

**ANALYSIS OF BROWNFIELDS CLEANUP ALTERNATIVES (ABCA)**  
**3250 South Kedzie Avenue**  
**Chicago, IL**

**I. INTRODUCTION AND BACKGROUND**

**a. Site Location**

The site is located at 3250 S. Kedzie Avenue in Chicago, Cook County, Illinois and occupies a 3.2 acre parcel of land. (Cook County PIN 16-35-203-006).

**b. Previous Site Use(S) And Any Previous Cleanup/Remediation**

According to the historical information reviewed, the subject site was first developed with an industrial facility sometime between 1938 and 1951 and was occupied by multiple industrial owners including, "Stepan Chemical Co.," "Union Carbide Corp/Fiber Bond Corp." and "The Paper Group" until 1999. Additional warehouse space was added onto the west side of the structure between 1950 and 1962 and onto the west side of the structure in 1962 and 1972. The property has been vacant since 1999. The on-site structure was razed in 2016. The site currently consists of a vacant lot with remnant building foundations and asphalt parking areas.

The following Remedial Activities took place on site prior to the recent site assessments:

- The site was enrolled in the Illinois EPA Leaking Underground Storage Tank (LUST) program (Incident # 20041384) by 3250 South Kedzie Avenue Trust for two (2) 10,000 fuel oil tanks and a No Further Remediation Letter (NFR) Letter was issued by the IEPA LUST Division for the site on May 10<sup>th</sup> 2005.
- The site was also enrolled in the Illinois Site Remediation Program (SRP) in 2004 by 3250 South Kedzie Avenue Trust and was issued LPC#0316306386. A Focused NFR Letter was issued for Volatile Organic Compounds (VOCs) for the site on June 6, 2006 with Engineering controls including Asphalt/Concrete, Building Foundation Barriers, an industrial/commercial land use stipulation and Institutional controls in the form of a groundwater use restriction and additionally a construction worker precaution area was issued for the site.

The following most recent assessments have been conducted at the site:

- Phase I Environmental Site Assessment dated July 2014 was prepared by GSG Consultants, Inc.
- Phase II Environmental Site Assessment dated August 2014 was prepared by GSG Consultants, Inc.
- Comprehensive Site Investigation (CSI), Remedial Objectives Report (ROR), and Remedial Action Plan (RAP) dated December 2016 was prepared by Tetra Tech, Inc.

**c. Site Assessment Findings**

The ASTM Phase I ESA completed by GSG revealed the following Recognized Environmental Conditions (RECs):

Suspect Presence of Impacted Subsurface: Impacted soil/water/or soil gas may be present at the Site due to the historic site use as an industrial facility, UST presence, LUST and SRP enrollment (controlled REC) as well as the and historical industrial use of the

adjacent properties (tank farm, junk yard, steel manufacturing and railroad spurs), historical presence of multiple USTs. Specifically the site was enrolled in the LUST program for incident #20041384 involving a release from two (2) 10,000 gallon heating oil USTs and it was issued an NFR Letter from the LUST program dated May 10, 2005 with no preventative or engineering controls but with the stipulation that land use must be industrial/commercial. Additionally, the subject site was enrolled in the SRP program (LPC# 0316306386) on November 11, 2004. A **Focused** NFR Letter was issued on June 6, 2006 for only VOC constituents, including a stipulation for a groundwater use restriction as an institutional control and Asphalt Barrier/Concrete Barrier/Building Foundations as engineered barriers. An industrial/commercial land use restriction has also been issued for the site as a condition of the NFR Letter.

Two subsurface investigations were subsequently performed, a Phase II ESA completed by GSG and a CSI completed by Tetra Tech. The subsurface investigations revealed the following:

