



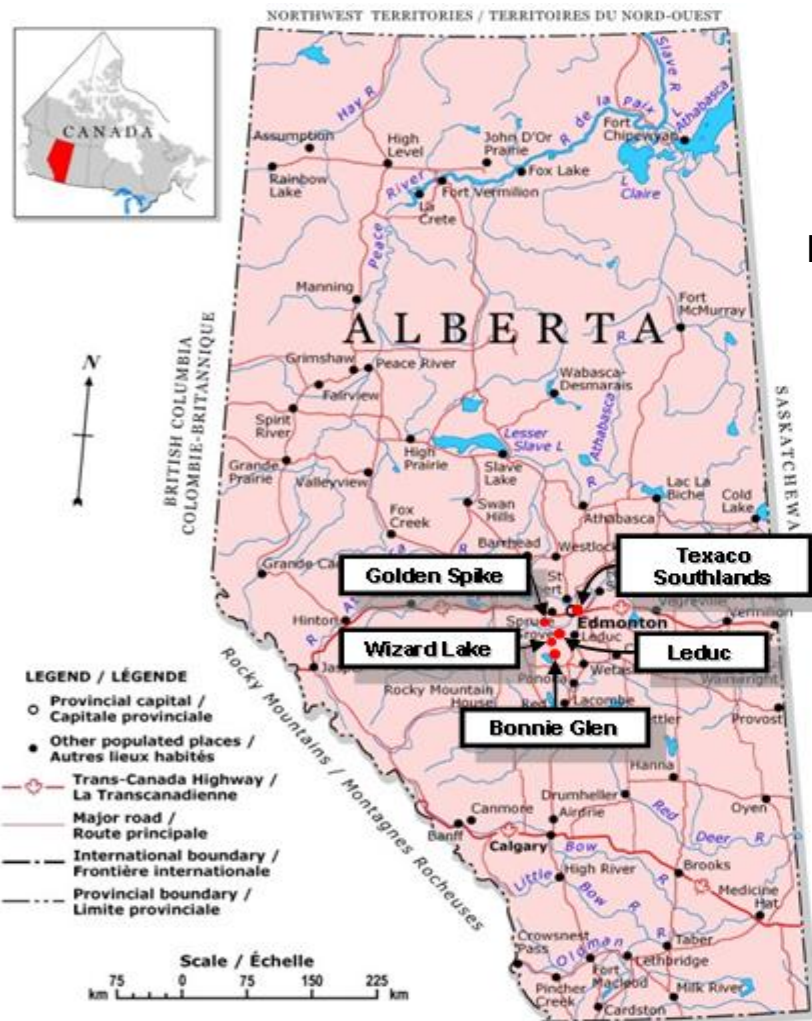
CAB Demolition Project

Dave Slade — Imperial Oil
RemTech 2012

Presentation Outline

- **Project Logistics/Contracting Strategy**
- **Project Performance**
- **Project Execution**
 - **Regulatory**
 - **ABSA**
 - **Hazmat/DSS Surveys**
 - **Hazmat/Asbestos Abatement**
 - **Demolition**
 - **QA/QC/Waste Management**
- **Global Sharing & Learning's**
- **Video on CAB Demolition**

Project Location



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- Leduc Gas Conservation Plant (Devon)
- Golden Spike Gas Plant
- Former Texaco Bonnie Glen Gas Plant Complex (3 Plants)
- Former Texaco Wizard Lake Battery
- Former Texaco Southlands Refinery (P&C asset)



