

***Environmental Business Risks:
Opportunities to Cost-Effectively Manage Environmental Exposures***

***Risques financiers et environnementaux:
Options de gestion efficiente des expositions environnementales***



North American Operations

Presenting in Partnership with the
Inogen Environmental Alliance and Oranjewoud NV Companies

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Presenting with

- Antea



- Oranjewoud



- Delta Consultants



Environmental Business Risks & Solutions

Environmental issues, risks, and resulting liabilities require an appropriate scope of remedial work that provides solutions to mitigate and to eliminate environmental issues.

In many cases these environmental liabilities have been previously known to exist, or are newly identified liabilities discovered during redevelopment, renovation, acquisition, or divestment events involving real estate asset properties.

Regulations and guidelines typically are successful to direct the necessary clean-up steps to resolve the environmental liabilities.

Increasingly, financial management is the larger challenge for funding environmental cleanups and to provide cost-effective solutions.



Environmental Business Risks & Solutions

It is important to frame the overall project and develop a strategic, scientifically-defensible plan to carry it out to the desired end-point.

Critical factors to understand are project complexity, risk drivers, and financial resources available to fund the project.

- ✓ An environmental survey including site assessment and risk analysis, or an I.E.M. (*Interprétation de l'Etat du Milieu*), supports development of the Management Plan.
- ✓ The Management Plan (*Plan de Gestion*) defines the measures required to treat sources of pollution, impacts or unacceptable risks and methods of transfer.
- ✓ If necessary, an Evaluation Quantifiée des Risques pour la Santé (E.Q.R.S.) quantifies health risks as required.



Environmental Business Risks & Solutions

The following Framework for Sustainable Remediation Assessment illustrates globally applicable elements to achieve cleanup:

- ✓ Assess soil and groundwater impacts.
- ✓ Identify remedial action objectives.
- ✓ Identify candidate technologies for cleanup.
- ✓ Develop the scope of work required.
- ✓ Estimate remedial actions impacts with a Life-Cycle Analysis.
- ✓ Analyze remedial alternatives.
- ✓ Develop and execute the Management Plan.



Framework for Sustainable Remediation Assessment

Source: Ellis, D.E., DuPont Engineering, *DuPont's Work in Sustainability Remediation*, National Brownfields Conference, May 5, 2008

Information Sources

- RI and Other Reports

Assess soil and ground water impacts

- Aerial and vertical extent
- Groundwater: volume, flow, constituents (concentration and mass)
- Soil: volume, constituent mass

