Case Study #2: The Tex Tin Superfund Site

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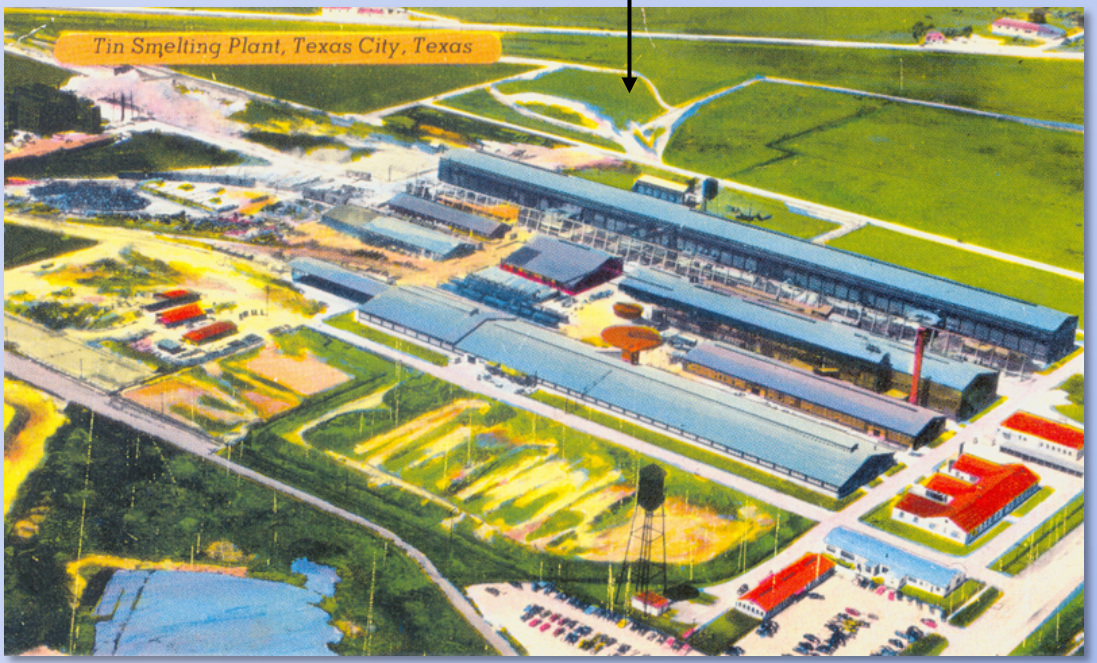
Clean up and Redevelopment at the Tex Tin Superfund Site, Texas City, TX

