signed by the Permittee and a registered P.E.	Prior to the management of hazardous waste in a new or modified portion of the facility.
V.16	Provide to the Illinois EPA written notification of anticipated noncompliance due to any planned changes in the permitted facility or activity.	Prior to modification or action.
V.17	Submit to the Illinois EPA a Class 1 modification request to this Permit to reflect transfer of ownership and/or new operator.	At least 90 days prior to the scheduled change.
V.19	Submit to the Illinois EPA any information required in a compliance schedule.	Within 14 days after each schedule date .
V.20	Report to the Illinois EPA any non-compliance which may endanger the environment or human health: <u>Via Telephone:</u> <u>In Writing:</u>	Within 24 hours of discovery Within five days of discovery
V.21	Provide to the Illinois EPA a report of all other instances of noncompliance.	By March 31 of the following calendar year with the Annual Report.
V.36	Provide to the Illinois EPA documentation of financial assurance, as required by 35 IAC 724.245 and 724.251.	Annually, or when the cost estimate changes.
V.37	Notify the Illinois EPA of commencement of voluntary or involuntary bankruptcy proceedings.	Within 10 days after commencement of proceeding.

VI. SPECIAL CONDITIONS

<u>Condition</u>	<u>Submittal</u>	<u>Due Date</u>
VI.1	Provide to the Illinois EPA LPC-PA23 application form.	With all additional information, permit modifications, and permit applications.
VI.2	Provide to the Illinois EPA 39i Certification Forms.	With every permit submittal.
VI.5	Provide to the Illinois EPA updated cost estimate and financial assurance.	Within 90 days of the effective date of this Permit.

ATTACHMENT A

APPROVED PERMIT APPLICATION IDENTIFICATION

**CITGO Lemont Refinery
STATE ID No.: 1978030004
USEPA ID No: ILD041550567
Log No. B-162R2**

ATTACHMENT A
APPROVED PERMIT APPLICATION

DOCUMENT	DATE	Date Received
RCRA Part A and Part B Post-Closure Care Permit Renewal Application	11/13/2020	11/13/2020
Response to Notice of Deficiency to the RCRA Part A and Part B Post-Closure Care Permit Renewal Application	03/12/2021	03/12/2021
Response to Notice of Deficiency to the RCRA Part A and Part B Post-Closure Care Permit Renewal Application	06/23/2025	06/24/2025

ATTACHMENT B

FACILITY MAPS

**CITGO Lemont Refinery
STATE ID No.: 1978030004
USEPA ID No: ILD041550567
Log No. B-162R2**

Attachment B Facility Maps

EPA ID #: 1LD041550567

Site Name: CITGO PETROLEUM CORPORATION, LEMONT, ILLINOIS REFINERY

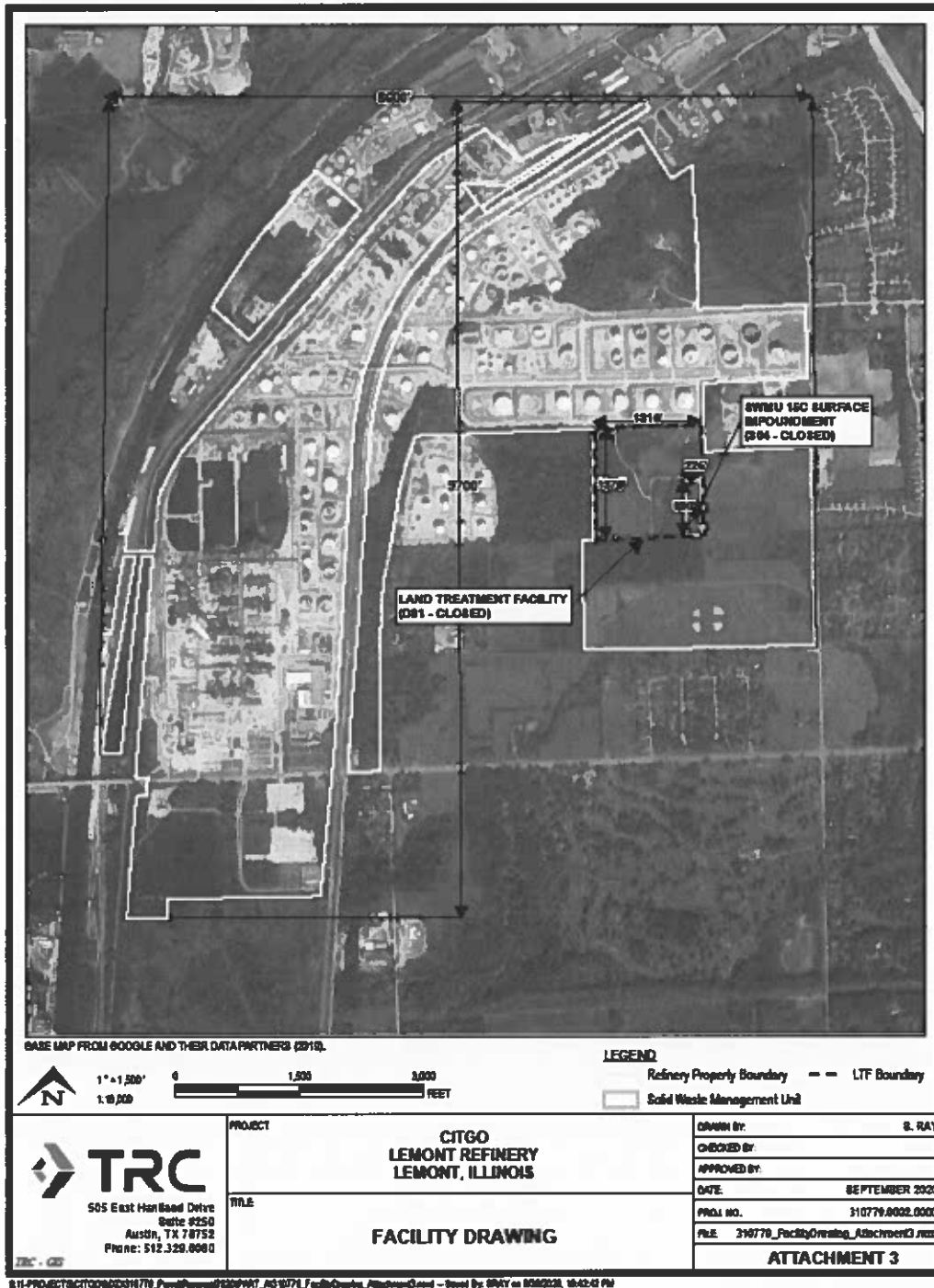


Figure 1: CITGO Lemont Refinery



Figure 2: Topographic Map

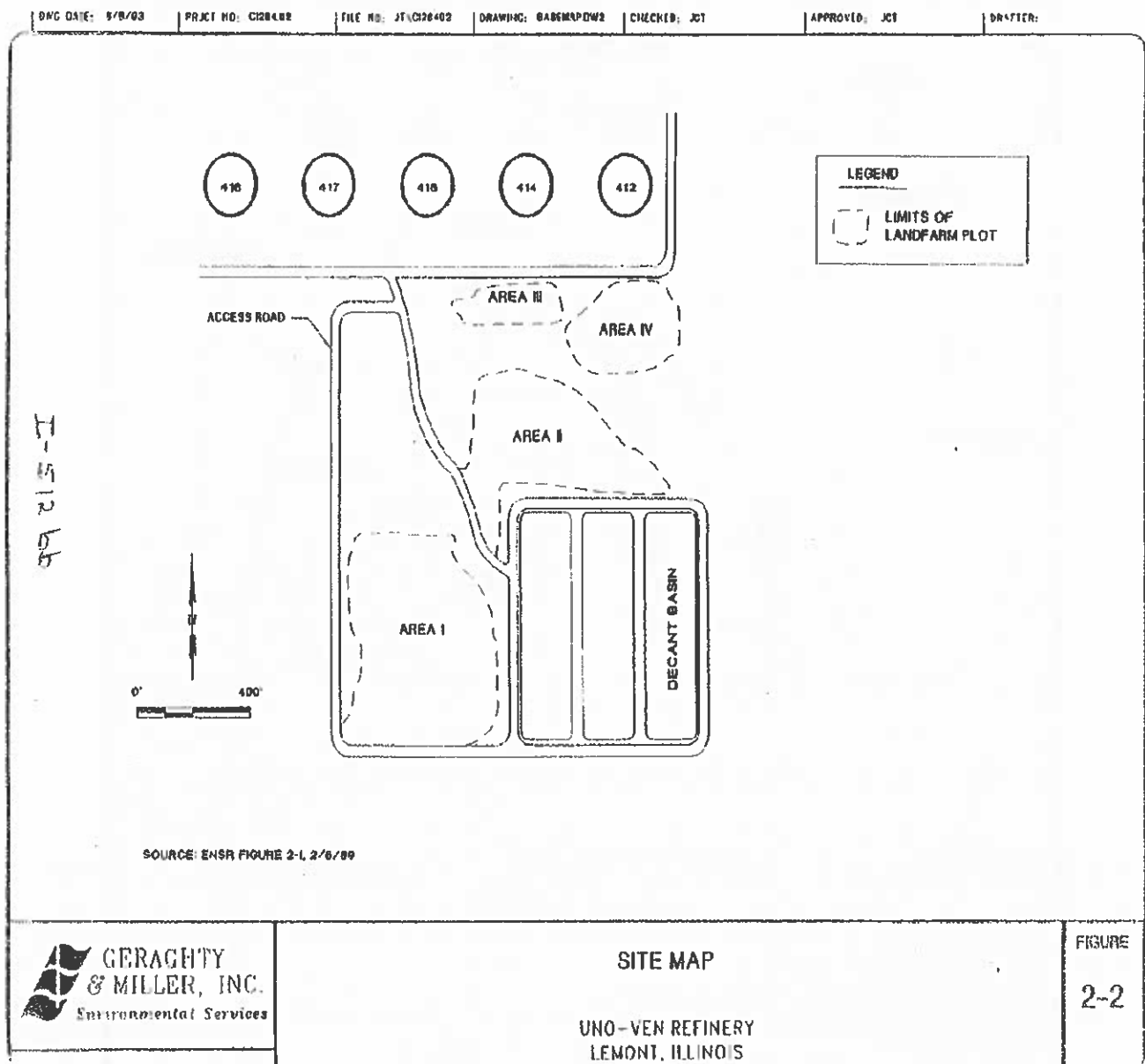


Figure 3: Site Map



Figure 4: Location of the LTF

ATTACHMENT C

INSPECTION SCHEDULE AND INSPECTION FORMS

**CITGO Lemont Refinery
STATE ID No.: 1978030004
USEPA ID No: ILD041550567
Log No. B-162R2**

Land Treatment Facility Typical Inspection Schedule for CITGO Petroleum Corporation, Lemont Refinery			
Item to be Inspected	Inspected For	Inspection Procedure	Frequency of Inspection Justification of Frequency of Inspection
Fence			
Fence	Holes/Damage	Visually check to ensure that there are no sites where unauthorized entry has occurred or could occur.	Quarterly Unlikely to deteriorate quickly. Required to be locked by last person leaving the LTF. Unlikely to deteriorate quickly.
	Fence Posts	Visually check for deterioration or damage.	
	Gates	Ensure that gates are locked upon arrival at the unit.	
Signs	Damage/Deterioration	Visually inspect signs surrounding RCRA facilities to ensure that they have not deteriorated or been damaged.	
	Readability	Visually inspect signs to ensure that they can be read from an adequate distance.	
Run-On/Run-Off Control Systems			
Ditches	Blockage	Visually check to ensure that trench is free of debris.	Quarterly and after a precipitation event of greater than four inches in a 24-hr period Unlikely to deteriorate quickly in the presence of vegetative cover.
	Collapse	Check to ensure that sides of trench are not collapsing and that trench capacity remains as originally designed.	
	Erosion	Visually check for evidence of erosion.	

Table D-2. Land Treatment Facility Typical Inspection Schedule (cont.)

Item to be Inspected	Inspected For	Inspection Procedure	Frequency of Inspection	Justification of Frequency of Inspection
Cover System				
Vegetative Cap	Erosion	Visually check for evidence of erosion, settling, or subsidence.	Quarterly and after a precipitation event of greater than four inches in a 24-hr period	Unlikely to deteriorate quickly.
	Surface Disturbances	Visually check for gouged areas or ruts caused by vehicles or other physical actions.	Quarterly and after a precipitation event of greater than four inches in a 24-hr period	Unlikely to deteriorate quickly.
	Areas of stressed or missing vegetation	Visually check for brown patches or bare patches in the grass. Also check for growth of trees or shrubs.		
	Vegetation Growth	Visually ensure that height of vegetation does impede adequate inspection for subsidence or erosion.		
	Burrowing Animals	Visually check for holes or other signs of burrowing animals.	Unlikely to pond due to slop and run-on/run-off controls.	Seasonal.
	Ponding	Visually check for puddles or ponding of precipitation.		
Berms	Erosion	Visually check for evidence of erosion, settling, or subsidence.	Quarterly and after a precipitation event of greater than four inches in a 24-hr period	Unlikely to pond due to slop and run-on/run-off controls.
	Surface Disturbances	Visually check for gouged areas or ruts caused by vehicles or other physical actions.		

Table D-2. Land Treatment Facility Typical Inspection Schedule (cont.)				
Item to be Inspected	Inspected For	Inspection Procedure	Frequency of Inspection	Justification of Frequency of Inspection
Cover System (cont.)				
Berms (Cont.)	Areas of Stressed or Missing Vegetation	Visually check for brown patches or bare patches in the grass. Also check for growth of trees or shrubs.	Quarterly and after a precipitation event of greater than four inches in a 24-hr period	Unlikely to pond due to slop and run-on/run-off controls.
	Vegetation Growth	Visually ensure that height of vegetation does impede adequate inspection for subsidence or erosion.		Unlikely to pond due to slop and run-on/run-off controls.
	Rock Rip Rap Integrity	Visually ensure that the rock rip rap is structurally sound, rock is intact, and damage has not occurred		Unlikely to pond due to slop and run-on/run-off controls.
	Burrowing Animals	Visually check for holes or other signs of burrowing animals.		Seasonal.
Locks	Missing or damaged	Check locks to ensure that they are present and are working correctly.	Semi-Annually	Unlikely to deteriorate quickly.
Guard Posts	Structural damage	Inspect posts to ensure that they are upright and firmly set in concrete.		
Outer Steel Casing	Structural damage	Inspect casing for corrosion, dents, cracks or erosion around base; attempt to move casing to ensure that it is still securely set in concrete.		
	ID Numbers	Visually ensure that ID numbers are clearly visible on the well casing.		

Table D-2. Land Treatment Facility Typical Inspection Schedule (cont.)

Item to be Inspected	Inspected For	Inspection Procedure	Frequency of Inspection	Justification of Frequency of Inspection
Cover System (Cont.)				
Surface Pads/Seals	Gaps or cracks	Visually inspect surface pads surrounding RCRA monitoring wells to ensure that they have not deteriorated or been damaged.	Semi-Annually	Semi-Annually Unlikely to deteriorate quickly.
Stormwater Management System				
Intermittent Stream	Obstructions	Visually ensure that the flow of water is unobstructed.	Quarterly and after a precipitation event of greater than four inches in a 24-hr period	Unlikely to deteriorate quickly.
	Erosion	Visually check for evidence of erosion that could render the channel ineffective or damage the LTF cover system.		
Culvert	Inverts	Visually ensure inverts are debris free.		
	Erosion	Visually check for evidence of erosion.		
Grass Waterways and Diversion Channels	Erosion	Visually check for evidence of erosion that could render the channel ineffective or damage the LTF cover system.		
	Silt	Visually ensure that excessive siltation has not occurred.		
	Vegetation	Visually ensure that vegetation in the channels is adequate. Visually ensure that height of vegetation does impede adequate inspection or stormwater flow.		

Table D-2. Land Treatment Facility Typical Inspection Schedule (cont.)				
Item to be Inspected	Inspected For	Inspection Procedure	Frequency of Inspection	Justification of Frequency of Inspection
Stormwater Management System (cont.)				
Grass Waterways and Diversion Channels	Obstructions	Visually ensure that the flow of water is unobstructed.	Quarterly and after a precipitation event of greater than four inches in a 24-hr period	Unlikely to deteriorate quickly.
	Rock Filter Drains	Silt		
Structural Damage		Visually ensure that the dam is structurally sound, rock is intact, and damage has not occurred.		
	Outfall Rip Rap	Silt		
Structural Damage		Visually ensure that the rip rap is structurally sound, rock is intact, and damage has not occurred.		
Survey Benchmark				
Benchmark for Survey Plat	Visibility	Visually ensure that the benchmark is visible, accessible, clearly labeled, and undisturbed.	Semi-Annually	Unlikely to deteriorate quickly.
Monuments for UZM Grid	Visibility	Visually ensure that the monuments are visible, accessible, clearly labeled, and undisturbed.	Semi-Annually	Unlikely to deteriorate quickly.

GENERAL INFORMATION

- 1) NAME OF INSPECTOR:
2) COMPANY:
3) DATE:
4) TIME: _____ AM or PM
5) WEATHER:
TEMPERATURE _____ °F
SUNNY ☐ CLOUDY ☐ WINDY ☐ RAINY ☐ SNOWY ☐
6) GROUND CONDITIONS: WET ☐ DRY ☐ SNOW ☐
7) IS THIS A SCHEDULED INSPECTION? ☐ YES ☐ NO
IF NO, EXPLAIN:

MONITORING WELL INSPECTION

- 8) ARE THE MONITORING WELLS LOCKED? ☐ YES ☐ NO
IF NO, REFERENCE SPECIFIC WELL(S) AND EXPLAIN: _____

- 9) ARE GUARD POSTS OR PROTECTIVE CASINGS DAMAGED? ☐ YES ☐ NO IF YES,
REFERENCE SPECIFIC WELL(S) AND EXPLAIN _____

- 10) ARE THE WELL LOCKS OPERABLE? ☐ YES ☐ NO
IF NO, REFERENCE SPECIFIC WELL(S) AND EXPLAIN: _____

- 11) ARE ID NUMBERS CLEARLY VISIBLE ON WELL CASING? ☐ YES ☐ NO
IF NO, REFERENCE SPECIFIC WELL(S) AND EXPLAIN: _____

- 12) ARE THERE GAPS OR CRACKS IN THE SURFACE PADS/SEALS? ☐ YES ☐ NO
IF YES, REFERENCE SPECIFIC WELL(S) AND EXPLAIN: _____

PERIMETER FENCE INSPECTION

- 13) ANY SIGNS OF UNAUTHORIZED ENTRY? ☐ YES ☐ NO
14) ARE ANY FENCE POSTS DAMAGED? ☐ YES ☐ NO
15) DOES FENCE APPEAR IN GOOD CONDITION? ☐ YES ☐ NO
16) ARE ANY SIGNS MISSING? ☐ YES ☐ NO
17) ARE THE SIGNS READABLE? ☐ YES ☐ NO
18) UPON ARRIVAL, WERE THE GATES LOCKED? ☐ YES ☐ NO

COMMENTS: _____

COVER SYSTEM AND BERM INSPECTION

- 19) IS THERE ANY SETTLING, SUBSIDENCE, OR EROSION EVIDENT?

AREA I ☐ YES ☐ NO

AREA II ☐ YES ☐ NO

AREA III ☐ YES ☐ NO

AREA IV ☐ YES ☐ NO

IF YES, NOTE AREA NUMBER AND EXPLAIN: _____

- 20) ARE THERE ANY TREES OR SHRUBS GROWING IN THE COVER SYSTEM OR BERM?

AREA I ☐ YES ☐ NO

AREA II ☐ YES ☐ NO

AREA III ☐ YES ☐ NO

AREA IV ☐ YES ☐ NO

IF YES, NOTE AREA AND EXPLAIN: _____

- 21) DOES THE VEGETATION GROWTH HEIGHT IMPEDE INSPECTION OF THE COVER SYSTEM OR BERM SUCH THAT EVIDENCE OF SUBSIDENCE OR EROSION IS DIFFICULT TO DETECT?

AREA I ☐ YES ☐ NO

AREA II ☐ YES ☐ NO

AREA III ☐ YES ☐ NO

AREA IV ☐ YES ☐ NO

IF YES, NOTE AREA AND EXPLAIN: _____

22) ARE THERE ANY SIGNS OF STRESSED VEGETATION OR NO VEGETATION?

AREA I ☐ YES ☐ NOAREA II ☐ YES ☐ NOAREA III ☐ YES ☐ NOAREA IV ☐ YES ☐ NO

IF YES, NOTE AREA AND EXPLAIN: _____

23) ARE THERE ANY SIGNS OF BURROWING ANIMALS IN THE COVER SYSTEM OR BERM?

AREA I ☐ YES ☐ NOAREA II ☐ YES ☐ NOAREA III ☐ YES ☐ NOAREA IV ☐ YES ☐ NO

IF YES, NOTE AREA AND EXPLAIN: _____

24) ARE THERE ANY SURFACE DISTURBANCES FROM VEHICLES OR OTHER PHYSICAL ACTIONS?

AREA I ☐ YES ☐ NOAREA II ☐ YES ☐ NOAREA III ☐ YES ☐ NOAREA IV ☐ YES ☐ NO

IF YES, NOTE AREA AND EXPLAIN: _____

25) IS THERE ANY PRECIPITATION PONDING ON THE COVER SYSTEM OR BERM?