People Involved

- Project Team
- Sustainability Resources

- Regulations
- Business needs

Identify remedial action objectives

- Project Team
- Sustainability Resources
- Regulators, community

- ITRC
- Technology Forums

Identify candidate technologies

- Project Team
- Sustainability Resources
- Technology Specialists
- Regulators

- Prior Assessments

Scope remedial option tasks

- Duration
- Staff
- Materials
- Equipment

- Project Team
- Sustainability Resources
- Technology Specialists
- Regulators

- Life Cycle Analysis

Estimate remediation impacts

- Structure templates to reflect technologies

- Project Team
- Sustainability Resources
- Technology Specialists

- Regulatory Framework

Analyze remedial alternatives

- Include with balancing criteria

- Project Team
- Sustainability Resources
- Peer Review
- Regulators

Building Financial Estimates of Environmental Liability



Predicting Potential Cleanup Costs for a Portfolio of Sites

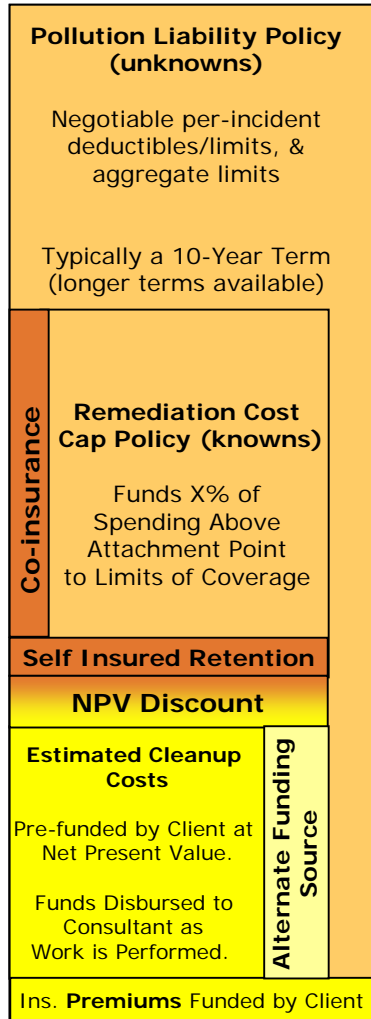
- Quantify costs
- Understand environmental risks
- Identify data gaps & uncertainties

An additional focus:

- *Environmental liability transfer*



Environmental Business Risks & Solutions



Environmental Liability Transfer

- ✓ *Can provide a financial program for responsible parties*
- ✓ *Business opportunity to transfer environmental liabilities for a fixed cost utilizing insurance*
- ✓ *Offers a solution to manage environmental business risks*



Why an Environmental Liability Transfer Program?

Flexible structure for **single sites or portfolios of multiple sites**

Asset transaction support for risk adverse buyers

Potential **balance sheet relief**

Potential **tax advantages**

Possible to **utilize alternative funding sources** for cleanups
(e.g. pre-existing insurance policies, or redevelopment programs)



Why an Environmental Liability Transfer Program? continued

Ensure known & unknown site conditions and environmental liabilities are properly managed into the future with sufficient funding

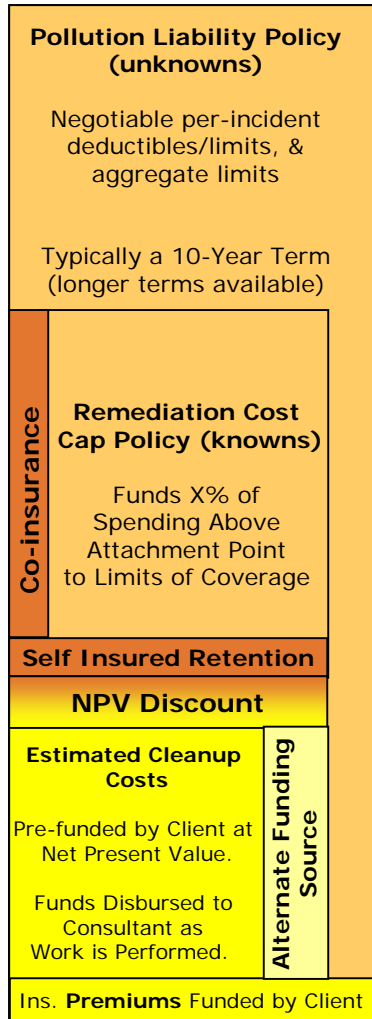
Quantification and capping of future cleanup costs with protection against inflation and changing regulatory drivers

Pre-funding of environmental liabilities at Net Present Value

Reduce or eliminate future internal management costs



Hypothetical Liability "Tower" Transfer Structure



Environmental Liability Transfer

This hypothetical structure has financial solutions for buyer and seller to complete a fixed-cost transaction, backed by insurance products

- Addresses **known or existing** environmental liabilities
- Protects against cost over-runs of Estimated Cleanup Costs
- Covers **unknown** environmental liabilities discovered in the future



Building the Liability Transfer "Tower"

Estimated Cleanup Costs

Pre-funded by Client at Present Value.

Funds Disbursed to Consultant as Work is Performed.

Estimated Cleanup Costs

Pre-funded by Client at Present Value.