Project Sites

Site Characteristics

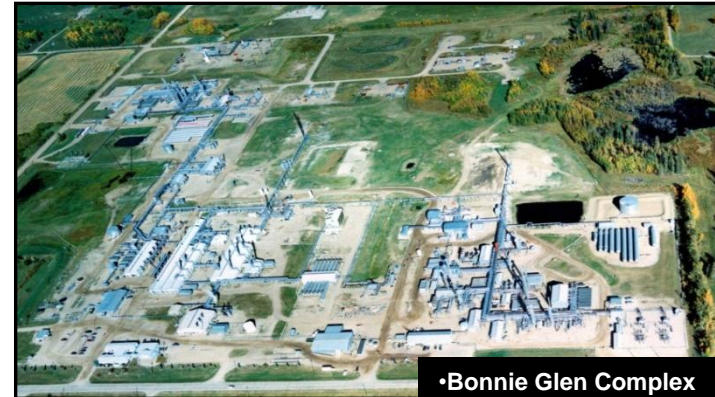
- Upstream oil and gas production facilities
 - Crude oil processing and separation
 - Gas sweetening (sulfur) and processing
 - Produced (saline) water handling
- Constructed mainly early 1950's
- Ceased operations between 2006 to 2010
- Located in or adjacent to urban areas / agricultural
- Community proximity, (Devon, Mulhurst, Parkland Acreages)

Considerations / Encumbrances

- End land use determination, (Town of Devon)
- Upwards of 175 B/G pipelines and utilities on some sites
- Active:
 - 3rd party surface facilities and pipelines
 - 3rd party surface lease agreements
 - road use agreements
 - Utility Companies

Drivers for Demolition

- Safety / security – proximity to residential
- Access for environmental assessment
- Regulatory – compliance with ERCB and AE&W regulations



Demolition Contract

Texaco Southlands

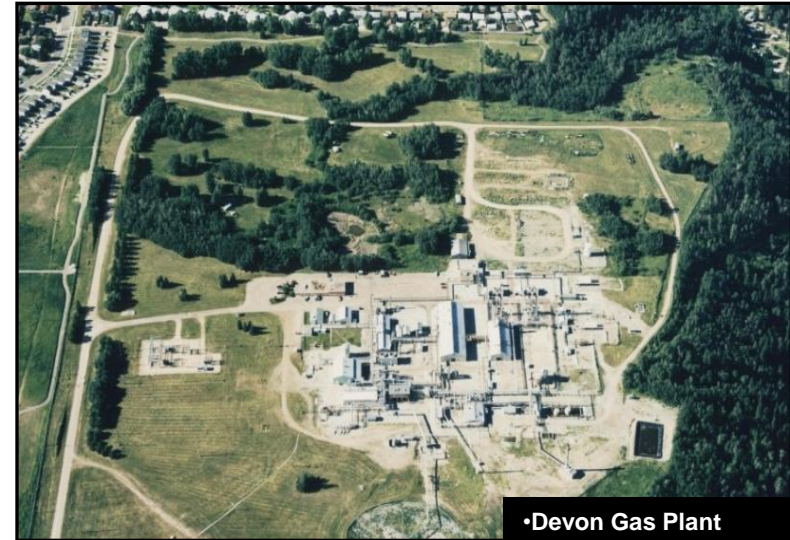
- Former Texaco refinery, ceased operations 1980
- Operating refinery units previously dismantled
- Tank farm, rail spurs, miscellaneous buildings remain
- 160 acres, 2 – 20 acre commercial leases

Demolition Project Scope

- Hazmat abatement, demolition to “slab-on-grade” elevation
- Bundled 5 sites, 7 plant facilities
- Economies of scale on Lump Sum contract
- Processing off -site vs on-site
- Buildings, equipment, and A/G piping to be removed
- Material salvage, market price
- Foundations, berms, slabs, B/G piping and buried tanks stay
- Intrusive site environmental assessment not included
- Early removal of large copper to reduce security risks
- QA / QC 3rd party environmental consultant
 - Abatement exposure control
 - Classification of waste streams, disposal
 - Validation of salvage quantities

