State of Illinois
Illinois Environmental Protection Agency

Indian Refinery Superfund Site
Lawrenceville, Lawrence County, Illinois

January 2025
BOL ID: 1010150003

Community Involvement Opportunities

Read the Proposed Plan

You may review the full Proposed Plan at the information repository:
Lawrence Public Library, 814 12th St., Lawrenceville, IL 62439, 618-943-3016
or at:
https://epa.illinois.gov/topics/community-relations/sites/indian-refining.html

Attend the Public Availability Session

On **January 29, 2025, from 3:30 to 5:00 p.m.**, Illinois EPA will hold an availability session at the **Lawrenceville High School, 2200 James St., Lawrenceville** for the public to ask questions of the Illinois EPA about the Proposed Plan. No formal presentation will be provided.

Participate in the Public Meeting

On **January 29, 2025, from 6:00 to 8:00 pm**, Illinois EPA will hold a public meeting at the **Lawrenceville High School** to accept oral and written comments on the Proposed Plan. A formal presentation will be provided.

Submit Public Comments

Illinois EPA will accept written comments from **January 15 to February 13, 2025**. All comments must be postmarked by **February 13, 2025**. You may use the enclosed Comment Form or another form and send to:
Illinois EPA, Office of Community Relations,
Mail Code #5,
PO Box 19276
Springfield, IL 62794-9276

Or email to:
Epa.publichearingcom@illinois.gov

The Illinois Environmental Protection Agency (Illinois EPA) is proposing a cleanup plan for several areas of the Indian Refinery Superfund Site (Site) in Lawrenceville, Illinois. This proposed plan fact sheet provides an overview of the alternatives and preferred remedies for five of the six areas of the Site. Because this is such a large site, Illinois EPA divided the site into six smaller areas that are managed separately from the site overall. These smaller areas are referred to as Operable Units (OU). OUs may include a geographic area or area with similar types of contamination. Some of the OUs have been further divided into subareas (*see Page 2 for more details on how the site is organized into OUs*). The proposed cleanup plan is for OUs 1 – 5; OU-6 will be addressed later. Illinois EPA is the lead agency for the Site, and U.S. EPA is the support agency.

Your Comments are Needed

The Illinois EPA will review all comments received during the public comment period before making a final decision on the cleanup plan (*see the box to the left for ways you can participate in the decision-making process*). Illinois EPA may modify the proposed cleanup plan or select another option based on new information or public comments, so your opinion is important.

This fact sheet gives you background information, describes cleanup options, and explains the Illinois EPA's recommendations for each OU. You can find more details in a document called the *Proposed Plan*, available on the Site's webpage at https://epa.illinois.gov/topics/community-relations/sites/indian-refining.html. We encourage you to review and comment on the proposed cleanup plan.[1]

About the Indian Refinery Superfund Site

The Indian Refinery – Texaco Lawrenceville Site ("Indian Refinery" or "Site") is a former petroleum refinery that comprises approximately 990 acres in Lawrenceville, Lawrence County, Illinois. The Site includes the former refinery property and forested floodplain. It is bordered by cultivated farmland to the west and southwest, floodplain to the southeast, the Embarras River to the east, and industrial and residential areas to the north and northwest.

[1]*Section 117(a) of the* ***Comprehensive Environmental Response, Compensation, and Liability Act*** *(CERLCA, known as the Superfund law) requires the publication of a notice announcing the proposed plan. It also requires a public meeting and public comment period. This fact sheet summarizes information contained in documents that can be viewed online at* https://epa.illinois.gov/topics/community-relations/sites/indian-refining.html.

How the Site is Organized

The main Site features are the Main Process Area (MPA), Indian Acres, six tank farms (TFs), lime sludge ponds, the floodplain forest, the area adjacent to the Embarras River, and the Land Treatment Unit (LTU). The OUs, including these features and additional areas of contamination, are described in more detail below and shown in Figure 1 on the following page.

OU-1 includes the **TFs**, the **Main Process Area (MPA)**, and the road **Rights-of-Way (ROW)/City Storm Sewer Investigation (CSSI) area**. The MPA is approximately 125 acres and is next to approximately 177 acres that includes TFs A through F. OU-1 also includes the road ROWs that abut these areas and the CSSI, a non-contiguous area to the north of the refinery property (10 acres). These areas include surface soil and subsurface soil contaminated with polycyclic aromatic hydrocarbons (PAHs), benzene, ethylbenzene, naphthalene, arsenic, and lead. Contamination sources are likely the result of refinery operations over the decades, including releases associated with tanks and piping.

OU-2 includes the **Oily Soil Areas**, **Indian Acres** (approximately 90 acres), and the **Separator 7 Area** (approximately 18 acres). These areas include contaminated surface soil, subsurface soil, and wastes. The Oily Soil Areas include three locations impacted with hydrocarbons from refinery operations, including the former B&O Pond, Lime Sludge Ponds, and solid waste management unit (SWMU) 9 North Drainage Ditch. Disposal of byproducts from lubricating oil polishing and historical settling operations within Indian Acres have caused the accumulation of waste materials, including tarry acidic sludges and filter cake material. Some acidic sludges may release sulfurous gases if disturbed. The Separator 7 Area includes two oil/water separators and a disposal pit for sludge and oily wastes. An accumulation of acidic pitch and oily clay-like sludges have contributed to contamination of surface and subsurface soils; all wastes have been removed from two oil/water separators in the Separator 7 Area. In each of these areas, surface and subsurface soils have been contaminated with PAHs, benzene, ethylbenzene, naphthalene, arsenic, and lead.