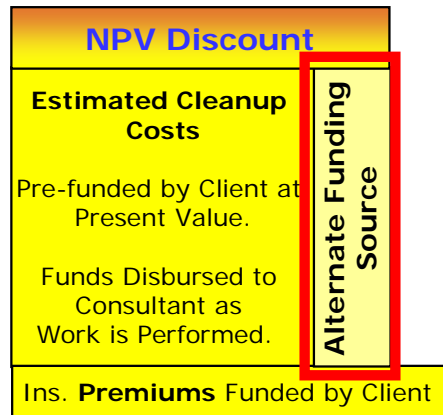
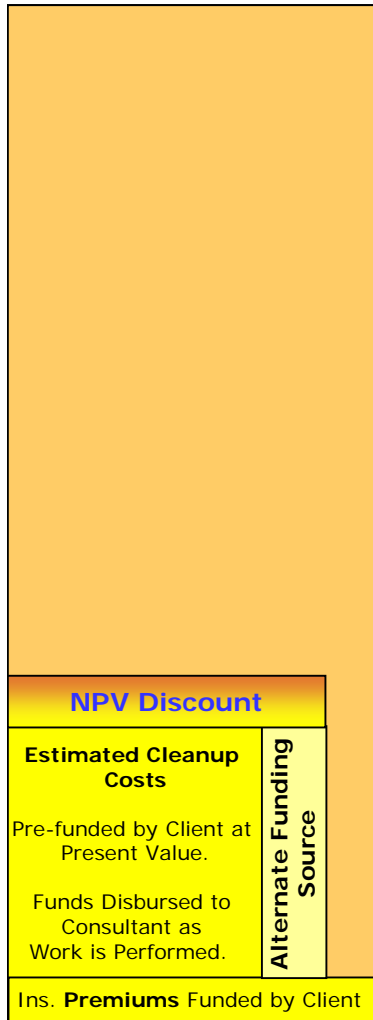
Funds Disbursed to Consultant as Work is Performed.

Estimated Cleanup Costs

- ✓ Based upon engineering estimates, joint estimates, or 3rd-Party estimates
- ✓ Typically pre-funded by Clients at Present Value or Net Present Value
- ✓ Funds paid to Consultant as Work Scopes are verified completed
- ✓ Milestones may be used to examine the Work Scope progress and determine payment



Building the Liability Transfer "Tower"



Alternative Funding Source

Can include other sources of funding for cleanup work:

- ✓ Redevelopment funding
- ✓ Negotiated sharing of multiple-party owned liabilities
- ✓ Buyer interests may dictate cost sharing to allow specific future land use



Building the Liability Transfer "Tower"