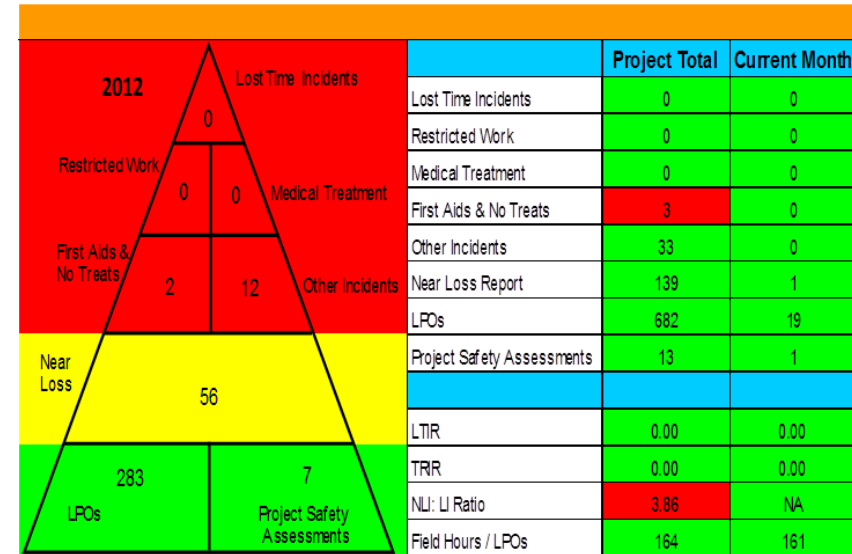
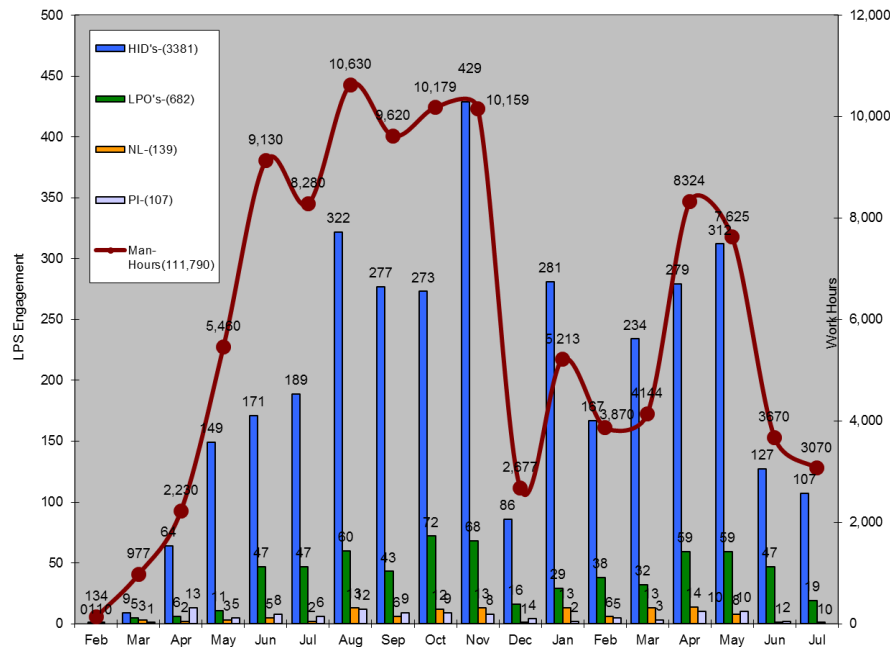
RFI, RFP, Contract Award

- Prequal process with 13 contractors – N. America
- Post home office visits – 2 qualified
- Contract award – Hazco (Tervita)



Project Performance

- > 110,000 safe work hours, no recordable incidents
- 3 first aid incidents
- 33 other incidents, (security & equipment)
- LPS metrics
 - 3381 HID's reported (1/hr)
 - 682 LPO's (1/682 hrs)
 - 139 Near Losses
 - 107 Peer Interventions



- Mobilization, early demo, copper removal late 2010
- 4 of 5 sites completed, 6 of 7 plants
- Awaiting transfer of Texaco Southlands to SPM
- Regulatory compliance 100%, 3 OH&S site audits
- 25% cost increase – asbestos containing mastics, boiler refractories, NORMs, additional metal processing
- > 900 tons asbestos waste, 1800 tons demolition debris
- 21,000 tons recycled metals

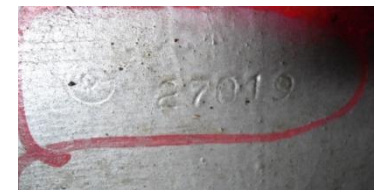
Project Execution

Regulatory/Key Stakeholders

- AENV OH&S Site inspections, Golden Spike and Bonnie Glen Gas Plants, (No deficiencies)
- Presentation to AENV on Oil & Gas Facility Decommissioning and Demolition
- Town of Devon, Parkland County, BG/Mulhurst Community