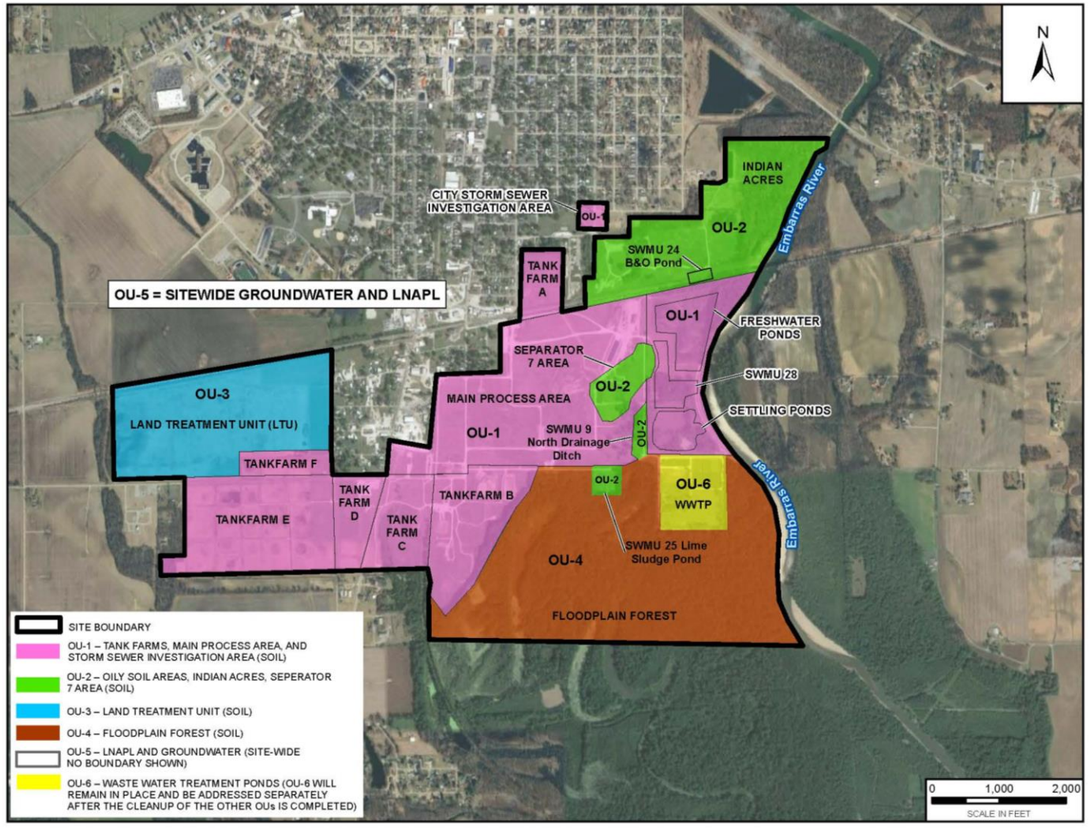
OU-3 is the **LTU** (109 acres) and includes a Resource Conservation and Recovery Act (RCRA)-permitted facility that was used from 1981 to 1988 to treat refining process byproducts, such as API separator sludge, slop oil emulsion solids, leaded tank bottoms, and wastewater treatment plant sludges, some of which were listed hazardous wastes. A portion of the LTU was used for the disposal of lime sludge and asbestos-containing material, and a portion was and remains open space. The treatment conducted here was land farming, in which the contaminated media were applied in liquid and solid forms and disced into the top 18 inches of soil to help break down contamination. Surface and subsurface soils are contaminated with metals, primarily arsenic, chromium, lead, mercury, and zinc.

OU-4 includes the **Floodplain Forest** (200 acres), including lowlands, sloughs, and oxbow ponds, along the south and southeast of the Site. The northwest portion of the Floodplain Forest is adjacent to Tank Farm B and likely received raw water clarifier sludge, boiler blowdown, and tank levee drainage from Tank Farm B. The northeast portion is immediately south of the SWMU 9 North Drainage Ditch. Releases from these sources have affected discontinuous areas of contaminated soils, totaling approximately 1 acre. Surface soils are contaminated with chromium, lead, and zinc.

OU-5 is the **Light Non-Aqueous Phase Liquid (LNAPL) and Groundwater Management Areas**, which extend throughout the Site, primarily in the TFs and MPA. OU-5 includes areas of LNAPL and contaminated groundwater. Ongoing groundwater monitoring indicates that contaminated groundwater does not occur beyond the Site's boundaries.

OU-6 includes the Wastewater Treatment Ponds and is not included in this proposed plan. OU-6 will remain in use during the cleanup activities of the other five OUs and be addressed separately after the cleanup of the other OUs is completed.