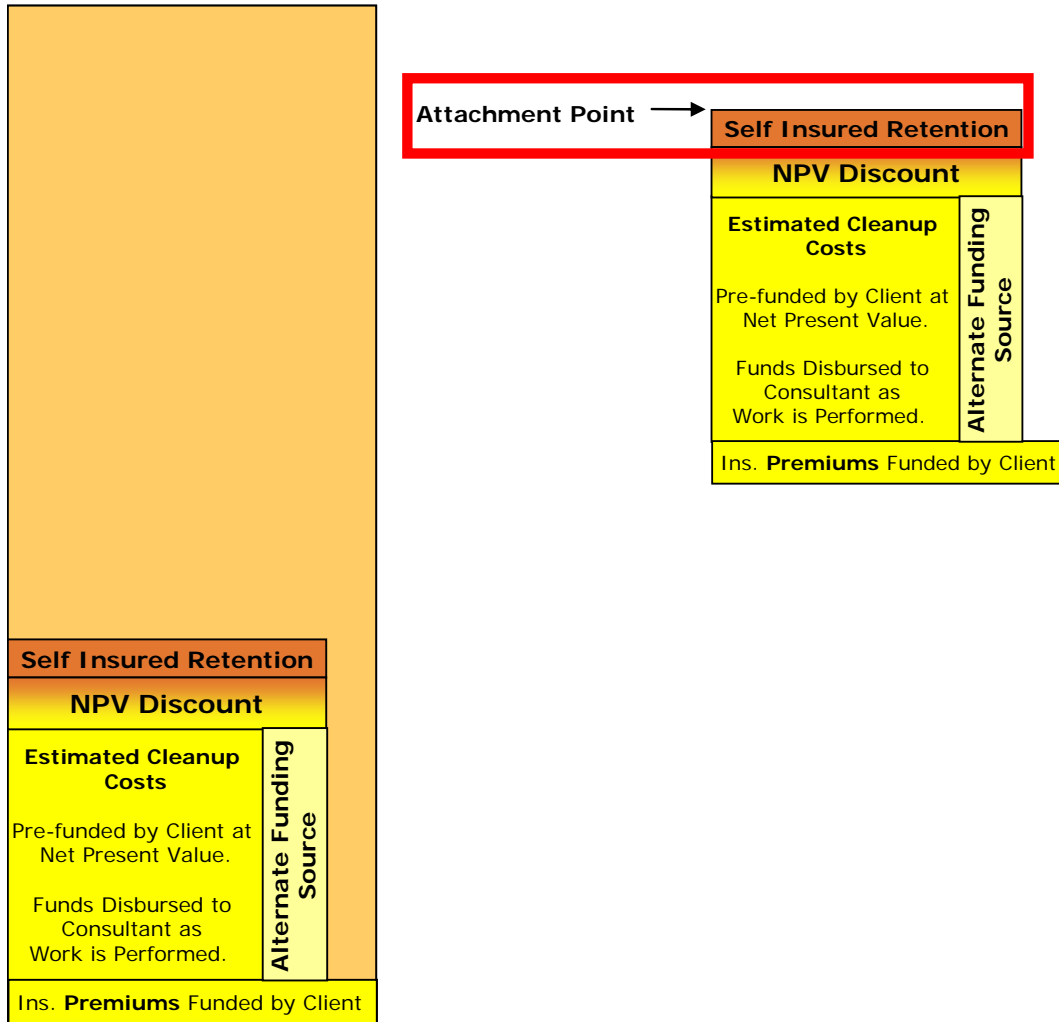


Insurance protection now considered

- ✓ Insurance coverage enlisted for the possibility of exceeding the '*Estimated Cleanup Costs*'
- ✓ Builds an insurance option to ensure sufficient funding beyond the original '*Estimated Cleanup Costs*'
- ✓ Seller typically pays the premium associated with the insurance
- ✓ Net Present Value of funding usually taken into account to decide:
 - Funding at the time of occurrence
 - Pre-Funding payment



Building the Liability Transfer "Tower"



