

Objective based remediation

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Presentation goals

- Provide project managers an overview of objective based remediation
- Understand that objective based remediation is just another way to convey the project requirements



Prescriptive vs. Objective Specifications

- Specifications describe product quality, the quality of workmanship and installation or implementation methods to be used.
- Prescriptive specifications describe the means and methods for achieving the desired result (definition of requirement)
- Objective based specifications state the results which are to be achieved, giving the Contractor relative freedom in the choice of means and methods, but includes a method of performance substantiation, without needlessly limiting the process.

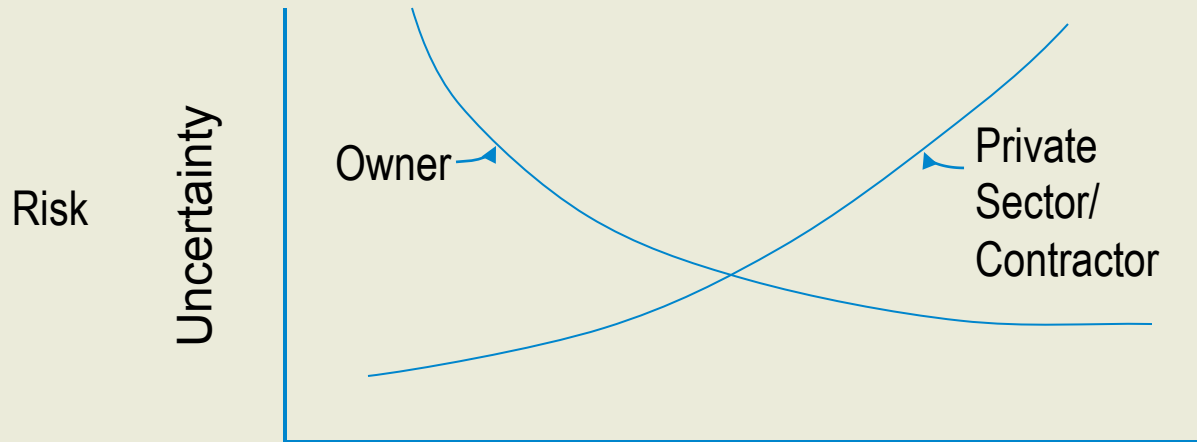


Objective based approach: context/drivers

- Reasons for shifting to an objective based approach include:
 - Enhance cost and schedule certainty/efficiency
 - Desire to shift project risk to third parties (contractors, purchasers, etc.)
 - Enhance supplier performance
 - Encourage innovation
 - Increase leverage of owner/client staff/resources



Solution (technology) risk continuum



Prescriptive Specification

Preferred Technology Identified

In Situ vs Ex Situ specified

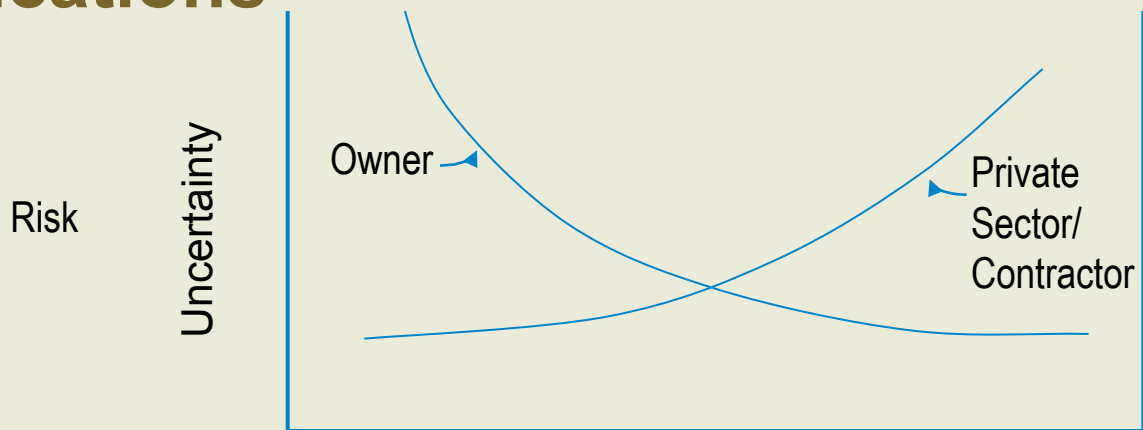
Possible Technologies Identified

Objective Based
(i.e. End Point)





