



Conducting Phased Environmental Site Assessments at Upstream Oil and Gas Sites

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- ◆ **Reclamation Program History**
 - ◆ **Phase I ESAs**
 - ◆ **Phase II ESAs**
 - ◆ **Phase II ESA Working Group**
 - ◆ **Draft Decision Trees**
 - ◆ **Next Steps**
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Reclamation Program

- ◆ **AENV's reclamation program changed October 1, 2003**
 - ◆ **Contamination assessment information required**
 - ◆ Phase I ESA
 - ◆ Phase II ESA
 - ◆ Drilling waste disposal
 - ◆ **Audits for surface reclamation & contamination at depth**
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Reclamation Program

- ◆ **Multi-stakeholder committee dealing with program issues**
 - ◆ **Committee of industry and gov't representatives discussing environmental site assessments**
 - ◆ Drilling Waste Working Group
 - ◆ Phase II ESA Working Group
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Phase I ESA

- ◆ **Required as of July 1, 2001**
 - ◆ **As of October 1, 2003, Phase I ESA must be included with reclamation certificate application – new reclamation program requirement**
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Phase I ESA Objective

- ◆ **AENV Phase I ESA Guideline based on CSA, ASTM standards**
 - ◆ **Purpose of Phase I ESA:**
 - ◆ Identify actual and potential site contamination (CSA)
 - ◆ Identify the presence or likely presence of hazardous substances or petroleum products (ASTM)
 - ◆ Counsel need for and design of Phase II ESA
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Phase I ESA Limitations

- ◆ **Phase I ESA will reduce, but not eliminate uncertainty about potential for contamination**
 - ◆ **Insufficient Phase I ESA information increases uncertainty and need for a Phase II ESA**
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Phase I ESA Timing

- ◆ **Phase I ESA should be conducted before a reclamation activity commences**
 - ◆ **Increased uncertainty if Phase I ESA conducted following reclamation**
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Phase I ESA Form

- ◆ **Requires review of company files, spill reports, aerial photographs, interview and site visit**
 - ◆ **Conclusions and Recommendation section**
 - ◆ Likelihood of contamination?
 - ◆ Is a Phase II ESA required?
 - ◆ **Insufficient Phase I ESA information necessitates a Phase II ESA**
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Phase I ESA Form

- ◆ **Form being revised to include area for drilling waste disposal information**

Phase II ESA

- ◆ **Defined as a systematic process to characterize and/or delineate concentrations of substances of concern and compare concentrations to criteria (CSA)**
 - ◆ **Confirms or refutes Phase I ESA information**
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Phase II ESA

- ◆ **CCME guidance recommends sampling and analysis to determine the nature and extent of contaminants**
 - ◆ **Insufficient Phase I ESA information leads to a potential risk that a contaminant could be unnoticed**
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Phase II ESA Limitations

- ◆ **Each collected sample represents one area of the site at one depth at one point in time**
 - ◆ **Specific sample may not be representative of the area or the site**
 - ◆ **Uncertainty about the presence of contamination is reduced but not eliminated**
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Phase II ESA Working Group

- ◆ **What triggers in Phase I ESA lead to a Phase II ESA?**
 - ◆ **Group identified need to develop a decision making tool to supplement Phase I ESA form**
 - ◆ Decision tree/flowchart format?
 - ◆ Checklist format?
 - ◆ Other?
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Phase II ESA Working Group – Draft Decision Trees

- ◆ **Draft Decision Trees developed**
 - ◆ **Separate draft Decision Tree for each type of infrastructure:**
 - ◆ USTs
 - ◆ Wellcentre
 - ◆ Pipelines on lease
 - ◆ Surface facilities
 - ◆ Drilling waste disposal areas
 - ◆ Pits
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Potential Use of Draft Decision Tree

