



Soil and land research funding platform for Europe

*SOILveR Webinar on Soil Certificates and Soil Passports*

*Zoom – 14/10/2022*

## Showcase 'How Certificates and Passports work in Wallonia'

Esther GOIDTS - SPW, Frédéric BRACKE - Fedexsol, Marie JAILLER - SPAQuE



# Outline

1. Soil legislation & associated tools
2. Generation of soil certificates/passports – Soil experts at work
3. Recycling brownfields – SPAQuE at work
4. Towards a soil health certificate?

# 1 - Soil legislation & tools

## Soil Decree 2018

- Objectives
- Implementation scope
- Terminology
- Mechanisms
- Changes of other laws
- Transition period
- Entry into force
- Annexes : soil thresholds per land uses / translation of land uses to legal land planning categories & effective use

# 1 - Soil legislation & tools

## Soil Decree 2018

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- Annexes : soil thresholds per land uses / translation of land uses to legal land planning categories & effective use

### Database

=> Soil status DB (« Banque de Données de l'Etat des Sols - BDES ») + feeding process & update

### Obligations

- Information on soil quality
- Soil and groundwater investigation + rules

### Actors

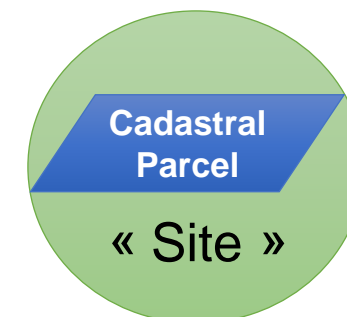
- Administration
- SPAQuE, ISSeP
- Walterre
- Certified bodies (experts, laboratories, samplers)

# 1 - Soil legislation & tools

## Soil status database (BDES)

⇒ ***geocentralised inventory of administrative registers from different authentic sources***

- **SPW environment** : soil studies from certified experts, environmental authorization & permits for potentially polluting activities, enforcement reports, remediation plans, historical data
- **SPW land planning** : (potentially) polluted economic wasteland
- **SPAQuE** : brownfield inventory
- (**Walterre** : excavated soil reports)



⇒ ***Publically available on web***

⇒ ***Owner/holder of parcels are informed if their parcel is registered, system for rectifications, BDES weekly updated***

⇒ ***Possibility to get an official extract of the data for one parcel (automatical delivery, 30€/parcel)***

BDES  
conform  
extract



# Soil Status Database (BDES) : Administrative data on soil available on web [bdes.spw.wallonie.be](http://bdes.spw.wallonie.be)