AREA I ☐ YES ☐ NOAREA II ☐ YES ☐ NOAREA III ☐ YES ☐ NOAREA IV ☐ YES ☐ NO

IF YES, NOTE AREA AND EXPLAIN: _____

STORMWATER MANAGEMENT SYSTEM INSPECTION**Intermittent Stream**

- 26) ARE THERE ANY OBSTRUCTIONS TO FLOW? ☐ YES ☐ NO
IF YES, EXPLAIN: _____

- 27) IS THERE ANY EVIDENCE OF EROSION OR DETERIORATION THAT COULD RENDER THE STRUCTURE OR CHANNEL INEFFECTIVE OR THAT COULD DAMAGE ANY OF THE LANDFARM PLOT COVER SYSTEMS? ☐ YES ☐ NO
IF YES, EXPLAIN: _____

Culverts

- 28) ARE THE INVERTS FREE OF DEBRIS? ☐ YES ☐ NO
IF NO, EXPLAIN: _____

- 29) IS THERE ANY EVIDENCE OF EROSION OR DETERIORATION? ☐ YES ☐ NO
IF YES, EXPLAIN: _____

Grass Waterways, Diversion Channels, Ditches, Rock Filter Dams

- 30) IS THERE ANY EVIDENCE OF EROSION OR DETERIORATION THAT COULD RENDER THE STRUCTURE OR CHANNEL INEFFECTIVE OR THAT COULD DAMAGE ANY OF THE LANDFARM PLOT COVER SYSTEMS? ☐ YES ☐ NO
IF YES, EXPLAIN: _____

- 31) IS THERE SILTATION OVER HALF THE DESIGN DEPTH? ☐ YES ☐ NO
IF YES, EXPLAIN: _____

- 32) IS THE VEGETATION IN THE CHANNELS ADEQUATE? ☐ YES ☐ NO
IF NO, EXPLAIN: _____

- 33) ARE THERE ANY OBSTRUCTIONS TO FLOW? ☐ YES ☐ NO
IF YES, EXPLAIN: _____

BENCHMARK INSPECTION

- 34) IS THE SURVEYED BENCHMARK USED TO PREPARE THE SURVEY PLAT FOR THE
LAND TREATMENT FACILITY:
VISIBLE? ☐ YES ☐ NO
ACCESSIBLE? ☐ YES ☐ NO
CLEARLY LABELED? ☐ YES ☐ NO
UNDISTURBED? ☐ YES ☐ NO
IF NO, EXPLAIN: _____

- 35) ARE THE MONUMENTS WHICH DELINEATE THE SAMPLING GRID FOR THE
UNSATURATED ZONE MONITORING PROGRAM VISIBLE, ACCESSIBLE, CLEARLY
LABELED AND UNDISTURBED?
AREA I ☐ YES ☐ NO
AREA II ☐ YES ☐ NO
AREA III ☐ YES ☐ NO
AREA IV ☐ YES ☐ NO
IF NO, NOTE AREA AND EXPLAIN: _____

ACTION ITEMS

(Including the nature or date of any repairs and remedial action)

RE-INSPECTION NOTES

ATTACHMENT D

CERTIFICATION OF COMPLETION OF POST-CLOSURE CARE

**CITGO Lemont Refinery
STATE ID No.: 1978030004
USEPA ID No: ILD041550567
Log No. B-162R2**



Illinois Environmental Protection Agency

CERTIFICATION OF COMPLETION OF POST-CLOSURE CARE

CITGO Lemont Refinery (1978030004) – Will County

USEPA ID: ILD041550567

RCRA Permit Log No. B-162R2

To meet the requirements of 35 Ill. Adm. Code 724.220, this statement is to be completed by both a responsible officer of the owner/operator (as defined in 35 Ill. Adm. Code 702.126) and by a qualified Illinois licensed professional engineer upon completion of post-closure care of the Land Treatment Facility (LTF). Submit one copy of the certification with original signatures and two additional copies.

The hazardous waste management unit closed as a landfill, known as the LTF, has been closed in accordance with the specifications in the approved closure plan. Post-Closure care required for the LTF has been provided and completed in accordance with the RCRA Permit. A report documenting that required post-closure care has been carried out and completed in accordance with the approved post-closure care plan is attached.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS5/44(h))

Facility Name

Printed Name of Responsible Officer

**Signature of Owner/Operator
Responsible Officer**

Date

Printed Title of Responsible Officer

Signature of Licensed P.E.

Date

**Printed Name of Licensed P.E. and Illinois
License Number**

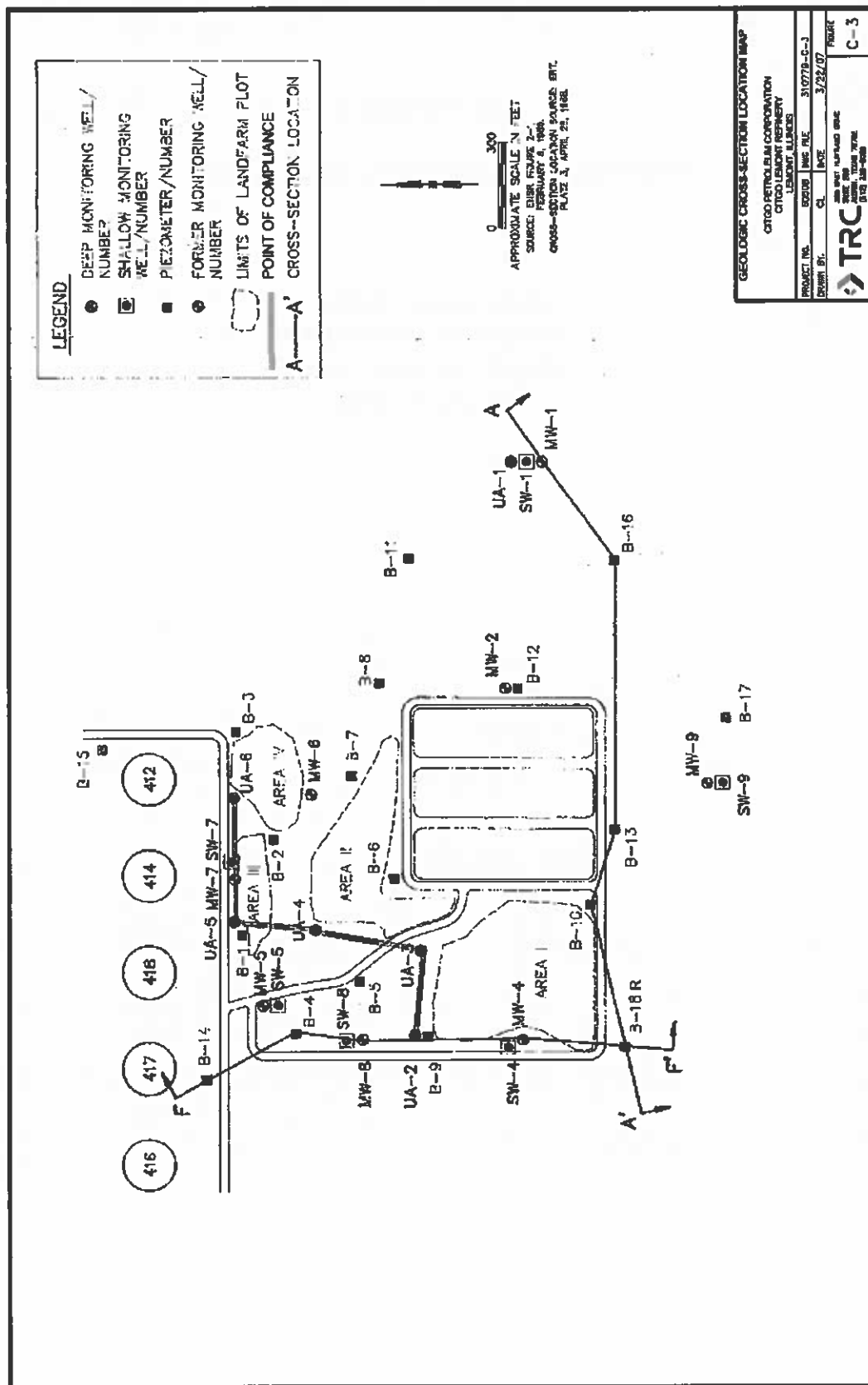
Mailing Address of P.E.:

Licensed P.E.'s Seal:

ATTACHMENT E

GROUNDWATER MONITORING WELL LOCATIONS

**CITGO Lemont Refinery
STATE ID No.: 1978030004
USEPA ID No: ILD041550567
Log No. B-162R2**



ATTACHMENT F

CHRONOLOGICAL SUMMARY OF CORRECTIVE ACTION ACTIVITIES

**CITGO Lemont Refinery
STATE ID No.: 1978030004
USEPA ID No: ILD041550567
Log No. B-162R2**

ATTACHMENT F

Summary of Illinois EPA Letters Regarding Corrective Action Activities
(Updated November 2025)

1. Chronological Summary of Corrective Action

Illinois EPA Letter Dates & Log Nos.	Description of Submittal	Illinois EPA Action Taken
9/18/1997 B-162	Application for RCRA Post-Closure Permit.	Issued a RCRA permit for closure and post-closure care of four (4) land treatment units. The Permit also required the facility to conduct corrective action at (34) SWMUs. The Permit broke the SWMUs down into two (2) groups. Group 1 of those SWMUs, with a known release or highest potential risk to human health and the environment, to be addressed first. Group II to be next.
5/06/1998 B-162-M-7 & M-8	- Request to include an addendum to the Unsaturated Zone Monitoring Plan, in Attachment G, (dated 11/21/1997 and rec'd 11/24/1997 and 5/5/1998); and Request to modify the soil sampling procedures. - Request to modify the UA-Series Monitoring Constituents in Attachment H of the letter, in response to Condition III.D.1 of the Permit (dated 11/21/1997 and rec'd 5/5/1998).	- Approved the Unsaturated Zone Monitoring Plan request and Sections II and Attachment I of the Permit were modified; and Did not approve the soil sampling procedure request. - Approved and modified Condition III.D of the Permit.
10/22/1998 B-162-M-11	Request to modify the GMZ beneath and around the stormwater basin (this GMZ is also identified as SWMU 33). The requirements for the GMZ were initially contained in Conditions IV.B.1.a of the RCRA Permit.	Approved the request (GMZ is also identified as SWMU 33).

11/28/2000 B-162-M-1	Closure by removal demonstration at the wastewater treatment sludge decant basin (a surface impoundment) which had previously been closed under IEPA approved plan Log No. C-193). This is also referred to as SWMU 15C; required by Condition I.C of the RCRA Permit.	Disapproved the request; further soil investigation at this unit is required.
5/14/2001 B-162-M-1	A workplan for soil investigation at SWMU 15C as part of the closure by removal demonstration required by Condition I.C of the Permit; follow-up to the 11/28/2000 letter (see above).	Approved with conditions and modifications.
10/09/2001 B-162-CA-1; B-162-CA-2; and B-162-CA-3	The following documents were included in this submittal: 1. Group I RFI Phase I/II Workplan; 2. Sewer Inspection and Maintenance Work Plan; and 3. Streamlined Corrective Action Workplan.	Disapproved all three documents.
11/14/2001 B-162-M-1	A soil investigation report for SWMU 15C, submitted as part of the closure by removal demonstration required by Condition I.C of the Permit. Follow-up to the 5/14/2001 letter.	Approved the report with conditions: required the facility to remove the "ashy/silty" material from the unit.
9/27/2002 B-162-M-1	Final closure by removal demonstration document for SWMU 15 C, as required by Condition I.C of the Permit. It contained soil investigation results and a soil excavation report; follow-up to the 11/14/2001 letter.	Approved a closure by removal demonstration for the former surface impoundment, known as SWMU 15C.
2/21/2003 B-162-CA-4 (1)	<u>Sewer Inspection and Maintenance Work Plan (B-162-CA-2)</u> , submitted in May 1998.	Approved plan as a follow-up to Illinois EPA's 10/9/2001 letter.

4/09/2003 B-162-CA-4 (2)	The submittal received on 1/17/2002, consisted of: 1. Workplan for Streamlined RCRA Corrective Action; 2. Results of Site-Wide Groundwater Investigation; and 3. Workplan and Procedures: Streamlined Corrective Action.	Illinois EPA's response included concerns and requirements that need to be addressed prior to establishing the revised process for carrying out the corrective action program at the facility.
1/28/2004 B-162-CA-6; and B-162-CA-7	The submittal included: 1. Site-Wide Groundwater Monitoring Report (9/2003); 2. Workplan for Streamlined RCRA Corrective Action (10/2003); and Letter dated 1/8/2004 – a request to withdraw the 10/2003 streamlined workplan.	1. Approved the Site-Wide Groundwater Monitoring Report with conditions to conduct additional groundwater investigation at the site. 2. Indicated the streamlined plan was withdrawn and was discussed in the 12/2003 meeting. A revised Streamlined CA Workplan is to be submitted to Illinois EPA by 1/31/2004.
6/01/2004 B-162-CA-11	A 1/30/2004 report entitled <u>SWMU-1 Soil Investigation Streamline Corrective Action Program</u> and supplemental information, dated 5/6/2004.	Approved the report which documented no further action is necessary at SWMU 1 (former Empty Drum Storage Area).
10/04/2004 B-162-CA-9; and B-162-CA-10	The submittal the following documents: 1. Workplan for Site-Wide Groundwater Monitoring (rec'd 2/02/2004); 2. Workplan for Evaluation of GW Conditions at I&M Canal (rec'd 3/30/2004); 3. Sewer Inspection – Annual Report (rec'd 3/30/2004); and RCRA Streamlined Category A SWMU Work Plans (rec'd on 3/30/2004) for SWMUs 2a-e, 3, 16, 17, 19b, 24, 31a, and 31 b-e.	1. Accepted the Sewer Inspection Annual Report. 2. Approved the Workplan for Category A SWMUs with conditions and modifications – focused mainly on soil investigation only. Required additional groundwater CA activities, a report for evaluation of I&M canal, and additional information regarding groundwater monitoring wells.

1/06/2005 B-162-CA-5	A workplan entitled <u>SWMU 43j: Pipeline Release Located Newar Tanks 92 and 108</u> , which included a soil sampling plan for SWMU 43j (rec'd 12/14/2004).	Approved the workplan with conditions and modifications.
3/23/2005 B-162-CA-12	A groundwater report entitled, <u>Field Investigation Report: Evaluation of Groundwater Conditions at the I&M Canal</u> , rec'd 11/23/2005. CITGO proposed natural attenuation to address the groundwater contamination at the site.	Disapproved the report; required CITGO to submit a plan to address groundwater in the I&M canal within 60 days (this date was extended an additional 60 days as result of the 5/19/2005 meeting between Illinois EPA and CITGO).
8/24/2005 B-162-CA-13 & CA-15 thru CA-22	Submittals rec'd 3/31/2005 contained Category A SWMU investigation reports for the following SWMUs: SWMUs 2a-e, 3, 16, 17, 19b, 24, 31a, 31b-e, and 43j (the workplan for this effort had been approved on 10/4/2004).	Approved the reports. Additional work is necessary at each SWMU.
10/21/2005 B-162-CA-23	<u>Site Wide Groundwater Monitoring Report</u> , rec'd 6/20/2005, was submitted to address groundwater concerns discussed during the meeting between Illinois EPA and CITGO on 6/19/2005.	Approved the report with conditions and modifications. Illinois EPA required CITGO to submit additional information regarding its background and details on the remediation options.
11/30/2005 B-162-CA-9	<u>Work Plan for Streamlined Corrective Action</u> , rec'd on 2/03/2004, and the related draft revised workplan, rec'd via email on 3/01/2005 and 5/13/2005.	Disapproved. CITGO is required to submit either a revised CA workplan or a Phase I/II RFI Workplan for all group I SWMUs in accordance with its RCRA Permit by 1/31/2005.
1/31/2006 B-162-CA-25	Phase II RFI Workplan for SWMUs 2A-E, rec'd 11/28/2005.	Approved CITGO's plan to monitor this unit for 12-mo and to submit a report of the monitoring after 12-mo. No further investigation is necessary regarding soil at these units.

2/27/2006 B-162-CA-1 & CA-8	1. CITGO's 1/14/2004 letter regarding Disposal of Storm Water Basin (SWB) Material, rec'd 1/16/2004. 2. CITGO's 7/12/2005 submittal entitled <u>Withdrawal of January 14, 2004 Proposal Regarding Storm Water Basin (SWB) Material at the Land Treatment Facility (LTF) and Notice of Plan for Final Grading of SWB Material for Final Grading of SWB Material at the LTF</u> rec'd on 7/15/2005. CITGO's 12/08/2005 letter to request an extension for submittal of a Phase I/II RFI Workplan for Group I SWMUs, rec'd 11/18/2005.	1. Approved an extension request and required CITGO to submit a Phase I/II RFI Workplan for Group I SWMUs by 3/31/2006. 2. Also approved the withdrawal of CITGO's 1/14/2004 letter, however this letter did not address any other content of the 7/12/2005 submittal. Rob Watson (RCRA Unit) to respond to final grading plan in 7/15/05 submittal.
2/27/2006 B-162-CA-27 thru -CA-30	Phase II RFI Workplans for the following SWMUs: SWMU 17, 19B, 31A, and 43J, rec'd 11/28/2005	Approved Phase II Workplans for the (4) SWMUs with conditions and modification. Acknowledged that a revised SAP and QAPP will be submitted in the near future. Any CA activities will be conducted in accordance with the facility's RCRA Permit.
4/3/2006 B-162-CA-26	Phase II RFI Workplan for SWMU 16 (Former Sludge Application Area).	Approved the Phase II RFI workplan for SWMU 16 with conditions and modifications. Approval required address of arsenic contamination and to submit a report by September 1, 2006.
5/8/2006 B-162-CA-31	<u>2006 Groundwater Monitoring and Investigation Work Plan</u>, rec'd 2/01/2006. This submittal replaced Groundwater CA Workplan, rec'd 7/19/2005 (Log No. B-162-CA-24).	Approved the groundwater investigation workplan with conditions and modifications. Additional information is required to be submitted within 30 days.

6/8/2006 B-162-CA-14 & CA-34	2004 RCRA Sewer Investigation Annual Report, dated 3/30/2006 (rec'd 4/1/2005); and 2005 RCRA Sewer Investigation Report, dated 3/24/2006 (rec'd 3/27/2006).	Approved with conditions and modifications. Additional information, such as maps information regarding ratings and an investigative schedule is to be submitted within 75 days.
7/17/2006 B-162-CA-35 thru CA-47	Phase I/II Workplans for the following (13) SWMUs, dated 3/30/2006: SWMU 4, 7, 11A, 11B, 12, 19D, 21, 30, 32, 33, 34, 36, and 37.	Approved with conditions and modifications. No further corrective action is required for SWMU 36 and 37.
8/08/2006 B-162-CA-9 (CCR); B-162-CA -32 (QAPP); and B-162-CA -33 (SAP)	1. Current Conditions Report (CCR), dated 1/30/2004; 2. Quality Assurance Project Plan (QAPP), dated 3/22/2006; and 3. Sampling and Analysis Plan (SAP), dated 3/22/2006.	Approved with conditions and modifications. Illinois EPA required standard procedures for the sampling and analysis program, unless otherwise specifically proposed in individual workplans for each SWMU.
4/3/2006 B-162-CA-26	Phase II RFI Workplan for SWMU 16 (Former Sludge Application Area).	Approved the Phase II RFI workplan for SWMU 16 with conditions and modifications. Approval required address of arsenic contamination and to submit a report by September 1, 2006.
10/04/2006 B-162-CA-48; CA-49; & CA-50	1. Modification to Interim 2006 site-wide groundwater monitoring and investigation workplan – Free Phase Hydrocarbon Procedures, dated 6/1/2006; 2. Response to Comment #1, dated 6/1/2006; and 3. Amended request to Groundwater Work Plan – Groundwater Monitoring and Investigation Workplan, dated 8/4/2006; and Response to Comment #7 – Sampling Schedule, dated 6/1/2006.	Approved with conditions and modifications. Modifications to proposed FPH recovery and monitoring are made by Illinois EPA.

11/27/2006 B-162-CA-52	Phase II RFI Report for Former Sludge Application Area (SWMU 16), dated 8/30/2006.	No further action is required for SWMU 16.
1/17/2007 B-162	CITGO's letter, entitled <u>Monitoring Well/Piezometer Abandonment (P-16, PB-MW-4, & FR-MW-5)</u> , dated 8/11/2006.	Approved abandonment of P-16, PB-MW-4, & FR-MW-5. Additional submittal regarding the three wells is requested.
1/17/2007 B-162-CA-51	Response to Comments on 2004 and 2005 RCRA Sewer Investigation Annual Reports, dated 8/18/2006.	Additional information to the 2004 & 2005 Annual Sewers Reports are approved with conditions and modifications.
4/12/2007 B-162-CA-55; and B-162-CA-61	Phase I RFI Report for Spill at Hot Oil Line (SWMU 4) and Vertical Oil Storage Tank (SWMU 21), both dated 1/30/2007.	An ELUC must be placed for SWMU 21 to restrict land use for Ind./Comm. No further action is required for SWMU 4.
5/17/2007 B-162-CA-53	"Re-Evaluation of Groundwater Management Zone," rec'd 10/03/2006.	Approved the workplan with conditions and modifications.
5/31/2007 B-162-CA-54; and B-162-CA-66	"Stepped Flow Rate Pump" and "Site-Wide Groundwater Monitoring and Investigation Workplan," rec'd 11/29/2006 and 2/6/2007, respectively.	Approved the workplan with conditions and modifications.
6/13/2007 B-162-CA-56 thru CA-60; and CA-62 thru CA-64.	Phase I RFI Reports for the following SWMUs: 7, 11A, 11B, 12, 19D, 30, 34, 2 a-e (all but SWMU 2 report were submitted on 1/30/2007; SWMU report 2 was submitted 2/28/2007).	Phase II workplans and groundwater remedial plan for SWMU 2 must be submitted within 90 days.
7/30/2007 B-162	Additional information submitted in response to Illinois EPA's 1/17/2007 letter.	Approved abandonment of P-16, PB-MW-4, & FR-MW-5.
12/06/2007 B-162-CA-73 thru CA-84	Phase I RFI Workplans for the following SWMUs: 5, 10, 13, 15A/15B, 18 & 19A, 19C, 20, 25A, 25B, 25C, 356, and 44.	The (12) workplans were approved with conditions and modifications.