1. Site History
2. Remedial Action
3. Redevelopment

Site History

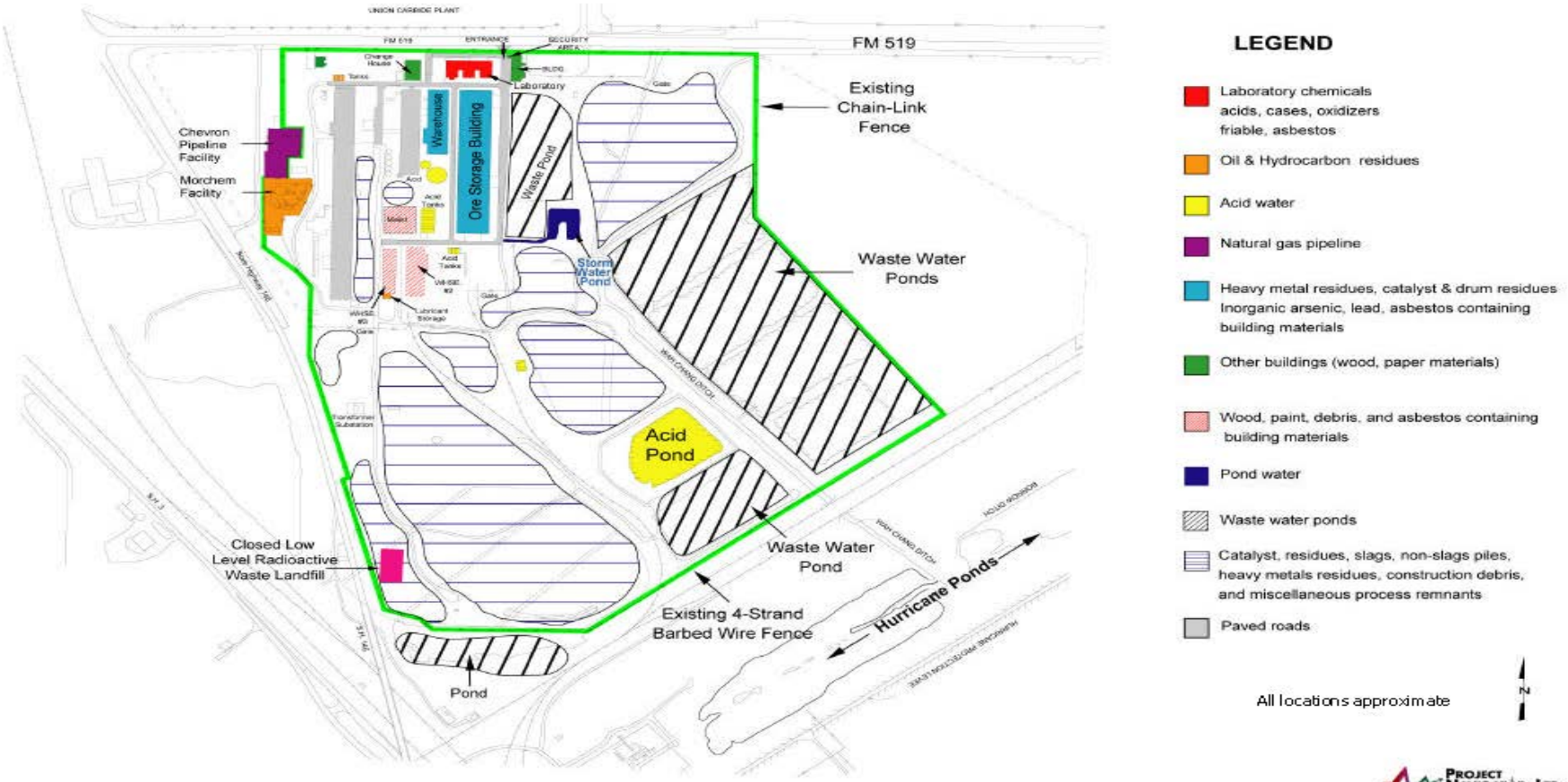
- The US Government contracted to build The Longhorn Tin Smelter in 1941 for $3.5 million in just 13 months.
- In April 1942, the Longhorn Tin Processing Corporation opened the only tin smelter in the Western Hemisphere. By the end of the war, the Texas City tin smelter was responsible for almost half the world's tin production.
- Private companies continued to operate the plant as a tin smelter from the late 50s until 1991.



Tex Tin Superfund Site – Pre-Remedy (~ late-1990s)

Site Conditions
Pre-Remedy

Tex Tin Superfund Site: General Site Features



Conceptual - Generalized site features

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Site Remediation under the Superfund Program

- The 140 acre site was listed on National Priorities List in 1998.
- The final remedy was selected in 2000.
- After the remedy selection, the Tex Tin Settling Defendants entered into a Consent Decree with EPA for the cleanup of the site.
- In 2001, the Tex Tin Settling Defendants selected a team of contractors to perform the Remedial Design and the Remedial Action.
- Remedial activities occurred from Dec. 2001 to Nov. 2003 with EPA oversight.

