Lessons Learned – Asarco Tacoma Smelter

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History

• Smelter Facility
  • Operated 1890-1985
• Superfund Site in 1983
• Facility Demolished by 1995
• Asarco, LLC PRP – sole responsible party
  • Bankrupt in 2006
Breakwater Peninsula

• Part of Commencement Bay Nearshore/Tideflats Superfund Site
• Located in Tacoma, WA
• Metro Parks Tacoma (MPT) owner
• 23 acres comprised of slag
• 17 acres capped by Point Ruston, LLC (adjacent site owner)
  • BFPP consent decree with EPA
  • No public access
• Tacoma Yacht Club (TYC)
  • Long-term lease with MPT
  • Clubhouse, yacht basin, site access
What was the project?

- Remediation of slag/contaminated soil - EPA
  - 6 acre upland cap
  - Shoreline armoring
  - Replace infrastructure removed for remediation
  - New infrastructure to support capping (retaining walls)

- Construction of new park - MPT
  - Park and related infrastructure
  - Upgrade some TYC infrastructure
  - Triangle
Stakeholders

- U.S. EPA
  - Remediation
- Metro Parks Tacoma
  - Owner
  - Park Development
  - Held construction contract
- Washington Department of Ecology
  - Stormwater management (Triangle only)
- Tacoma Yacht Club
  - Long term leaseholder for portion of peninsula
What worked well

- We built a really, really nice park
  - Grand Opening on July 6, 2019
- MPT won a National Award
  - 2019 National Gold Medal Award for Excellence in Park and Recreation Management
    - Top achievement in the industry
    - American Academy for Park and Recreation Administration
- Ownership team worked well together
  - EPA/CH2M Hill (Jacobs Engineering)
  - MPT/Site Workshop
- Communication
  - Weekly meetings with construction contractor
- Lesson Learned:
  - Patience, sense of humor, and collaboration will pay off
What did not work well: Design Conflicts

• No design coordination
  • Cap vs. Redevelopment/Park
  • City infrastructure – electrical and water

• Reach A shoreline cap not fully designed

• Constant changes in cap design

• Effects of design changes not fully thought out
  • Small changes had huge ripple effect
  • Capacity
  • Escalating cleanup costs
    • +$5.5 Million in remedial costs
    • Increased schedule

• Lessons Learned:
  • Fully integrate design before construction starts
What did not work well: Inexperienced Construction Contractor

- No experience in remediation
  - Exclusion zones
  - Soil/stockpile management
- Safety violations
  - Dust control, PPE, exclusion zones
- Storm water management
  - Numerous discharge events
  - Permit exempt – must still meet substantive requirements
- Schedule delays
  - Learning curve
  - Poor sequencing of activities
- Disregarding RA oversight contractor
- Generated contaminated slag/soil
  - Project originally had a balanced Cut/Fill
  - ~20,000 cy hauled offsite

- Lesson Learned:
  - Inexperience is expensive and delays work
What did not work well: TYC occupancy during construction

• Construction delays
  • Providing Access & Utilities
    • Temporary Roads and parking areas
    • Temporary water
    • Temporary power (generators)
    • Temporary communication
    • Management of exclusion zones and contaminant reduction zones
  • Closure for TYC events
  • Members & guests entering contamination zones
  • Increased cost and duration of project

• Lesson Learned:
  • Have tenant vacate site for portion or all of project, would have saved time and money
What did not work well: Other Unanticipated Events

• Wettest winter on record
  • 40 inches over 6 months, 20 inches average

• Infrastructure
  • Water line wrapped in asbestos

• Contaminated sediment
  • Disposal capacity
  • Dewatering/space
Biggest Lesson Learned

• Integration of remediation and development must be well coordinated up front
  • Haste makes waste
    • Coordinate designs upfront or have one design contractor
    • Make sure City approves infrastructure design before construction starts
    • Upfront coordination faster and less expensive than change orders

• Construction Contractor Experience Key
  • Inexperience is expensive and delays projects
  • Hire two contractors with experience: less expensive and faster
  • Sequence work: keep remedial and development construction areas separated

• Vacate all tenants
  • It is less expensive to find them temporary space than accommodate them during construction.
Thank you!