12/17/2007 B-162-CA-67	2006 RCRA Sewer Investigation Annual Report was submitted and was received on 3/28/2007 and 10/5/2007 (CA certification form).	The annual report was approved with conditions and modifications.
12/17/2007 B-162-CA-69 thru CA-72	Phase II RFI Report for the following SWMUs: 17, 19B, 31A, and 43J (rec'd 5/16/2007).	Approved Phase II Report for the (4) SWMUs with conditions and modifications.
1/28/2008 B-162-CA-85	Preliminary GRW-2 and GRW-2 Effectiveness Report, dated 7/06/2007; and Response to Comment 2C (CA-54 & 66), dated 8/01/2007.	Approved with conditions: No groundwater investigation is necessary at SWMUs 36 & 37. No replacement wells are necessary at SWMU 32. Replacement wells are approved at SWMU 30, 31 A-E.
2/20/2008 B-162-CA-65; and CA-88	<u>Soil Investigation of Year 2 Defects (1/31/2007);</u> <u>Re-examination of Sewer Defects/Soil Locations (9/04/2007);</u> and <u>Soil Investigation of Year 3 and Remaining Year 2 Defects (10/17/2007).</u>	Approved the workplan with conditions and modifications.
4/25/2008 B-162-CA-86	September 10, 2007 submittal (rec'd 9/13/2007) regarding the following SWMUs: 7, 11, 11A & B, 12, 19D, 30, 34, and 2a-e.	Approved with conditions and modifications. This submittal included a CM Plan for SWMU 19D.
4/25/2008 B-162-CA-90	<u>Multiple Step Pump Test</u> (dated 8/28/2007 & rec'd 8/30/2007) was submitted to further evaluate the pilot testing of hydraulic controls at GQ-MW-2A.	Approved with conditions and modifications. The facility is required to submit a report upon the completion of the pilot testing.
8/01/2008 B-162-CA-91	CITGO's March 14, 2008 submittal (rec'd 3/18/2008) addressed CA activities at the following SWMUs: 17, 19B, 31A, and 43J. This submittal was sent in response to Illinois EPA's 12/17/2007 letter (CA-69-72).	Approved with conditions and modifications. The Workplan for SWMU 19B and an extension request to submit a workplan for SWMU 43J are approved.

4/25/2008 B-162-CA-86	September 10, 2007 submittal (rec'd 9/13/2007) regarding the following SWMUs: 7, 11A&B, 12, 19D, 30, 34, and 2a-e.	Approved the workplan with conditions and modifications. This submittal included a CM Plan for SWMU 19D.
4/25/2008 B-162-CA-90	<u>Multiple Step Pump Test</u> (Dated 8/28/2007 & rec'd 8/30/2007) was submitted to further evaluate the pilot testing of hydraulic controls at GW-MW-2A.	Approved the workplan with conditions and modifications. The facility is required to submit a report upon the completion of the pilot testing.
8/01/2008 B-162-CA-91	CITGO's March 14, 2008 submittal (rec'd 3/18/2008) addressed CA activities at the following SWMUs: 17, 19B, 31A, and 43J. This submittal was sent in response to Illinois EPA's 12/17/2007 letter (CA-69-72).	Approved the workplan with conditions and modifications. The Workplan for SWMU 19B and an extension of the submittal of a workplan for SWMU 43J are approved.
12/18/2008 B-162-CA-114	A corrective measure completion report for SWMU 19D, a former Sludge Drying Area, rec'd 10/31/2008.	Approved an NFA with the condition that migration to groundwater exposure route is addressed through the GMZ. An ELUC will have to be placed for industrial land use in the area.
1/13/2009 B-162-CA-92	2007 Annual Sewer Investigation Report	Approved with conditions and modifications.
3/12/2009 B-162-CA-93 thru CA-97	Phase II RFI Workplan for SWMUs: 38a, 38b, 38c, 39a, and 39b (RCRA sewer investigation – soil investigation).	Approved with conditions and modifications.
6/05/2009 B-162-CA-101	Corrective Measure Plan (CMP) for SWMU 43J.	Approved with conditions and modifications.
6/16/2009 B-162-CA-116 thru CA-118	Addressed: 1. Group 2 Phase I Report for SWMU 25A; 2. Phase II & Closure Report for SWMU 34; and 3. CM Plan for SWMU 12.	Approved with conditions and modifications.

9/16/2009 B-162-CA-115	Proposed gauging and re-sampling of Sumps 2c and 2e, utilizing low-flow sampling technique.	Approved with conditions and modifications.
12/21/2009 B-162-CA-121	2008 RCRA Annual Sewer Investigation Report, addressed the West Tank Farm (Areas 3 and 5) and the North Plant (Areas 4b and 2).	Approved with conditions and modifications.
2/01/2010 B-162-CA-135	CITGO's 12/16/2009 letter, which proposed abandonment of (5) flush mounted piezometers (PZ-4, PZ-5, PZ-7, PZ-8, and PZ-9).	Approved with conditions and modifications.
2/24/2010 B-162-CA-129	SWMU 43J CM Completion Report.	Approved with conditions and modifications.
3/15/2010 B-162-CA-127	SWMU 38A Investigation Report.	Approved with conditions and modifications.
4/26/2010 B-162-CA-102	Current Conditions Report and a proposed workplan for future groundwater management.	Approved with conditions and modifications.
7/08/2010 B-162-CA-139	Phase II RFI and Closure Report for SWMU 38a, Process Sewer Line Segment at 31-MH-8-DP01 to 31-MH-8-DP02.	Approved with conditions and modifications. Tier 2 evaluations for construction worker inhalation ROs were approved.
7/29/2010 B-162-CA-142	Notification of a newly discovered SWMU (SWMU 45 – Contaminated Fill Area).	Approved the proposal to submit an RFI workplan by 8/31/2010 for this new SWMU.
10/04/2010 B-162-CA-126, and CA-128	1. Revised CMP for SWMU 12; Investigation report for SWMUs 38b and 38c.	1. An NFR was issued for SWMU 38b with an ELUC for I/C use. 2. NFA on soil is required for SWMU 12 and 38c. However, groundwater must be investigated for SWMUs 12 and 38c.
11/04/2010 B-162-CA-103 thru CA-113	Group 2 Phase I RFI Reports for the following SWMUs: 5, 10, 13, 15A/B, 18&19A, 19C, 25B, 25C, 35, and 44.	An NFR was issued for SWMUs 5, 25C, and 35 (with an ELUC for I/C use). Phase II RFI is required for SWMUs 10, 13, 15A/B, 18&19A, 19C, 20, 25B, and 44.

1/10/2011 B-162-M-2 thru M-6; and M-10	In response to the Class I and Class I* permit modification requests: 1. M-2 (Class 1) – Addendum to Site Characterization, dated 11/21/1997 & rec'd 11/24/1997 2. M-3 (Class 1) – New Closure Period Inspection Form, dated 11/21/1997 & rec'd 11/24/1997 3. M-4 (Class 1) – Addendum to GW Monitoring Section E, Appendix E-1, dated 11/21/1997 & rec'd 11/24/1997 4. M-5 (Class 1*) – LTF Well Inspection Report, dated 11/21/1997 & rec'd 11/24/1997 5. M-6 (Class 1*) – Addendum to GW Monitoring Plan for LTF, dated 11/21/1997 & rec'd 11/24/1997 M-10(Class 1) – Revised Monitoring Limits for Table II.D.5 of the RCRA Permit, dated 6/5/1998 & rec'd 6/11/1998	Approved with conditions
6/30/2011 B-162-CA-137; and CA-152	1. <u>2009 RCRA Sewer Inspection Annual Report</u>, dated 3/29/2010 & rec'd 3/31/2010; and <u>2010 RCRA Sewer Inspection Annual Report</u>, dated 3/29/2011 and rec'd 3/31/2011.	Approved with conditions and modifications.

7/27/2011 B-162-CA-120; CA-136; and CA-148	1. <u>Soil Investigation of 2007 Sewer Defects (per Appendix H, 2007 RCRA Sewer Investigation Annual Report, March 2009, dated 3/11/2009 and rec'd 3/16/2009;</u> 2. <u>Soil Investigation Report for 2008 Sewer Defects, dated 1/27/2011 and rec'd 1/6/2010; and</u> <u>Soil Investigation Report for 2009 Sewer Defects, dated 1/27/2011 and rec'd 2/7/2011.</u>	Approved with conditions and modifications.
8/17/2011 B-162-CA-140; and B-162R-CA-3	1. <u>Defect Release Determination Soil Screening Assessment Work Plan for 2009 Sewer Defects, dated 5/28/2010 and rec'd 6/01/2010; and</u> 2. <u>Defect Release Determination Soil Screening Assessment Work Plan for 2010 Sewer Defects, dated 5/23/2011 and rec'd 5/27/2011.</u>	Approved with conditions and modifications.
9/27/2011 B-162-CA-143; CA-145; and CA-147	1. <u>Sixty (60) Day Extension Request, rec'd 7/22/2010 (Log No. B-162-CA-143);</u> 2. <u>Site-Wide Groundwater Management Program and Proposed Work Plan for Future Groundwater Management, rec'd 9/27/2010 (Log No. B-162-CA-145); and</u> 3. <u>Request to Remove Manganese from the Groundwater Monitoring List for the Site-Wide Groundwater Management Program, rec'd 1/18/2011 (Log No. B-162-CA-147).</u>	Approved with conditions and modifications.
9/27/2011 B-162R-CA-4	4. <u>2010 Sewer Rehabilitation Report, dated 6/28/2011 & rec'd 6/30/2011</u>	Approved with conditions and modifications.

10/4/2011 B-162R-CA-5; and CA-6	The following reports were required (additional information in response to the approval letter from Illinois EPA dated 11/4/2010), dated 7/29/2011 and rec'd 8/3/2011. 1. "Spill at the Gasoline Transfer (SWMU 44). 5. "Wastewater Treatment Sludge Decanter Basins Within Land Treatment Facility (SWMU 15A(B)).	Approved with conditions and modifications. NFRs were issued (relative to soil) for both units (with ELUCs for I/C use).
10/14/2011 B-162-CA-146	<u>Phase II RFI and Supplemental Investigation Report and Corrective Measures Plan; SWMU 7 Interceptor Trench and Canal Dock, dated 10/21/2010 and rec'd 10/25/2010.</u> 1. Summary of the Phase II RFI at the Interceptor Trench at the Canal Dock (SWMU 7); and 2. CMP to remediate the soils at SWMU 7 by excavation.	Approved with conditions and modifications.
10/14/2011 B-162R-CA-1	<u>Well GQ-MW-2A Groundwater Recovery Pilot Study</u> (Dated 4/8/2011 and rec'd 4/11/2011) was submitted to address the conditions of the Illinois EPA April 25, 2008 letter (Log No. B-162-CA-90).	Approved with conditions and modifications. The facility is required to submit results to Illinois EPA quarterly.
11/03/2011 B-162R-CA-7	<u>Re-Evaluation of Groundwater Management Zone (GMZ)</u> (Rec'd 9/19/2011) was submitted to meet the requirements of 35 IAC 620.250(c), a requirement that the GMZ be re-evaluated every (5) years.	Approved with conditions and modifications.

1/12/2012 B-162-CA-144; and B-162R-CA-2	1. Assessment report for a newly identified SWMU, referred to as the Contaminated Fill Area, SWMU 45 (dated 8/24/2010 and rec'd 8/31/2010); and Assessment report for a newly identified SWMU, referred to as the Former Separator #3, SWMU 46 (dated 5/06/2011 and rec'd 5/09/2011).	Approved with conditions and modifications.
1/12/2012 B-162R-CA-8	<u>Phase II RFI and Supplemental Investigation Report and Corrective Measures Plan, SWMU 13</u> (Rec'd 9/29/2011) was submitted to meet the requirements of the Phase I RFI at the Sludge Drying Area.	Approved with conditions and modifications.
1/12/2012 B-162-CA-149; CA-150; and CA-151	1. Phase II RFI Report and Corrective Measures Plan for SWMU 10 – North Plant Heat Exchanger Bundle Cleaning Pad (dated 3/11/2011 and rec'd 3/14/2011). 2. Phase II RFI Report for SWMU 20 – Active Drum Staging Area (dated 3/11/2011 and rec'd 3/14/2011). Phase II RFI Report for SWMU 25B – Heat Exchanger Bundle Cleaning Pad (dated 3/11/2011 and rec'd 3/14/2011).	Approved with conditions and modifications, including requirements for institutional controls.
1/13/2012 B-162-CA-138	Revised Tier II for the industrial/commercial and construction worker inhalation exposure routes for the French Drain System, SWMU 34 (dated 4/6/2010 and rec'd 4/8/2010). Illinois EPA approved the Tier II proposal on June 16, 2009 (Log No. B-162-CA-116 thru -118).	Approved with conditions and modifications. An ELUC for this area to restrict the land use to I/C and a site safety plan for soil excavation is required.

1/13/2012 B-162-CA-125	Former Primary Light Oils UST at the Fuel Rack (SWMU 30) 1. Phase II RFI and Closure Report, SWMU 30 (dated 7/30/2009 and rec'd 8/04/2009) Addendum to the above (dated 7/15/2011 and rec'd 7/19/2011).	Approved with conditions and modifications, including a requirement for an institutional control.
1/24/2012 8-162-CA-122 thru -124	Reports which document the results of Phase II investigations: 1. Phase II reports for SWMU 43A through 43I (dated 4/15/2009 and rec'd 4/17/2009) 2. Phase II reports for SWMU 11A (dated 4/17/2009 and rec'd 4/17/2009) Phase II reports for SWMU 11B (dated 4/17/2009 and 5/3/2011 and rec'd 4/17/2009.	Approved with conditions and modifications, including a requirement for an institutional control. Provided institutional control restricts the following SWMUs to industrial/commercial activities is established, no further action is necessary for SWMU: 43A – Canal Dock Piping Spill 43B – Primary Light Oil Pump Spill 43D – Barge Spills 43E – Above Ground Tank Spill 43G – Process Drain System Spills 43H – Pipeline Primary Light Oil Spills 43I – Condenser (Sulfur Dioxide) Spill 11A – Recycle Tanks, Mobile Interface Tank 11B – Recycle Tanks; 302 Tank
2/10/2012 B-162-CA-8	Phase II RFI and Corrective Investigation Report and Corrective Measures Plan, SWMU 13 Sludge Drying Area – submitted in accordance with the Permit and Illinois EPA's 11/4/2010 letter (dated 9/21/2011 and rec'd 9/29/2011).	Approved with conditions and modifications, including a requirement for an ELUC.

3/14/2012 B-162R-M-1; and M-3	Request to modify the RCRA Permit (Class I and I* modifications): 1. M-1 (dated 7/11/2011 and rec'd 7/14/2011) M-2 (dated 9/8/2011 and 5/3/2011 and rec'd 9/12/2011).	Approved.
5/15/2012 B-162R-CA-9	<u>Soil Investigation of 2010 Sewer Defects</u> was submitted to address CA requirements of the RCRA Permit.	Approved with conditions and modifications. No further action is required for Area 54 and Area 55.
5/30/2012 B-162R-CA-17	2011 RCRA Sewer Investigation Annual Report was submitted to report CA activities at SWMU 38 (Process Sewer System) and SWMU 39 (Storm Sewer System)	Approved with conditions and modifications. No further action is required for Area 54 and Area 55.
6/06/2012 B-162-CA-131; CA-132; and CA-141	1. Phase II RFI Report, SWMU 39a – Storm Sewer Line Segment 130-MH-79-DRC-01 to 130-MH-75-DRC-02 (dated 11/24/2009 and rec'd 11/30/2009). 2. Phase II RFI Report, SWMU 39b – Storm Sewer Line Segment 130-MH-75-DRC-05 to 130-MH-75-DRC-35 (dated 11/24/2009 and rec'd 11/30/2009) Phase II RFI Report, SWMU 38d – Process Sewer System Line Segments 52-LS-DP-01 through 52-MH34-DP-01 (rec'd 6/7/2010)	Approved with conditions and modifications. Corrective action is complete at SWMU 38D. CA efforts included removal of contaminated soil and replacement of the sewer line.
10/15/2012 B-162-CA-134	Withdrawal request, dated September 5, 2012 and received September 10, 2012, to withdraw the November 19, 2019 letter; this letter was submitted as a supplemental Phase II investigation for SWMUs 2a-c and requested an NFA determination for that SWMU.	Withdraw request as approved.

11/28/2012 B-162R-CA-12 thru CA-14; and CA-16	1. Phase II RFI Work Plan and Closure Report for the 2007 Sewer Defects (Areas 2, 4, 6, 8, 11, 12, 15, and 16) SWMUs 38d thru SWMU 38g; and SWMUs 39c thru 39e; (dated 1/18/2012 and rec'd 1/26/2012) 2. Phase II RFI Work Plan and Closure Report for the 2008 Sewer Defects (Areas 18, 19, 21, 22, 23, 24, 25, 26, 27, 28 29, 32, 33, and 34) SWMUs 38h, 39f, 38i, 39g, 39h, 39i, 39j, 38j, 39k, 39q, 39m, 39n, 39o, and 39p; (dated 1/18/2012 and rec'd 1/26/2012). 3. Closure Report for the 2009 Sewer Defects (Areas 39, 40, 41, and 42) SWMUs 38k, 38i, 39q, and 39r; (dated 1/18/2012 and rec'd 1/26/2012). Closure Report for the 2010 Sewer Rehabilitation Proposed Addendum to the Phase II RFI Closure Report for SWMU 38h (rec'd 3/26/2012)	Approved with conditions and modifications. No further action is required for SWMU 38h, 38e, 39f, 39h, 39i, 39k, 39l, 39m, 39n, 39o, 39p, 39q, 38k, 38l, 39q, and 39r, provided ELUCs are established to restrict these areas to industrial/commercial land use.
12/18/2012 B-162R-CA-10	4. A submittal entitled <u>Conditional Approval – Groundwater Recovery Well GQ-MW-2A</u> Pilot Study was submitted in response to Illinois EPA's 10/26/2011 letter (Log No. B-162R-CA-1), which required monitoring results with the quarterly Site-Wide Groundwater Monitoring Report (dated 1/18/2012 and rec'd 1/19/2012).	Approved with conditions and modifications.

1/03/2013 B-162R-CA-15 and CA-23	The submittals were requirements of: 1. Illinois EPA's 7/27/2001 letter, Log Nos. B-162-CA-120, 136, & 148 (dated 3/21/2012 & rec'd 3/26/2012); and 2. Illinois EPA's 9/27/2011 letter, Log Nos. B-162R-CA-4 (dated 11/13/2012 & rec'd 11/21/2012). 5. The facility must install the proposed (12) sumps in accordance with the "Free-Phase Hydrocarbon Investigation and Remediation Work Plan" and the subsequent "Addendum.)	Approved with conditions and modifications.
1/03/2013 B-162R-CA-18	6. Was submitted in response to provide clarification for the sampling frequency, which was incorrectly entered in both Table 9 of the 9/27/2010 "Site-Wide Groundwater Management Program Proposed Work Plan for Future Groundwater Management" and then in Attachment 1 of Illinois EPA's 9/27/2011 letter Log No. B-162-CA-143, 145, & 147, (dated 4/5/2012 & rec'd 4/9/2012).	Approved with conditions and modifications.
1/29/2013 B-162R-CA-20	Two submittals were addressed to corrective action activities: 1. Submittal contained revised Figures 2-1 and 4-1 to more clearly depict the sewer investigation areas of the facility (dated 7/12/2012 & rec'd 7/17/2012). Additional revisions to Figure 4-1, post discussion between CITGO and Illinois EPA (dated 10/8/2012 & rec'd 10/12/2012).	Approved with conditions and modifications.

2/19/2013 B-162R-M-2	The submittals entitled: 1. "Land Treatment Area Treatment Zone Extent Investigation Work Plan (Work Plan)", dated 6/13/2012 & rec'd 6/15/2012; and 2. The revised Work Plan (dated 9/27/2012 and rec'd 10/2/2012) Were submitted to Illinois EPA's request augment the pending permit modification B-162R-M2, still under review.	Approved with conditions and modifications.
7/25/2013 B-162R-CA-29; and CA-30	The submittals included reports which documented completion of corrective action at SWMU 7 (Interceptor Trench, Canal, and Dock) & SWMU 13 (Sludge Drying Rea). 1. "Corrective Measures Completion Report, SWMU 7", dated 5/29/2013 & rec'd 5/31/2013; and 2. "Corrective Measures Completion Report, SWMU 13", (dated 6/11/2013 and rec'd 6/14/2013) Were submitted to Illinois EPA's request augment the pending permit modification B-162R-M2, still under review.	Approved with conditions and modifications. NFA issued to SWMUs 7 and 13.

8/07/2013 B-162R-CA-19 and CA-26	The submittals included workplans to investigate (3) SWMUs: 38 (Process Sewer system), 39 (Storm Sewer System), and 40 (Open Flow Ditches). 1. "Defect Release Determination Soil Screening Assessment Work Plan for 2011 Sewer Defects", dated 5/29/2012 & rec'd 5/31/2012; and 2. "Addendum to Defect Release Determination Soil Screening Assessment Work Plan for 2011 Sewer Defects", (dated 3/14/2013 and rec'd 3/25/2013)	Approved with conditions and modifications.
10/04/2013 B-162R-CA-22	The submittals included the Phase II Work Plan and Closure Report for the 2010 Sewer Defects (Areas 48 thru 60) dated 11/09/2012 & rec'd 11/16/2012	Approved with conditions and modifications. NFA issued, provided that the facility obtains an ELUC, for SWMUs 38m, 39s, 38o, 39t, and 39u.
10/08/2013 B-162R-CA-31	The submittal (dated 6/11/2013 and rec'd 6/18/2013) included as-built diagrams for (12) recovery pumps, as required by Condition 1 of Illinois EPA's 1/03/2013 letter (Log No. N-162R-CA-15 & 23), (13 pumps were proposed, 12 were installed).	Approved with conditions and modifications.
12/09/2013 B-162R-CA-24	This submittal was in response to CITGO's letter (dated 2/14/2012 and rec'd 2/17/2012) regarding CA activities as SWMU 19B (Former Sludge Drying Area).	1. Illinois EPA did not approve the facility's Tier 3 proposal. Illinois EPA required lead remediation at PB-7. 2. Illinois EPA approved with conditions and modifications the facility's proposed soil excavation as a CMP. Illinois EPA approved with conditions and modifications the facility's proposal to resample mercury at PB-4.