Figure 1. Site Boundary and Operable Units



Site Background

Indian Refining Company (IRC) and Central Refining Company owned and operated the refinery in the early 1900s. In 1928, Central Refining, owners of the Indian Acres area, transferred its land and operations to IRC, and in the early 1930s, Texaco acquired the Site from IRC. Texaco or one of its subsidiaries operated the refinery until 1985, when refinery operations ceased. The refinery produced a typical range of refined petroleum products.

In December 1988, the Site was sold, and various companies owned and operated the refinery through the mid-1990s. American Western Refining, L.P. (AWR) bought the refinery in 1995. In 1997, AWR sold the aboveground structures through a bankruptcy auction to a limited partnership formed by Clark Oil Trading Company (COTC) and Blastco Services, who removed or demolished most of the aboveground structures by 2003. In 2011, Texaco Downstream Properties Inc. (TDPI), a subsidiary of Chevron U.S.A., acquired the Site and remaining structures from AWR Liquidating Trust with the approval of the bankruptcy court. Since that time, Chevron Environmental Management Company (CEMC), on behalf of TDPI, has been providing maintenance and security for the Site, including operating the on-site Wastewater Treatment Plant (WWTP) in accordance with the current National Pollution Discharge Elimination System permit for the Site.

Currently, the former refinery area and Indian Acres are fenced, and access is generally controlled. Only a few aboveground structures remain at the Site today, including one inactive oil/water separator, the functioning wastewater treatment ponds, and the former rail car fabrication shop (Fabrication Shop, now used for equipment storage) located along the eastern side of the former MPA. A small building, formerly the Guard Gate/Time House, at the entrance of the Site serves as a Site museum. Three trailers provide offices for the environmental staff under contract to CEMC, who conduct investigations and other activities on the Site.

Why is Cleanup Needed?

Because of former industrial processes at the site, surface soil, subsurface soil, and groundwater are contaminated. Soil is the environmental medium that poses the most significant risk to human health and the environment. The primary soil contaminants of concern (COCs) include benzene, benzo(a)pyrene (and associated carcinogenic PAHs), arsenic, lead, ethylbenzene, naphthalene, chromium, and zinc. Different portions of the sites include different contaminants. Risks from groundwater are limited to on-site and are primarily associated with benzene.

Illinois EPA has identified certain alternatives as preferred because Illinois EPA believes the preferred alternatives offer the best means for cleanup and protection of human health and the environment from actual or threatened releases of hazardous substances.

The human health and environmental risks and hazards present on-site from soil will be addressed through remediation of the Site OUs. Groundwater risks, though low and limited to on-site, will also be addressed through remediation. LNAPL remediation will address an ongoing source of contamination to groundwater and future indoor air inhalation risks. Risks present to ecological receptors will be addressed through remediation of soil at Site OUs.

Common Elements of Cleanup Alternatives Considered

Elements of the site cleanup that are common to most or all alternatives regardless of OU are presented below to focus the alternative descriptions on distinguishing features.

- Each OU and subarea were evaluated for a "no action" alternative. Illinois EPA is required to evaluate a "no action" alternative when considering potential remedial actions for a site. The "no action" alternative is used through the evaluation process as a point of comparison for the other alternatives. Under this alternative, there would be no remediation beyond the interim actions performed to date, and no additional monitoring would occur.
- All alternatives, unless otherwise indicated, meet requirements for the protection of human health and the environment, will meet all remedial action objectives (RAOs), and applicable or relevant and appropriate requirements. COCs will meet soil remediation objectives (SROs) and groundwater remediation objectives (GROs), which are risk-based or regulatory based concentrations. The SROs and GROs are listed in the Proposed Plan.
- Soil used as backfill for excavated areas or as cover soils will come from on-site sources to the extent possible. All backfill or cover soils will be approved by Illinois EPA for use and tested as needed to ensure no new contamination is brought onto the property or placed at the Site. Topsoil will also be tested for agricultural parameters to ensure it can sustain vegetation.
- Current and future land use will be restricted by using environmental covenants that run with the land. Restrictions will include:
  - Preventing residential development.
  - Preventing access to and use of contaminated groundwater.
  - Managing exposure to construction workers by requiring health and safety precautions.
  - Placing conditions on handling and managing impacted soils via a soil management plan.
  - For those alternatives that use a soil cover or cap: preventing access to and disturbance of waste containment areas or capped/covered areas.
  - Evaluating the indoor air pathway for any new buildings to be constructed on Site, which may require mitigation systems to address any potential risks.
- Operation and maintenance as warranted of any engineered components will be conducted for as long as needed.
- Long-term monitoring of soil and groundwater to ensure compliance with RAOs.
- Development of a Site-Wide Long Term Stewardship Plan that will describe requirements for implementation, monitoring, maintenance, reporting, and enforcement of Institutional Controls (ICs). ICs are administrative, legal controls, proprietary, and informational controls such as deed restrictions, signage, etc. that can help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy.
- All alternatives will undergo five-year reviews to ensure the remedy is performing as anticipated. The Superfund law requires regular checkups of sites that have been cleaned up – with waste managed on-site – to make sure the cleanup continues to protect people and the environment.