Version 4.0.7.2

CARTE

## BDES : L'état des sols



FR / DE |

S'authentifier

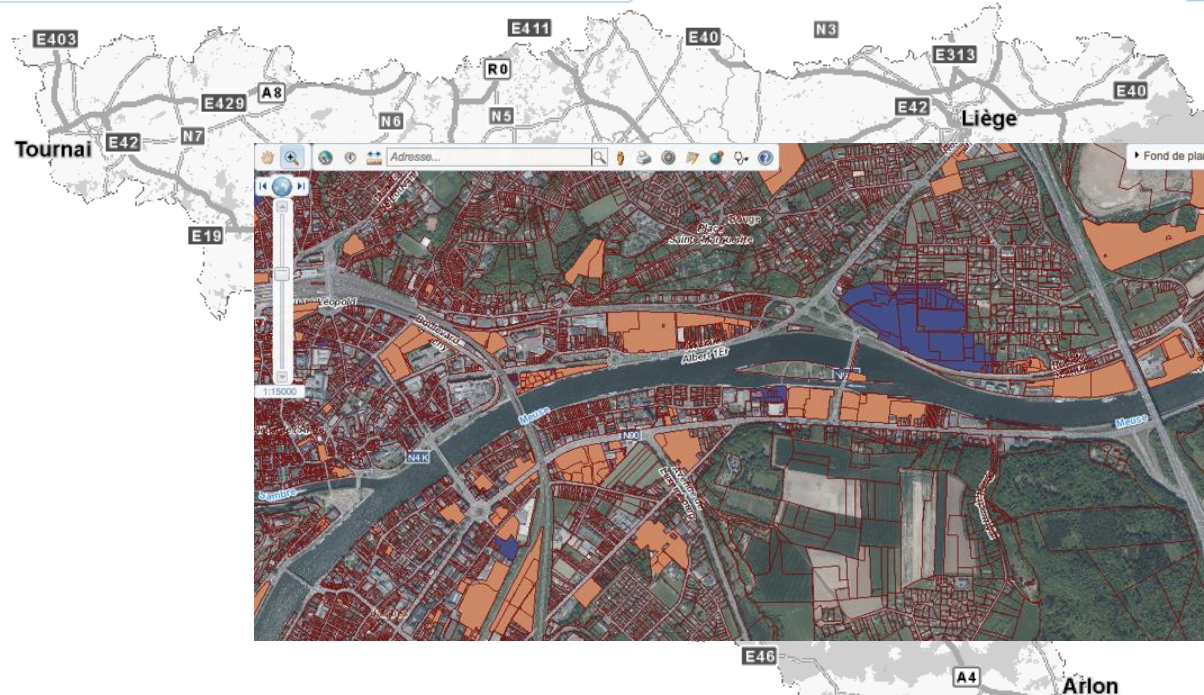
Limites administratives

☒ Parcelles cadastrales  
☐ Bâtiments

Statut à l'inventaire

☒ Statut à l'inventaire  
▼ ☒ Parcelle pour laquelle  
des démarches de  
gestion des sols ont été  
réalisées ou sont à  
prévoir (Art. 12 §2 et 3  
du Décret)  
  
☒ Parcelle concernée par  
des informations de  
nature strictement  
indicative ne menant à  
aucune obligation (Art.  
12 §4 du Décret)

1:1000000



213.472 (2021)

Around 70.000 parcels out of  
3,8 M are colored in BDES  
(20% of artificial areas) (2021)

Parcel for which soil management procedures have been done or have to be done

Parcel concerned by strictly indicative informations which do not imply any mandatory requirements

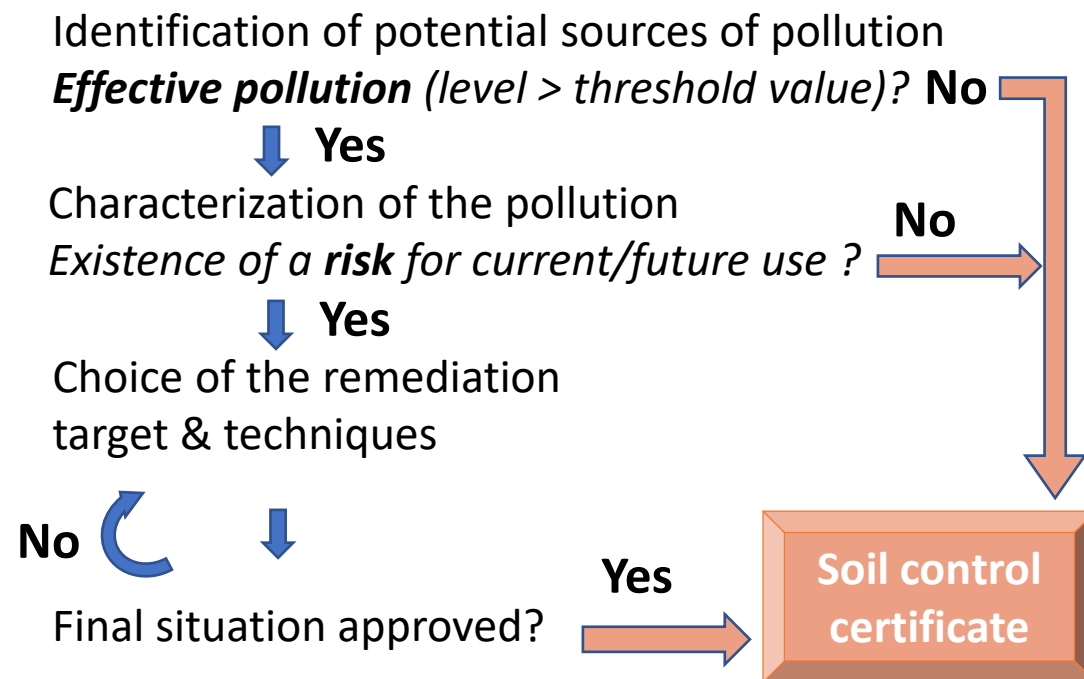
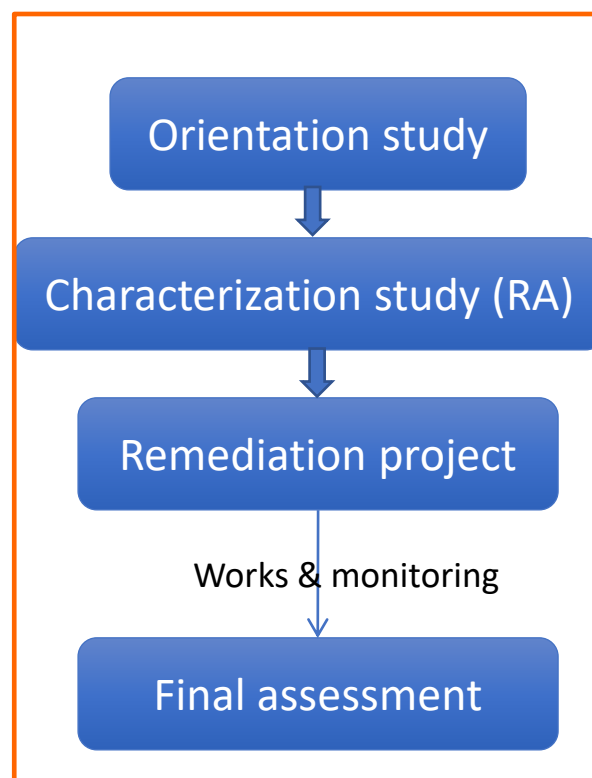
# 1 - Soil legislation & tools