1/30/2014 B-162R-CA-32	This submittal was in response to CITGO's letter (dated 10/06/2013 and rec'd 10/10/2013), which was in response to Illinois EPA's 8/7/2013 (Log No. B-1462R-CA-19 & 26). The subject submittal contained the results of additional investigation/evaluation required at Sewer Defect Investigation Area 4, SL-13 (or SWMU 38e) and Area 5, SL-18 (or SWMU 38p).	Approved with conditions and modifications. The facility must meet the conditions specified in the 11/28/2012 Illinois EPA letter. NFA issued for Sewer Defect Investigation Area (SWMU 38p). (SWMU 28e has already met the requirements of corrective action for soil and no further action is required.)
2/26/2014 B-162R-CA-33	This submittal was in response to CITGO's letter (dated 11/07/2013 and rec'd 11/23/2013), which addressed: 1. SWMU 38f (Process Sewer System – Area 6); 2. SWMU 43f (Suspected Spill Locations Along Produce Pipelines); and 3. SWMU 46 (Former Separator #3)	Approved with conditions and modifications. 1. Proposed additional investigation efforts for SWMU 43f and SWMU 46; 2. Proposed resampling and analyses for SWMU 38f.
3/06/2014 B-162R-CA-34 and CA-35	This submittal was in response to CITGO's letter (dated 12/13/2013 and rec'd 12/20/2013), which addressed: 1. Storm Sewer System Sewer Line Segment: 130-MH79-DRC-01 to 130-MH75-DRC-02; and 2. Storm Sewer System Sewer Line Segment: 130-MH75-DRC-05 to 130-MH75-DRC-35. 3. A Phase II Supplemental RFI and Closure Report for SWMU 39A and 39B	Approved with conditions and modifications. 1. No further action is necessary for SWMUs 39A and SWMU 39B for soil migration to groundwater exposure route, soil ingestion exposure route, and outdoor air inhalation exposure route; and 2. Indoor air inhalation exposure route must be evaluated for these units.

4/08/2014 B-162R-CA-25	This submittal was in response to CITGO's letter (dated 1/23/2013 and rec'd 1/25/2013) requested clarification regarding the status of several locations of SWMUs 38 and 39: 1. No further action is necessary for the soils at the following units (provided ELUCs are provided): SWMU 38k and 38i; and SWMU 39f, 39h thru 39r (14 total); 2. No further action is necessary for SWMU 38e for both soil and groundwater; 3. No further action is necessary at SWMU 38d, 38h, 39d, and 39g for both soil and groundwater, provided IC are established to restrict future use of these areas; 4. Additional work at SWMU 38j may be postponed until ROs for SWMU 18B have been finalized; 5. Illinois EPA's 11/28.2012 letter which approved RFI Phase II workplans for: SWMU 38f; 38g/392; 38i; 39c; and 39e.	Approved with conditions and modifications.
6/02/2014 B-162R-M-2	This submittal was in response to CITGO's letter (dated 11/7/2013 and rec'd 11/12/2013) regarding the revised "Closure Plan for the Land Treatment Facility (LTF)."	Not approved and a list of deficiencies were identified as Attachment 1 to the letter.

8/05/2014 B-162R-CA-37	This submittal was in response to CITGO's letter (dated 3/11/2014 and rec'd 3/17/2014) included a Phase II Supplemental RFI and Closure Report for 2007 and 2008 Sewer Defects associated with the RCRA CA efforts carried out at SWMU 38 and SWMU 39. This report was required in accordance with Illinois EPA's 11/28/2012 letter – approval of additional investigation at SWMUs 38g and 38i, as well as 39c and 39e.	Approved with conditions and modifications. No further action necessary for SWMUs 38g and 39e, as well as 38i.
3/30/2015 B-162R-M-4	This submittal was in response to CITGO's letters (dated 4/02/2013 and rec'd 4/08/2013; and dated 5/19/2014 and received 5/19/2014) included Class 1* permit mod to update the Corrective Action Cost Estimate in Table I-11, in accordance with Permit Condition VI.E.2.	Approved with conditions and modifications.
6/30/2015 B-162R-CA-42; and CA-43	This submittal was in response to CITGO's letter (dated 1/27/2015 and rec'd 1/30/2015) included: 1. Phase I and Phase II RFIs and Corrective Measures Plan for SWMU 43F (Lift Station Pump Spill); and 2. Phase I RFI and Closure Report for SWMU 43C (Refinery Flare). Submittal of these reports was a requirement of Illinois EPA's 1/24/2012 letter.	Approved with conditions and modifications. 1. No further action necessary for SWMU 43C, relative to soil issues. Additional efforts are necessary at SWMU 43F.
7/01/2015 B-162R-CA-49; and CA-50	This submittal was in response to CITGO's letter (dated 5/05/2015 and rec'd 5/07/2015) which included Phase II RFIs and Closure Reports for SWMU 38h and SWMU 38n. These reports were a requirement of Illinois EPA's 10/04/2013 letter (Log No. B-162R-CA-22) and its 2/26/2014 letter (B-162R-CA-33).	Approved with conditions and modifications. No further action is required, relative to soil issues, for SWMU 38f and 38n, provided the facility obtains an ELUC for each.

7/01/2015 B-162R-CA-27; CA-28; CA-38, and CA-48	This letter was in response to CITGO's (4) submittals: 1. Defect Release Determination Soils Screening Assessment Workplan for 2011 Sewer Defects (Log No. B-162R-CA-48), dated May 2012 and rec'd 4/03/2015. 2. 2012 RCRA Sewer Investigation Annual Report (Log No. B-162R-CA-27), dated 3/26/2013 and rec'd 4/02/2013. 3. Defect Release Determination Soils Screening Assessment Workplan for 2011 Sewer Defects (Log No. B-162R-CA-28), dated 5/23/2013 and rec'd 5/28/2013; and Soils Investigation Report for 2011 and 2012 Sewer Defects (Log No. B-162R-CA-38), dated 3/27/2014 and rec'd 4/03/2014;	Approved with conditions and modifications.
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8/06/2015 B-162R-CA-39; CA-41; CA-46; and CA-51	This letter was in response to CITGO's (4) submittals: 1. 2013 RCRA Sewer Investigation Annual Report (Log No. B-162R-CA-41), dated 3/27/2014 and rec'd 4/03/2014; 2. Defect Release Determination Soils Screening Assessment Workplan for 2013 Sewer Defects (Log No. B-162R-CA-39), dated 5/29/2014 and rec'd 6/04/2014; 3. 2014 RCRA Sewer Investigation Annual Report (Log No. B-162R-CA-46), dated 3/31/2015 and rec'd 4/06/2015; and Defect Release Determination Soils Screening Assessment Workplan for 2014 Sewer Defects (Log No. B-162R-CA-51), dated 5/29/2015 and rec'd 6/03/2015;	Approved with conditions and modifications.
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8/27/2015 B-162R-M-2	This letter was in response to CITGO's request to modify its RCRA Permit (dated 7/11/2011 and rec'd 7/14/2011). The modification included: 1. Closure Plan (dated 7/11/2011 and rec'd 7/14/2011); 2. Corrected LPC-PA23 Form (dated 9/06/2011 and rec'd 9/08/2011); 3. Work Plan to Investigate Extent of LTAs (dated 6/13/2012 and rec'd 6/15/2012); 4. Revised Work Plan to Investigate LTAs (dated 9/27/2012 and rec'd 10/02/2012); 5. Corrected LPC-PA23 Form (dated 10/02/2012 and rec'd 10/10/2012); 6. Revised Closure Plan (dated 11/07/2013 and rec'd 11/12/2013); 7. Revised Pages to Closure Plan (dated 7/24/2014 and rec'd 7/29/2014); and Revised Pages to Closure Plan (dated 7/15/2015 and rec'd 7/28/2015);	Approved with conditions and modifications.
10/27/2015 B-162R-CA-53	This letter was in response to CITGO's request regarding the use of soil from SWMU 16 (Former Sludge Application Area) for the construction of berms and backfill for excavations associated with the closure of the LTF (dated 10/07/2015 and rec'd 10/13/2015).	Approved.

2/23/2016 B-162R-CA-55	This letter was in response to CITGO's report entitled "SWMU 39C Phase II RFI and Closure Report" (dated 12/15/2015 and rec'd 12/22/2015), which documented the results of additional soil sampling/analysis efforts at SWMU 39C (within the facility's storm sewer system).	Approved with conditions and modifications. No further action is required at SWMU 39C, provided the facility obtains an ELUC for this unit.
2/23/2016 B-162R-CA-52	This letter was included documentation of the construction of an engineered barrier over SWMU 10 (North Plant Heat Exchanger Bundle Cleaning Pad), dated 9/18/2015 and rec'd 9/24/2015.	Approved with conditions and modifications. No further action is required at SWMU 10, provided the facility obtains an ELUC for this unit.
2/23/2016 B-162R-CA-57	This letter was in response to CITGO's report entitled "SWMU 18 & 19A Phase II RFI and Closure Report" (dated 12/22/2015 and rec'd 12/28/2015), which documented the results of soil sampling/analysis efforts at SWMUs 18 (Waste Staging Area) and 19A (Former Sludge Drying Area). Submittal of this report was required in Illinois EPA's 11/04/2020 letter, which approved Phase I and Phase II RFI efforts at several SWMUs, including SWMUs 18 and 19A.	Approved with conditions and modifications. No further action is required at SWMUs 18 and 19A, provided the facility obtains an ELUC for these units.
2/26/2016 B-162R-CA-56	This letter was in response to CITGO's submittal of additional information regarding the soil removal effort at SWMU 43F (Left Station Pump) and the associated sampling/analysis efforts to demonstrate the unit meets Tier I residential ROs (dated 12/23/2015 and rec'd 12/28/2015).	Approved with conditions and modifications.

2/26/2016 B-162R-CA-58	This letter was in response to CITGO's report entitled "SWMU 19C Phase II RFI and Closure Report" (dated 12/22/2015 and rec'd 12/28/2015). This document included soil sampling/analysis results for SWMU 19C (Sludge Drying Area) with TACO analysis of the data. Submittal of this report was required by Illinois EPA's 11/04/2010 letter, which approved Phase I and Phase II RFI efforts at several SWMUs, including SWMU 19C.	Approved with conditions and modifications. No further action is required at SWMU 19C, provided the facility obtains an ELUC for these units.
2/29/2016 B-162R-CA-54	This letter was in response to CITGO's report entitled "Phase II Supplemental Work Plan and Closure Report for 2011 and 2012 Sewer Defects, SWMUs 38 & 39 (SL-73, SL-85, SL-189, SL-206, SL-211, SL_218, and SL-220)" (dated 12/15/2015 and rec'd 12/22/2015).	Approved with conditions and modifications. No further action is required at Locations SL-73, SL-85, SL-189, SL-206, SL-211, and SL_218, provided the facility establish an ELUC for these locations.
4/06/2016 B-162R-M-2	This letter was in response to CITGO's letter (dated 1/20/2016 and rec'd 1/25/2016) regarding the "Land Treatment Facility (LTF) Closure Update and Materials Management Approval Request." The letter requested Illinois EPA's approval to extend the closure schedule and place contaminated soil from SWMU 15b (Middle Decant Basin) on the LTAs during Closure.	Approved.

7/18/2016 B-162R-CA-60; CA-61; and CA-62	This letter was in response to CITGO's (3) submittals: 1. Soil Investigation Report for 2013 and 2014 Sewer Defects (Log No. B-162R-CA-62, dated 1/18/2016 & rec'd 1/25/2016); 2. 2015 RCRA Sewer Investigation Annual Report (Log No. B-162R-CA-60, dated 3/31/2016 & rec'd 4/01/2016); and Defect Release Determination Soils Screening Assessment Workplace for 2015 Sewer Defects (Log No. B-162R-CA-61, dated 5/27/2016 & rec'd 5/31/2016).	Approved with conditions and modifications.
7/20/2016 PS16-065	This letter was in response to CITGO's letter regarding the "Land Treatment Facility (LTF Closure Update and Deadline Extension Approval Request" (dated 6/22/2016 & rec'd 6/27/2016).	Approved.
8/1/2016 B-162R-M-5	This letter was in response to CITGO's letter to update the Corrective Action Cost Estimate in Table I-11, to include known costs, as well as costs for activities detailed in previously submitted Work Plans.	Approved with conditions and modifications.
10/07/2016 B-162R-CA-59	This letter was in response to CITGO's submittals regarding SWMU 45 (Contaminated Fill Area): 1. "SWMU 45 Phase II and Supplemental RFI Report" (dated 3/16/2016 and rec'd 3/23/2016); and 2. An addendum to "SWMU 45 Phase II and Supplemental RFI Report" (dated 6/21/2016 & rec'd 6/24/2016).	Approved with conditions and modifications.

10/25/2016 B-162R-CA-47	This letter was in response to CITGO's submittal entitled "SWMU 198 Corrective Measures Completion Report" (dated 4/1/2015 and rec'd 4/6/2016). This report was submitted to document the investigation and remediation efforts completed at 19B (Former Sludge Drying Area) and to propose Tier 3 ROs of lead for construction worker ingestion exposure pathway for Illinois EPA review and approval.	Approved with conditions and modifications.
2/01/2017 B-162R-CA-66	This letter was in response to CITGO's submittal (dated 10/06/2016 and rec'd 10/07/2016) entitled "A Supplemental RFI Report and Corrective Measures Plan for SWMU 46." A majority of SWMU 46 is located in Tract A of Parcel XXIX, leased from IDNR, however a portion is located within Parcel of the subject facility. This submittal contained results of additional soil investigations efforts and proposed a soil remediation effort at SWMU 46.	Approved with conditions and modifications, including a ELUC requirement to limit the property use of Parcel 1 to industrial/commercial uses.
2/02/2017 B-162R-CA-68	This letter was in response to CITGO's submittal (dated 12/20/2016 and rec'd 12/23/2016) regarding activities at SWMU 198 (Former Sludge Drying Area). This submittal was submitted in response to Illinois EPA's 10/25/2016 letter (Log No. B-162R-CA-47), which approved an alternate Tier 3 RO for the construction worker soil injection pathway for lead.	Approved with conditions and modifications, including a ELUC requirement to limit this property use to industrial/commercial uses.

2/10/2017 B-162R-CA-64; and CA-67	This letter was in response to two submittals: 1. CITGO's submittal (dated 9/02/2016 and rec'd 9/12/2016) which provided well construction information regarding (3) groundwater monitoring wells; and 2. CITGO's submittal (dated 10/14/2016 and rec'd 10/18/2016) which provided as-built diagrams of (4) recovery sumps installed in Sept. 2016.	Approved with conditions and modifications.
5/09/2017 B-162R-CA-63	This letter was in response to CITGO's submittals (dated 8/29/2016 and rec'd 9/06/2016) which included a Phase II RFI Report and Closure Report for SWMU 39v (a defect in the northern portion of the storm sewer system).	Approved with conditions and modifications. No further action is required at SWMU 39v, provided the facility establish an ELUC for this location to limit the property use to industrial/commercial uses.
6/15/2017 B-162R-CA-72	This letter was in response to CITGO's submittal (dated 3/29/2017 and rec'd 4/05/2017) which included a proposal to address exceedances of the Tier 3 soil RO for construction worker exposure for lead contamination.	Approved with conditions and modifications.
6/21/2017 B-162R-CA-71	This letter was in response to CITGO's submittal (dated 2/28/2017 and rec'd 3/03/2017) which included documentation of the installation of the required concrete engineered barrier at SWMU 30 (Former Light Oils UST at the Fuels Rack). It also proposed an ELUC for SWMU 30.	Approved with conditions and modifications. No further action is necessary at SWMU 30, provided CITGO meets the conditions of this letter.

7/18/2017 B-162R-M-6; M-7; and M-8	This letter was in response to: 1. A document entitled "Closure Documentation for the Land Treatment Facility," dated 10/31/2016 and rec'd 11/01/2016. An additional submittal (dated 10/25/2016 and rec'd 11/02/2016) was also assigned this log number. It contained a copy of the information to be filed with the deed of for this facility. 2. A document entitled "Request for Class 1 and Class 1* Modifications to the RCRA Permit Renewal Application – Corrective Action Financial Assurance Updates," dated 12/27/2016 and rec'd 12/30/2016. This document provided updated CA cost estimates. A document entitled "Request for Class 1 and Class 1* Modifications to the RCRA Permit Renewal Application – Closure of the Land Treatment Facility," dated 10/31/2016 and rec'd 11/01/2016.	Approved with conditions and modifications.
2/08/2018 B-162R-CA-70	This letter was in response to CITGO's submittal entitled "Soil Investigation Report for 2015 Soil Defects," dated 1/04/2017 and rec'd 1/09/2017). It contained the results of a 2016 investigation.	Approved with conditions and modifications.

2/08/2018 B-162R-CA-73; and CA-74	This letter was in response to CITGO's submittals entitled: 1. "2016 RCRA Sewer Investigation Report," dated 3/30/2017 and rec'd 4/03/2017. "Defect Release Determination Soils Screening Assessment Work Plan for 2016 Sewer Defects," dated 5/30/2017 and rec'd 6/05/2017. This submittal is a follow up to the above-mentioned submittal.	Approved with conditions and modifications.
7/31/2018 B-162R-CA-77	This letter was in response to CITGO's submittal dated 3/14/2018 and rec'd 3/20/2018. This submittal addressed SWMU 38j, which was in response to Illinois EPA's 11/28/2012 letter (Log Nos. B-162R-CA-12, 13, 14, and 16).	Approved with conditions and modifications. No further action is necessary at SWMU 38j.
7/31/2018 B-162-CA-87; and CA-99	This letter was in response to CITGO's ELUC submittal dated 5/20/2008 and then superseded by the 5/20/2008 ELUC submittal. The draft ELUC is for SWMU 31b-e. This ELUC was submitted in response to Illinois EPA's 8/25/2005 letter, which approved the RCRA Phase I Investigation Report.	Approved with conditions and modifications.
7/31/2018 B-162-CA-89; and CA-98	This letter was in response to CITGO's ELUC submittal dated 2/28/2008 (and rec'd 3/03/2008) for SWMU 31A (a former UST), which was superseded by the 5/20/2008 (and rec'd 5/23/2008) ELUC submittal. This ELUC was submitted in response to Illinois EPA's 8/24/2005 letter, which approved the RCRA Phase I Investigation Report.	Approved with conditions and modifications.

2/03/2010 B-162-CA-84	This letter was in response to CITGO's ELUC submittal dated 9/25/2019 (and rec'd 10/01/2019) for SWMU 46 (former separator). CITGO requested confirmation that excavation and subsequent cleaning activities completed at Target Perimeter Area (1a and 1b) and the western portion of the SWMU46 adequately implemented the requirements of the CMP and can be backfilled.	Approved with conditions and modifications.
7/31/2018 B-162-CA-89; and CA-98	This letter was in response to CITGO's ELUC submittal dated 2/28/2008 (and rec'd 3/03/2008) for SWMU 31A (a former UST), which was superseded by the 5/20/2008 (and rec'd 5/23/2008) ELUC submittal. This ELUC was submitted in response to Illinois EPA's 8/24/2005 letter, which approved the RCRA Phase I Investigation Report.	Approved with conditions and modifications.
3/03/2010 B-162-CA-65	This letter was in response to the following submittals: 1. "Re-Evaluation of Groundwater Zone (GMZ) Solid Waste Management Unit (SWMU) 33", dated 9/23/2016 (and rec'd 10/01/2019); and 2. Additional information dated 11/21/2019 (and rec'd) 11/26/2019 and dated 2/06/2020 (and rec'd 2/13/2020). CITGO proposed to conduct statistical evaluations for only certain constituents.	Approved with conditions and modifications.

3/12/2020 B-162R-CA-80	This letter was in response to CITGO's submittal entitled "Modification Request to the Free Phase Hydrocarbon (FPH) Monitoring and Recovery Program," dated 9/25/2018 and rec'd 10/01/2018.	Approved with conditions and modifications. CITGO was approved to shut down and abandon the following FPH monitoring and recover sumps: SL-57; SL-80; SL-85; SL-127; SL-129; SL-149; SL-157; SL-160; SL-168; SL-178; SL-194; SL-203; SL-211; SL-239; SL-246; SL-250; and SL-255.
4/21/2010 B-162-CA-86	This letter was in response to CITGO's "SWMU 445 Monitoring Well Installation and 4Q Groundwater Report," dated 2/25/2020 and rec'd 3/02/2020.	Approved with conditions and modifications.
5/22/2010 B-162-M-9; M-10; and and M-11	This letter was in response to CITGO's (3) requests to modify its RCRA permit: <u>M-9</u> : A Class 1* request (dated 12/28/2017 and rec'd 12/29/2017) to modify the Approved RCRA Part B Permit Renewal Application and Corrective Action Cost Estimate. <u>M-10</u> : A Class 1* request (dated 12/17/2018 and rec'd 12/21/2018) to modify the Approved RCRA Part B Permit Renewal Application and Corrective Action Cost Estimate. <u>M-11</u> : A Class 1* request (dated 12/19/2019 and rec'd 1/03/2020) to modify the Approved RCRA Part B Permit Renewal Application and Corrective Action Cost Estimate.	Approved with conditions and modifications.