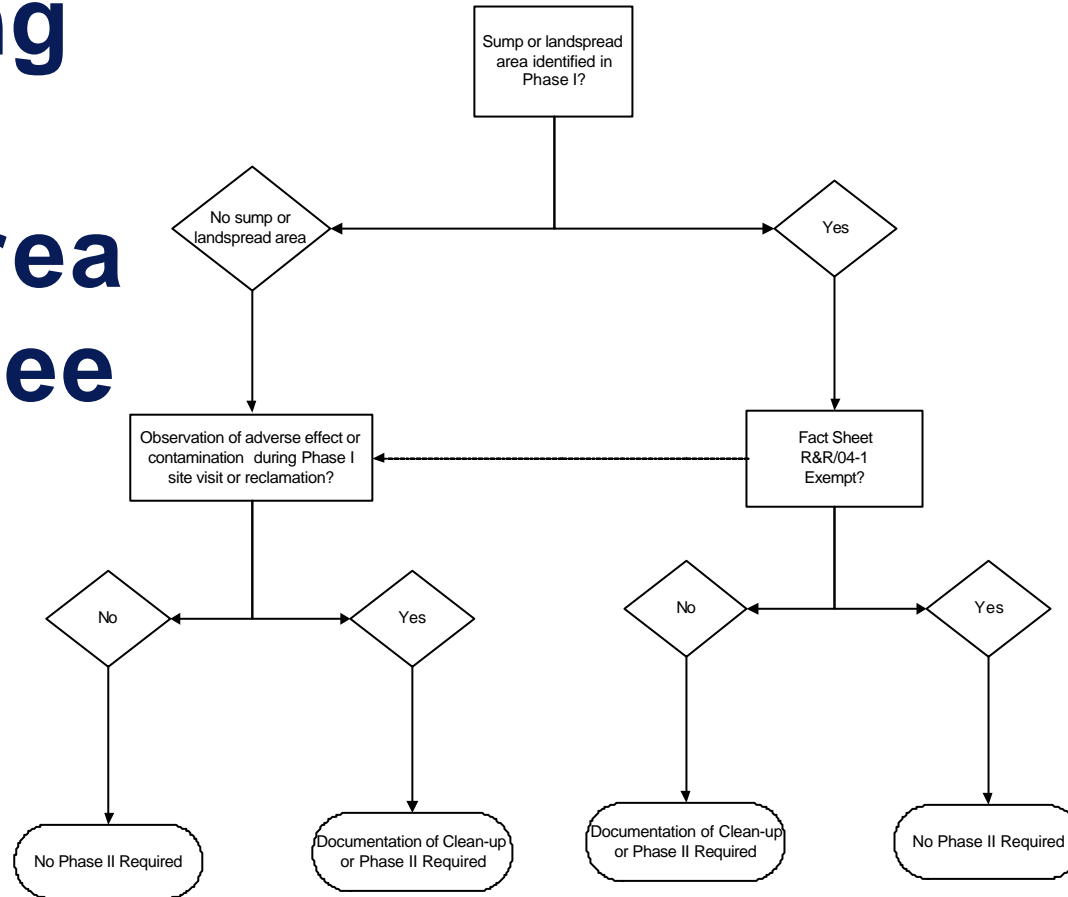
- ◆ Each decision box is a guide to the next step
 - ◆ Dotted lines indicate that due diligence is required even if clean-up has occurred
 - ◆ Overall, the EUB licensee has responsibility to ensure the entire site has been evaluated for potential contamination
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Phase II ESA Working Group – Draft Decision Trees

