

Quality and Integrity

An integrated public-private structure

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*Arthur de Groof
Soil Management Workshop Soil Bank
Toronto, ON, 19 February 2013*



Building trust and confidence

- Dutch structure for QA/QC: organisation
- Certification, accreditation and licensing of service providers
- Focus on soil depots
 - Document structure
 - Sampling



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Conditions: quality and integrity

- Standardisation
- Competence
- Integrity
- Compliance

This means:

- *both public and private participation*
- *an integrated structure*



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Principle of the Dutch structure

Critical activities:

- to be performed by licensed organisations ONLY
statutory requirements
- according to relevant instructions ONLY
private quality assurance documents



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Basic rule for public authorities

Dismiss ANY application for a disposition if the application contains data supplied by non-licensed persons or organisations



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Basic rules for service providers

Perform formally defined critical activities:

- while licensed
- (selected activities) by persons mentioned on the license
- according to relevant (privately maintained) instructions



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Quality for service providers and contractors

- Certification or accreditation is requirement for license
- Private protocols basis for certification
 - *Organisational requirements: based on ISO 9001*
 - *Technical requirements: often in Standards (maintained by Dutch SCC counterpart)*
 - *Competence requirements*
- Certifying body needs a license as well



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Public-private cooperation

- Standardisation body: technical requirements
- SIKB: certification and accreditation schemes
- Certifying bodies: certification or accreditation body (*Dutch SCC counterpart*): accreditation
- Soil+: licensing
- Ministry of I&M: statutory regulation



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The making of ...

- SIKB tenders authorship and constitutes a review committee
- Review committee reviews drafts
- Central Board of Experts releases final draft
- Public consultation
- Review committee discusses all comments
- Central Board of Experts publishes final version
- Test period for validation
- Accreditation Body confirms final version



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Activities critical for final result of soil work

- Fieldwork, including sampling
 - Laboratory analysis
 - (Site characterisation and risk assessment)
 - Monitoring site remediation
 - Site remediation
 - Most handling of soil material and sludge
 - Certification
 - Installation and inspection of non-permeable floors
- *(almost) all in certification or accreditation schemes*



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Quality assurance of consultancy: a tough cookie

- Good quality consultancy requires creativity
→ *not easily described in clear procedures*
- Site characterisation sampling plan standardised
- Risk assessment: computing tools
- Compliance: we are working on an integrated set of instruments