Remedial Action Objectives

Remedial Action Objectives (RAOs) are statements that describe the goals for the cleanup of the Site. These goals are site- and medium-specific developed to address potential human health and ecological risks. Below are the RAOs for specific media at the site.

Soil: The RAOs focus on minimizing the potential for exposure to contaminated soils that would pose unacceptable human health or ecological risk at the Site by meeting the SROs.

LNAPL: The RAO focuses on the protection of groundwater and the return of groundwater within the smear zone (and footprint of the LNAPL plume) to beneficial use within a reasonable timeframe.

Groundwater: The RAOs address contaminants within groundwater, with the related goals of returning groundwater to beneficial use and protecting potential off-site receptors from migration of COCs by meeting the GROs.

Indoor Air: The RAO applies to future scenarios where new buildings may be constructed on the Site and require the mitigation of COCs above health-based objectives, if needed.

OU-Specific Elements of Proposed Cleanup Alternatives

There are elements based on distinguishing features specific to each OU that are not common across all cleanup alternatives. A list of alternatives that were evaluated is provided for each OU (and subarea, if applicable) and highlights the Illinois EPA preferred alternative (in ***bold and italics***). An evaluation is presented for each of the preferred alternatives. The criteria used to evaluate alternatives is shown in the graphic on Page 10. Given the number of OUs, which results in many alternatives developed for the site, alternatives other than the preferred alternatives are not presented in this fact sheet. For further details on the other alternatives not recommended, please see the Proposed Plan at https://epa.illinois.gov/topics/community-relations/sites/indian-refining.html. The preferred alternatives are described below.

OU-1 – Tank Farms/Main Process Area and Road Rights of Way/City Storm Sewer Investigation Area

All OU-1 alternatives evaluated in detail address soil contamination.

TFs/MPA

The following alternatives were evaluated for the TFs/MPA:

- Alternative TF/MPA -1: No Action
- ***Alternative TF/MPA-2A: Targeted Excavation with On-Site Consolidation, Monitored Natural Attenuation, and Combined ICs***
- Alternative TF/MPA-2B: Targeted Excavation with Off-Site Disposal, Monitored Natural Attenuation, and Combined ICs
- Alternative TF/MPA-3A: Soil Cover and Seeding, Monitored Natural Attenuation, and Combined ICs
- Alternative TF/MPA-3B: Partial (0- to 1-foot) Soil Cover and Seeding, Monitored Natural Attenuation, and Combined ICs

Alternative TF/MPA-2A will involve excavating metal- and PAH-contaminated soil in the TF areas and MPA to depths of 0 to 3 feet below ground surface (bgs). Excavated soil will be transported to an on-site containment cell in OU-2. Approximately 18.6 acres will require excavation to depths ranging from 0 to 3 feet bgs for a total of approximately 30,000 cubic yards. Excavated areas will be backfilled and vegetated.

VOC-impacted soil (0 to 3 feet bgs) will be addressed through natural attenuation via aerobic biodegradation to meet the soil remediation objectives (SROs). Aerobic biodegradation is the breakdown of organic pollutants by microorganisms when oxygen is present. Soil sampling will be conducted at 5-year intervals to track attenuation progress. Remediation (via bioventing or sulfate enhancement, if necessary) will be conducted in conjunction with the LNAPL remedy in those areas that are not meeting the anticipated 25-year timeframe for reaching VOC SROs.

Road ROWs and City Storm Sewer Investigation Area

The following alternatives were evaluated for the Road ROWs and CSSI area:

- Alternative ROW-1: No Action
- ***Alternative ROW-2: Layered Government Controls, Proprietary Controls, and Monitoring***

This alternative will control exposure to contaminants within ROWs and the CSSI area using layered ICs, including prohibiting future development and/or construction activities to those only deemed necessary by state, county, township, or city authorities, as applicable; a contingency plan that protects workers in the cases that intrusive work is required; preventing residential development; preventing access to and use of contaminated groundwater; and implementing a long-term stewardship plan. Additional controls for the CSSI area include developing a health and safety plan for construction workers, establishing conditions for the handling and management of impacted soil, evaluating risks from indoor air, and assessing the need for a vapor intrusion mitigation technology if a new building is constructed. These government and proprietary controls will be implemented through mechanisms available to the State, including Highway Authority Agreements or environmental covenants pursuant to the Uniform Environmental Covenants Act. The controls are easements or covenants running with the land that (a) limit land, water, or other resource use and/or provide access rights and (b) are created pursuant to common law or statutory law by an instrument that is recorded in the appropriate land records office. These controls will address an area of approximately 1.5 acres associated with State Highway 1, 2 acres associated with County Road 950N, 1.5 acres associated with 1160E, and 5 acres of the CSSI, immediately north of Indian Acres.

OU2 – Oily Soil Areas, Indian Acres, Separator 7 Area

All OU-2 alternatives evaluated in detail involve the on-site consolidation of wastes and containment within on-site containment cells. The locations of these cells are areas where wastes and contaminated soil have historically been disposed of and are unlined. The containment cell locations also serve to shrink the overall footprint of contamination Site-wide.