- ◆ **Phase I ESA draft Decision Trees for discussion only**
 - ◆ **Are decision trees effective or are checklists or other tool(s) better?**
 - ◆ **Stakeholder input requested**
 - ◆ **Provide comments to land.management@gov.ab.ca**
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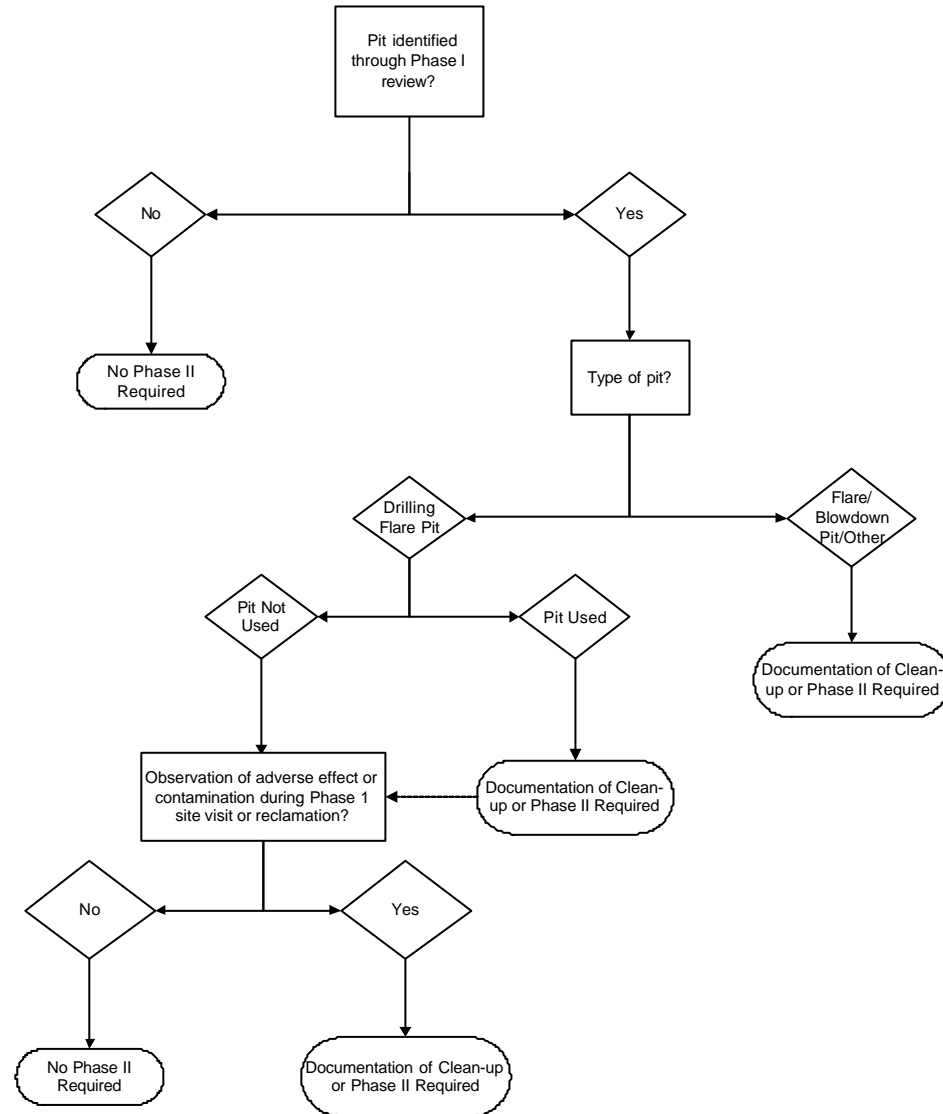
Draft Drilling Waste Disposal Area Decision Tree