- Exceedances above the Tiered Approach to Corrective Action Objectives (TACO) Tier 1 Soil Remediation Objectives (SROs) for the Residential and Industrial/Commercial Ingestion and Inhalation Exposure Routes; the Construction Worker ingestion and inhalation exposure routes; and the Class I and Class II Soil Component to groundwater and groundwater (Class I and Class II) exposure routes.
- Laboratory analytical results for soil boring samples collected by GSG and Tetra Tech indicated that no pesticides or PCBs were detected at concentrations exceeding the TACO Tier 1 remediation objectives. The following VOCs were detected at concentrations exceeding the TACO Tier 1 SROs: cis-1,2-dichloroethene, methylene chloride, Tetrachloroethene, and Trichloroethene. The following PNAs were detected at concentrations exceeding the TACO Tier 1 SROs and the background values for metropolitan statistical areas: Benz(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, and Naphthalene. The following SVOCs were detected at concentrations exceeding the TACO Tier 1 remediation objectives: Dibenzofuran and 2-Methylnaphthalene. The following total metals were detected in both shallow and deeper soil samples at concentrations exceeding the TACO Tier 1 SROs: Antimony, Arsenic, Chromium, Lead, and Mercury.
- Laboratory analytical results indicated that the following VOCs are present in sub-slab vapor samples at concentrations exceeding TACO Tier 1 indoor air remediation objectives (Part 742, Appendix B, Tables H and I) for diffusion and advection: Methylene Chloride, Naphthalene, PCE, TCE, and Vinyl Chloride. The following VOCs are present in concentrations exceeding remediation objectives for diffusion only: PCE and TCE. These remediation objectives require that the existing or potential building has a full concrete slab-on-grade or a full concrete basement floor and walls.
- Analytical results for groundwater samples indicated that no SVOCs, pesticides, or PCBs were detected at concentrations exceeding the TACO Tier 1 remediation objectives. The following compounds were detected at concentrations exceeding the TACO Tier 1 remediation objectives for Class I and II groundwater: PCE, TCE, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Iron, and Lead. Manganese, TCE and Vinyl Chloride concentrations exceeded only the TACO Tier 1 remediation objectives for Class I groundwater.

#### **d. Project Goals**

The site is currently zoned as heavy industry (M3-3). The project goal is to reopen the current Focused NFR for the site and complete the necessary remedial activities in order to receive a comprehensive industrial/commercial NFR. The planned development and reuse for the site is mixed commercial use including retail units and will be ultimately be included as part of the larger development project known as the Focal Point Community Campus. The campus will reside on a 22-acre lot at 31st Street and Kedzie Avenue, will deliver a combination of retail, wellness, education, arts and recreation services to improve the lives of more than 400,000 residents of the West and Southwest Sides of Chicago. The campus will be financially self-sustaining with income from its for-profit elements supplementing the financial needs of the not-for-profit elements and will serve as a national model for community development across the country.

## **II. APPLICABLE REGULATIONS AND CLEANUP STANDARDS**

### **a. Clean up oversight responsibility**

GSG will perform the oversight of the cleanup activities on site. GSG has completed the SRP/remediation oversight component on multiple Brownfields projects in the state of Illinois, all of which were issued an NFR Letter at the completion of each project. GSG will provide environmental oversight and management and document remedial activities to ensure that construction/remediation activities are performed in conformance with the project design plans and specifications and the agency approved Remedial Action Plan. GSG will coordinate the assembly of all required environmental documentation with the Contractor for the remedial work and will submit a Remedial Action Completion Report (RACR) to the IEPA to secure the comprehensive NFR Letter for the project site.

### **b. Clean up standards for major contaminants**

Site cleanup activities and cleanup standards will be in accordance with 35 Illinois Administrative Code (IAC) Part 740 Site Remediation Program and Part 742 Tiered Approach to Corrective Action Objectives. A Comprehensive NFR for industrial/commercial use of the property will be requested to be issued by the IEPA at the completion of the project.

### **c. Laws and Regulations Applicable to the cleanup**

Site cleanup activities and cleanup standards will be in accordance with 35 IAC Part 740 Site Remediation Program and Part 742 Tiered Approach to Corrective Action Objectives. All other related federal, state and local regulations including the federal Davis-Bacon Act, State of Illinois Environmental Protection Act, etc. All appropriate permits (e.g., notifications of excavation, soil transport/disposal manifests, etc.) will be obtained prior to the work commencing.

## **III. EVALUATION OF CLEANUP ALTERNATIVES**

### **a. Clean Up Alternatives Considered**

1. Alternative 1 - No actions;

2. Alternative 2 – Extensive site excavation of soils above Tier 1 SROs across the site to a depth of three feet below ground surface (bgs) and in select areas to a depth of ten (10) feet bgs to eliminate the inhalation exposure route. All excavated soils will be transported and disposed off-site at a Subtitle D Landfill. Followed by importing clean soil to backfill the entire site to mitigate the ingestion and inhalation pathways. Utilize the City of Chicago’s groundwater usage Ordinance, offsite notifications as needed, and construction worker caution as institutional control; and
3. Alternative 3 – Soil excavation in limited areas for the installation of the engineered barriers. In proposed landscaped/permeable paver areas, soil will be removed to a depth of 3 feet bgs and additional soil removal will take where soils exceed the inhalation Exposure Pathway to a depth of 10 feet bgs as identified in the CSI in conjunction with confirmation sampling. The use of a Soil Management Zone (SMZ) in accordance with Part 740.535 being implemented to allow on-site solutions to on-site soil contamination without violating the solid waste disposal regulations. Engineered barriers will be installed over the portions of the site where soils exceeding the industrial-commercial SROs remain on site. The engineered barriers would be required to prevent potential ingestion exposure to site soils. The top three feet of open landscape area will be excavated and clean soil will be imported and used as engineered barrier. The proposed building concrete slab combined and asphalt pavement parking areas and concrete sidewalks will be used as engineered barrier as well. The specific location of the various proposed engineered barriers are not yet determined because site the development plan is not yet finalized. The potential construction worker exposure pathway may be addressed by implementing a construction worker caution for the site. Institutional controls will include industrial commercial use of the site and the exclusion of the groundwater ingestion exposure route by use of the city’s groundwater ordinance. These institutional and preventive controls will protect human health and the environment from contaminated soil, groundwater, and soil gas.