Oily Soil Areas

The following Alternatives were evaluated for the Oily Soil Areas:

- Alternative OSA-1: No Action
- Alternative OSA-2A: Excavation of SWMU 9N Drainage Ditch and Lime Sludge Ponds with On-Site Consolidation, Monitored Natural Attenuation, and Combined ICs
- Alternative OSA-2B: Excavation of SWMU 9N Drainage Ditch and Lime Sludge Ponds with Off-Site Disposal, Monitored Natural Attenuation, and Combined ICs
- Alternative OSA-3A: Excavation of SWMU 9N Drainage Ditch with On-Site Consolidation, Backfilling of Lime Sludge Ponds, Monitored Natural Attenuation, and Combined ICs
- Alternative OSA-3B: Excavation of SWMU 9N Drainage Ditch with Off-Site Disposal, Backfilling of Lime Sludge Ponds, Monitored Natural Attenuation, and Combined ICs
- ***Alternative OSA-4: Excavation of SWMU 9N Drainage Ditch with On-Site Consolidation of Lime Sludge Ponds, Backfilling and Capping of Lime Sludge Ponds, Monitored Natural Attenuation, and Combined ICs***

Alternative OSA-4 involves using the excavated soil from the SWMU 9N Drainage Ditch as backfill for the Lime Sludge Ponds. The Lime Sludge Ponds will then be capped in place with an engineered clay cap, topsoil, and vegetated. This will restore the Lime Sludge Ponds to the surrounding grade. The cap will be constructed and seeded to control the effects of potential flooding. Routine inspection of the cap will ensure long-term integrity. Requirements for any maintenance, repair, and monitoring needed will be included in the long term monitoring and stewardship plans for the Site.

Indian Acres

The following Alternatives were evaluated for Indian Acres:

- Alternative IA-1: No Action
- Alternative IA-2A: Excavation of Indian Acres, Solidification and Neutralization of Former Spray Pond, On-Site Consolidation, Monitored Natural Attenuation, and Combined ICs
- Alternative IA-2B: Excavation of Indian Acres, Solidification and Neutralization of Former Spray Pond, Off-Site Disposal, Monitored Natural Attenuation, and Combined ICs

- Alternative IA-3: Excavation of Indian Acres North and Pump House Road, Consolidation at Indian Acres South, Monitored Natural Attenuation, and Combined ICs (Engineered Cap)
- ***Alternative IA-4: Excavation of Indian Acres North, Indian Acres East, and Pump House Road; Consolidation at Indian Acres West; Monitored Natural Attenuation; and Combined ICs (Engineered Cap)***

Alternative IA-4 involves excavation of the eastern portion of Indian Acres South, Indian Acres North, and the Pump House Road, resulting in the excavation of approximately 100,000 cubic yards of soil and waste. The excavated soil and waste will be consolidated in a containment cell in the western portion of Indian Acres South and will include the footprint of the former Spray Pond. The excavated area will be backfilled, graded, and sloped for water management.

The engineered cap is anticipated to be 10 acres in size and a height of approximately 20 feet above the surrounding ground elevations. The uppermost foot of waste/impacted soil would be graded consistent with the final design slopes and then covered with, from bottom to top either (1) 18 inches of low permeability clay meeting engineer-provided specifications (to be defined during remedial design) to minimize water infiltration and six inches of vegetated topsoil or with (2) a geomembrane, which is a synthetic membrane liner or barrier used to control fluid migration; 18 inches of soil; and 6 inches of vegetated topsoil. Together the soil and vegetation would protect the underlying liner (clay or geomembrane) from erosion, UV exposure, etc. With use of appropriate armoring/seeding using flood resistant grasses, erosion of the proposed cap during a 100-year flood is not expected. Requirements for any maintenance, repair, and monitoring needed will be included in the long term monitoring and stewardship plans for the Site.

Separator 7 Area

The following Alternatives were evaluated for the Separator 7 Area:

- Alternative Sep7-1: No Action
- ***Alternative Sep7-2: Consolidation and Cap with Solidification and Neutralization of Former Sludge Pit, Monitored Natural Attenuation, and Combined ICs (Engineered Cap)***
- Alternative Sep7-3: Solidification, Neutralization, and Excavation with Off-Site Disposal, Monitored Natural Attenuation, and Combined ICs

Alternative Sep7-2 involves consolidating soil and waste material under an engineered cap of approximately 15 to 20 acres. Consolidated wastes will include:

- 9,000 cubic yards of impacted soil from the east side of the road between the Separator 7 Area and SWMU-28 and consolidating the material on the west side of the road.
- Approximately 24,400 cubic yards of additional waste and impacted soil from west of the cap area.
- The former sludge pit, including approximately 150,000 cubic yards of waste material located in the southeast portion of the Separator 7 Area. This material will be solidified and neutralized in place to depth prior to placing the cap. The solidification and neutralization will be done by mixing a reagent into the soft sludge using an excavator with an appropriate attachment or other applicable technology.
- Other soils and wastes from other OUs, including:
    - An estimated 30,000 cubic yards from the TFs/MPA
    - An estimated 2,236 cubic yards from the Floodplain Forest