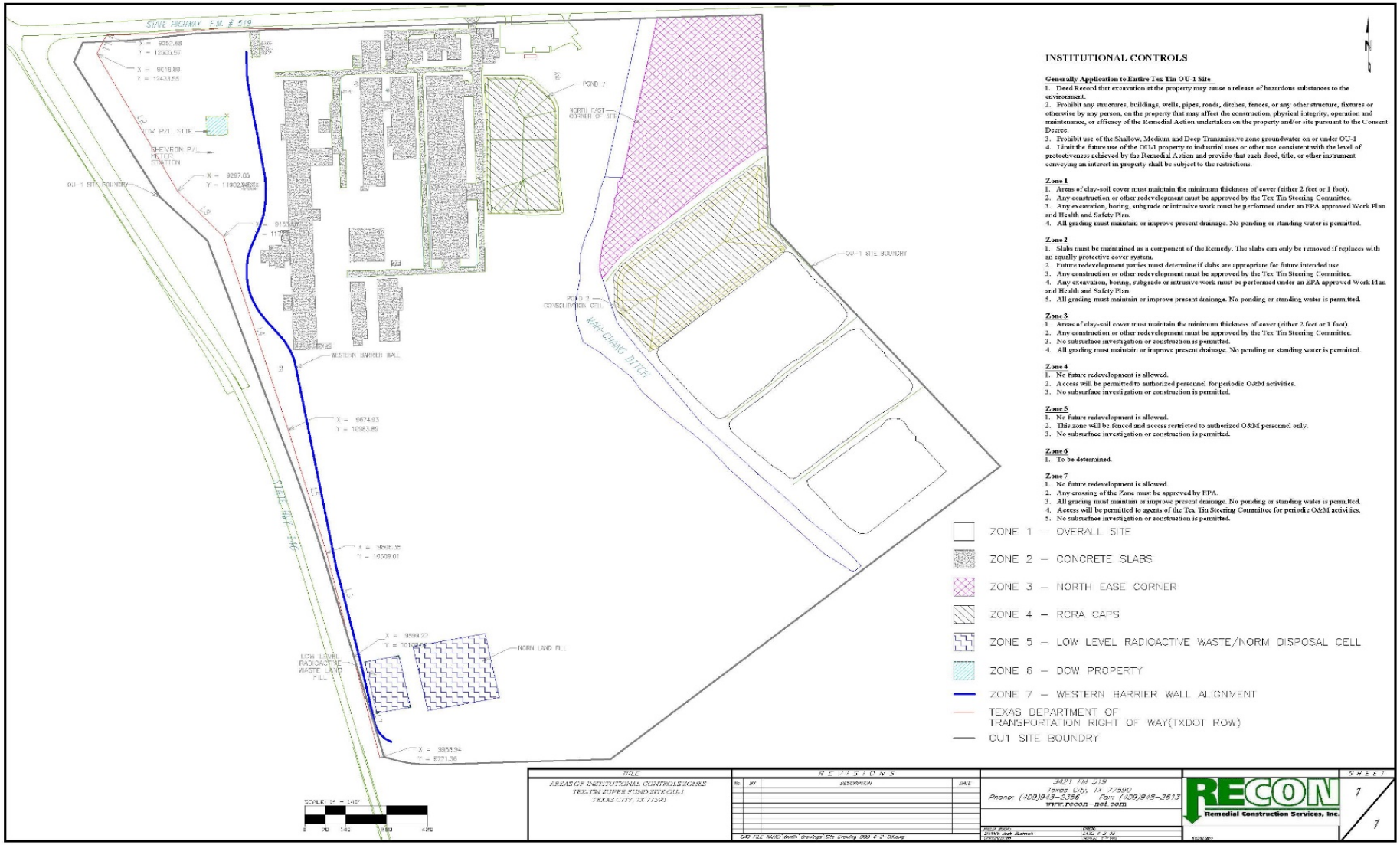
Tex Tin Remedial Action

- Asbestos Abatement, Lab Pack and Decon/Demo of 14 buildings
- Decon/Demo of 156 tanks up to ½ million gal. capacity
- Management/treatment of 7,855 drums and 5,300 cy of waste
- Treatment of 7,500 cy of PTS and 9,750 cy sediment
- Treatment of 16 million gallons of Acid Pond water with pH < 1 su
- Treatment of 70,000 cy of Acid Pond sediment
- Consolidation of 10,000 cy of NORM slag
- RCRA cap installation over 3-acre arsenic scrubber sludge pond
- Demolition of 250-foot tall concrete stack
- Installation of 55-foot deep, 3,000 foot long slurry wall
- Consolidation of 13,000 cy non-haz slag and 18,700 cy haz slag
- Installation of clay cap at Low Level Radioactive Waste Landfill
- Closure of 20 acres of former waste water ponds
- RCRA Cap installation at 5 acre consolidation cell
- RCRA Cap installation at NORM disposal cell
- Installation of 366 tree evapotranspiration system
- Installation of 90 acres of clay soil cover and hydroseeding
- Installation of groundwater monitoring system