2. Summary of CITGO's Submittals to Illinois EPA Under Review

Log Nos. & Rec'd Dates	Description of Submittal
B-162R-CA-102 October 02, 2025	Three Environmental Land Use Control (ELUC) Documents for Parcels 2, 3, and 4 at CITGO Lemont Refinery

B-162R-CA-101 March 26, 2025	<u>2024 RCRA Sewer Investigation Annual Report</u> ; and <u>2024 Sewer Repair Report</u>
B-162R-CA-100 March 21, 2025	<u>SW 45 Groundwater Monitoring Program – Proposed Modifications and Rationale</u>
B-162R-CA-99 April 05, 2024	<u>Notification of new SWMU Identification and SWMU Assessment Report – SWMU 48 Caustic Unloading Area Sodium Hydroxide/Caustic Release</u>
B-162R-CA-98 April 10, 2023	2020 RCRA Sewer Investigation Annual Report
B-162R-CA-97 April 10, 2023	2022 RCRA Sewer Investigation Annual Report
B-162R-CA-96 February 14, 2023	Request to Modify the Free-phase Hydrocarbon Monitoring and Recovery Program
B-162R-CA-95 April 04, 2022	2022 RCRA Sewer Investigation Annual Report Summarizing Activities Completed During the 2021 Calendar Year
B-162R-CA-93 September 20, 2021	SWMU 46 Corrective Measure Implementation and Partial Corrective Action Completion Report – September 2021 Addendum #1
B-162R-CA-92 April 02, 2021	SWMU 46 Corrective Measure Implementation and Partial Corrective Action Completion Report
B-162R-CA-91 March 30, 2021	2020 RCRA Sewer Investigation Annual Report
B-162R-CA-90 February 23, 2021	Proposed SWMU 47 Assessment Unit 123 Pump Can, Field Investigation, Results, and Evaluation
B-162R-CA-89 December 22, 2020	Removal of Free-phase Hydrocarbon Monitoring and Recovery Sump SL-278

B-162R-CA-87 March 30, 2020	2019 RCRA Sewer Investigation Annual Report
B-162R-CA-85 February 10, 2020	Phase II RFI Supplemental Work Plan and Closure Report for 2015 Sewer Defects, SWMUs 38 & 39
B-162R-CA-83 May 7, 2019	Submittal of the Soil Investigations Report for 2016 Sewer Defects
B-162R-CA-82 April 2, 2019	2018 RCRA Sewer Investigation Annual Report Summarizing Activities Completed During the 2018 Calendar Year
B-162-CA-154 October 15, 2018	Recorded and Certified Copy of SWMU 31B-E
B-162-CA-153 October 15, 2018	Recorded and Certified Copy of SWMU 31A
B-162R-CA-81 December 13, 2018	Soils Release Determination Work Plan for Sewer Defects
B-162R-CA-79 June 5, 2018	Soils Release Determination WP
B-162R-CA-78 April 2, 2018	Sewer Investigation Annual Report
B-162R-CA-76 October 10, 2017	3Q2017 GW Report
B-162R-CA-61 May 31, 2016	Defect Release Determination Soils Screening Assessment WP
B-162R-CA-45 January 30, 2015	Re-evaluation of SWMU 43D

B-162R-CA-44 January 30, 2015	Re-evaluation of SWMU 43A
B-162R-CA-40 July 03, 2014	As-built diagrams
B-162-CA-135 December 18, 2009	Proposed abandonment of damaged piezometers
B-162-CA-68 <i>Received Date N/A</i>	Ph. II report SWMU 31 A

3. Summary of Corrective Action Completed to Date

CORRECTIVE ACTION EFFORTS COMPLETED TO DATE						
SWMU No.	Unit Name	Unit Type	Wastes Managed	Release	Activity / Regulatory Status	Additional Information
1	Former Empty Drum Storage Area	Container Storage Area	Lubrication Oils	No	Closed. NFA (6/01/2004) – Illinois EPA	10/31/2001: Work Plan for Soil Investigation 5/6/2004: SWMU 1 Investigation Report
2 A-E	Sumps Along Former Process Wastewater Line ("Big Inch")	Wastewater Treatment Unit	Oily Wastewater	Yes	Active. NFA Status for Soils (1/31/2006); RCRA Corrective Action under Illinois EPA for Groundwater	3/26/2004: Phase I RFI Work Plan 3/30/2005: Phase I RFI Report 11/22/2005: Phase II RFI Work Plan 2/26/2007: Phase II RFI Report 9/10/2007: RFI Report 11/18/2009: Supplemental Phase II Investigation
3	Former North Plant API Separator and Current Above Ground Corrugated-Plate Separator	Wastewater Treatment Unit	Oily Wastewater	Yes	Active. NFA Status for Soils (8/24/2005); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	3/26/2004: Phase I RFI Work Plan 3/01/2005: Phase I RFI Report 1/30/2006: Interim 2006 Site-Wide Groundwater Monitoring and Investigation Work Plan
4	Hot Oil Line, Seneca Petroleum Storage Tank	Other	Solidified Asphalt Feedstock	Yes	Inactive; NFA (4/12/2007) – Illinois EPA	3/31/2006: Phase I RFI Work Plan 1/29/2007: Phase I RFI Report

5	Former Dump Area for Lime Sludge, Seneca Tank Location	Waste Pile	Lime Sludge	Unknown	Active; NFA for Soils (11/04/2010) – Illinois EPA	7/13/2007: Phase I RFI Work Plan 9/29/2008: Phase I RFI Report
7	Interceptor Trench; Canal Dock	Other	Groundwater and Liquid Hydrocarbons	Yes	Active; NFA for Soils (7/25/13) – Illinois EPA	3/31/2006: Phase I RFI Work Plan 1/29/2007: Phase I RFI Report 9/10/2007: Phase II RFI Work Plan 11/18/2009: Phase II RFI and Supplemental Investigation Report and Corrective Measure Plan; SWMU 7 Interceptor Trench Canal Dock
10	North Plant Heat Exchanger Bundle Cleaning Pad	Other	Heat Exchanger Solids (K050)	Unknown	Active; NFA (2/23/2016) – Illinois EPA	7/13/2007: Phase I RFI Work Plan 9/29/2008: Phase I RFI Report 3/14/2011: Phase II RFI Report and CMP - Documentation of construction of an engineered barrier (submittal date 9/15/2015)
11A	Recycle Tank: 11A – Mobile Interface Tank 436	Waste Recycling Operations	Comingled Products from Pipeline Shipments	Yes	Active; NFA Status for Soils (1/24/2012); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	3/31/2006: Phase I RFI Work Plan 1/29/2007: Phase I RFI Report 9/10/2007: Phase I RFI Report 4/17/2009: Phase II RFI Report
11B	Recycle Tank: 11B – 301	Waste Recycling Operations	Combined Crude Oil to Slop Oil	Yes	Active; NFA Status for Soils (1/24/2012); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	3/31/2006: Phase I RFI Work Plan 1/29/2007: Phase I RFI Report 9/10/2007: Phase I RFI Report 4/17/2009: Phase II RFI Report
12	Proximate Area to Tank 201	Waste Pile	Light Cycle Oil	Yes	Active; NFA Status for Soils (10/04/2010); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	3/31/2006: Phase I RFI Work Plan 1/29/2007: Phase I RFI Report 9/10/2007: Phase II RFI Work Plan 11/24/2008: Corrective Measures Plan 8/31/09: Corrective Measures Plan Modification
13	Sludge Drying Area	Waste Pile	Sludge from the Primary Light Oil Storage Tank	Unknown	Inactive; NFA Status for Soils (7/25/2013); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	7/13/2007: Phase I RFI Work Plan 9/29/2008: Phase I RFI Report 2011 Phase II RFI Work Plan

						9/27/2011: Phase II Report and Corrective Measures Plan
15 A-B	Wastewater Treatment Sludge Decant Basin within Land Treatment Facility	Surface Impoundment	Water and Wastewater Sludge, Stormwater Pond Dredgings, Clear Well Sludge, Cooling Tower Sludge, API Separator Sludge, Heavy Oil Sludge	No	Inactive; NFA Status for Soils (10/04/2011); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	7/13/2007: Phase I RFI Work Plan 9/29/2008: Phase I RFI Report 2011 Phase II RFI Work Plan 7/29/2011: Phase II Report
15C	Wastewater Treatment Sludge Decant Basin within Land Treatment Facility	Surface Impoundment	Water and Wastewater Sludge, Stormwater Pond Dredgings, Clear Well Sludge, Cooling Tower Sludge, API Separator Sludge, Heavy Oil Sludge	No	Closed (Illinois EPA Approval - (9/27/2002) Log No. B-162-M-1	11/21/1997: Equivalency Demonstration for the Surface Impoundment at the LTF (SWMU 15C) 1/29/2001: Notice of Intent to Conduct Additional Investigation Activities for Closure Equivalency Demonstration at Surface Impoundment S04 10/19/2001: Results of Additional Soil Investigation Activities former Surface Impoundment S04 (SWMU 15C) 8/15/2002: Removal of Soils from Former Surface Impoundments (S04) – Clean Closure Completion Report
16	Sludge Application Area	Landfarm	Stormwater Pond Dredgings	Yes	Inactive; NFA (11/27/2006) – Illinois EPA	3/26/2004: Phase I RFI Work Plan 3/01/2005: Phase I RFI Report 11/28/2005: Phase II RFI Work Plan 8/30/2006: Phase II Report
17	Intermittent Stream/ Stormwater Conveyance	Other	Stormwater Run-off from SWMUs 14A-D and 15A-C	No	Active; NFA (12/17/2007) – Illinois EPA	3/26/2004: Phase I RFI Work Plan 3/30/2005: Phase I RFI Report 11/22/2005: Phase II RFI Work Plan 5/14/2007: Phase II Report
18 + 19A	Waste Staging Area	Waste Pile	Storm Pond Sludge, Oil-Contaminated Fill	Unknown	Active; NFA (2/23/2016) – Illinois EPA	7/13/2007: Phase I RFI Work Plan 9/29/2008: Phase I RFI Report 2011 Phase II RFI Work Plan 12/15/2018: Phase II Report
	Former Sludge Drying Area	Waste Pile	Storm Pond Sludge, Oil-Contaminated Fill	Unknown	Active (as a waste staging area); NFA (2/23/2016) – Illinois EPA	

19B	Former Sludge Drying Areas	Waste Pile	Stormwater Basin Sediments	Unknown	Inactive; NFA (10/04/2017) – Illinois EPA	3/26/2004: Phase I RFI Work Plan 3/30/2005: Phase I RFI Report 11/22/2005: Phase II RFI Work Plan 5/14/2007: Phase II RFI Report 11/05/2009: Phase II Addendum 6/10/2011: Phase II Addendum 12/20/2016: Corrective Measure Completion Report
19C	Former Sludge Drying Areas	Waste Pile	Stormwater Basin Sediments	Unknown	Inactive; NFA (2/26/2016) – Illinois EPA	7/13/2007: Phase I RFI Work Plan 9/29/2008: Phase I RFI Report 2011 Phase II RFI Work Plan 12/18/2015: Phase II Report
19D	Former Sludge Drying Areas	Waste Pile	Stormwater Basin Sediments	Unknown	Active; NFA Status for Soils (12/18/2008); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	3/31/2006: Phase I RFI Work Plan 1/29/2007: Phase I RFI Report 9/10/2007: Corrective Measures Plan 10/30/2008: Corrective Measures Completion Report
20	Active Drum Staging Area	Container Storage Area	Empty Lubrication Oil Drums, Empty Chemical Drums, Drums Containing Waste, Dumpsters	Yes	Active; NFA (1/12/2012) – Illinois EPA	7/13/2007: Phase I RFI Work Plan 9/28/2008: Phase I RFI Report 2011 Phase II RFI Work Plan 3/11/2011: Phase II RFI Report
21	Vertical Oil Storage Tanks at the Stormwater Basin (SWB)	Wastewater Treatment Unit	Oil Removed from the SWB	Unknown	Inactive; NFA (4/12/2007) – Illinois EPA	3/31/2006: Phase I RFI Work Plan 1/29/2007: Phase I RFI Report
25A	Heat Exchanger Bundle Cleaning Pads	Other	Heat Exchanger Solids (K050)	Unknown	Active; NFA (6/16/2009) – Illinois EPA	7/13/2007: Phase I RFI Work Plan 11/24/2008: Phase I RFI Report
25B	Heat Exchanger Bundle Cleaning Pads	Other	Heat Exchanger Solids (K050)	Unknown	Active; NFA (1/12/2012) – Illinois EPA	7/13/2007: Phase I RFI Work Plan 9/29/2008: Phase I RFI Work Plan 3/11/2011: Phase II RFI Report
25C	Supplementary Heat Exchanger Bundle	Waste Treatment (Detoxification)	Heat Exchanger Solids (K050)	Unknown	Active; NFA (11/04/2010) – Illinois EPA	7/13/2007: Phase I RFI Work Plan 9/29/2008: Phase I RFI Report

	Cleaning Pads - Cleaning Building					
30	Former Primary Light Oil (PLO) Underground Storage Tank (UST) at Fuels Loading Rack Area	Underground Storage Tank (UST)	Primary Light Oil (PLO)	Yes	Inactive; NFA (6/21/2017) – Illinois EPA	3/31/2006: Phase I RFI Work Plan 1/29/2007: Phase I RFI Report 9/10/2007: Phase II RFI Work Plan 7/30/2009: Phase II RFI Report 7/15/2011: Phase II Report Addendum
31A	Former Underground Storage Tanks located at Active Solvent Loading Rack Area	Underground Storage Tank (UST)	Primary Light Oil (PLO)	Yes	Inactive; NFA Status for Soils (12/17/2007); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	3/26/2004: Phase I RFI Work Plan 3/30/2005: Phase I RFI Report 11/22/2005: Phase II RFI Work Plan 5/14/2007: Phase II RFI Report - ELUC submittal dated: 10/10/2018
31B	Former Underground Storage Tanks located at Former Service Station	Underground Storage Tank (UST)	Gasoline	Yes	Inactive; NFA Status for Soils (8/24/2005); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	3/26/2004: Phase I RFI Work Plan 3/30/2005: Phase I RFI Report - ELUC submittal dated 10/10/2018
31C	Former Underground Storage Tanks located at Former Service Station	Underground Storage Tank (UST)	Hydraulic Oil	Yes		
31D	Former Underground Storage Tanks located at Former Service Station	Underground Storage Tank (UST)	Leaded Gasoline	Yes		
31E	Former Underground Storage Tanks located at Former Service Station	Underground Storage Tank (UST)	Diesel Fuel	Yes		
32	Former Process Blending UST at the Process Blend Center	Underground Storage Tank (UST)	Leaded and Unleaded Gasoline	Yes	Inactive; NFA Status for Soils (7/17/2006); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	3/31/2006: Phase I RFI Work Plan
34	French Drain System	Other	Petroleum Constituents in Groundwater	Unknown	Inactive; NFA Status for Soils (1/13/2012); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	3/31/2006: Phase I RFI Work Plan 1/29/2007: Phase I RFI Report 9/10/2007: Phase II RFI Work Plan 11/24/2008: Phase II RFI Report

35	Red Dye Spill Area	Other	Red Dye (Diesel additive)	Yes	Inactive; NFA (11/04/2010) – Illinois EPA	4/16/2010: Tier II Evaluation 7/13/2007: Phase I RFI Work Plan 9/29/2008: Phase I RFI Report
36	Former USTS Located at South Plant Maintenance Area	Underground Storage Tank (UST)	Gasoline and Diesel	Yes	Inactive; NFA (7/17/2006) – Illinois EPA	3/31/2006: Phase I RFI Work Plan
37	Former USTS Located near WWTP Outfall to Chicago Sanitary & Ship Canal	Underground Storage Tank (UST)	Diesel	No	Inactive; NFA (7/17/2006) – Illinois EPA	3/31/2006: Phase I RFI Work Plan
40	Open Flow Ditches	Other	Storm Water from Non-Process Areas	Unknown	Active. RCRA Corrective Action under Illinois EPA	3/30/2005: Phase I RFI Report
43A	Canal Dock Piping	Other	Refined Product(s)	Yes	Inactive; NFA (1/24/2012) – Illinois EPA	4/15/2009: Phase I RFI Work Plan
43B	Primary Light Oil Pump	Other	Refined Product(s)	Yes	Inactive; NFA (1/24/2012) – Illinois EPA	4/16/2009: Phase I RFI Work Plan
43C	Refinery Flare	Other	Refined Product(s)	Yes	Inactive; NFA (6/30/2015) – Illinois EPA	4/15/2009: Phase I RFI Work Plan 1/23/2015: Phase I RFI Report
43D	Barge	Other	Refined Product(s)	Yes	Inactive; NFA (1/24/2012) – Illinois EPA	4/15/2009: Phase I RFI Work Plan
43E	Above Ground Tank	Other	Refined Product(s)	Yes	Inactive; NFA (1/24/2012) – Illinois EPA	4/15/2009: Phase I RFI Work Plan
43F	Life Station Pump	Other	Refined Product(s)	Yes	Inactive; NFA (1/23/2012) – Illinois EPA	4/15/2009: Phase I RFI Work Plan 11/07/2013: Phase II RFI Work Plan 1/23/2015: Corrective Measures Plan 12/20/2016: Corrective Completions Report
43G	Process Drain System	Other	Refined Product(s)	Yes	Inactive; NFA (1/24/2012) – Illinois EPA	4/15/2009: Phase I RFI Work Plan
43H	Pipeline Primary Light Oil	Other	Refined Product(s)	Yes	Inactive; NFA (1/24/2012) – Illinois EPA	4/15/2009: Phase I RFI Work Plan

43i	Condenser (Sulphur Dioxide)	Other	Refined Product(s)	Yes	Inactive; NFA (1/24/2012) – Illinois EPA	4/15/2009: Phase I RFI Work Plan
43j	Pipeline Release near Tanks 92 and 108	Other	Refined Product(s)	Yes	Inactive; NFA Status for Soils (2/24/2010); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	12/09/2004: Phase I RFI Work Plan 3/30/2005: Phase I RFI Report 11/22/2005: Phase II RFI Work Plan 5/14/2007: Phase II RFI Report 8/30/2008: Corrective Measures Plan 9/30/2009: Corrective Completions Report
44	Spill at the Gasoline Transfer Line	Other	Gasoline	Yes	Inactive; NFA Status for Soils (10/04/2011); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	7/13/2007: Phase I RFI Work Plan 9/29/2008: Phase I RFI Report 7/29/2011: Phase II RFI Report
45	Contaminated Fill Area	Other	Unknown	Unknown	Inactive; RCRA Corrective Action under Illinois EPA	8/26/2010: Phase I RFI Report 3/10/2016: Phase II RFI Report 6/21/2016: Phase II RFI Report Addendum
46	Former Separator #3	Former Oil Water Separator	Process Water	Unknown	Inactive; RCRA Corrective Action under Illinois EPA	5/06/2011: Phase I RFI Report 11/07/2013: Phase II RFI Work Plan 10/04/2016: Corrective Measures Plan Area 1 and West Cell Former Separator Excavation submittal dated 9/25/2019

CORRECTIVE ACTION EFFORTS COMPLETED TO DATE – SWMU 38 Process Sewer					
SWMU No.	Process Line/Structure ID	Regulatory Status		Additional Information ¹	
38a	Process Sewer – Line Segment 31-MH8-DP-01 to 31-MH8-DP-02	NFA Status for Soils (3/15/2010); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program		1/31/2007: Phase I RFI Work Plan 4/11/2008: Phase II RFI Work Plan 5/18/2009: Phase II RFI Work Plan Modification 9/22/2009: Phase II RFI Report 4/22/2009: Tier II Evaluation	
38b	Process Sewer – Line Segment	NFA (10/04/2010) – Illinois EPA		10/17/2007: Phase I RFI Report	

	31-MH5-DP-03 to 31-MH5-DP-01		4/11/2008: Phase II RFI Work Plan 9/22/2009: Supplemental Work Plan
38c	Process Sewer – Structure 31-MH5-DP-01	NFA Status for Soils (10/04/2010); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	10/17/2007: Phase I RFI Report 4/11/2008: Phase II RFI Work Plan 5/18/2009: Phase II RFI Work Plan Modification 9/22/2009: Phase II RFI Report
38d	Coker Road Process Sewer – 2007 Defects – Area 2 (7) Line Segments 31-MH8-DP-01 to 31-MH8-DP-02	NFA (4/08/2014) – Illinois EPA	3/13/2009: Phase I RFI Report 3/25/2009: Phase I RFI Report 6/02/2010: Phase II RFI Report
38e	Process Sewer Line, 2007 Defects – Area 4	NFA (4/08/2014) – Illinois EPA	3/11/2009: Phase I RFI Report 1/18/2012: Phase II RFI Work Plan
38f	Process Sewer Line, 2007 Defects – Area 6	NFA Status for Soils (7/01/2015); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	3/11/2009: Phase I RFI Report 1/18/2012: Phase II RFI Work Plan 11/07/2013: Supplemental Letter 4/30/2015: Phase II RFI Report
38g	Process Sewer Line, 2007 Defects – Area 15 (joined with SWU 39e – Area 16)	NFA Status for Soils (8/15/2014); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	3/11/2009: Phase I RFI Report 1/18/2012: Phase II RFI Work Plan 3/06/2014: Phase II RFI Report
38h	Process Sewer Line, 2008 Defects – Area 18	NFA (4/08/2014) – Illinois EPA	1/04/2010: Phase I RFI Report 1/18/2012: Phase II RFI Report
38i	Process Sewer Line, 2008 Defects – Area 21	NFA Status for Soils (8/15/2014); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	1/04/2010: Phase I RFI Report 1/18/2012: Phase II RFI Work Plan 3/06/2014: Phase II RFI Report
38j	Process Sewer Line, 2008 Defects – Area 26	NFA Status for Soils (7/31/2018); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	1/04/2010: Phase I RFI Report 1/18/2012: Phase II RFI Work Plan 8/03/2017: Phase II RFI Report

38k	Process Sewer Line, 2009 Defects – Area 39	NFA Status for Soils (4/08/2014); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	1/27/2022: Phase I RFI Report 1/18/2012: Phase II RFI Report
38l	Process Sewer Line, 2009 Defects – Area 40	NFA Status for Soils (4/08/2014); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	1/27/2011: Phase I RFI Report 1/18/2012: Phase II RFI Report
38m	Process Sewer Line, 2010 Defects – Area 48	NFA (10/04/2013) – Illinois EPA	12/13/2011: Phase I RFI Report 11/09/2012: Phase II RFI Report
38n	Process Sewer Line, 2010 Defects – Area 49	NFA Status for Soils (7/01/2015); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	12/13/2011: Phase I RFI Report 11/09/2012: Phase II RFI Work Plan 4/30/2015: Phase II RFI Report
38o	Process Sewer Line, 2010 Defects – Area 57	NFA (10/04/2013) – Illinois EPA	12/13/2011: Phase I RFI Report 11/09/2012: Phase II RFI Report
38p	Process Sewer Line, 2007 Defects – Area 5	NFA (01/30/2014) – Illinois EPA	3/11/2010: Phase I RFI Report 5/29/2012: Phase I RFI Report Modification 10/06/2013: Phase II RFI Report