Because soil from other OUs may be consolidated under the Separator 7 cap, the final height and footprint of the cap are dependent on the alternatives selected for other remedial areas and OUs. The uppermost foot of waste/impacted soil will be graded consistent with the final design slopes and then covered (from bottom to top of slopes) with either: (1) 18 inches of low permeability clay meeting engineer-provided specifications (to be defined during remedial design) to minimize water infiltration and 6 inches of vegetated topsoil or (2) a geomembrane, 18 inches of soil, and 6 inches of vegetated topsoil. Together, the soil and vegetation will protect the underlying liner (clay or geomembrane) from erosion, UV exposure, etc. An updated flood impact study will be conducted. Using appropriate armoring/seeding with flood-resistant grasses, erosion of the proposed cap during a 100-year flood is not expected. Requirements for any maintenance, repair, and monitoring needed will be included in the long term monitoring and stewardship plans for the Site.

OU3 – Land Treatment Unit

The following Alternatives were evaluated for the LTU:

- Alternative LTU-1: No Action

- ***Alternative LTU-2: Soil Cover, Combined ICs***
- Alternative LTU-3A: Soil Excavation and On-Site Consolidation, Combined ICs
- Alternative LTU-3B: Soil Excavation and Off-Site Disposal, Combined ICs
- Alternative LTU-4: Vegetation Management, Combined ICs

This alternative will involve installing a 1-foot soil cover to limit direct contact and exposure to human and ecological receptors, with ICs to limit exposure during future development. The extent of the cover is based on the protection of ecological receptors and construction workers and is estimated to cover approximately 34 acres. The cover will be seeded with grass, and the area will be maintained as it is now, as a maintained lawn. Ongoing monitoring will include inspections for erosion, vegetation growth, and any needed repairs. Requirements for any maintenance, repair, and monitoring needed will be included in the long term monitoring and stewardship plans for the Site.

OU-4 – Floodplain Forest

The following Alternatives were evaluated for the Floodplain Forest:

- Alternative FF-1: No Action
- ***Alternative FF-2A: Targeted Excavation of Soil with On-Site Consolidation and ICs***
- Alternative FF-2B: Targeted Excavation of Soil with Off-Site Disposal and ICs
- Alternative FF-3: Targeted Soil Cover and ICs

This alternative will excavate soil contaminated with lead, chromium, and zinc above the SROs for ecological receptors. Excavations will vary from 1 to 3 feet, depending on contaminant concentrations and the receptor at risk. Some deforestation and removal of vegetation will occur in these areas. An estimated 2,236 cubic yards of soil will be excavated. Excavated soil will be transported to an on-site containment cell in the Separator 7 Area for management. Excavated areas will be backfilled, regraded, and restored. Short-term monitoring will occur to ensure the success of re-vegetation.

OU-5 – Light Non-Aqueous Phase Liquid Management Area and Groundwater Management Area

All OU-5 alternatives evaluated in detail address Site-wide LNAPL and groundwater contamination. LNAPLs are organic liquids such as gasoline, diesel, and other petroleum hydrocarbon products that do not mix well with water and are less dense than water.

LNAPL Management Area

The following alternatives were evaluated for the LNAPL Management Area:

- Alternative LNAPL-1: No action
- ***Alternative LNAPL-2: Compositional Changes (by Passive Bioventing, Air Sparging, Sulfate Land Application, and/or Natural Source Zone Depletion), Monitored Natural Stability, and Combined ICs***

Areas of high benzene or a slow rate of decrease in benzene concentrations are used to represent areas of LNAPL, which can be more readily addressed by specific techniques to change the composition of the LNAPL. These techniques may include:

- Bioventing, which consists of using pressure differentials between the vadose zone of the soil and the atmosphere to move air in or out of the bioventing wells.
- Air sparging, which is used for the treatment of saturated soils and groundwater contaminated by volatile organic compounds (VOCs).
- Sulfate land application involves spreading sulfate salts on the ground surface and allowing their dissolution and infiltration of sulfate into the subsurface.
- Natural source zone depletion (NSZD) is the combined action of natural processes that reduce the mass of LNAPL in the subsurface.

These technologies or combinations of technologies will be used at specific areas and Site-wide. Sampling will be conducted on varying frequencies as needed (e.g., annually in actively treated areas for the first 5 years) but will be conducted at least every 5 years. Enhancements to the LNAPL remedy will be evaluated if the NSZD results indicate aquifer restoration will not be achieved within a reasonable amount of time.

ICs will also be implemented for OU-5 as needed. In addition, ICs will:

- Prevent disturbance of recovery/remediation systems.
- Ensure long-term on-going access as needed for purposes of monitoring and remediation.
- Prohibit potable groundwater use until cleanup values are met.