Draft Pits Decision Tree

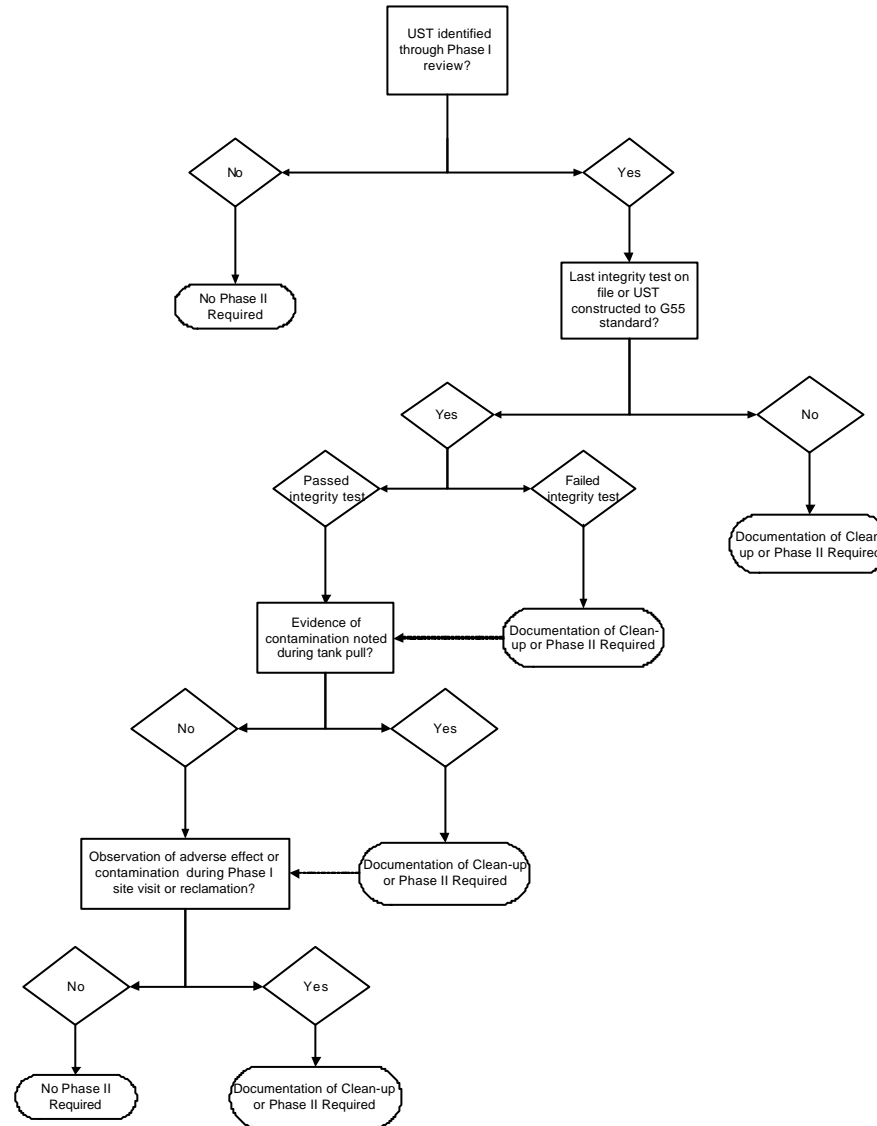
Phase I Decision Tree for Pits
For a Single Well Facility
DRAFT for Discussion Purpose Only





Draft UST Decision Tree

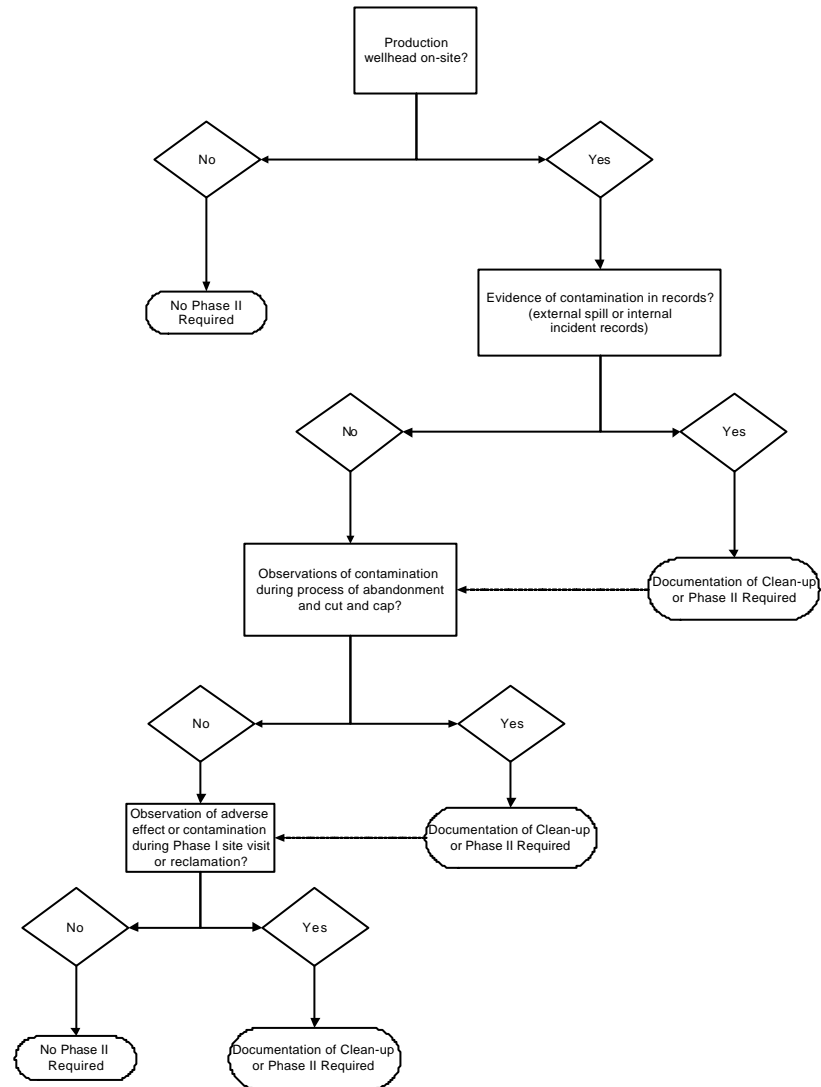
Phase I Decision Tree for UST's
For a Single Well Facility
DRAFT for Discussion Purposes Only