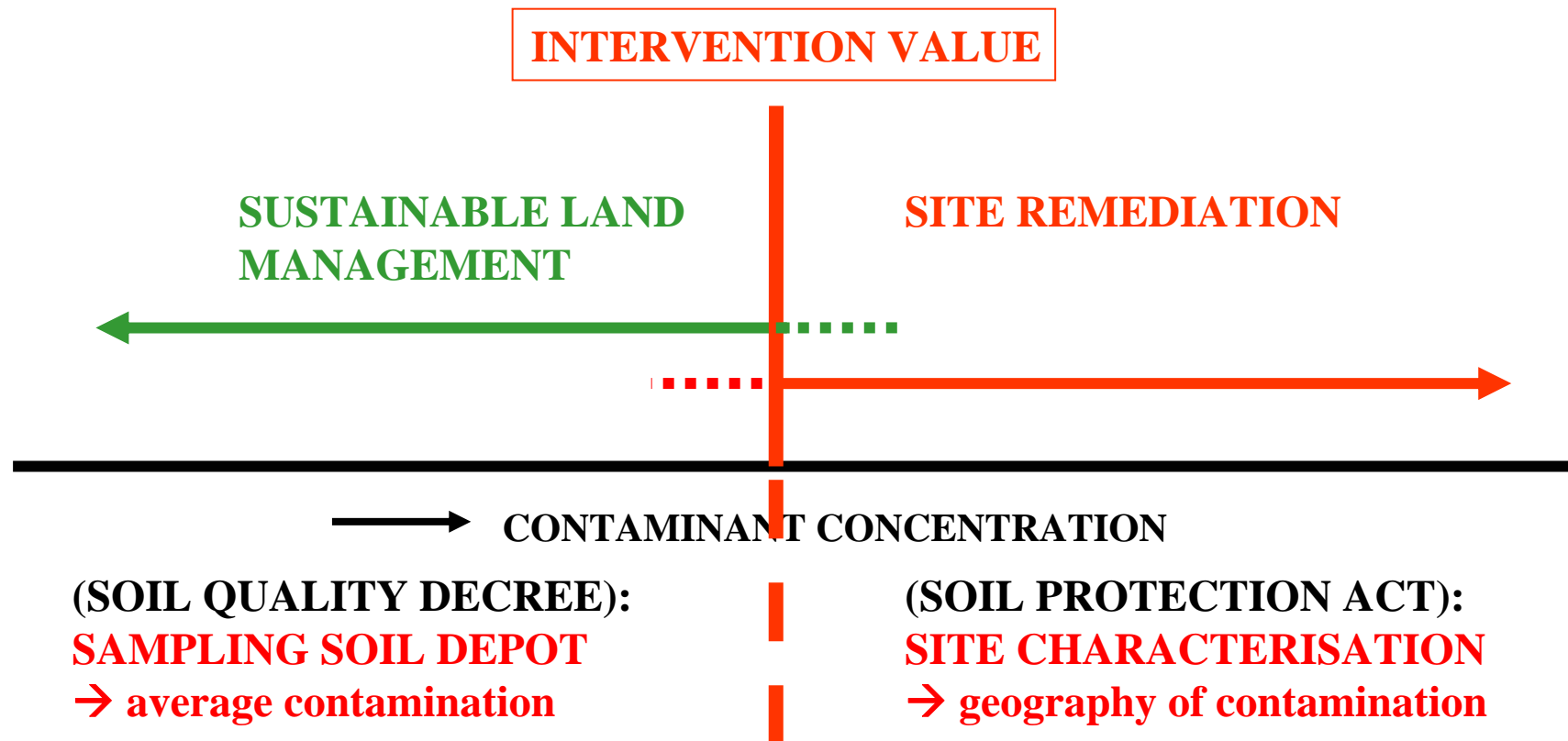


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THE DUTCH SYSTEM FOR SUSTAINABLE LANDMANAGEMENT AND SITE REMEDIATION





Sampling soil depots – towards a license

- Service provider makes sure to meet requirements
- Certifying body (c.b.) audits:
 - General quality requirements (documents and procedures)
 - Competence and fieldwork per fieldworker
 - *if OK → c.b. issues company certificate and registers individual fieldworkers*
- Soil+ checks integrity
 - *if OK → Soil+ issues company license, and adds company details to public list*



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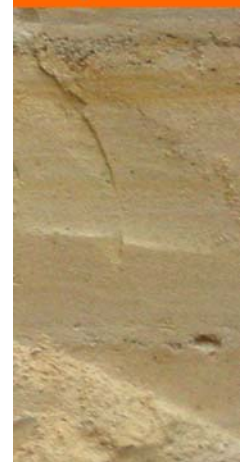
Sampling soil depots – keeping the license

- Certifying body audits periodically
- Ministerial Inspection keeps an eye on:
 - Integrity (primary task)
 - Quality (“second-line enforcement”)



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Documents soil and other building materials characterisation		
Analysis	On-site activity	Competent authorities
Laboratory Analysis AP 04 <i>(inspection)</i>	Sampling BRL or AS 1000 <i>(process)</i>	Document 8002 Enforcement Guidelines
	Soil characterisation BRL 9335 <i>(product)</i>	





Documents soil and other building materials characterisation		
Analysis	On-site activity	Competent authorities
Laboratory Analysis AP 04: <i>(inspection)</i> -A: General -V: Pre-treatment -SG: Soil material -SB: Other building materials -U: Leaching tests -E: Eluates	Sampling BRL or AS 1000: <i>(process)</i> Soil depots: 1001 Granular building materials: 1002 Non-granular building materials: 1003 Granular waste for landfilling: 1004	Document 8002 Enforcement Guidelines
	Soil characterisation BRL 9335: <i>(product)</i> Soil depots: 9335-1 Soil from works (including cleaned soil): 9335-2 Composite soils: 9335-4 Civil engineering: 9335-9	