Redevelopment Considerations during Remedy Construction

- EPA, the Site Trustee and the TTSD and its contractors collaborated to broadly support designs and methods to enhance future redevelopment options.
  - Design Considerations
    - Planned location of NORM disposal cell (i.e. – repository or landfill) was moved from center of Site to SW corner, increasing useable acreage.
  - Construction Methods
    - Trustee valued water well equipment which was then salvaged for potential future use.

Institutional Control Plan Showing Areas of Site Where Redevelopment Can Occur



Remedy Completed (~2005)

The Future of the Remedy

- Site remedy will continue to be inspected and monitored by the TTSD.
- Institutional controls will be monitored and enforced.
- Remedy reviews will be conducted by EPA every five years.

Remedy & Redevelopment Timeline

- **2001-2003 - Remedial Construction Completed**
  - Over 120,000 man-hours worked incident free, utilizing many local companies.
  - Work completed 9 months ahead of EPA schedule for millions less than EPA cost estimate.

- **2003 – Ready for Reuse**
  - 140 acre Superfund property returned to beneficial reuse.
  - 75 percent of site area is made available for redevelopment.
  - Site received the nation's first ever Superfund Ready for Reuse Determination from EPA.

- **2010 – Property Sale**
  - After several initial reuse efforts, Texas City Terminal Railway Company bought the site property in 2010.

- **2016 – Initial Discussions with Genesis**
  - For redevelopment of eastern portion of the Site as a crude oil terminal.

Reuse Outcomes

- The Texas City Terminal is a crude oil terminal that receives and stores crude oil and delivers barrels via pipeline to Houston area refiners, Texas City refiners, and waterborne markets.

Pictured: Texas City Terminal

Reuse Outcomes

- Genesis chose to locate the Texas City Terminal on a portion of this site due to its location which offered connectivity to its existing pipeline infrastructure, cost effective access to key infrastructure needed for operations like electricity, and proximity and connectivity to customers.
- Although Genesis was not looking for a reuse project, the Ready for Reuse Determination issued for this site and the positive support received from EPA and the Tex Tin Steering Committee made the project team comfortable with the prospect of reuse.

Pictured: Construction of Texas City Terminal

Reuse Outcomes

- This project was built on a very tight schedule and the willingness of all parties to achieve a successful outcome was critical to the success.
- The site includes storage tanks, pipeline and electrical equipment, as well as large diameter pipelines that were installed by Horizontal Directional Drilling (HDD).
  - Construction techniques were selected to minimize site impact and disturbance (e.g. – helical pilings)
  - All parties worked together to develop solutions for any unexpected issues.

Pictured: TCT Construction (HDD and power pole installation)

Reuse Recognition

- In November 2017, EPA honored the partners who worked toward redeveloping the site for beneficial and protective reuse. Honorees included:
  - Current and past Texas City Mayors
  - Texas City Terminal Railway Company – Site Owner
  - Tex Tin Steering Committee
  - Project Navigator – Project Coordinator
  - RECON - Remedial Contractor
  - Genesis Energy, L.P. – Site Developer

Pictured: Award Recipients

2018 - Genesis Texas City Terminal

Lessons Learned

- “Protect the Remedy”
- “Begin with the End in Mind”
- Early and Frequent Communication on knowns and unknowns.
  - Risk and Cost Management
- Collaborative Development and Implementation of Work Plans.
  - Facility design modified to minimize disturbances to the remedy.
  - Construction methods selected to minimize waste generated.
  - Capabilities for On-Site management of waste materials to minimize cost.
- Use of contractors with knowledge and experience with Site conditions.
- Upon completion, transfer of maintenance responsibilities as appropriate.

Tex Tin Superfund Site
EPA Contacts

- EPA RPM
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  - Casey Luckett, (214) 665-7393, Luckett.Casey@epa.gov

- EPA's Tex Tin Superfund Site Page
- EPA's Tex Tin Redevelopment Page