Remediation risks versus objective based specifications



Prescriptive —————> Obj. based spec

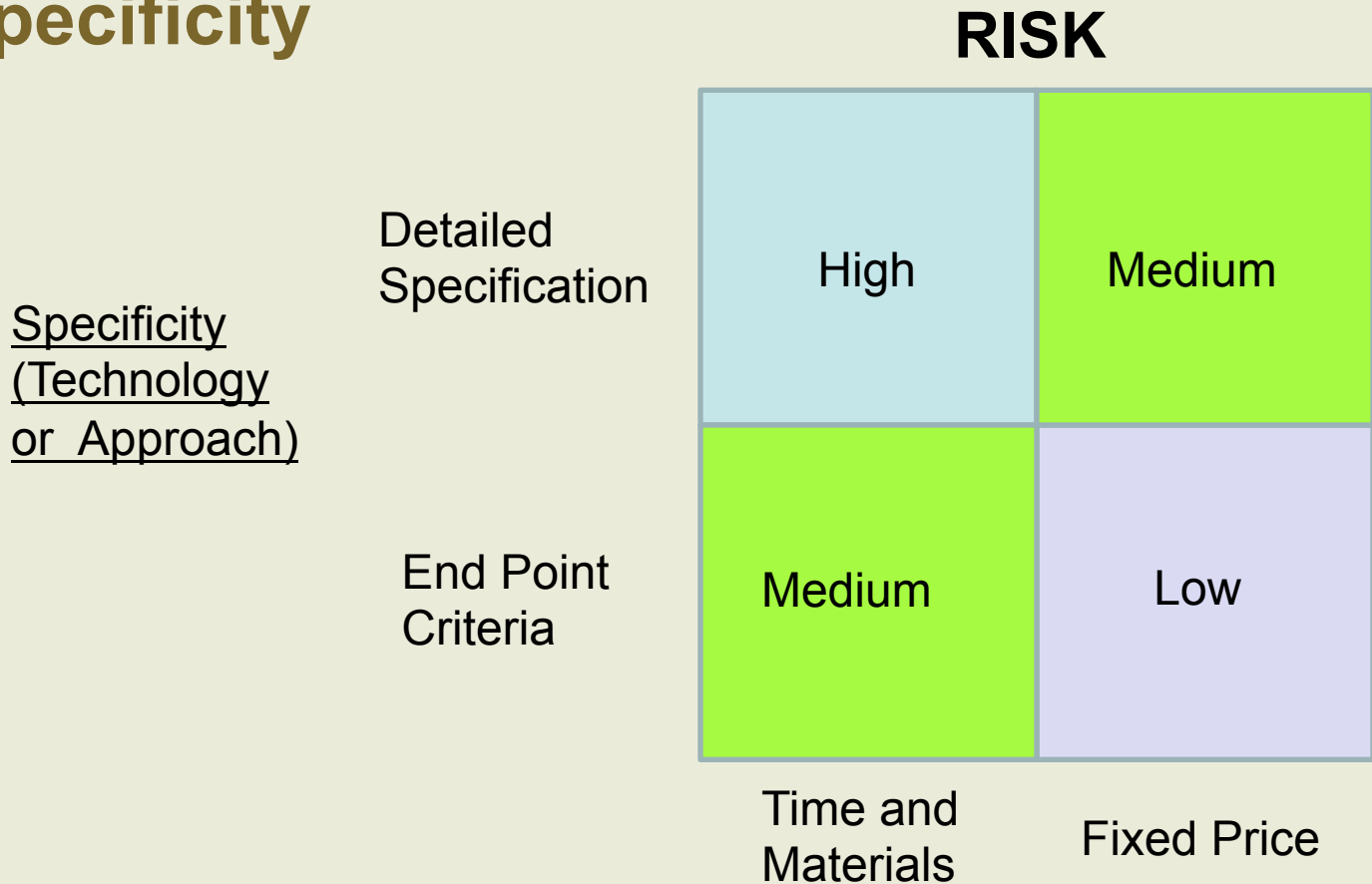
Sharing/transfer

Risks include: {

- Characterization
- Cost
- Regulatory



Relative owner risk vs. contract type and specificity



Contract Type: fixed-price

Strategy parameters – requirement definition



Site Delineation

- Site well characterized including risk to human health and the environment. Remedy is predictable.
- Performance objectives are well defined. Unknowns are out of scope.
- Source of contamination is defined.
- Contractor risk is limited to delivering defined scope for defined price to achieve performance objectives. Client owns risk for differing site conditions outside the scope of work.



Planned End Use or Reuse

- Site reuse/future use is defined.