CORRECTIVE ACTION EFFORTS COMPLETED TO DATE – SWMU 39 Storm Sewer			
SWMU No.	Process Line/Structure ID	Regulatory Status	Additional Information ¹
39a	Storm Sewer – Line Segment 130-MH75-DRC-01 to 130-MH75-DRC-02	NFA (3/06/2014) – Illinois EPA	10/17/2007: Phase I RFI Report 4/11/2008: Phase II RFI Work Plan 5/18/2009: Phase II RFI Work Plan Modification 11/24/2009: Phase II RFI Report
39b	Storm Sewer – Line Segment 130-MH75-DRC-05 to 130-MH75-DRC-32 And Structure 130-MH75-DRC-05	NFA (3/06/2014) – Illinois EPA	10/17/2007: Phase I RFI Report 4/11/2008: Phase II RFI Work Plan 5/18/2009: Phase II RFI Work Plan Modification 11/24/2009: Phase II RFI Report
39c	Storm Sewer Line, 2007 Defects – Area 11	NFA (2/23/2016) – Illinois EPA	3/11/2029: Phase I RFI Report 1/18/2012: Phase II RFI Work Plan 12/11/2015: Phase II RFI Report

39d	Storm Sewer Line, 2007 Defects – Area 12	NFA (4/08/2014) – Illinois EPA	12/11/2015: Corrective Measures Completion Report 3/11/2009: Phase I RFI Report 1/18/2012: Phase II RFI Report
39e	Storm Sewer Line, 2007 Defects – Area 16 (joined with SWMU 38g – Area 15)	Joined with SWMU 38g - NFA Status for Soils (4/08/2014); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	3/11/2009: Phase I RFI Report 1/18/2012: Phase II RFI Work Plan
39f	Storm Sewer Line, 2008 Defects – Area 19	NFA Status for Soils (4/08/2014); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	1/04/2010: Phase I RFI Report 1/18/2012: Phase II RFI Report
39g	Storm Sewer Line, 2008 Defects – Area 22	NFA (4/08/2014) – Illinois EPA	1/04/2010: Phase I RFI Report 1/18/2012: Phase II RFI Report
39h	Storm Sewer Line, 2008 Defects – Area 23	NFA Status for Soils (4/08/2014); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	1/04/2010: Phase I RFI Report 1/18/2012: Phase II RFI Report
39i	Storm Sewer Line, 2008 Defects – Area 24	NFA Status for Soils (4/08/2014); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	1/04/2010: Phase I RFI Report 1/18/2012: Phase II RFI Report
39j	Storm Sewer Line, 2008 Defects – Area 25	NFA Status for Soils (4/08/2014); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	1/04/2010: Phase I RFI Report 1/18/2012: Phase II RFI Report
39k	Storm Sewer Line, 2008 Defects – Area 27	NFA Status for Soils (4/08/2014); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	1/04/2010: Phase I RFI Report 1/18/2012: Phase II RFI Report
39l	Storm Sewer Line, 2008 Defects – Area 28	NFA Status for Soils (4/08/2014); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	1/04/2010: Phase I RFI Report 1/18/2012: Phase II RFI Report
39m	Storm Sewer Line, 2008 Defects – Area 29	NFA Status for Soils (4/08/2014); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	1/04/2010: Phase I RFI Report 1/18/2012: Phase II RFI Report
39n	Storm Sewer Line, 2008 Defects – Area 32	NFA Status for Soils (4/08/2014); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	1/04/2010: Phase I RFI Report 1/18/2012: Phase II RFI Report
39o	Storm Sewer Line, 2008 Defects – Area 33	NFA Status for Soils (4/08/2014); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	1/04/2010: Phase I RFI Report 1/18/2012: Phase II RFI Report

39p	Storm Sewer Line, 2008 Defects – Area 34	NFA Status for Soils (4/08/2014); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	1/04/2010: Phase I RFI Report 1/18/2012: Phase II RFI Report
39q	Storm Sewer Line, 2009 Defects – Area 41	NFA Status for Soils (4/08/2014); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	1/04/2010: Phase I RFI Report 1/18/2012: Phase II RFI Report
39r	Storm Sewer Line, 2009 Defects – Area 42	NFA Status for Soils (4/08/2014); Groundwater to be addressed by Site-Wide Groundwater Monitoring Program	1/04/2010: Phase I RFI Report 1/18/2012: Phase II RFI Report
39s	Storm Sewer Line, 2010 Defects – Area 51	NFA (10/04/2013) – Illinois EPA	12/13/2011: Phase I RFI Report 11/09/2012: Phase II RFI Report
39t	Storm Sewer Line, 2010 Defects – Area 58	NFA (10/04/2013) – Illinois EPA	12/13/2011: Phase I RFI Report 11/09/2012: Phase II RFI Report
39u	Storm Sewer Line, 2010 Defects – Area 60	NFA (10/04/2013) – Illinois EPA	12/13/2011: Phase I RFI Report 11/09/2012: Phase II RFI Report
39v	Storm Sewer Line, 2011 & 2012 Defects – Area 67 (SL-220)	NFA (5/19/2017) – Illinois EPA	3/27/2014: Phase I RFI Report 12/11/2015: Phase II RFI Work Plan 8/29/2016: Phase II RFI Report
39w	Storm Sewer Line, 2015 Defects – (SL-244)	RCRA Corrective Action under Illinois EPA	1/31/2020: Phase II RFI Work Plan

¹ Phase I RFI Work Plan was part of approved investigation plan activities (SWMUs identified from this process as requiring additional investigation are then further evaluated)

ATTACHMENT G

GUIDANCE FOR CONDUCTING A RCRA FACILITY INVESTIGATION

**CITGO Lemont Refinery
STATE ID No.: 1978030004
USEPA ID No: ILD041550567
Log No. B-162R2**

Attachment G
GUIDANCE FOR CONDUCTING A RCRA FACILITY INVESTIGATION

I. PURPOSE

The purpose of the RCRA Facility Investigation (RFI) is to: (1) characterize each SWMU of concern at the facility; (2) determine the nature and extent of any contamination associated with releases of hazardous waste or hazardous constituents to the environment from the SWMUs of concern; and (3) gather data necessary to develop and implement a Corrective Measures Program (CMP). Specifically, the information gathered during the RFI will be used to help determine the need, scope and design of a corrective measures program.

II. SCOPE OF WORK

The Scope of Work for the RFI is evaluate whether a release has occurred and to what extent. The scope for the RFI is divided into three phases – Phases I, II, and III.

1. The purpose of Phase I is to provide information on the characteristics and integrity of each unit and conduct field activities, as necessary, to determine if a SWMU(s) at that facility has released, is currently releasing, or has the potential to release hazardous waste and/or hazardous constituents to the soil and/or surface water.
2. Phase II of the RFI will be required if Illinois EPA determines, from the data obtained in Phase I, for any SWMU that: (1) a release has occurred to the soil, groundwater, and/or surface water; (2) a release is occurring to the soil, groundwater, and/or surface water; or (3) the results are inconclusive. The purpose of Phase II is to define the extent of releases any media of concern (i.e., to the soil, groundwater, and/or surface water).
3. Phase III will be required if Illinois EPA determines, from the data obtained in Phase I or Phase II, that hazardous wastes or hazardous constituents may have migrated to the groundwater in areas not previously investigated for possible groundwater contamination. The purpose of Phase III is to define the extent of releases both on-site and off-site to the ground water from SWMUs identified in Phase I or II to have potentially released hazardous waste or hazardous constituents to the groundwater.

It must be noted that the goals of each phase of an RFI may be somewhat different than those set forth above for those SWMUs that will be closed as landfills and then receive post-closure care. In such cases, the goal of the RFI will

be to collect sufficient information to: (1) establish the boundaries and construction details of a final cover system; (2) design post-closure monitoring/maintenance/management programs for leachate, subsurface gas, groundwater and final cover.

Each phase of the investigation is divided into three subparts: (1) The first subpart addresses the development of an RFI Workplan; (2) the second subpart is the implementation of the RFI; and (3) the final subpart covers the submission of reports of activities and results of the RFI.

III. RFI WORKPLANS

The Permittee shall prepare a detailed workplan for each phase of the RFI and submit to the Illinois EPA for review and approval. The Permittee must obtain approval from the Illinois EPA prior to conducting that phase of the RFI.

The workplan for each phase of the RFI must, at minimum, contain the information identified in III.A through III.H. The information in the workplan must be presented in a manner similar to the format set forth in these sections. The information provided in each Phase of the RFI may be incorporated into the workplan for the subsequent Phase by reference. Information already submitted in the Part B permit application may also be incorporated by reference into the workplans when appropriate (the Permittee must provide clear references to the location of the information in the application, including page number and date the information was submitted).

A. INTRODUCTION (required for all workplans)

The Permittee must provide a general discussion of the contents and goals of each workplan as an introduction of the workplan. This introduction should also provide a general discussion of the facility and the SWMUs under investigation.

B. ADMINISTRATIVE OUTLINE

The Permittee must submit, as part of the workplan for each phase of the RFI, a general outline defining the RFI objectives, technical approach, and scheduling of tasks during that phase of the RFI.

The Permittee shall prepare a Project Management Plan (PMP) as part of each Phase Workplan, which will include a discussion of the technical approach, schedules, budget, and personnel. The PMP must also include a description of the qualifications of personnel performing or directing the RFI, including contractor personnel. This plan shall also document the overall management approach to the current Phase of the RFI.

C. INFORMATION REQUIRED SPECIFICALLY IN THE RFI PHASE I WORKPLAN

1. General Facility Information

The Permittee must provide, as available, the following information in the Phase I RFI workplan regarding the facility overall:

- a. A description of the facility, including the nature of its business, both past and present. This description should identify: (1) the size and location of the facility; (2) the raw materials used and products manufactured at the facility; and (3) the Standard Industrial Code (SIC) which describes the type of activities carried out at the facility;
- b. Identification of past and present owners;
- c. A discussion of the facility's past and present operations, including solid and hazardous waste generation, storage, treatment and disposal activities;
- d. A brief discussion of each of the SWMUs identified in the Corrective Action section of this Permit.
- e. A description of all significant surface features (ponds, streams, depressions, etc.) and wells within 1,500 feet of the facility;
- f. A description of all land usage within 1,500 feet of the facility, including all known SWMUs;
- g. Identification of all human populations and environmental systems susceptible to contaminant exposure from releases from the SWMUs within a distance of at least 1,500 feet of the facility;
- h. A description of any interim corrective action measures which were or are being planned or actually being undertaken at the facility;
- i. Approximate dates or periods of past spills or releases, identification of material spilled, location and a description of the response actions, including any inspection reports generated as a result of the spill or release.

- j. A current topographic map(s) showing a distance of at least 1,000 feet around the facility and other information described below, and at a scale of one inch equal to not more than 200 feet. Contours shall be shown on the map, with the contour interval being sufficient to clearly show the pattern of surface water flow. If such a map is not available, the workplan shall describe the method for generating the map for inclusion in the Phase I report. The map shall clearly show the following:

- (1) Map scale, north arrow, date, and location of facility with respect to Township, Range and Section;
- (2) Topography and surface drainage depicting all waterways, wetlands, 100-year floodplain, drainage patterns, and surface water areas;
- (3) Property lines, with the owners of all adjacent property clearly indicated;
- (4) Surrounding land use;
- (5) Locations and boundaries of (1) all solid waste, including hazardous waste, management units, both past and present, (2) spill areas and (3) other suspected areas of contamination;
- (6) All injection and withdrawal wells, and
- (7) All buildings, tanks, piles, utilities, paved areas, easements, rights-of-way, and other features including all known past and present product and waste underground tanks or piping.

The map(s) shall be of sufficient detail and accuracy to locate and report all current and future RFI work performed at the site. The base map(s) shall be submitted in the Phase I report and modified in subsequent reports and workplans as appropriate.

2. Nature and Extent of Contamination

The Phase I workplan must contain the following information, to the extent known, for each of SWMUs and AOCs identified in the Corrective Action Section of this Permit:

- a. Location of unit;
- b. The horizontal and vertical boundaries of each unit;
- c. Details regarding the construction, operation and structural integrity of each unit;
- d. A description of all materials managed and/or disposed at each SWMU including, but not limited to, solid waste, hazardous wastes, and hazardous constituents to the extent they are known or suspected over the life of the facility including:
 - (1) Type of waste or hazardous constituents placed in the units, including source, hazardous classification, quantity and chemical composition;
 - (2) Physical and chemical characteristics, including physical form, physical description, general chemical class, cohesiveness of the waste;
- e. Quantities of solid and hazardous wastes managed at the unit;
- f. The history of the utilization of each SWMU and the surrounding areas, including the period of operation and age of the unit;
- g. Methods used to close the unit, if applicable;
- h. All available data and qualitative information on the level of contamination present at the SWMU;
- i. A description of the existing degree and extent of contamination at each unit area.
- j. Identification of additional information which must be gathered regarding 2.a through 2.i.

3. Integrity Inspection

The RFI Phase I workplan must provide an evaluation of the structural integrity of the concrete-asphalt bases of any unit with a concrete-asphalt base during the corrective action process.

The surfaces of these bases shall be visually inspected, photographed, and any residue adhering to the surface must be removed by scraping and/or brushing. After cleaning the concrete/asphalt surfaces, an independent registered professional engineer shall inspect the integrity of the surfaces. Specifically, these surfaces must be inspected by the engineer for cracks or other defects which penetrate through the base. In addition, all construction joints must be inspected to ensure they are watertight.

This inspection must meet the standards and recommendations from professional/technical industry, such as the American Concrete Institute, the Portland Cement Association, the American Society of Testing and Materials, the American Society of Civil Engineers, etc., which relate to the ability of concrete/asphalt to contain liquids. The results of this inspection shall be: (1) submitted in the form of a report; (2) included in the RFI Phase I report required by the Corrective Action Section of the Permit; and (3) certified in accordance with 35 IAC 702.126 by the engineer. The reports must include: (1) the results of the inspection; (2) scaled drawings showing the location of all cracks and construction joints observed during the investigation; (3) conclusions reached regarding any cracks or construction joints observed in the area of concern; (4) justification for the conclusions reached (e.g., information must be provided which indicates that any construction joints in the areas of concern are indeed watertight); and (5) photographs to support the conclusions reached.

If joints, cracks or other defects are found in the base of any SWMU during the inspection required above which would potentially allow hazardous waste or hazardous constituents to migrate through the base, then the RFI Phase I workplan must provide for the collection of soil samples beneath the base to determine if hazardous waste or hazardous constituents have been released to the underlying soil.

- a. Samples should be collected from at least one location along each joint or crack that provides a potential for hazardous waste or hazardous constituents to migrate to underlying soil. Chosen sample locations shall be biased to stained areas or low-lying areas where spills would tend to accumulate.
- b. Samples should be collected from zero-to-six inches below the subgrade/natural soil interface.

- c. Samples must be collected and analyzed in accordance with the procedures set forth in the sampling and analysis plan below.

4. Soil Sampling/Analysis Plan

The RFI Phase I workplan must provide for a determination of the presence or absence of releases of hazardous waste and hazardous constituents into the soil around and under each SWMU in the Corrective Action Section of this Permit. To meet this requirement, the plan must identify:

- a. The procedures which will be used to describe and characterize the soils in and around the subject SWMU(s) down to the water table, including, but not limited to, the following:
 - (1) Unified Soil Classification;
 - (2) Soil profile; and
 - (3) Elevation of water table;
- b. The parameters and hazardous constituents to be used to establish the presence or absence of contamination. These must include, but are not limited to, specific hazardous constituents of wastes known or suspected to have been managed by the SWMU(s) as identified and determined by the unit characterization information presented in the workplan.
- c. The basis for selecting the parameters and constituents in (b).
- d. The methodology for choosing sampling locations, depths, and numbers of samples.
- e. Sampling procedures for each parameter or constituent to be analyzed. Unless detailed procedures are otherwise contained in the workplan, all soil samples collected must be handled in accordance with Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition (SW-846) and finalized updates and the Illinois EPA soil volatile sampling procedure if volatiles are to be analyzed.
- f. Analytical methods to be used in the analysis of the samples. The procedures set forth in SW-846 shall be followed. Otherwise, a

complete description of the methods to be used and the justification for not using the appropriate SW-846 methods must be provided.

- g. Procedures and criteria for evaluating analytical results to establish the presence or absence of any contamination.

5. Hydrogeologic and Hydrologic Investigation Sampling and Analysis Plan

Phase I hydrogeologic and geologic investigation plan for each SWMU must provide descriptions of groundwater monitoring systems which will provide adequate data on the detection, nature, extent and rate, and concentration of any release to the groundwater at the facility. The SWMUs include but are not limited to: (1) landfills; (2) surface impoundments; or (3) units where there is known or highly suspected groundwater contamination.

The information which must be provided regarding the Phase I investigation of hydrogeology and hydrology at each SWMU identified above includes:

- a. Information, as it is available, regarding:
 - (1) The regional geologic and hydrogeologic characteristics in the vicinity of the facility, including stratigraphy, hydrogeologic flow and the areas of recharge and discharge.
 - (2) Any topographic or geomorphic features that might influence the groundwater flow system;
 - (3) The hydrogeologic properties of all of the hydrogeologic units found at the site down to the first bedrock aquitard, including: hydraulic conductivity and porosity, texture, uniformity and lithology; and interpretation of hydraulic interconnections between saturated zones, and zones of significant fracturing or channeling in the unconsolidated and consolidated deposits;
 - (4) Using the facility map as a base, isopach and structural contour maps, and at least two geologic cross sections showing the extent (depth, thickness, lateral extent) of all hydrogeologic units within the facility boundary, down to

the first bedrock aquitard, identifying: all units in the unconsolidated and consolidated deposits; zones of higher permeability or lower permeability that might direct or restrict the flow of contaminants; perched aquifers; and the first saturated zone that may have a potential for migration of contaminants;

- (5) The water level or fluid pressure monitoring, including: water level contour maps and vertical gradient sections, well or piezometer hydrographs and interpretation of the flow system, interpretation of any changes in hydraulic gradients, and seasonal fluctuation; and
- (6) Any man-made influences that may affect the hydrogeology of the site, identifying local water supply and production wells and other man-made hydraulic structures within 1,500 feet of the facility boundary.

b. Procedures for obtaining information identified in Item 5(a) that was not obtained during preparation of the workplan.

c. Documentation that sampling and analysis of groundwater monitoring wells will be carried out in accordance with the approved Data Collection Quality Assurance Plan required below. The Plan shall provide information on the design and installation of all groundwater monitoring wells. The designs shall be in accordance with the latest version of the Technical Enforcement Guidance Document (TEGD), where appropriate, and the latest version of the Illinois EPA design criteria. At a minimum:

- (1) The groundwater monitoring network must consist of monitoring wells installed in the uppermost aquifer and in each underlying aquifer (e.g., sand units) that are hydraulically interconnected;
- (2) At least one background monitoring well in each aquifer shall be installed hydraulically upgradient (i.e., in the direction of increasing static head) from the limit of the SWMUs, except in the situation where SWMUs in close proximity can be investigated with the same background well system. The number, locations, and depths must be sufficient to yield groundwater samples that are: (a)

representative of background quality in the uppermost aquifer and units hydraulically interconnected beneath the facility and (b) not affected by SWMUs at the subject facility; and

- (3) Monitoring wells in each appropriate aquifer shall be installed hydraulically downgradient (i.e., in the direction of decreasing static head) at the limit of the SWMU or at the limit of each group of proximate SWMUs. The number, locations and depths must ensure that they allow for detection of releases of hazardous waste or hazardous constituents from the SWMU(s).

d. A sampling plan which specifies:

- (1) The parameters and constituents to be used to establish the presence or absence of a plume of contamination. These must include, but need not be limited to, specific hazardous constituents of wastes determined to have been placed in or released from the SWMUs (including any possible degradation products);
- (2) The basis for selecting the parameters and constituents in (1) above;
- (3) The methodology for investigating the hydrostratigraphic units at site, and the locations, depths, and concentration specifications for each monitoring well;
- (4) Sampling procedures for each parameter or constituent to be analyzed, including sampling frequency;
- (5) Analytical methods to be used in the analysis of the samples. If any of these methods is not consistent with those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition (SW-846) and finalized updates, a complete description of the methods to be used and the justification for not using the appropriate SW-846 methods will be provided; and
- (6) Procedures and criteria for evaluating analytical results to establish the presence or absence of any plume of contamination.

6. Surface Water and Sediment Sampling and Analysis Plan

The RFI Phase I workplan must provide for a determination of the presence or absence of releases of hazardous wastes and hazardous constituents into all surface waters or their sediments potentially affected by certain SWMUs. Surface water and sediment investigation must be conducted for those SWMUs in the Corrective Action section of the permit which have surface water and/or sediments listed as environmental media of concern. A determination of "no impact" must be justified and documented to the satisfaction of the Illinois EPA. The plan must include, but is not limited to:

- a. A description and characterization of all potentially affected surface waters, including locations, areas, depths, inflows and outflows, volumes of water, seasonal fluctuations, flooding tendencies, drainage patterns, on-site and off-site affected populations and activities.
- b. Descriptions and characterization of sediments associated with all surface waters, including deposition areas, thickness profiles, and physical and chemical parameters;
- c. The parameters and constituents to be used to establish the presence or absence of a plume of contamination. This must include, but need not be limited to, specific hazardous constituents of wastes known or suspected to have been managed at the facility or placed in the SWMUs or AOCs ;
- d. The basis for choosing the parameters and constituents in (c) above;
- e. The method for choosing sampling locations, depths, and number of samples;
- f. The analytical methods to be used in the analysis of the samples. If any of these methods are not identical to those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition (SW-846) and finalized updates, a complete description of the methods to be used and the justification for not using the SW-846 methods must be provided; and
- g. Procedures and criteria for evaluating analytical results to establish the presence or absence of any plume of contamination.

7. Air Investigation Sampling and Analysis Plan

- a. The Phase I workplan must provide for an investigation to characterize the particulate and gaseous contaminants released into the atmosphere from those SWMUs or AOCs in the Corrective Action section of the permit which have "air" identified as an Environmental Media of Concern. The workplan must describe the procedures which will be used to obtain the following information:
 - (1) A description of the horizontal and vertical direction and velocity of contaminant movement;
 - (2) The rate and amount of release; and
 - (3) The chemical and physical composition of the contaminants release, including horizontal and vertical concentration profiles.
- b. The Phase I workplan must contain information characterizing the climate in the vicinity of the facility. Such information shall include, but not be limited to:
 - (1) A description of the following parameters:
 - (a) Annual and monthly rainfall averages;
 - (b) Monthly temperature averages and extremes;
 - (c) Wind speed and directions;
 - (d) Relative humidity and dew point;
 - (e) Atmospheric pressure;
 - (f) Evaporation data;
 - (g) Development and inversions; and
 - (h) Climate extremes that have been known to occur in the vicinity of the facility, and the frequency of occurrence.