## Obligations « Soil decree » (from 2019)

- Soil and groundwater investigation + rules

« In situ » site investigation

Investigations  
done by certified  
soil experts



*Delivered by administration after validation*

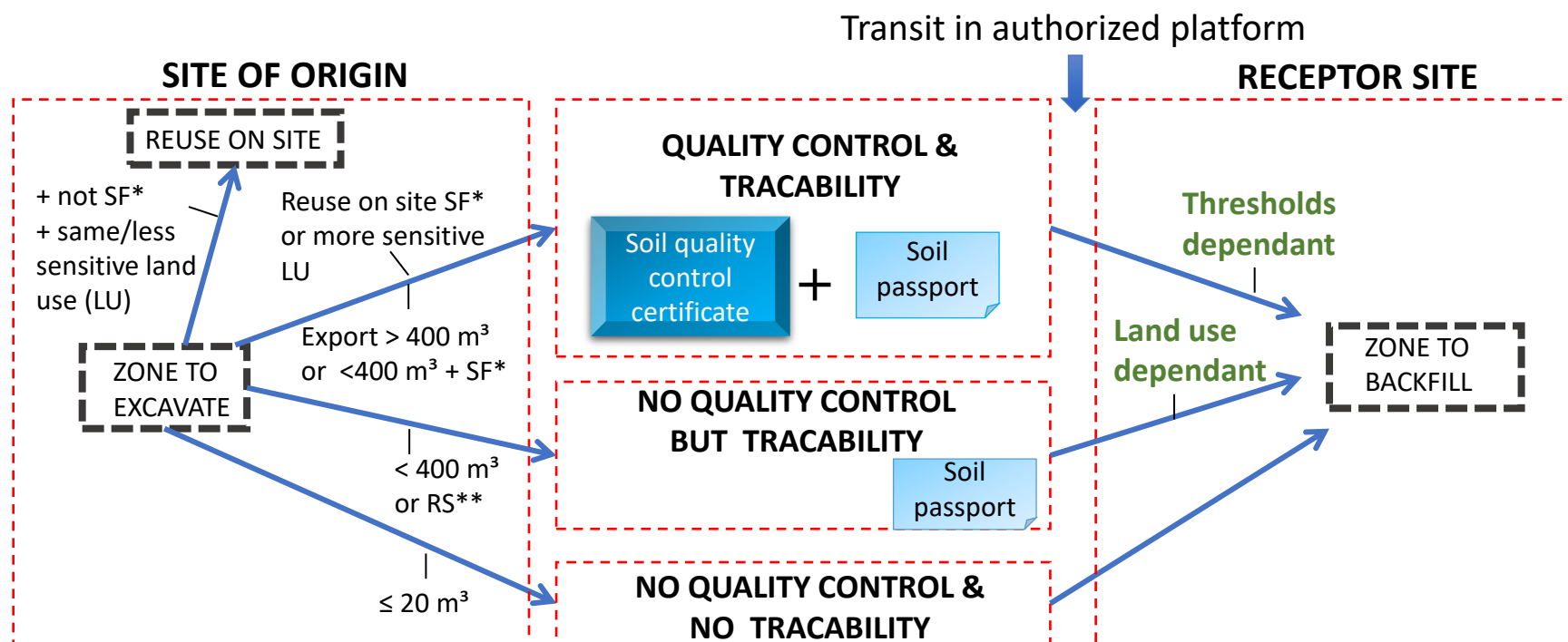
# 1 - Soil legislation & tools

## Obligations « Soil traceability » (from 2020)

- Soil investigation + rules

« Ex situ » site investigation (excavated soil)

Investigations  
done by  
certified soil  
experts,  
registered soil  
samplers or  
Authorized  
platform



Certificates,  
passports &  
movement  
notifications  
delivered by  
Walterre after  
validation



\* SF = suspect field (in soil database BDES or due to (potential) pollution not yet recorded in BDES)

\*\* RS = excavated soil from roads/railways/...