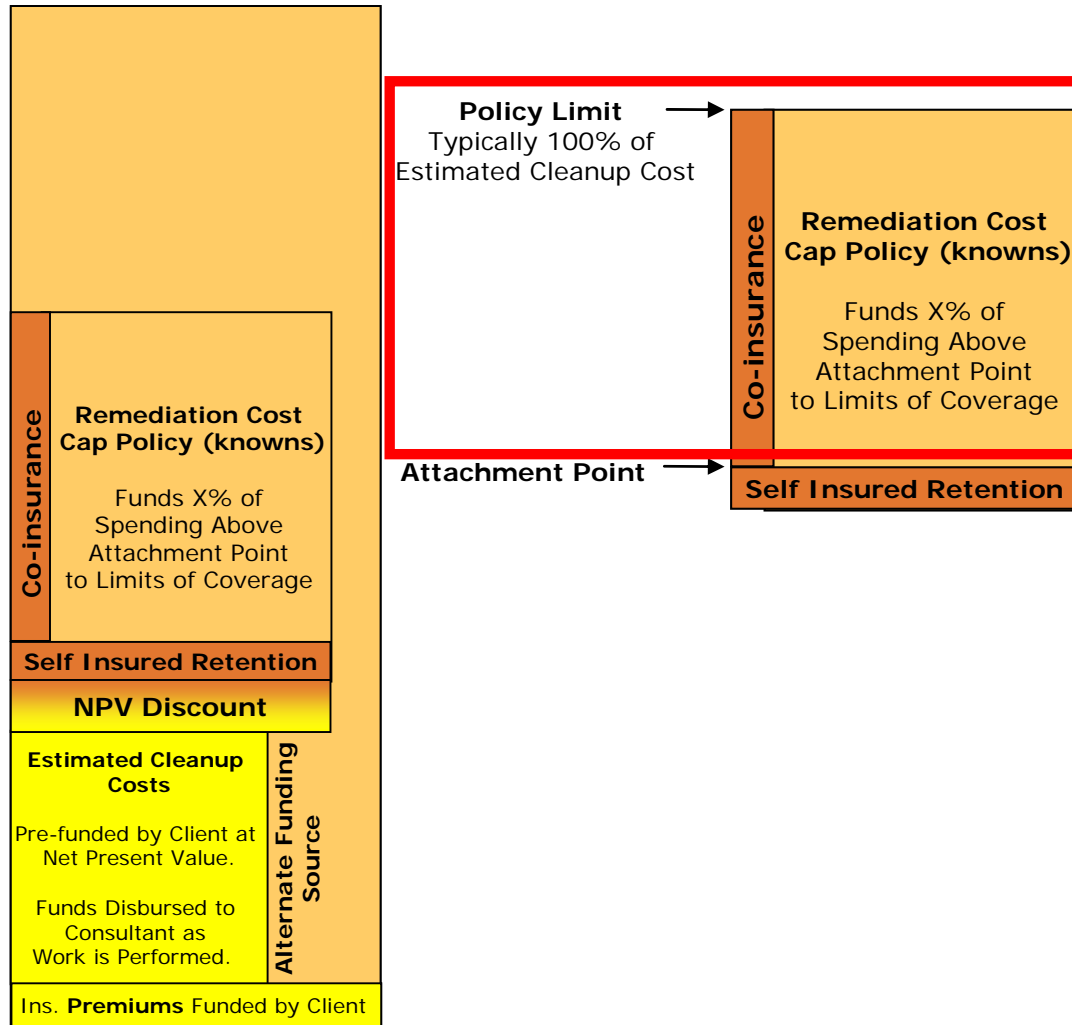
Attachment Point reflects *Insurer's* 'Estimated Cleanup Costs' estimate, plus a contingency, based on their own engineering review

'Estimated Cleanup Costs' funding versus Insurance '**Attachment Point**' is the gap, or deductible, and becomes the '**SIR**'

All remediation costs must first utilize and exhaust a **Self Insured Retention (SIR)** layer, typically jointly shared by seller & buyer, prior to insurance



Building the Liability Transfer "Tower"