- (2) A description of topographic and manmade features which affect air flow and emission patterns, including:
 - (a) Ridges, hills or mountain areas;
 - (b) Canyons or valleys;
 - (c) Surface water bodies;
 - (d) Wind breaks and forests;
 - (e) Buildings; and
 - (f) Other man-made features.

8. Potential Receptors

The Phase I workplan must contain data describing the human population and environmental systems within a radius of 1,500 feet of the facility boundary that may be affected by releases from SWMUs. The following characteristics must be identified.

- a. Local uses and possible future uses of groundwater:
 - (2) Type of use (e.g., municipal or residential drinking water source, industrial, etc.); and
 - (3) Location of groundwater users, including wells and discharge areas.
- b. Local uses and possible future uses of surface water running through the facility:
 - (1) Domestic and municipal;
 - (2) Recreational;
 - (3) Agricultural;
 - (4) Industrial; and
 - (5) Environmental.

- c. Human use of, or access to, the facility and adjacent lands, including, but not limited to:
 - (1) Recreation;
 - (2) Agriculture;
 - (3) Residential;
 - (4) Commercial;
 - (5) Zoning; and
 - (6) Location between population locations and prevailing wind direction.
- d. A description of the biota in surface water bodies on, adjacent to, or affected by the facility.
- e. A description of ecology at and adjacent to the facility.
- f. A demographic profile of the people who use or have access to the facility and adjacent land, including, but not limited to: age, gender and sensitive subgroups.
- g. A description of any endangered or threatened species near the facility.

D. INFORMATION REQUIRED SPECIFICALLY IN THE RFI PHASE II WORKPLAN

1. Soil Sampling and Analysis Plan

A Phase II Soil Sampling and Analysis plan, if necessary, must describe procedures to determine the nature and extent of hazardous waste and/or hazardous constituents released to the soil. This plan shall address and/or include, at a minimum:

- a. A description of what is known about the horizontal and vertical extent of contamination;
- b. A description of relevant contaminant and environmental chemical properties within the affected source area and plume, including solubility, specific absorption, leachability, exchange

capacity biodegradability, hydrolysis, photolysis, oxidation and other factors that might affect contaminant migration, and transformation (if known);

- c. Specific contaminant concentrations (if known);
- d. The horizontal and vertical velocity and direction of contaminant movement (if known);
- e. An extrapolation of future contaminant movement (if known);
- f. The methods and criteria to be used to define the boundaries of the plume(s) of contamination;
- g. The parameters and constituents to be used to establish the presence, or absence, of a plume of contamination. This must include, but need not be limited to, specific hazardous constituents of wastes known, or suspected to have been placed, in the SWMUs;
- h. The basis for selecting the parameters and constituents in (g);
- i. The methodology for choosing sampling locations, depths, and numbers of samples;
- j. Sampling procedures for each parameter or constituent to be analyzed;
- k. Analytical methods to be used in the analysis of the samples. If any of these methods are not identical to those specified in SW-846, a complete description of the methods to be used and the justification for not using the SW-846 methods shall be provided; and
- l. Procedures and criteria for evaluating analytical results to establish the presence or absence of any plume of contamination.

2. Groundwater Investigation

A Phase II groundwater investigation, if necessary, must describe the procedures and methods to determine and identify the horizontal and vertical extent of any contamination detected during the investigation

carried out in accordance with the Corrective Action section of this Permit. The RFI Phase II workplan must include all applicable and relevant information required to determine the extent of the groundwater contaminant plume at the site.

3. Sediment and Surface Water Sampling and Analysis Plan

If the Illinois EPA determines from the data obtained during the RFI Phase I investigation that a release of hazardous waste or hazardous constituents has occurred to surface water or sediments, or that the data is inconclusive, the Permittee shall submit a Phase II workplan to characterize the contamination of the surface waters and sediments. The workplan shall include, at a minimum:

- a. A description of the horizontal and vertical extent of any plumes and the extent of contamination in the underlying sediments (if known);
- b. Specific contaminant concentrations (if known);
- c. The horizontal and vertical direction and velocity of contaminant movement (if known);
- d. An evaluation of the physical, biological and chemical factors influencing contaminant movement (if known);
- e. An extrapolation of future contaminant movement (if known); and
- f. The criteria used to define the boundaries of the plume.

4. Air Investigation Sampling and Analysis Plan

A Phase II Sampling and Analysis Plan, if necessary, must describe procedures to determine the nature and extent of hazardous waste and/or hazardous constituents released to the air. This plan shall address and/or include, at a minimum:

- a. A description of what is known about the horizontal and vertical extent of contamination;

- b. A description of relevant contaminant and environmental chemical properties within the effected source plume, including solubility, specific absorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation and other factors that might affect contaminant migration, and transformation (if known);
- c. Specific contaminant concentrations (if known);
- d. The horizontal and vertical velocity and direction of contaminant movement (if known);
- e. An extrapolation of future contaminant movement (if known);
- f. The methods and criteria to be used to define the boundaries of the plume(s) of contamination;
- g. The parameters and constituents to be used to establish the presence or absence of a plume of contamination. This must include, but need not be limited to, specific hazardous constituents of wastes known or suspected to have been placed in the SWMUs;
- h. The basis for selecting the parameters and constituents in (g) above;
- i. The methodology for choosing sampling locations, depths, and numbers of samples;
- j. Sampling procedures for each parameter or constituent to be analyzed;
- k. Analytical methods to be used in the analysis of the samples. If any of these methods are not identical to those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical methods (SW-846), Third Edition and finalized updates, a complete description of the methods to be used and the justification for not using the SW-846 Methods shall be provided; and
- l. Procedures and criteria for evaluating analytical results to establish the present or absence of any plume of contamination.

5. Potential Receptors

If: (1) a release to air or groundwater is detected; or (2) the Permittee desires to establish site-specific soil cleanup objectives, then the Phase II RFI workplan must provide data describing the human populations and environmental systems within a radius of 1,500 feet of the facility boundary that may be affected by releases from SWMUs must be collected and submitted to the Illinois EPA. The information identified in Section III.C.8 above shall be identified.

E. INFORMATION REQUIRED SPECIFICALLY IN THE RFI PHASE III WORKPLAN

The potential for release to groundwater from a given SWMU (which was not evaluated during the Phase I investigation) must be investigated as part of a Phase III of the RFI if the Illinois EPA determines from the data obtained during the RFI Phase II investigation that releases to soil from a given SWMU may have migrated to the groundwater below the site or the data is inconclusive. The RFI Phase III hydrogeologic and geologic investigation plan must provide descriptions of groundwater monitoring systems that will provide adequate data of the detection, nature, extent and rate, and concentration of any releases to groundwater or surface water.

If releases of hazardous waste or hazardous constituents have entered the groundwater at a particular SWMU, the RFI Phase III workplan shall address a hydrological investigation and groundwater monitoring for a SWMU or group of SWMUs at the time the Illinois EPA notifies the Permittee that a RFI Phase III workplan is required. This workplan must include the information described in the RFI Phase III workplan regarding the required hydrogeology and hydrologic investigation.

F. GROUNDWATER MONITORING PLAN

If the Illinois EPA determines, from the data obtained during the Phase I or Phase III investigation, that releases of hazardous waste or hazardous constituents have occurred to the groundwater, or that the data is inconclusive, the Permittee will be required to submit a Groundwater Monitoring Plan. This Plan must be designed to determine the vertical and horizontal distribution of the contaminants identified, as well as to predict the long-term disposition of the contaminants. This groundwater monitoring program will require proposals to establish the locations, depths, and construction specifications of additional monitoring wells necessary to delineate the extent of any plume. The methodology of the investigation, the sampling procedures, and analytical results to establish the extent of the plume shall be the same as that specified above,

unless otherwise specifically identified by the Illinois EPA in writing. The Groundwater Monitoring Plan must also specify the criteria which will be used to determine the limits of the plume.

G. SITE-SPECIFIC SAMPLING PLANS

The Permittee shall prepare detailed site-specific sampling plans to be submitted as part of the work for each phase of the RFI which address all field activities needed to obtain site-specific data.

The plans must contain: a statement of sampling objectives, specifications of equipment, analyses of interest, sample types, sample locations and schedules for sampling. Wherever appropriate, the Permittee must follow the sample collection, handling, preservation, preparation and analysis procedures described in Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, Third Edition (SW-846) and finalized updates. Samples for volatile organic compounds analysis must be collected in accordance with Illinois EPA's Volatile Compound Sampling Procedure, as described in RCRA Interim Status Closure Guidance (2003), available at the Illinois EPA web site.

The plans must address all levels of the investigations, as well as types of investigations conducted on specific environmental media (i.e., soil, air, surface water, groundwater). The plans must describe in detail how each phase of the RFI will be implemented.

Site-specific sampling and analysis plan should contain the following informational:

1. Goals and Objectives of Effort

A discussion of the goals and objectives of the sampling/analysis effort should be included in the plan. This will have an impact on the overall plan, as the requirements of the sampling/analysis effort to demonstrate that an area is clean is very different than that required to determine the horizontal and vertical extent of contamination.

2. Parameters to be Analyzed

A list of proposed parameters and a discussion justifying their inclusions should be included in the plan. The proposed parameters should include the hazardous constituents which may be present, based upon the knowledge of the wastes managed at the unit and the facility overall.

This list should include degradation products. The Illinois EPA may require additional parameters, dependent upon review of the wastes and other materials managed at the facility.

3. Sample Locations

A scaled map should be provided in the plan. This map must clearly identify the location of each anticipated sample.

4. Sampling Depth

The depth of each anticipated sample should be identified in the plan.

5. Sample Collection Procedures

The anticipated procedures used to collect the samples must be described in the closure plan. The following should be considered in developing these procedures:

- a. Sampling methods and equipment should follow guidance in the SW-846 Methods.
- b. Field sampling methods not included in SW-846 must have prior approval from the Illinois EPA before they can be used in the closure plan. This includes methods such as drilling, borings, etc. When available, standards procedures, as defined by US EPA, Illinois EPA, or ASTM, should be followed.
- c. Soil and sediment samples collected for volatile organics analysis require specialized sampling and handling procedures, as specified in the Illinois EPA's volatile compound sampling procedure. This procedure is described in the RCRA Interim Status Closure Guidance (2003) and is available at the Illinois EPA web site. Unless extenuating circumstances dictate, soil samples collected for volatile organic analysis should not be mixed, composited or otherwise aerated. If extenuating circumstances prevail, then procedures must be made to minimize: (1) the time the sample is exposed to the air; (2) aeration of the sample; and (3) agitation of the sample. No mixing of compositing of samples should ever take place if the samples are to be analyzed for VOCs.
- d. All soil encountered during the sampling effort should be field classified in accordance with ASTM D-2488. Provisions should be

made in the plan to make this classification. Samples collected specifically for VOC analysis are excluded from field classification.

- e. If a drill rig or other piece of equipment is necessary to collect soil samples:
 - (1) The procedures specified in ASTM Method D-1586 (Split Spoon Sampling), or D-1587 (Shelby Tube Sampling) must be used to collect the samples;
 - (2) Soil samples should be collected continuously at several locations to provide information regarding the shallow geology of the area where the investigation is conducted.
- f. Soil and sediments encountered in an area where VOC contamination is a concern should be field-screened for VOCs. However, the actual samples collected for analysis at the laboratory should not be field-screened.
- g. In general, samples should never be composited.
- h. The anticipated procedures to decontaminate the sampling equipment after each sample is collected should be described in the plan. Decontamination procedures should be carried out in accordance with SW-846.
- i. The actual material placed in the container for analysis should be obtained from a contaminated portion (i.e., identified visually).

6. Sample Handling Procedures

The sampling plan should describe the anticipated procedures used to store, preserve, and transport collected soil samples to the laboratory, as well as all chain-of-custody procedures. These procedures should be carried out in accordance with the guidance in SW-846.

7. Analytical Procedures

The sampling/analysis plan should identify the anticipated procedures used to prepare the samples for analysis and to analyze them. In general, such procedures should be carried out in accordance with those set forth in SW-846. The actual portion of the sample to be analyzed should be obtained from a visually contaminated portion of the sample, if present.

The procedures specified must be sufficient to analyze for all the parameters identified in the closure plan. The estimated quantitation limits and/or practical quantitation limits (PQL) to be achieved should also be identified. Again, these limits should meet the requirements set forth in SW-846. It must be noted that it is especially important to achieve low detection limits if the goal of the sampling/analysis effort is to demonstrate that little or no contamination exists in a given area. To demonstrate a parameter is not present in a sample, the PQL achieved must be at least as low as that specified in SW-846. Low detection limits may not be necessary when collecting samples in contaminated areas.

8. Any additional items required in the other portions of this section regarding the sampling/analysis of specific environmental media.

H. DATA COLLECTION QUALITY ASSURANCE

The Permittee shall prepare and submit to the Illinois EPA a plan which describes the anticipated procedures to carry out and monitor all sampling and analysis efforts. This plan must ensure that all information and data collected are technically sound, statistically valid and properly documented. Such a plan, referred to as a Quality Assurance Project Plan (QAPP), must be developed using a format in which the 14 items listed below are discussed in detail:

1. Project Description;
2. Project Organization and Responsibility;
3. Quality Assurance Objectives for Data Measurements;
4. Sampling Procedures;
5. Sample Custody;
6. Calibration Procedures and Frequency;
7. Analytical Procedures;
8. Data Reduction, Validation and Reporting;
9. Internal Quality Control Audits;
10. Performance and System Audits;

11. Preventative Maintenance;
12. Specific Routine Procedures Used to Assess Data Precision, Accuracy and Completeness;
13. Corrective Action; and
14. Quality Assurance Reports to Management

Of special concern in the development of a QAPP are: (1) the use of trip blanks, field blanks, and laboratory blanks; and (2) calibration and verification of the laboratory procedures and equipment used to analyze the samples. All procedures used in this RFI must meet the requirements of Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods, Third Edition (SW-846) and finalized updates. As such, the quality assurance/quality control procedures carried out during the RFI must meet the requirements set forth in SW-846.

I. DATA MANAGEMENT PLAN

The Permittee shall develop and initiate a Data Management Plan to document and track investigation data and results. This plan shall identify and establish all data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the investigation(s). This plan shall be submitted with each phase workplan.

J. HEALTH AND SAFETY PLAN

In accordance with the provisions of 29 CFR 1910 (54 FR 9,295, March 6, 1989), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations. These requirements must be met during each phase of the RFI. A detailed Health and Safety Plan demonstrating that this requirement is met must be contained in the workplan for each phase of the RFI.

IV. IMPLEMENTATION OF RFI

The Permittee shall conduct those investigations necessary to characterize the site and to determine the nature, rate and extent of migration, and concentrations of hazardous waste and hazardous constituents, if any, released from the SWMUs into the surface water, sediments, groundwater, air, and soil. The investigations must be of adequate technical content to support the development and evaluation of a corrective action program, if one is deemed necessary by the Illinois EPA.

The investigation activities shall follow the plans and procedures set forth in the workplan(s) and the RFI schedule. Any actual or anticipated deviations from the workplan(s) or the RFI schedule shall be reported no later than the time of submission of the next quarterly report required by Section V after the determination of need or actual deviation from the workplan.

V. SUBMISSION OF WORKPLANS, REPORTS, AND RESULTS OF RFI ACTIVITIES**A. QUARTERLY REPORTS**

The Permittee must prepare and submit quarterly progress reports (based on a calendar year) of the activities and results of each phase of the RFI activities, as appropriate. The progress reports shall contain at a minimum:

1. An estimated percentage of the investigation completed;
2. A summary of the activities completed during the reporting period;
3. Summaries of all actual or proposed changes to the workplan or its implementation;
4. Summaries of all actual or potential problems encountered during the reporting period;
5. A proposal for correcting any problems;
6. Projected work for the next reporting period; and
7. Other information or data as requested in writing by the Illinois EPA.

B. GENERAL CONTENTS OF FINAL REPORTS

The Permittee must develop and submit to the Illinois EPA reports that document the results of each phase of the RFI in accordance with the following:

1. The portion of the report documenting the results of the required soil, air, surface, water, and sediment sampling and analysis should contain the following:
 - a. A discussion of: (1) the reason for the sampling and analysis conducted at each Waste Management Unit (WMU); and (2) the goals of the sampling and analysis conducted at each WMU;
 - b. A scaled drawing that clearly identifies the horizontal and vertical location of each sample collected relative to each SWMU and/or other relevant structures;
 - c. Justification for the selected sample locations;
 - d. A description of the procedures used for:
 - (1) Sample collection;
 - (2) Sample preservation;
 - (3) Chain of custody; and
 - (4) Decontamination of sampling equipment;
 - e. Visual classification of each soil sample collected for analysis;
 - f. Discussion of the results of all field screening efforts;
 - g. Logs of all soil borings made during the investigation;
 - h. A description of the soil types encountered during the investigation, including scaled cross-sections;
 - i. A description of the procedures used to analyze the samples, including:
 - (1) The analytical procedure used, including the procedures, if any, used to prepare the sample for analysis;
 - (2) Any dilutions made to original samples;
 - (3) Any interferences encountered during the analysis of each sample; and

- (4) The PQL achieved, include justification for reporting PQLs which are above SW-846 levels.
 - j. A description of all quality control/quality assurance analyses conducted, including the analysis of lab blanks, trip blanks and field blanks;
 - k. A description of all quality assurance/quality (QA/QC) control efforts made overall;
 - l. A summary in tabular form of all analytical data, including QA/QC results;
 - m. Copies of the final laboratory sheets that report the results of the analyses, including the final sheets of QA/QC data;
 - n. Colored photographs that document the sampling effort; and
 - o. A discussion of the collected data. This discussion should: (1) identify the sample locations where contaminants were detected and the concentrations of the contaminants; and (2) evaluate the data collected by comparing the results to remediation objectives developed in accordance with 35 IAC Part 742, as appropriate. This discussion should focus on the data collected during the recent investigation and data previously collected.
 - p. Conclusions reached, based on a review of all information available;
 - q. Recommendations regarding the next steps to ensure corrective action is properly implemented at the facility. Of particular concern is whether the next step is: (1) NFA; (2) execution of a corrective measures plan to achieve/support the remediation objectives; or (3) closure of a landfill, followed by long-term post-closure care (including groundwater monitoring and, as necessary, remediation).
2. The portion of the final report documenting the results of the required subsurface and groundwater investigation should contain, at a minimum, the following information for each WMU:
- a. Logs of the borings made during the required subsurface investigation and/or monitoring well installation;

- b. A description of all procedures followed to carry out the subsurface investigation (including boring procedures) and the installation of any the monitoring well;
- c. Results of all tests conducted in-situ, or in the laboratory, and a discussion of the procedures followed to carry out the tests;
- d. Completed Illinois EPA Well Completion Reports;
- e. Scaled drawings that clearly indicate the locations of all borings and the locations of all installed monitoring wells;
- f. A description of the well development procedures;
- g. A discussion of the geology and hydrogeology of the area(s) investigated, including:
 - (1) A detailed description of the geology;
 - (2) Physical characteristics of each geologic strata encountered;
 - (3) Identification of water-bearing units encountered;
 - (4) Depth to the water table;
 - (5) The horizontal and vertical components of groundwater flow of the water-bearing units;
 - (6) The hydraulic conductivity of the water-bearing units.
- h. A minimum of two cross-sections that clearly identify the subsurface geology and hydrogeology. These cross-sections should be as close to perpendicular to each other as possible, so that a three-dimensional presentation of this information can be depicted
- i. Information regarding the groundwater sampling/analysis effort as identified in Section B, Items 1.a, 1.d, and 1.i through 1.q;
- j. Water level measurements made prior to the collection of the groundwater samples; and

- k. Maps and supporting data that identify the piezometric surface of the groundwater beneath the facility and the direction of groundwater flow.

ATTACHMENT H

CORRECTIVE MEASURES PROGRAM REQUIREMENTS

**CITGO Lemont Refinery
STATE ID No.: 1978030004
USEPA ID No: ILD041550567
Log No. B-162R2**

ATTACHMENT H CORRECTIVE MEASURES PROGRAM REQUIREMENTS

1.0 INTRODUCTION/PURPOSE

RCRA corrective action projects typically consist of two phases: (1) A RCRA Facility Investigation (RFI) where an investigation is conducted at the solid waste management units (SWMU's) of concern at a facility; and (2) implementation of corrective measures needed to properly address any contaminant encountered during the RFI. This document has been developed to outline the procedures to be carried out to implement a corrective measure program.

2.0 BRIEF OVERVIEW OF A RCRA CORRECTIVE MEASURES PROGRAM

Typically, at the end of an RFI, the concentration of contaminants present in the soil/sediments/groundwater/surface waters at a SWMU or other AOC is compared to remediation objectives developed in accordance with 35 IAC Part 742. If the contaminant levels are above these objectives, then some type of corrective measure must be completed to achieve these objectives. In addition, certain corrective measures may need to be carried out to support the established remediation objectives (i.e., the establishment of engineered barriers and/or institutional controls). However, at a unit where waste or high levels of contamination remains, a decision may be made to close the unit as a landfill and then provide post-closure rather than removing the material and/or achieving remediation objectives developed in accordance with 35 IAC Part 742.

To allow for a logical and orderly progression in developing and implementing necessary corrective measures, the Corrective Measures Program (CMP) being carried out in accordance with this Permit should be carried out in five phases which build on each other. It is not necessary for a corrective measures program at a given SWMU or other AOC to follow these five phases step-by-step; rather, phases can be combined and/or skipped, depending on the actual remedial measure selected. The overall CMP implemented must set forth a logical path for its implementation and allow for the Illinois EPA oversight and approval throughout the entire process.