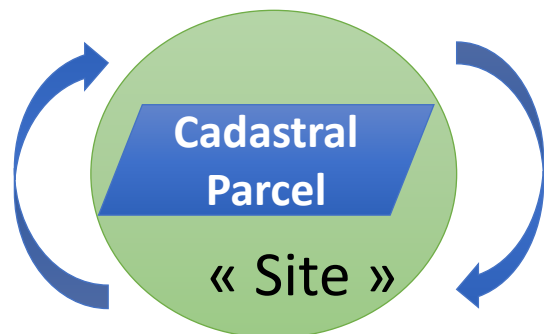
+ Database



# 1 - Soil legislation & tools

Obligations: *Information on soil quality*

## Life cycle of a parcel

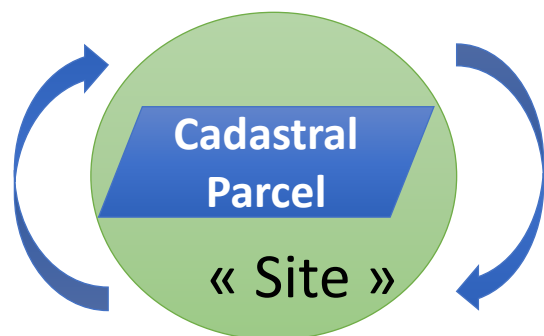


# 1 - Soil legislation & tools

Obligations: *Information on soil quality*

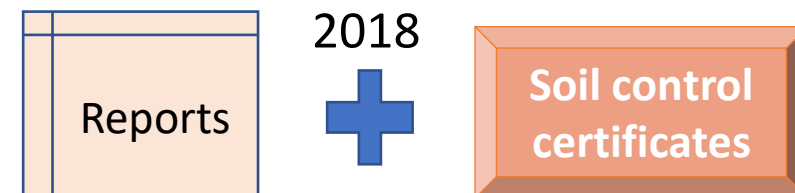
✓ *List of priority historical/orphan sites defined by Government*

## Life cycle of a parcel



- *Extensive historical registers*
- *Prioritization process linked to land planning*
- *Budget for remediation*
- *Final assessment*

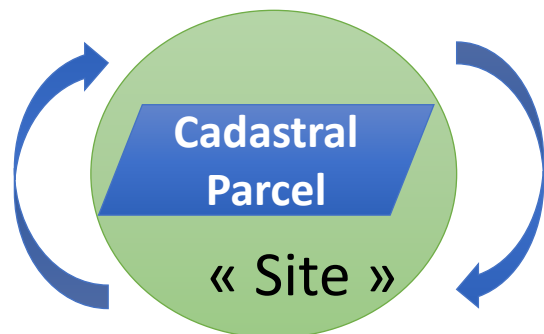
Static inventory



# 1 - Soil legislation & tools

Obligations: *Information on soil quality*

Life cycle of a parcel



✓ *List of priority historical/orphan sites defined by Government*

✓ *Transfer of land/environment permit :*

BDES  
conform  
extract

- *Same knowledge for seller / buyer*
- *No mandatory soil investigation (private discussion)*

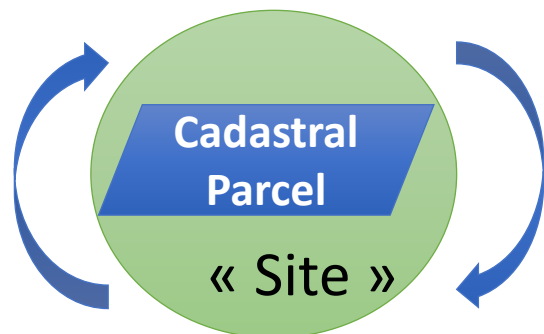
Static inventory

Dynamic inventory

# 1 - Soil legislation & tools

Obligations: *Information on soil quality*

Life cycle of a parcel



- ✓ *List of priority historical/orphan sites defined by Government*
- ✓ *Transfer of land/environment permit :*
- ✓ *Change of land use :*