ABSA Inventory (Alberta Boilers Safety Association)

- Best Practice developed for identification and destruction process
- Identify ABSA registered equipment onsite while operations staff is onsite is preferred option.
- Identify the ABSA registered equipment with colour code for easy identification during demolition.
- Collect photos of ABSA pressurized equipment prior to demolition both of the name plate and the equipment.
- Photograph ABSA name plate once it has been removed during the demolition, (Certificate of Destruction Form)



Hazardous Material Surveys, (DSS), Abatement

- Specialist skill not universally understood by Environmental Consultants and are more challenging than typical management surveys
 - Destructive & Non-destructive assessments
 - Inaccessible Materials
- Financial impact to project in Contractor bids either over or under estimate requiring scope changes during project execution
- Liability impact to abatement workers and all project staff on site in failing to identify quantity, type and location of asbestos

Hazardous Materials Survey Guideline for Demolition of Oil & Gas Facilities/Buildings

Guidance on Asbestos in Demo Projects

NORM Screening Best Practice



Demolition Execution

The demolition component of bringing a facility down to grade accounts for a small percentage of the project but can be the highest risk activity on the site.

The safe execution of demolition can only be achieved through;

- Proper use of demolition equipment, ROPS, FOPS, tracked equipment, foam tires, demolition trailers, etc.
- “No Boots on The Ground”
- Active Demolition Zones
- Quality method statements/demo plans & JSA’s
- Skilled and experienced site supervisors and equipment operators
- Total engagement of all workers on-site to safety
- Management visibility and consistent expectations



QA/QC & Waste Management

Must meet all regulatory requirements for the handling, storage, transportation and disposal/ recycle of all DOW and Non-DOW wastes

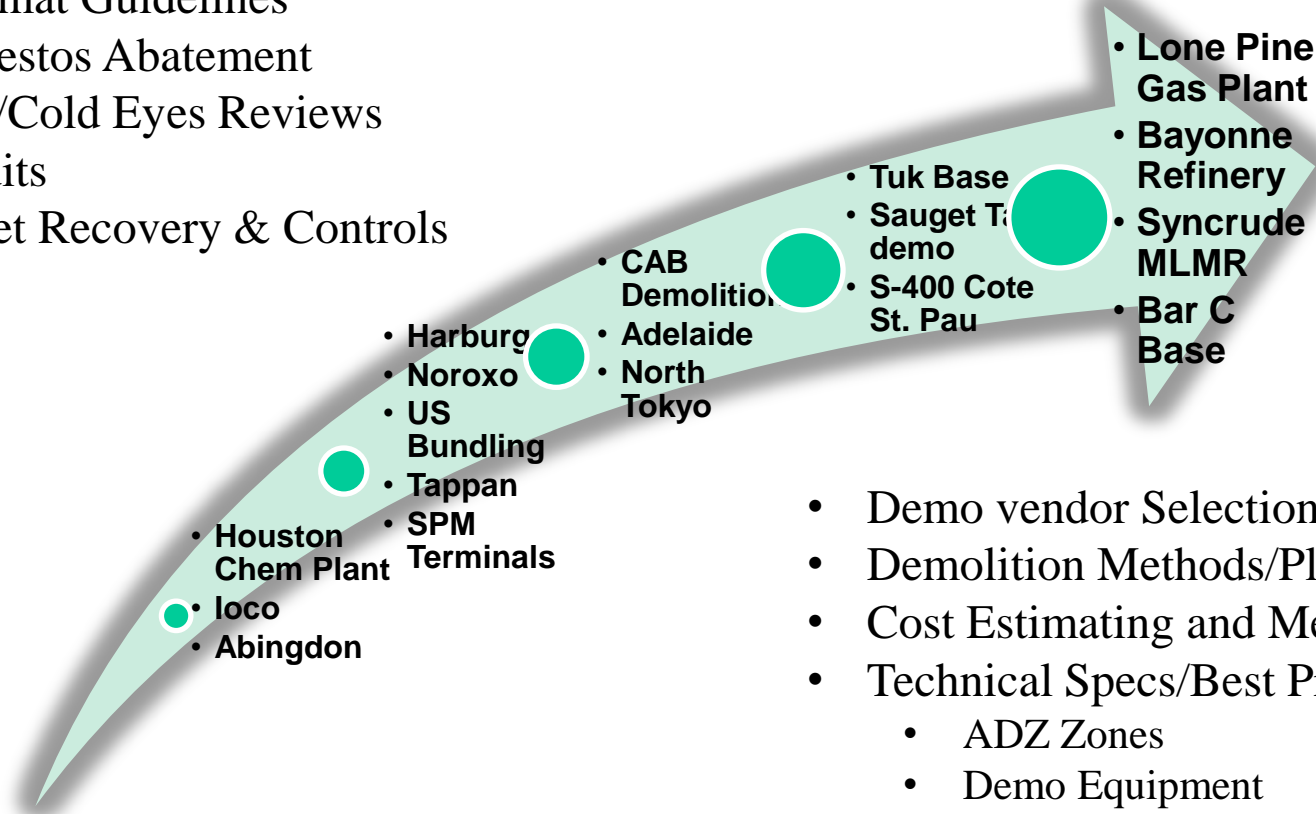
Accomplished through;