Groundwater Management Area

The following Alternatives were evaluated for the Groundwater Management Area:

- Alternative GW-1: No Action
- ***Alternative GW-2: Monitored Natural Attenuation, Combined ICs, and Performance Monitoring at the Consolidation Cells and LTU***

This alternative involves monitoring groundwater throughout the Site by using monitoring well networks established for the containment cells and the LTU, as well as the Site-wide network already used for annual data collection. Groundwater within the LNAPL smear zone will benefit from treatment of the LNAPL. The wells associated with the containment cells of OU-2, the LTU, and the Site boundary will be incorporated into the Site-wide monitoring network as appropriate. Wells will continue to be monitored to ensure groundwater contamination does not cross boundaries to off-site property. Interior monitoring will occur in areas where needed, and the LNAPL remediation monitoring will be coordinated with groundwater monitoring to avoid duplication. Groundwater management zones will be established, consistent with state regulations. Monitoring will occur annually and include the contaminants of concern and other constituents used to evaluate the progress of monitored natural attenuation. ICs will be established to prohibit the use of groundwater until restored and ensure the integrity of the monitoring network.

Contingency remedies will be evaluated for possible implementation if ongoing monitoring reveals monitored natural attenuation is not proceeding on the expected timeframe (within 50 years) or if contaminant migration is observed.

Next Steps

Before the Illinois EPA makes a final decision, the Agency will consult with U.S. EPA and review public comments received. The Illinois EPA will hold a 30-day public comment period (s*ee Page 1 for the dates of the public comment period).* The Illinois EPA encourages you to review and comment on the proposed cleanup plan. More detail on the cleanup alternatives is available in the official documents online at https://epa.illinois.gov/topics/community-relations/sites/indian-refining.html. Illinois EPA will respond to the comments in a "responsiveness summary" as part of the Record of Decision (ROD) that describes the final cleanup plan. The ROD is a technical, legal, and public document that describes the selected remedial action and includes the facts, analyses of facts, and site-specific policy determination to support the selection. Illinois EPA will announce the final cleanup plan in the *Lawrenceville News Record* and post it on the Illinois EPA's webpage: https://epa.illinois.gov/topics/community-relations/sites/indian-refining.html.

Figure 2. Evaluation Criteria

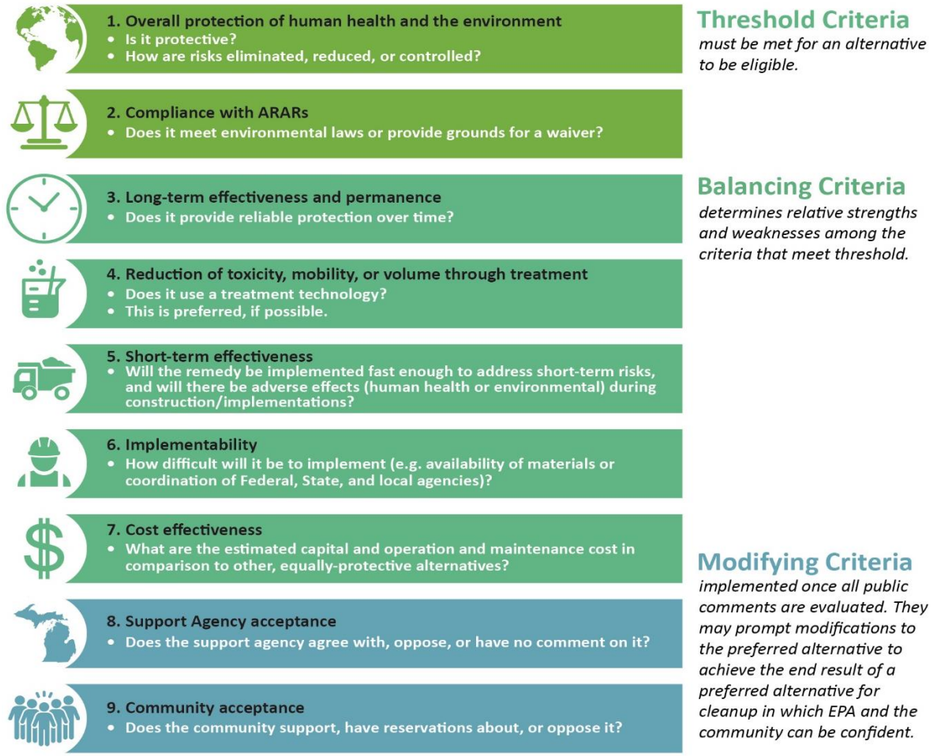


Table 1. Description of Preferred Alternatives

Preferred Alternative	Brief Description of Preferred Alternative	Estimated Present Worth Cost	Estimated Construction Time	Time to Achieve RAOs
OU1 Tank Farms/Main Process Area				
TF/MPA-2A: Targeted Excavation with On-Site Consolidation, Monitored Natural Attenuation, and Combined ICs	Excavating metal- and PAH-impacted soil in the TF areas and MPA. Excavated soil will be transported to an on-site containment cell. VOC-impacted soil will be addressed through natural attenuation via aerobic biodegradation.	$4,646,000	1 to 2 years	PAHs and Metals: 1 to 2 years VOCs: 25 years
OU1 Road Right of Ways (ROWs) and City Storm Sewer Investigation (CSSI) Area				
ROW-2: Layered Government Controls, Proprietary Controls, and Monitoring	Controlling exposure to contaminants within ROWs and the CSSI area using layered ICs, including prohibiting future development and/or construction activities; developing a contingency plan that protects workers; preventing residential development; preventing access to and use of contaminated groundwater; and implementing a long-term stewardship plan. Additional controls for the CSSI area include developing a health and safety plan for construction workers, establishing conditions for the handling and management of impacted soil, evaluating risks from indoor air, and assessing the need for a vapor intrusion mitigation technology.	$220,000	1 to 2 years	1 to 2 years