BDES  
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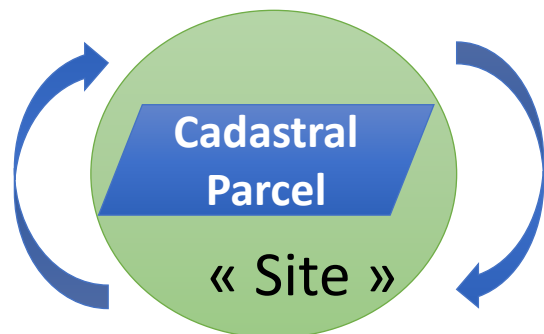
Static inventory

Dynamic inventory

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BDES  
conform  
extract

✓ *Change of land use :*

➤ Urbanism permit : BDES/

BDES  
conform  
extract

(+)

Soil control  
certificate

- *Impacting works*
- *Change of land use  
(more sensitive)*

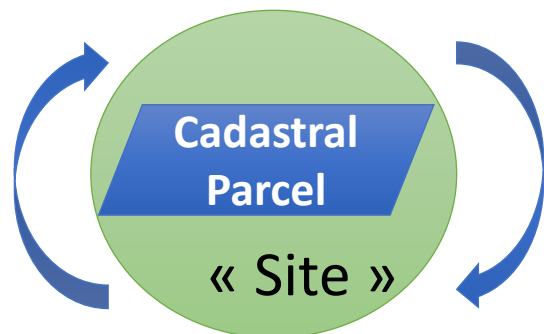
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# 1 - Soil legislation & tools

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BDES  
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(+)

Soil control  
certificate

)

➤ Environment permit : BDES [+ & impacts (+

BDES  
conform  
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Soil control  
certificate

)]

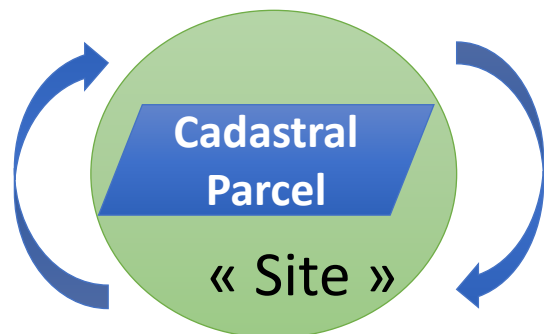
*Potentially polluting activity list*



# 1 - Soil legislation & tools

Obligations: Information on soil quality

## Life cycle of a parcel



Static inventory

Dynamic inventory

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BDES  
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Soil control  
certificate

)]

✓ *Excavation works:*

Soil  
passport

(+)

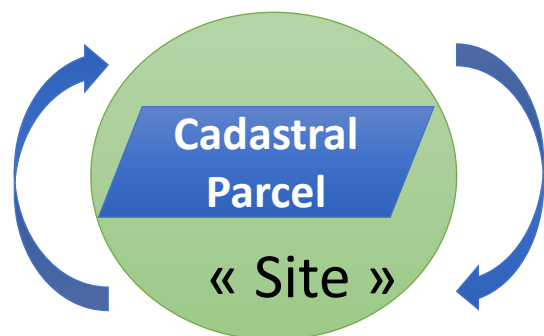
Soil quality  
control  
certificate

)

# 1 - Soil legislation & tools

Obligations: Information on soil quality

## Life cycle of a parcel



Static inventory

Dynamic inventory

✓ *List of priority historical/orphan sites defined by Government*

✓ *Transfer of land/environment permit :*

BDES  
conform  
extract

✓ *Change of land use :*

➤ Urbanism permit : BDES/

BDES  
conform  
extract

(+)

Soil control  
certificate

➤ Environment permit : BDES [+ & impacts (+

BDES  
conform  
extract

Soil control  
certificate

✓ *Excavation works:*

Soil  
passport

(+)

Soil quality  
control  
certificate

)

✓ *Accidents/heavy threat :*

Soil control  
certificate

# 1 - Soil legislation & tools

## • Soil « certificates »



30€

- Reference ID & cadastral parcel, plan, date of issuing, validity
- Status in soil DB & references to administrative information
- Legal obligations

=> Automatic delivery from soil DB (BDES)



- Issued at the end of a soil study done by certified soil expert
- Detailed information (levels/location of contaminants, restrictions of use, plan, ...)
- Downloadable from soil DB

=> Delivered by administration/mandated organism after validation of soil studies

## • Soil « passport »



= transport document

- Reference ID, date of issuing, validity
- Parties involved, origin/receptor site ID & location, excavated / backfilled zones, batches characteristics (quality, volumes, ...)
- Form for the transporter (« bon de transport »)