Regulatory Approval of RAP

- Regulatory buy-in has been obtained or is predictable



Contract Type: time and materials (max fee)

Strategy parameters – requirement definition

Site
Delineation



- Uncertainties are high and exceed the capability of the client, contractor and insurance carrier to quantify and adequately price risk
- Time is not available to adequately characterize the site for FP (or other)
- Primary goal is to minimize project and/or total life cycle costs

Planned End
Use or Reuse



- Can be either defined or undetermined

Regulatory
Approval of RAP



- Regulatory process is known or can be addressed within the project parameters
- Contractor and client partner to work most effectively with regulatory agency to negotiate a client-approved remedy



Remedial option analysis activities (Steps 5 and 7 of FCSAP)

The remediation approach may require further refinement to develop the preferred option during the Steps 5 and 7. It will be completed by activities, such as:

1. Reviewing available information
2. Letter of interest to the industry
3. Preparatory work and additional characterization to identify technologies
4. Develop remediation strategy
5. Technological risk evaluation
6. Environmental Assessment process



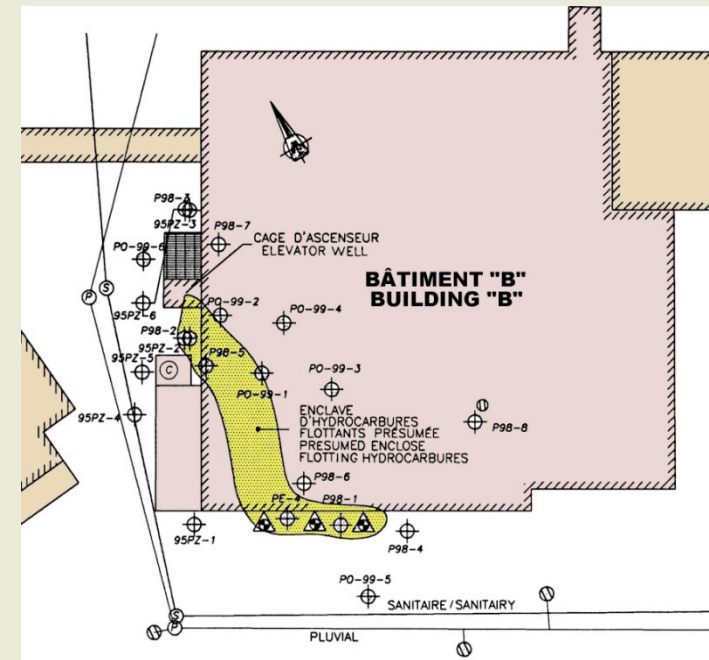
Implement Remediation Strategy (Step 8)

1. Develop tender document :
 - 1.1 Environmental Assessment process (Step 2)
 - 1.2 Select the right contractor
 - 1.3 Payment and management approach
2. Monitoring and Performance management
3. Close-out phase



Example: Rigaud Project

- PWGSC Site
- Diesel free-phase under the building
- Period available for treatment 3 months
- Field-scale pilot test previously completed to evaluate effectiveness of thermoslurping for removing liquid and vapour phase PH
- Cost estimate for the project 400k\$
- Competitive bid: Awarded at 340k\$
- Technology used : Chemical oxidation



Example: Rigaud Project

- Fixed price contract with performance goals
- Payments for:
 - Fixed price items – lump sum for each item
- Performance goals/indicators
 - Meet the provincial underground water criteria
- Technical proposal
 - Mandatory criteria
 - Evaluation criteria
 - minimum score of 70% for technical report (pass or fail)
- Cost proposal - Lowest bid



Federal Contaminated Sites



Example: Rigaud Remediation Project – Tender form

1 Item no	Column 2 Column Work Category/ equipment or material	Column 3 Unit	Column 4 Unit price	Column 5 Estimated Total Quantity	Column 6 Estimated Total price
1	Worksite and temporary facilities layout (See section 01520)	overall	-	overall	\$
2	Complete construction, installation and exploitation of the treatment system (See section 13291)	overall	-	overall	\$
3	Complete dismantling of the treatment system (See section 13291)	overall	-	overall	\$
TOTAL					\$



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Example: Rigaud Remediation Project - Evaluation criteria

Evaluation Criteria	Weight Per Sub-Criteria	Total % Weight Per Criteria
Knowledge of the firm and methodology - Knowledge of the project, Approach and Methodology - Work Plan Description - Environmental follow-up and Treatment	10 15 10	35
Experience of the firm - Firm Comparable projects - Organization Chart and roles and responsibilities - Key Personnel experience	15 10 20	45
Management and QA/QC Plan - QA/QC of the firm - QA/QC specific to the project	10 10	20
TOTAL		100



Resource websites

- National Project Management System
 - <http://www.tpsgc-pwgsc.gc.ca/biens-property/sngp-npms/index-eng.html>
- Contaminated Sites Remediation Project Roadmap
 - <http://www.tpsgc-pwgsc.gc.ca/biens-property/sngp-npms/route-road/contamine-contaminated-eng.html>
- 7 Steps to Performance-Based Acquisition
 - <https://www.acquisition.gov/sevensteps/home.html>





Federal Contaminated Sites



End of presentation



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