- QA/QC waste management program
 - Proper storage
 - Transportation – (testing loads for NORMS, weighing loads, disposed of at approved facilities)
 - Proper documentation –waste manifests, scale tickets, ABSA, (Certificate of Destruction)
 - Adherence to IOL/EMES Asset Management Recovery Plan for recycled steel
 - Engage Hazardous Waste specialists, (Normcan)



Global Sharing to Achieve Flawless Execution

- Safety-Planning, JSA Library, LPO's
- Facility Safe-out
- Hazmat Guidelines
- Asbestos Abatement
- IPR/Cold Eyes Reviews
- Audits
- Asset Recovery & Controls



- Demo vendor Selection & Evaluation
- Demolition Methods/Plans
- Cost Estimating and Metrics
- Technical Specs/Best Practices
 - ADZ Zones
 - Demo Equipment
 - Demo Guidelines/Modules

Global Impact - Learnings

EMES

- Global portal for corporate demolition excellence
- Proactive support of demolition project teams
- Develop best practices and tools
- Raise competency levels
- Continuous validation of global vendor capability

IOL Contributions

- Decommissioning & Reclamation approvals (AENV)
- Set global standard for RFI, RFP process and Job Spec documents
- Metals cost sharing strategy improved metals management efficiency and salvage valuation, (Develop a win/win strategy with Contractor)
- Third party onsite consultant for QA/QC – waste tracking, air quality monitoring, regulatory vessel destruction compliance (best practice)
- Best practices and video training – active demolition zones, asbestos abatement, hazmat guidelines, NORMS, demolition waste management, ABSA, Hg Pre-cursory Assessment.



Global Impact - Learnings

IOL Contributions

- Processing of metals off-site vs on-site
- Capability development – Alberta oil and gas industry and Regulators/Standards
- Early removal of accessible copper for security & liability
- Early engagement with Operations on plant safe-out expectations. (how clean is clean?)
- Communication with other third party Oil & Gas Operators
- Hazmat Survey conducted during decommissioning and safe out, (Utilize Operations experience). Potential engagement & review of Hazmat Survey by a facility abatement specialist.
- Raise awareness – Safety Bulletins
- Lessons learned shared - Adelaide Refinery IPR, Nexen Gas Plant, Syncrude Mildred Lake Mine)



Demolition Video

Video compiled from various training videos;

- Hazmat Abatement
- Dropping/Falling towers, stacks and furnaces
- Shearing of AST's
- Shearing of pipe bridges
- Demolition of buildings, cooling towers, boilers
- Loading and transporting metals for recycling

Thank You:

Freshwater Creative
Tervita
Golder Associates

Thank You

Questions