# 1 - Soil legislation & tools

## Actors

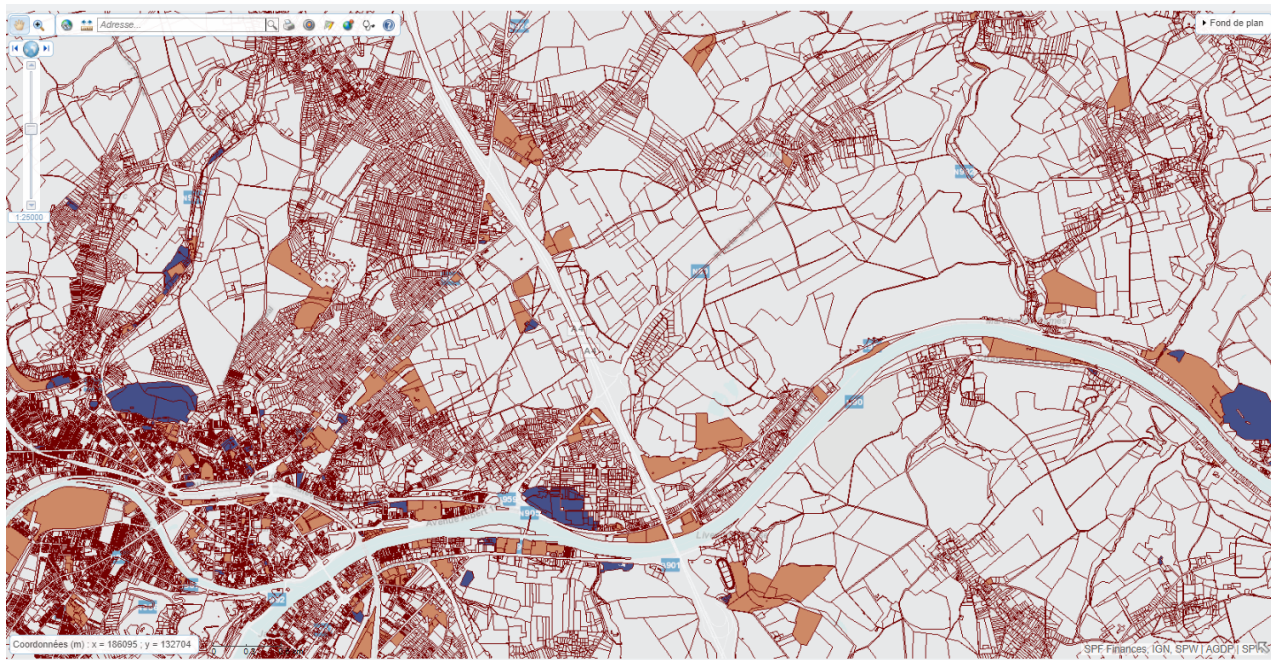
- *Administration*
- ***SPAQuE, ISSeP***
- *Walterre*
- ***Certified private entities (soil experts, laboratories, samplers)***

## 2 – Generation of soil certificates/passports

Role of soil experts in Wallonia (BELGIUM)



**FEDEXSOL** : federation of experts in soil and groundwater pollution  
(studies in Brussels and Wallonia) - <https://www.fedexsol.be/fr/>



Example (BDES) : sites where soil experts are possibly  
in charge of the soil studies (peach and blue textures)

**Strong federation representing 28 of  
40 certified soil experts in Wallonia**

**Scope of work according to Wallonia  
laws/obligations**

⇒ **From soil and groundwater checkup to  
final remediation (issues certificates  
delivered by Administration)**

**Wide range of customers (public,  
private)**

**Independent, creative, dedicated to  
solutions**



# 2 – Generation of soil certificates

Experience in Wallonia (BELGIUM)

Following « soil decree » (2021)  
943 Official soil studies introduced  
⇒ 7 000 ha Certified (soil control  
certificates « CCS »)

Soil control  
certificate

Wallonie  
environnement  
SPW

Page 1 sur 4

## CERTIFICAT DE CONTROLE DU SOL

délivré en vertu des dispositions du décret du 1<sup>er</sup> mars 2018 relatif à la gestion et à l'assainissement des sols

**IDENTIFICATION DE LA PARCELLE**

SITUATION CADASTRALE  
PARCELLE CADASTREE OU L'AYANT ETE : COMMUNE, DIVISION, SECTION, N°

ADRESSE  
Rue : ... n° : ...  
CP : ... Commune : ...