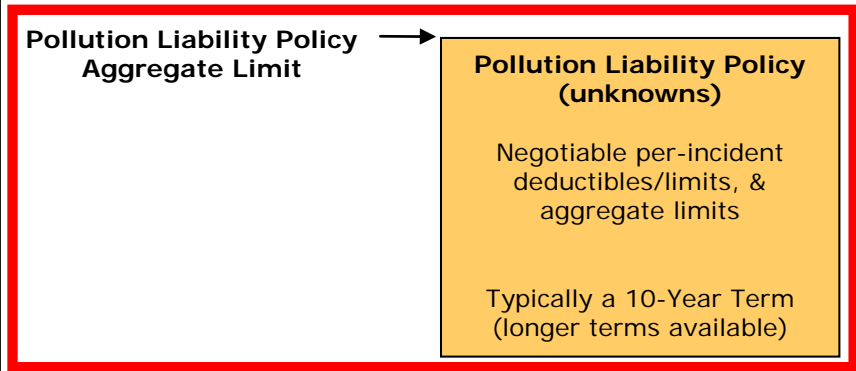
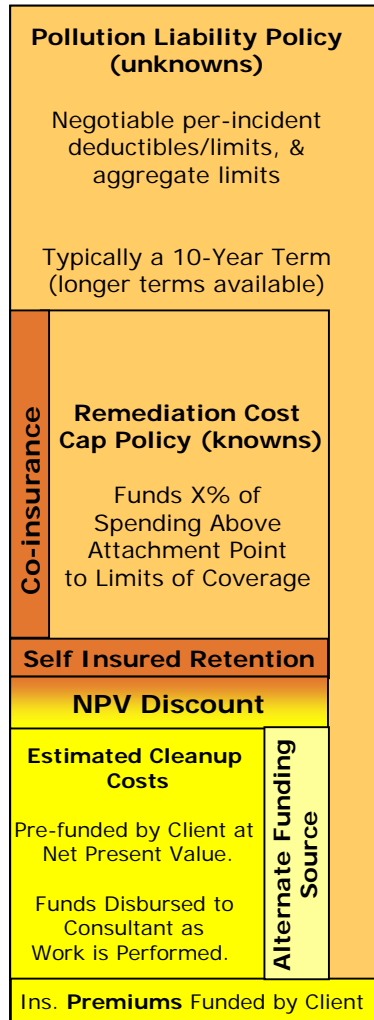
Remediation Cost Cap Policy covers cost overruns associated with the remediation of known conditions during policy term

- ✓ Discovery of additional contamination
- ✓ Regulatory requirements change
- ✓ Unexpected site conditions
- ✓ Increases in base costs
- ✓ Failure of clean-up technology

Co-insurance option serves as another incentive to not use insurance claims



Building the Liability Transfer "Tower"



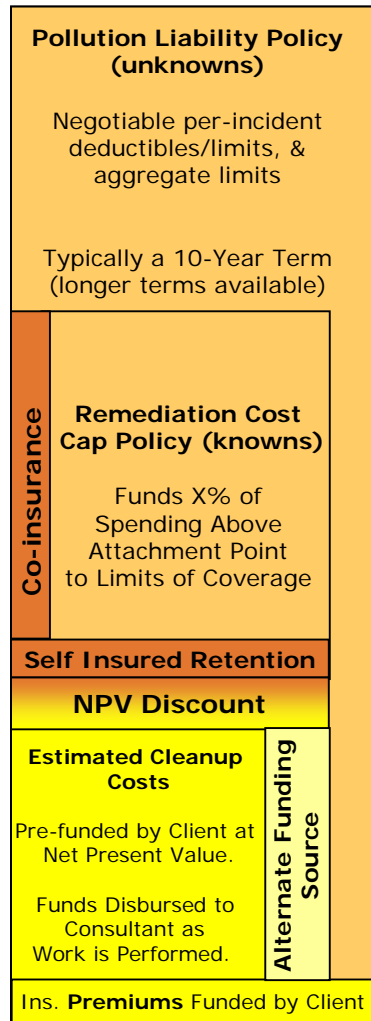
Pollution Liability Policy

includes:

- ✓ Negotiable per-incident deductibles/limits, and aggregate limit
- ✓ Covers pre-existing but unknown liabilities, including:
 - Unknown incidents
 - Regulatory re-openers
 - 3rd-Party claims
 - Natural Resource Damage
 - Non-owned disposal facilities



The Liability Transfer "Tower"



Insurance premium(s) represent a one-time cost:

Retain liability *versus* transfer

Self-insure *versus* commercial

Pre-fund *or* fund at occurrence



Summary

Environmental Business Risks & Solutions

Types of Applicable Portfolios

- **Asset transactions**

 - "As is/where is" asset/property transfers

 - Risk adverse buyers

- **Surplus properties**

Potential balance sheet relief or tax advantages

Accelerated liability reduction is desired

Quantification and capping of future cleanup costs with protection against inflation and changing regulatory drivers