Preferred Alternative	Brief Description of Preferred Alternative	Estimated Present Worth Cost	Estimated Construction Time	Time to Achieve RAOs
OU2 Oily Soil Areas				
OSA-4: Excavation of SWMU 9N Drainage Ditch with On-Site Consolidation of Lime Sludge Ponds, Backfilling and Capping of Lime Sludge Ponds, Monitored Natural Attenuation, and Combined ICs	Excavating soil from the SWMU 9N Drainage Ditch and using the excavated soil as backfill for the Lime Sludge Ponds. The Lime Sludge Ponds will then be capped in place with an engineered clay cap, topsoil, and vegetated.	$3,018,000	1 to 2 years	Metals: 1 to 2 years VOCs: 25 years
OU2 Indian Acres				
IA-4: Excavation of Indian Acres North, Indian Acres East, and Pump House Road; Consolidation at Indian Acres West; Monitored Natural Attenuation; and Combined ICs (Engineered Cap)	Excavating Indian Acres North, the Pump House Road, and the eastern portion of Indian Acres South. Consolidating excavated soil at Indian Acres West. The excavated area will then be capped in place with an engineered clay cap, topsoil, vegetated, and sloped for water management.	$31,273,000	2 to 3 years	2 to 3 years
OU2 Separator 7 Area				
Sep7-2: Consolidation and Cap with Solidification and Neutralization of Former Sludge Pit, Monitored Natural Attenuation, and Combined ICs (Engineered Cap)	Consolidating soil and waste material under an engineered cap. Because soil from other OUs may be consolidated under the Separator 7 cap, the final height and footprint of the cap are dependent on the alternatives selected for other remedial areas and OUs. The uppermost foot of waste/impacted soil will be graded consistent with the final design slopes and then covered. An updated flood impact study will be conducted.	$18,014,000	1 year	1 year 25 years if MNA is needed.
OU3 Land Treatment Unit (LTU)				
LTU-2: Soil Cover, Combined ICs	Installing a 1-foot soil cover to limit direct contact and exposure to human and ecological receptors, with ICs to limit exposure during future development. The cover will be seeded with grass, and the area will be maintained as a maintained lawn.	$3,838,000	1 year	1 year
OU4 Floodplain Forest				
FF-2A: Targeted Excavation of Soil with On-Site Consolidation and ICs	Excavating soil contaminated with lead, chromium, and zinc above the remediation objectives for ecological receptors. Excavated soil will be transported to an on-site containment cell in the Separator 7 Area. Excavated areas will be backfilled, regraded, and restored.	$404,000	1 year	1 year
OU5 Light Non-Aqueous Phase Liquid (LNAPL) Management Area				
LNAPL-2: Compositional Changes (by Passive Bioventing, Air Sparging, Sulfate Land Application, and/or Natural Source Zone Depletion), Monitored Natural Stability, and Combined ICs	Bioventing, air sparging, sulfate land application, and NSZD techniques to address and change the composition of the LNAPL. Sampling will be conducted on varying frequencies. ICs will also be implemented to prevent disturbance of remediation systems, ensure long-term monitoring, and prohibit potable groundwater use until beneficial use is restored.	$4,408,000	2 years or less	Within 50 years

Preferred Alternative	Brief Description of Preferred Alternative	Estimated Present Worth Cost	Estimated Construction Time	Time to Achieve RAOs
OU5 Groundwater Management Area				
GW-2: Monitored Natural Attenuation, Combined ICs, and Performance Monitoring at the Consolidation Cells and LTU	Monitoring groundwater throughout the Site by using monitoring well networks established for the containment cells and the LTU, as well as the Site-wide network already used for annual data collection. Wells will continue to be monitored to ensure groundwater contamination does not cross boundaries to off-site property. Interior monitoring will occur in areas where needed, and the LNAPL remediation monitoring will be coordinated with groundwater monitoring. ICs will be established to prohibit the use of groundwater until restored and ensure the integrity of the monitoring network.	$2,922,000	1 to 2 years Groundwater monitoring network is largely in place. Additional wells may be installed as part of remedial action for other OUs or as needed.	Within 50 years

Public Comment Sheet

Use this space to write your comments

Illinois EPA is interested in your comments on the cleanup plan for the Former Indian Refinery Site. You may use the space below to write your comments. You can fold, stamp and mail to Illinois EPA at the address on the other side of this comment sheet. You may also email comments to *Epa.publichearingcom@illinois.gov*. Comments must be postmarked by **February 13, 2025**. If you have questions, contact Rudy Alanis at 847-553-9251, 8a.m. –4:30 p.m., weekdays or at Rodolfo.alanis@illinois.gov.

Name:_____

Affiliation:_____

Address:_____

City:_____

State: _____Zip: _____

Former Indian Refinery Site– Comment Sheet

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