SUPERFICIE : ... m²

AFFECTATION AU PLAN DE SECTEUR :

USAGE EFFECTIF :

ZONE PARTICULIERE : ZONE DE PREVENTION D'UN OUVRAGE DE PRISE D'EAU SOUTERRAINE, DETERMINEE EN VERTU DE L'ARTICLE R.156 DU LIVRE II DU CODE DE L'ENVIRONNEMENT CONTENANT LE CODE DE L'EAU / SITE NATURA 2000 / STATUT DE PROTECTION AU SENS DE LA LOI DU 12 JUILLET 1973 SUR LA CONSERVATION DE LA NATURE

**STATUT DE LA PARCELLE**

Le présent certificat de contrôle du sol atteste que la parcelle / une partie de la parcelle a fait l'objet :

- d'une étude d'orientation
- d'une étude de caractérisation (avec dispense de l'étude d'orientation sur base des dispositions de l'article 41, 3<sup>e</sup> du décret du 05 décembre 2008 relatif à la gestion des sols), d'un projet d'assainissement et d'une évaluation finale
- d'une étude combinée
- d'une étude d'orientation, d'une étude de caractérisation, d'un projet d'assainissement et d'une évaluation finale
- d'une étude combinée, d'un projet d'assainissement et d'une évaluation finale
- d'une évaluation finale consécutive à des mesures de gestion immédiate
- d'un projet d'assainissement en procédure accélérée et d'une évaluation finale
- d'un projet d'assainissement sur base des dispositions de l'article 92bis du décret du 05 décembre 2008 relatif à la gestion des sols et d'une évaluation finale

et que les concentrations en polluants mesurées sont conformes aux exigences du décret et de son (ses) arrêté(s) d'exécution.

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Wallonie  
environnement  
SPW

Page 2 sur 4

## CERTIFICAT DE CONTROLE DU SOL

**INFORMATIONS DETAILLEES**

**1. PORTEE DU CERTIFICAT**

LE PRESENT CERTIFICAT PORTE SUR

- L'ENTIERETE DE LA PARCELLE
- UNE PARTIE DE LA PARCELLE – PARTIE IDENTIFIEE SUR LE PLAN INDICATIF ANNEXE AU PRESENT CERTIFICAT – POUR UNE SUPERFICIE ESTIMEE DE ..... m²

LA PORTEE DU PRESENT CERTIFICAT EST LIMITEE AU SOL A L'EXCLUSION DES EAUX SOUTERRAINES AU SENS DU LIVRE II DU CODE DE L'ENVIRONNEMENT CONTENANT LE CODE DE L'EAU (ZONE NON SATURÉE DU SOL).

LA PORTEE DU PRESENT CERTIFICAT EST LIMITEE AUX PARAMETRES SUIVANTS : .....

**2. IDENTIFICATION DES POLLUTIONS RESIDUELLES**

Les zones concernées par une pollution résiduelle sont identifiées sur le plan indicatif annexé au présent certificat.

Zone	Paramètres	Profondeur à partir du niveau du sol (m)	Volume estimé de pollution (m³)

**3. MESURES DE SECURITE A RESPECTER**

**3.1. Restrictions d'usage**

Sur base des concentrations en polluants mesurées, la parcelle/ la partie de parcelle est compatible avec le(s) usage(s) suivant(s) :

type I : naturel	type II : agricole	type III : résidentiel	type IV : récréatif et commercial	type V : industriel

**3.2. Restrictions d'utilisation**

Confinement

Le confinement de type ... (de même que le géotextile d'avertissement présent à une profondeur de ...) doivent être maintenus en bon état au droit de la (des) zone(s) ...

Toute modification de la configuration actuelle, telle que notamment l'enlèvement de la dalle de béton / le démantèlement du bâtiment existant / le retour en surface des couches de

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## 2 – Generation of soil certificates

Soil control  
certificate

FEDEXSOL feedback about the soil certificates and soil status Map (BDES) after 2 years experience

### Advantages

**Site Identity Card (parcel)** : soil quality snapshot, validating type of uses, restriction(s) usage

**Soil certificates** = administrative warranty for owners / buyers (type of uses)

**Obligations (laws)** helps Government to speed up soil quality knowledge (filling soil status from collected data)

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**Soil status (map)** allow public transparency (sharing general soil information to everyone)

### Key issues

**Setting up soil certificates** requires important Administrative means (financial and human)

**Legal uncertainty** (current Soil Decree) : no obligation to carry out a soil study when selling a potentially polluted site

**Transitional phase with formerly laws** (ex : Soil Decree 2008) : quid for sites already remediated before the soil certificate (type of use still compatible ?)