Draft Wellcentre Decision Tree

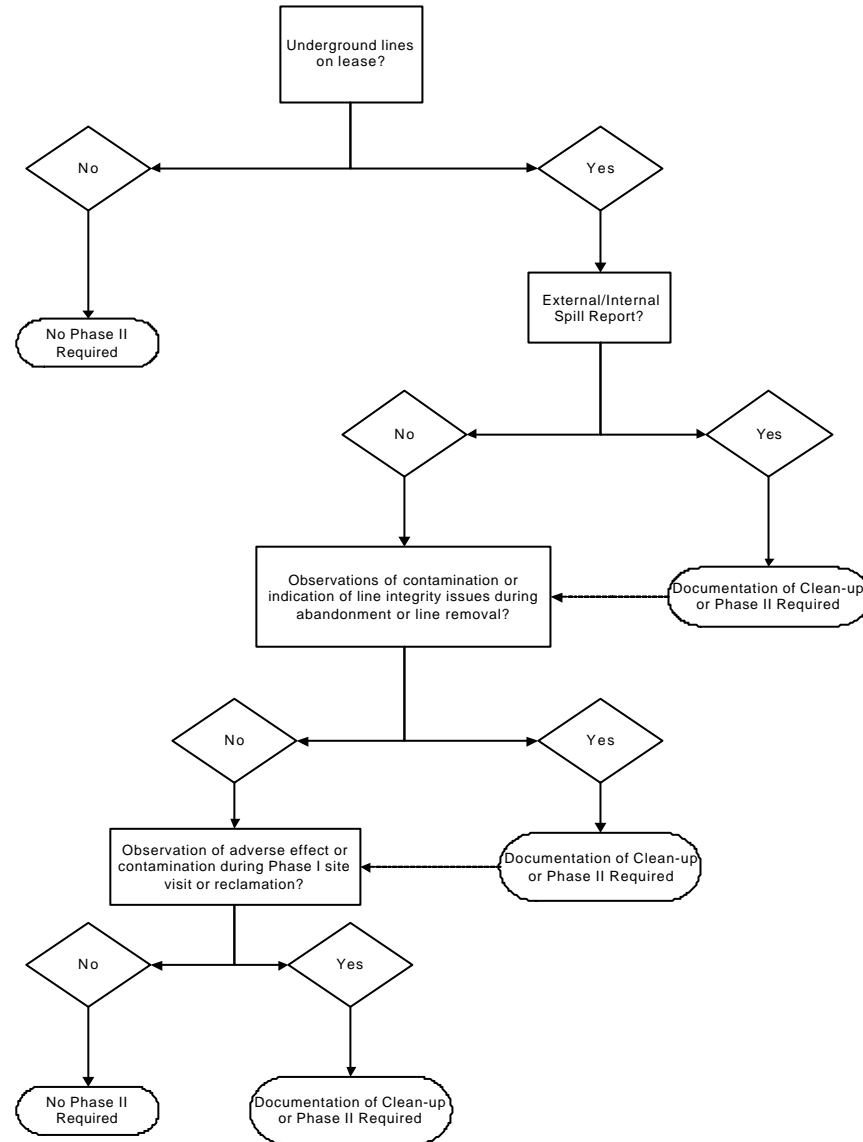
Phase I Decision Tree for Well Center
For a Single Well Facility
DRAFT for Discussion Purposes Only