A brief discussion of the five phases of a CMP is as follows:

1. Phase I is the conceptual design of the selected corrective measure(s).
2. Phase II is the development of final design plans for the corrective measure, including installation and operation/maintenance plans.
3. Phase III is the actual construction/installation of the selected corrective measure.

4. Phase IV is the operation, maintenance, and monitoring of the selected corrective measure to ensure it is properly protecting human health and the environment.
5. Phase V is the final demonstration/verification that the implemented corrective measure achieved the approved remedial objectives.

Sections 3.0 through 7.0 which follow provide a more detailed discussion of each of these five phases. Section 8.0 has been developed to describe the CMP which may be used in lieu of the afore-mentioned five phase procedure when soil removal is the selected remedy. It must be noted that work plans, reports, etc. must be developed to document how the Permittee carries out the required corrective measures program at each SWMU or other AOC. All such documents must be reviewed and approved by the Illinois EPA prior to their implementation.

3.0 PHASE I OF THE CMP

Phase I of the CMP includes selection of the corrective measure to be taken and developing a basis for completing the final design of the measure. This effort should be documented in a Conceptual Design Report which describes the proposed corrective measure for each SWMU and other AOCs and provides a conceptual design for these measures. The main criteria for the Illinois EPA review is whether the proposed corrective measures are able to achieve the final cleanup objectives previously established by the Permittee and the Illinois EPA and/or provide the necessary institutional controls to prevent the migration of contaminants from the SWMU of concern. Based upon a review of the Conceptual Design Report, the Illinois EPA may approve the corrective measures, require revisions to the proposed corrective measures, or require that a new corrective measures proposal be submitted to the Illinois EPA.

The Conceptual Design Report should contain the following sections:

1. Introduction/Purpose. This section should contain: (1) general background information regarding the project; (2) the purpose and goals of the submittal; and (3) the scope of the project.
2. Existing Site Conditions. This section should contain a summary of the investigative activities conducted for each of the units of concern. Investigation analytical results should be provided in tabular form, and maps depicting both the horizontal and vertical extent of contamination at the site should be provided.
3. Evaluation for Potential Future Migration. Based on the existing site conditions, a conceptual model of the site should be developed and presented in this section. The potential for additional future migration of contamination for each of the units of concern must then be evaluated, especially those units which have been

determined to have released hazardous waste/hazardous constituents to the groundwater. It may be helpful to develop conceptual models for contaminant migration. Of special concern in this evaluation are (1) the physical properties of the contaminants (solubility, volatility, mobility, etc.); and (2) existing site conditions (types of soil present, location of contamination, hydrology, geology, etc.).

4. **Corrective Measures Objectives.** This section should discuss the general objectives of the proposed corrective measure to be constructed/installed, and the ability of the proposed corrective measure to achieve the established remediation objectives (unless the selected corrective measure is closure as a landfill which will require proper establishment of a final cover and proper post-closure care of the closed unit).
5. **Identification of Options Available.** This section should contain a brief discussion of the various options available to achieve the corrective measures objectives for each unit. This discussion should identify: (1) a general overview of each option available, including how the option will achieve the stated objective; (2) the advantages associated with each option; (3) the disadvantages associated with each option; and (4) an estimate of the cost associated with choosing each remedial option.
6. **Description of Selected Corrective Measure.** This section should contain a qualitative discussion of the corrective measure chosen, along with the rationale which was used to select this measure from all those identified initially. This discussion should include documentation that the selected corrective measure will be effective.
7. **Identification of Design Criteria.** This section should identify what information must be available to design the selected corrective measure.
8. **Review of Available Information.** This section should contain an evaluation of the existing information to ensure that it is sufficient to complete the design of the selected corrective measure. If insufficient information is available, then the report should contain procedures for collecting the required additional information.
9. **Procedures for Completing the Design.** This section should contain a description of the procedures which will be followed to complete the design of the corrective measure. This should include as appropriate:

- a. Identification of the references and established guidance which will be used in designing the selected corrective measure. Justification for the selection of this procedure should also be provided.
- b. A description of the procedures which will be used to complete the design of the corrective measure.
- c. Identification of assumptions to be used in the design, and the impact these assumptions have on the overall corrective measure;
- d. Significant data to be used in the design effort;
- e. Identification and discussion of the major equations to be used in the design effort (including a reference to the source of the equations);
- f. Sample calculations to be used in the design effort;
- g. Conceptual process/schematic diagrams;
- h. A site plan showing a preliminary layout of the selected corrective measure;
- i. Tables giving preliminary mass balances; and
- j. Site safety and security provisions.

This information will form the technical basis for the detailed design of the remedial measure and the preparation of construction plans/specifications.

10. Identification of Required Permits. This section should identify and describe any necessary permits associated with the selected corrective measure, as well as the procedures which will be used to obtain these permits.
11. Long lead Procurement Considerations. This section should identify any elements/components of the selected corrective measure which will require a large amount of time to obtain/install. The following issues should also be discussed: (1) the reason why it will take a large amount of time to obtain/install the item; (2) the length of time necessary for procurement and (3) recognized sources of such items.
12. Project Management. This section should contain information regarding the procedures and personnel which will be involved in completing the design of the

selected corrective measure. A schedule for completing the design should also be provided.

4.0 PHASE II OF THE CMP

Once the Illinois EPA approves the Conceptual Design Report, the facility should complete the design of the approved corrective action (Phase II of the CMP). Upon final completion of the design, a Final Design Report, consisting of final plans, specifications, construction work plan, etc., must be submitted to the Illinois EPA for review and approval.

Several documents must be submitted to the Illinois EPA as part of Phase II of the CMP. The following text describes the expected contents of the various documents which should be developed and submitted to the Illinois EPA as part of Phase II of the CMP:

1. **Final Design Report and Construction Work Plan.** The Final Design Report and Construction Work Plan must contain the detailed plans, specifications and drawings needed to construct the corrective measure. In addition, this document must contain: (1) calculations, data etc., in support of the final design; and (2) a detailed description of the overall management strategy, construction quality assurance procedures and schedule for constructing the corrective measure. It must be noted that the approved Conceptual Design Report forms the basis for this final report. The information which should be provided in this document includes:
 - a. **Introduction/Purpose.** This portion of the document should: (1) provide background information regarding the project, (2) describe the purpose and goals of the project; and (3) describe the scope of the project.
 - b. **Detailed Plans of the Design System, including the following:**
 - 1) Plan views;
 - 2) Section and supplementary views which, together with the specifications and general layouts, facilitate construction of the designed system;
 - 3) Dimensions and relative elevations of structures;
 - 4) Location and outline form of the equipment;
 - 5) Ground elevations; and
 - 6) Descriptive notations, as necessary, for clarity.

- c. **Technical Specifications.** Complete technical specifications for the construction of the system, including, but are not limited to, the following:
 - 1) All construction information, not shown in the drawings, which is necessary to inform the contractor in detail as to the required quality of materials, workmanship, and fabrication of the project;
 - 2) The type, size, strength, and operating characteristics of the equipment;
 - 3) The complete requirements for all mechanical and electrical equipment, including machinery, valves, piping and jointing of pipe;
 - 4) Electrical apparatus, wiring and meters;
 - 5) Construction materials;
 - 6) Chemicals, when used;
 - 7) Miscellaneous appurtenances;
 - 8) Instruction for testing materials and equipment as necessary; and
 - 9) Availability of soil boring information.
- d. **Project Management.** A description of the construction management approach, including the levels of authority and responsibility, lines of communication and qualifications of key personnel who will direct corrective measures construction/installation must be provided in the work plan.
- e. **Construction Quality Assurance/Quality Control.** A construction quality assurance/quality control plan describing the procedures which will be followed to ensure the corrective measure is constructed/installed in accordance with the approved plans and specifications.
- f. **Schedule.** The work plan must contain a schedule for completion of all major activities associated with construction/installation of the selected corrective measures. All major points of the construction/installation should be highlighted.
- g. **Waste Management Practices.** This portion of the document should identify the wastes anticipated to be generated during the construction/installation of the corrective measures and provide a description of the procedures for appropriate characterization and management of these wastes.

- h. Required Permits. Copies of permit applications submitted to other Bureaus of the Illinois EPA for the selected corrective measure must be provided in the report. If it is determined that no permit is required for construction/installation and implementation of the corrective measures, rationale and justification must be provided to support this contention.
 - i. Cleanup Verification. The report must contain the procedures which will be followed that the approved remediation objectives have been achieved when operation of the system is completed.
- 2. Operation and Maintenance Plan. An Operation and Maintenance Plan must be developed and submitted as part of Phase II of the CMP. This plan should outline the procedures for performing operations, long term maintenance, and monitoring of the corrective measure.
 - a. Introduction and Purpose. This portion of the document should provide a brief description of the facility operations, scope of the corrective measures project, and summary of the project objectives.
 - b. System Description. This portion of the document should provide a description of the corrective measure and significant equipment, including manufacturer's specifications. This portion of the permit should also include a narrative of how the selected system equipment is capable of complying with the final engineered design of the corrective measure.
 - c. Operation and Maintenance Procedures. This portion of the document should provide a description of the normal operation and maintenance procedures for the corrective measures system, including:
 - 1) Description of tasks for operation;
 - 2) Description of tasks for maintenance;
 - 3) Description of prescribed treatment or operation conditions; and
 - 4) Schedule showing the frequency of each operation and maintenance task.
 - d. Inspection Schedule. This portion of the document should provide a description of the procedures for inspection of the corrective measures system, including problems to look for during the inspection procedure, specific inspection items, and frequency of the inspections.

- e. **Waste Management Practices.** This portion of the document should provide a description of the wastes generated by the corrective measure, and the appropriate procedures for proper characterization/management of these wastes.
- f. **Contingency Procedures.** This portion of the document should provide a description of the procedures which will address the following items:
 - 1) System breakdowns and operational problems including a list of redundant and emergency backup equipment and procedures;
 - 2) Alternative procedures (i.e., stabilization) which are to be implemented in the event that the corrective measure fails. The alternative procedures must be able to prevent release or threatened releases of hazardous wastes/hazardous constituents which may endanger human health and the environment, or exceed cleanup standards.
 - 3) Notification of facility and regulatory personnel in the event of a breakdown in the corrective measures, including written notification identifying what occurred, what response action is being taken and any potential impacts on human health and the environment.

5.0 PHASE III OF THE CMP

Once the final design report is approved by the Illinois EPA, construction/installation of the approved corrective measure must commence. During this period, quarterly reports should be submitted which contain the following information:

- 1. Summary of activities completed during the reporting period;
- 2. An estimate of the percentage of the work completed;
- 3. Summaries of all actual or proposed changes to the approved plans and specifications or its implementation;
- 4. Summaries of all actual or potential problems encountered during the reporting period;
- 5. Proposal for correcting any problems; and
- 6. Projected work for the next reporting period.

Upon completion of construction/installation of the approved corrective measure, a Construction Completion Report must be submitted to the Illinois EPA documenting that these

efforts were carried out in accordance with the Illinois EPA approved plans and specifications. This report should contain a thorough description of the efforts that went into constructing/installing the corrective measure and demonstrate that the procedures in the Illinois EPA approved Final Design Report were followed during this effort. Such a report should be formatted in a logical and orderly manner and contain the following information:

1. An introduction discussing the background of the project and the purpose and scope of the corrective measure described in the report.
2. Identification of the plans, technical specifications and drawings which were used in constructing/installing the corrective measure. These specifications and drawings should have been approved by the Illinois EPA during Phase II.
3. Identification of any variations from the Illinois EPA approved plans, technical specifications and drawings used in construction/installing the corrective measure. Justification regarding the need to vary from the approved plans and specifications must also be provided.
4. A description of the procedures used to construct/install the corrective measure, including the procedures used for quality assurance and quality control.
5. As built drawings, including identification of any variations from the approved plans, technical specifications and drawings.
6. A summary of all test results from the construction/installation effort, including quality assurance/quality control testing.
7. Actual test results, including quality assurance/quality control test results. These results should be located in an attachment/appendix and be well organized.
8. Identification of any test results which did not meet the specified value and a description of the action taken in response to this failure, including re testing efforts.
9. Photographs documenting the various phases of construction.
10. A detailed discussion of how the construction/installation effort met the requirements of the approved Final Design Report.
11. A certification meeting the requirements of 35 IAC 702.126 by a qualified Illinois licensed professional engineer and by an authorized representative of the owner/operator.

6.0 PHASE IV OF THE CMP

Once the corrective measure has been constructed/installed, it must be operated, maintained and monitored in accordance with the approved plans and specifications (this is Phase IV of the CMP). During this period, quarterly reports must be submitted to the Illinois EPA documenting the results of these efforts. These reports include the following:

1. **Introduction.** A brief description of the facility operations, scope of the corrective measures project, and summary of the project objectives.
2. **System Description.** A description of the corrective measures constructed/installed at the site and identify significant equipment.
3. **Monitoring Results.** A description of the monitoring and inspection procedures to be performed on the corrective measures. A summary of the monitoring results for the corrective measures, including copies of any laboratory analyses which document system effectiveness, provide a description of the monitoring procedures and inspections performed, and include a summary of the monitoring results for the corrective measure. Copies of all laboratory analytical results which document system monitoring must be provided.
4. **Effectiveness Determination.** Calculations and other relevant documentation which demonstrates the effectiveness of the selected corrective measure in remediating/stabilizing contamination to the extent anticipated by the corrective measures final design. Copies of relevant analytical data should be provided to substantiate this determination.
5. **System Effectiveness Recommendation.** Based upon the results of the effectiveness determination required under Item 4, recommendations on continued operation of the corrective measure must be provided. If the corrective measure is not performing in accordance with the final design, a recommendation on revisions or expansion of the system should be provided.

7.0 PHASE V OF THE CMP

Once all corrective measures have been completed, a report must be developed documenting all the efforts which were carried out as part of implementing the corrective measure and demonstrating, as appropriate, that the approved remediation objectives have been achieved. This report should contain a compilation of all previous reports and also contain sufficient information to demonstrate that the approved remediation objectives have been achieved. It must be noted that such a report will not be developed for a unit closed as a landfill until the post-closure care period has been completed.

8.0 PROCEDURES WHICH SHOULD BE FOLLOWED WHEN SOIL REMOVAL IS THE SELECTED CORRECTIVE MEASURE

Sections 2.0 through 6.0 above describe the procedures which should be followed when it is necessary to design a physical corrective measure (e.g., a final cover system, certain type of treatment system, etc.). However, such detail is not necessary if excavation/removal is selected as the remedial action for the contaminated soil encountered at the site. In general, a work plan should be developed for this effort (for the Illinois EPA review and approval) which fully describes each step to be used in removing the contaminated soil from the property. This includes a description of: (1) the equipment utilized in the removal effort; (2) the pattern followed in removing the soil; (3) the depth to which the soil will be removed; (4) management of the soil on-site after it is removed from the ground; (5) loading areas; (6) the ultimate destination of the soil; and (7) any other steps critical to the removal effort.

One way to conduct a soil removal effort is to collect and analyze a sufficient number of soil samples to clearly determine the horizontal and vertical extent of soil contamination prior to conducting the soil removal effort. The boundaries of soil which must be removed are defined by Illinois EPA established cleanup objectives for the project. Soil excavation must extend to sample locations where soil test results indicate that the remediation objectives are met. Closure verification sampling is not necessary in such cases, if a qualified Illinois licensed professional engineer oversees the soil removal effort and certifies that the remediation limits extend to these boundaries.

Another way to conduct a soil removal effort is to collect and analyze a limited number of soil samples prior to the soil removal effort and to rely mainly on field observation to determine the extent of the soil removal. In such cases closure verification sampling is necessary. Soil samples must be collected for analysis from the bottom and sidewalls of the final excavation. The following sampling/analysis effort is necessary to demonstrate that the remaining soil meets the established cleanup objectives:

1. A grid system should be established over the excavation.
2. Samples should be collected from the floor of the excavation at each grid intersection, including intersections along the perimeter of the excavation.
3. Samples should be collected at 6-inch to 12-inch below the ground surface (bgs) along the excavation sidewalls at each grid intersection around the excavation perimeter. Samples must also be collected at the midpoint of the excavation wall at each grid intersection along the excavation perimeter.
4. Collection/analysis of all required samples must be in accordance with the procedures set forth in the approved plan.

5. Soil samples which must be analyzed for VOCs must be collected in accordance with the procedures set forth in Method 5035 of SW-846. In addition, such samples must be collected 6-inch to 12-inch beneath the floor/sidewalls of the excavation to minimize the possibility of volatilization of the contaminants prior to the collection of the samples.
6. No random sampling may be conducted to verify achievement of cleanup objectives have been met.
7. Additional soil must be removed, as necessary, until it can be demonstrated that the remaining soil in and around the area of concern meets the established cleanup objectives. Additional samples must be collected and analyzed in accordance with the procedures described above from areas where additional soil has been removed.

ATTACHMENT I

SUBSET PARAMETERS FOR THE UNSATURATED ZONE MONITORING PROGRAM

**STATE ID No.: 1978030004
USEPA ID No: ILD041550567
CITGO Lemont Refinery
Log No. B-162R2**

Table 1: Soil samples collected every fifth year shall be analyzed for the following parameters:

Metals	Volatile Compounds	Semi-volatile Acid-Extractable Compounds	Semi-volatile Base/ Neutral Extractable Compounds
Antimony	<i>Acetone</i>	Benzenethiol	<i>Acenaphthylene</i>
Arsenic	Benzene	Cresols (o, m, & p)	Anthracene
Barium	<i>n-Butylbenzene</i>	2,4-Dimethylphenol	Benzo(a)anthracene
Beryllium	sec-Butylbenzene	2,4-Dinitrophenol	Benzo(b)fluoranthene
Cadmium	Carbon disulfide	4-Nitrophenol	Benzo(k)fluoranthene
Chromium	Chlorobenzene	Phenol	<i>Benzo(g,h,i)perylene</i>
Cobalt	Chloroform		Bis(2-ethylhexyl)phthalate
Lead	1,2-Dichloroethane		Butyl benzyl phthalate
Mercury	1,4-Dioxane		Chrysene
Nickel	Ethylbenzene		Dibenz(a,h)acridine
Selenium	Ethylene dibromide		Dibenz(a,h)anthracene
Vanadium	<i>4-Isopropyltoluene</i>		Dichlorobenzenes
	Methyl ethyl ketone		Diethyl phthalate
	<i>n-Propylbenzene</i>		7,12-Dimethyl-
	Styrene		Benz(a)anthracene
	Toluene		Dimethyl phthalate
	<i>1,3,5-Trimethylbenzene</i>		Di(n)butyl phthalate
	<i>1,2,4-Trimethylbenzene</i>		Di(n)octyl phthalate
	Xylene (total)		Fluoranthene
			<i>Fluorene</i>
			Indene
			<i>Indeno(1,2,3-cd)pyrene</i>
			Methyl chrysene
			1-Methyl naphthalene
			<i>2-Methyl naphthalene</i>
			Naphthalene
			Phenanthrene
			Pyrene
			Pyridine
			Quinoline

Note: Non-Skinner List constituents are shown in italics.

Table 2: Soil samples collected during all other years shall be analyzed for the following parameters:

Metals	Volatiles	Semivolatiles
Antimony	Acetone	Acenaphthylene
Arsenic	Benzene	Anthracene
Barium	n-Butylbenzene	Benzo(a)anthracene
Beryllium	sec-Butylbenzene	Benzo(g,h,i)perylene
Cadmium	Ethylbenzene	Butyl benzyl phthalate
Chromium	4-Isopropyltoluene	Chrysene
Cobalt	Methyl ethyl ketone	Di(n)octyl phthalate
Lead	n-Propyl benzene	Dibenz(a,h)anthracene
Mercury	Toluene	Fluorene
Nickel	1,3,5-Trimethylbenzene	Indeno(1,2,3-cd)pyrene
Selenium	1,2,4-Trimethylbenzene	Methyl chrysene
Vanadium	Xylene (total)	1-Methyl naphthalene
		2-Methylnaphthalene
		Naphthalene
		Phenanthrene
		Pyrene

Table 3: Concentrations greater than the Monitoring Limit for each compound specified in the following table shall be considered to be a statistically significant increase (SSI)

Chemical	Monitoring Limit	Chemical	Monitoring Limit
Inorganics (mg/kg)		Semivolatile Organic Compounds (µg/kg)	
Antimony	6.69	Acenaphthylene	330
Arsenic	55.6	Anthracene	660
Barium	1028.00	Benzo(a)anthracene	660
Beryllium	2.53	Benzo(b)fluoranthene	660
Cadmium	9.11	Benzo(k)fluoranthene	660
Chromium	368.00	Benzo(g,h,i)perylene	330
Cobalt	60.10	Benzo(a)pyrene	660
Lead	504.00	Bis(2-ethylhexyl)-phthalate	660
Mercury	0.90	Butyl benzyl phthalate	660
Nickel	138.00	Chrysene	660
Selenium	0.54	Dibenz(a,h)acridine	330
Vanadium	446.00	Dibenz(a,h)anthracene	660
Volatile Organic Compounds (µg/kg)		Dichlorobenzenes	
Acetone	20	Diethyl phthalate	660
Benzene	5	7,12-Dimethyl- Benz(a)anthracene	660
n-Butylbenzene	5	Dimethyl phthalate	660
sec-Butylbenzene	5	Di(n)butyl phthalate	660
Carbon disulfide	5	Di(n)octyl phthalate	660
Chlorobenzene	5	Fluoranthene	660
Chloroform	5	Fluorene	330
1,2-Dichloroethane	5	Indene	330
1,4-Dioxane	500	Indeno(1,2,3-cd)pyrene	330
Ethylbenzene	5	Methyl chrysene (TIC only)	330
Ethylene dibromide	10	1-Methyl naphthalene	660
4-Isopropyltoluene	5	2-Methyl naphthalene	330
Methyl ethyl ketone	20	Naphthalene	660
n-Propylbenzene	5	Phenanthrene	660
Styrene	5	Pyrene	660
Toluene	5	Pyridine	660
1,3,5-Trimethylbenzene	5	Quinoline	330
1,2,4-Trimethylbenzene	5	Benzenethiol	3300
Xylene (total)	5	Cresols (o, m, &p)	660
		2,4-Dimethylphenol	660
		2,4-Dinitrophenol	3300
		4-Nitrophenol	3300
		Phenol	660