## **b. Cost Estimate Of Cleanup Alternatives**

### **Effectiveness**

1. Alternative 1 – No Action. This alternative is not effective as it does not address the environmental contamination present on site and does not eliminate human exposure to the contaminants. Therefore, the development would not be able to proceed.
2. Alternative 2 – This alternative is effective in accordance with the state environmental regulations since soils across the site above Tier 1 SROs as identified in the CSI will be removed from the site to a depth of 3 feet bgs and in select areas to a depth of 10 feet bgs. However, the cost of this alternative is prohibitive.
3. Alternative 3 – This alternative is effective. It addresses the current contamination and exposure risks by removing soils in limited areas, and creating engineered barriers on site as well as using institutional controls to satisfy regulatory requirements. This method is cost effective since the barriers proposed to be constructed on site will be part of the final development of the site.

### **Implementability**

1. Alternative 1 – No Action. This alternative is easy to implement as no actions will be

conducted.

2. Alternative 2 – This alternative is relatively easy to implement but it is cost prohibitive.
3. Alternative 3 – This alternative is easy to implement and aligns well with the plans for redevelopment. Targeted areas of soil will be over excavated on site to remove soils exceeding the indoor inhalation exposure pathway. Engineered barriers will be constructed in the form of over excavation of the top three feet of open landscape areas and/or permeable paver areas (assume 30% of the site) and clean soil will be imported to the site for use as backfill material for the construction of engineered barriers. In addition, future building concrete slabs, concrete sidewalks and asphalt parking areas will be used as engineered barriers. The use of the barriers eliminates the need for extensive soil excavation. The existing City of Chicago groundwater ordinance, potential offsite notification, and construction worker safety caution will be used as institutional control along with offsite properties notification if needed.

### **Cost**

1. Alternative 1 – No Action. No cost will occur in this alternative.
2. Alternative 2 – Extensive soil excavation over the entire site of soils above TACO Tier 1 SROs as identified in the CSI to depths of three feet bgs and to 10 feet bgs in select areas. The soils will be disposed of offsite at a Subtitle D Landfill followed by importing clean soil to backfill the entire site and utilizing institutional controls (City groundwater usage Ordinance and offsite notification). Based on the 3.2-acre size of the site, approximately 16,228 cubic yards of soil would have to be excavated, disposed of at a Subtitle D Landfill and replaced with clean fill to cover the entire site. At a cost of \$85 per cubic yard for soil excavation and disposal and \$40 per cubic yard for clean backfill material. The backfill would be compacted once placed on site. This alternative would cost over approximately \$2.1 million dollars for the entire project area.
3. Alternative 3 – Excavation and disposal in the areas exceeding the indoor inhalation exposure route as identified in the CSI (approximately 1,000 cubic yards). The construction of the engineered barriers will include, over excavation to three feet below final surface grade in the landscaped/permeable paver areas assuming 30% of the site (4,700 cubic yards) and off site soil disposal at a Subtitle D Landfill (\$85 a cubic yard) and importing clean backfill (\$40 a cubic yard), as well as the use of the concrete building slabs and asphalt pavement in the parking areas. Institutional controls will include the City's groundwater usage Ordinance, offsite notification and construction worker safety caution areas. It is estimated that the cost will be on the order of approximately \$ 712,500.

### **c. Recommended Cleanup Alternative**

Based on the effectiveness, Implementability, and cost, Alternative 3 was selected as the proposed cleanup. Alternative 3 removes contaminated soil in certain areas (landscaped areas) and creates engineered barriers to address the remaining ingestion exposure route exceedances. The City's groundwater usage ordinance, offsite notification, and construction worker caution will also be utilized as institutional controls. This alternative addresses the contamination, environmental and human being risks, minimizes waste volume to be generated and disposed at a landfill, and reduces greenhouse gas and carbon footprint to occur during the site cleanup activities.