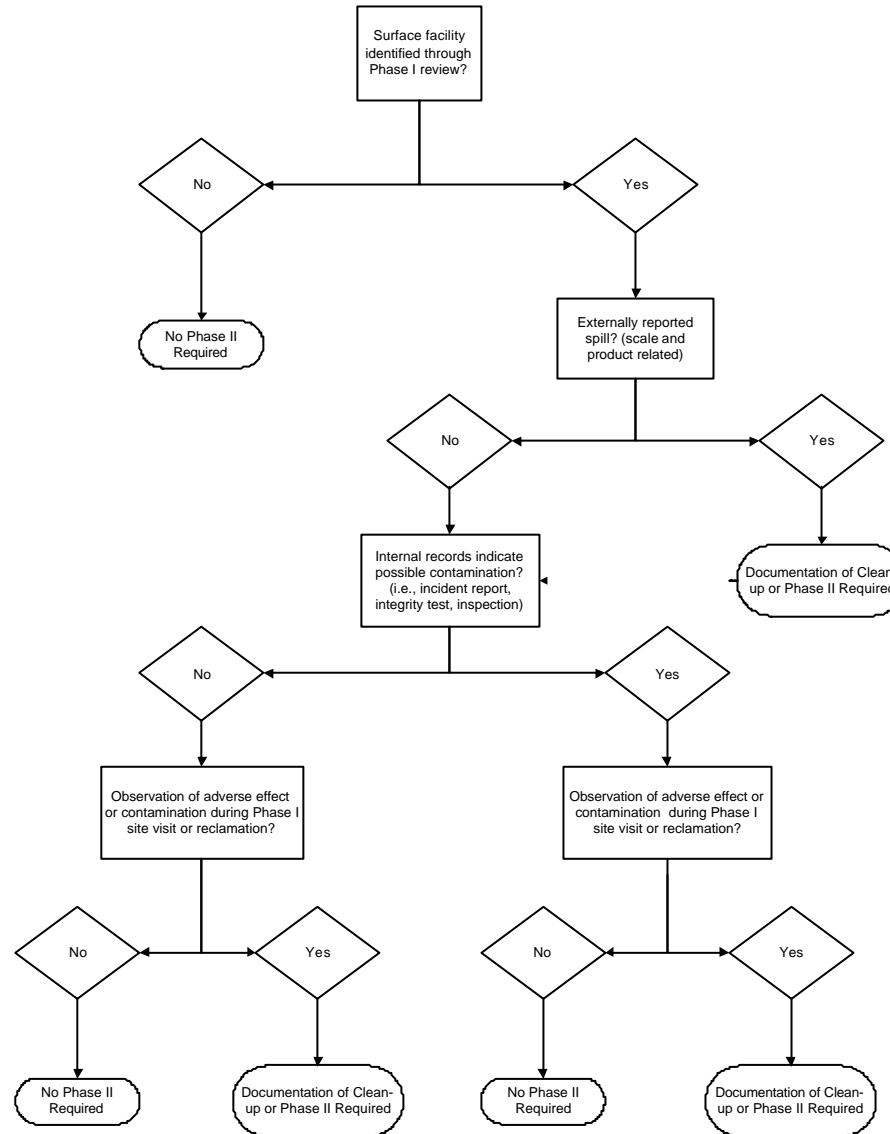
Draft Pipelines Decision Tree

Phase I Decision Tree for Pipelines (On Lease)
For a Single Well Facility
DRAFT for Discussion Purposes Only



Draft Surface Facility Decision Tree

Phase I Decision Tree for Each Surface Facility
(eg. Above Ground Tanks, Tankfarms, Facility Buildings, etc.)
For a Single Well Facility
DRAFT for Discussion Purposes Only



Summary

- ◆ **Phase I ESA has limitations**
 - ◆ **Phase I ESA triggers to identify need for Phase II ESA**
 - ◆ **Industry & AENV Phase II Working Group developing tools to provide clarity and confidence**
 - ◆ **Are Phase I ESA Decision Trees most effective format?**
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Next Steps

- ◆ **Provide your comments on the Phase I & II ESA processes to**
 - ◆ `land.management@gov.ab.ca`
 - ◆ **Fact Sheet will be released following consultation to advise on changes to Phase I & Phase II ESA processes**
 - ◆ **Phase I ESA form will be revised**
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