Sampling soil depots – sampling requirements

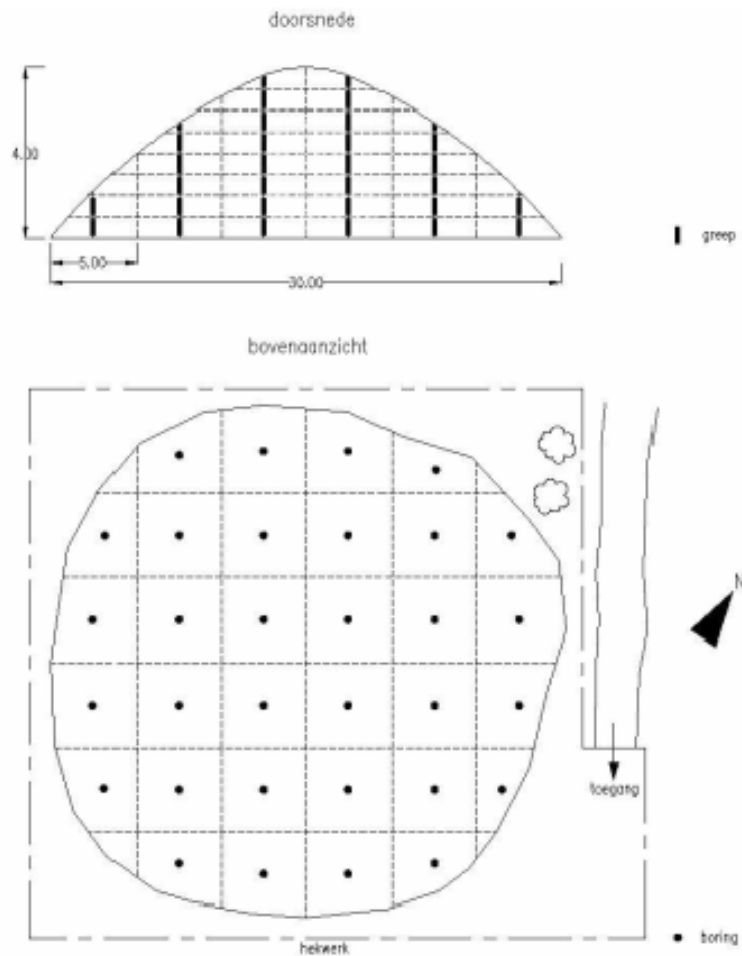
- General: ISO 9001 (*described in BRL SIKB 1000*)
- Sampling plan (*aim: to assess average contamination*)
 - Boundary definition
 - Sampling plan, 'take' size (*example follows*)
- Sampling in the field
 - In different situations (*table follows*)
 - Checks (*e.g. max. grain size, sampling tool size*)
 - Number of takes, minimum weight
 - Sample handling and handover to lab
 - Registration and reporting (*e.g. form formats*)



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Sampling plan



Aim: result supported by statistics

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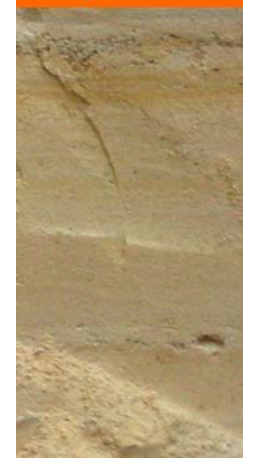


Sampling soil depots – sample plan requirements

Target	Max. size (in metric tons)	Min. # of samples	Min. # of takes per sample	Desk study
depot	10,000	2	50	recommended
in-situ	10,000	2	50	required
in-situ > 5 m deep	10,000	2	6 (stratified random)	recommended
non- cleanable material	2,000	2	50	required
under continuous surface	2,000	2	6 (stratified random)	required

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Soil banking

- General requirements
- Soil material acceptance: checks
- Storage and merging
- Sampling and analyses (*standard sets*)
- Analysis results assessment
- Evidence: quality declaration
 - Screening values met
 - Application options
 - Assessment details
- Soil material transport and delivery
- Reporting
- Informing the authorities



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Soil material from large projects

- Prospective soil quality map
- Situation determines:
 - Sampling frequency
 - Analyses set



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Lessons learned

- Quality control does not by itself stop crooks
→ *public enforcement to complement qc*
- Clearly delineate public and private authority
- Use only clear requirements
- Keep it as simple as possible



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More information

on the privately maintained requirements

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Documents site characterisation and remediation			
Analysis	On-site activity	Competent authorities	
Laboratory Analysis AS 3000	Fieldwork BRL 2000 and 2100	Document 8001 and 8002	Enforcement Guidelines
	Consultancy (BRL 5000)		
	Monitoring remediation BRL 6000		
	Remediation BRL 7000		
	Handling contamid. soil BRL 7500		





Sampling soil depots – analysis requirements

- general: EN-ISO 17025
- logistics chain, from sampling to reporting
- transport, sample storage
- control charts
- methods to be used, method defined parts
- pre-treatment of samples (*grinding, homogenisation*)
- validation (*based on the same reference material*)
- detection limits to be reached
- reproducibility
- proficiency schemes (*frequency, result assessment*)
- service aspects (*e.g. delivery periods*)



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Highly automated laboratory logistics

- Use of barcodes on sample containers:
 - Already registered by the client during sampling
 - Registration in the lab
 - On each sub-sample in the lab
- Client orders electronically through internet
- Flow through the lab guided by LIMS
- All instruments linked to the LIMS system: results are automatically downloaded
- All calculations automatically in LIMS
- Automatic control charts
- Results available through internet
- Control check code to prevent fraud



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