**Too complex laws** leads to difficulties to communicate the environmental information to notaries, architects, land developers

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**Soil status public map in use (BDES)** not based on soil quality as such (currently binary = information / no information)

**Soil quality data made public** : where to place the cursor in the detail of the information transmitted?

# 2 – Generation of soil passport

## Experience in Wallonia (BELGIUM)

### Following « Soil traceability » (2021)

⇒ 8 000 000 m<sup>3</sup> certified soil for transport and/or valorisation

Soil  
passport



CERTIFICAT CONTRÔLE QUALITE DE TERRES (CCQT)  
(visé à l'Art.10. §3. de l'AGW relatif à la gestion et la traçabilité des terres)  
Ref. WT030743  
Valable jusqu'au : 19/09/2027

Date de délivrance du CCQT 20/09/2022  
Référence administrative du CCQT/NMT d'origine

#### Identité des acteurs

**Demandeur**  
Csd Ingénieurs Conseils SA  
72 Avenue du Prince de Liège, 5100 Namur

#### Maître d'ouvrage

**L'expert agréé**  
Csd Ingénieurs Conseils SA  
72 Avenue du Prince de Liège, 5100 Namur

Référence administrative du rapport de qualité des terres :

Référence administrative du plan de tri de terre :

Référence des données supplémentaires:



### Fichier joint: Légende du code Walterre

Le code Walterre résume par lot de terre les types d'usage compatible pour la valorisation et la procédure applicable. Le code est composé de 2 numéros (ab) obligatoires et au maximum 3 suffixes facultatifs. Concrètement le code est du type ab\_[air] dont

- Le premier numéro (a) indique la procédure applicable
- Le deuxième numéro (b) indique l'usage compatible sur le site récepteur
- Les suffixes a, i et r [...] à l'utilisation de l'Art. 15. Le cas échéant, les détails sont décrits dans la partie « condition d'utilisation ».

Code	Obligatoire		Facultatif	
	A Procédure applicable	B Usage possible SR	Suffices facultatifs	
0	---	Inconnu		
1	Compatibilité Qualité de Terres (RQT)	Type d'usage I – V (restreint au type d'usage I en cas de a = 3) + Voie publique	a	En cas de conditions particulières liées à la présence d'amiante
2	Compatibilité d'Usage	Type d'usage II – V (restreint au type d'usage II en cas de a = 3) + Voie publique	i	En cas de conditions particulières liées à la présence d'espèces invasives
3	Compatibilité d'Usage restreint (art. 6 §1 2° et 3°)	Type d'usage III – V + Voie publique		
4	---	Type d'usage IV – V + Voie publique		
5	---	Type d'usage V + Voie publique		
6	---	Voie publique		
7	---	---		
8	---	---		
9	Evacuation de terres vers une installation autorisée de traitement de terres polluées suite à des actes de travaux d'assainissement	À traiter	r	Utilisation en application de l'Art.15 et restreint aux sites récepteurs en type d'usage IV

# 2 – Generation of soil passports

FEDEXSOL feedback about the soil passport after 2 years experience

Advantages	Key issues
<p><b>Increase end-customer protection</b> (more transparency on traçability and soil quality)</p> <p><b>Efficient IT environment created</b> to assure soil traceability (database)</p>	<p>Current lack of outlets for certain types of soil quality is leading to <b>increase valorisation prices</b> (market not yet mature)</p> <p>Soil certificates and soil passport based currently on different tresholds (safety margins on soil passport) can lead to <b>misunderstandings and complex situations</b></p> <p><b>Asbestos, PFAS</b> (which ones? PFAS save?), and <b>invasive plants</b> (100% tracked ?)</p>

# 3 – Recycling brownfields

## Role of SPAQuE in Wallonia (BELGIUM)



SPAQuE : a company in charge of the remediation of polluted orphan sites, using regional and european funds



**Location : Wallonia**

**Period : 2014-Today**

**Regional fund (Plan Marshall 2.vert) :  
132 Million euros for 32 sites**

**European fund (FEDER 2014-2020) :  
50 Million euros for 22 sites**

Example : sites where SPAQuE is in charge of the remediation in Charleroi surrounding area (in red)



## 3 – Recycling brownfields

A former foundry near Liège (BELGIUM) – 1,4 ha

Current owner of the site : SPAQuE



**Before soil remediation works (2006)**



**After soil remediation works (2022)**

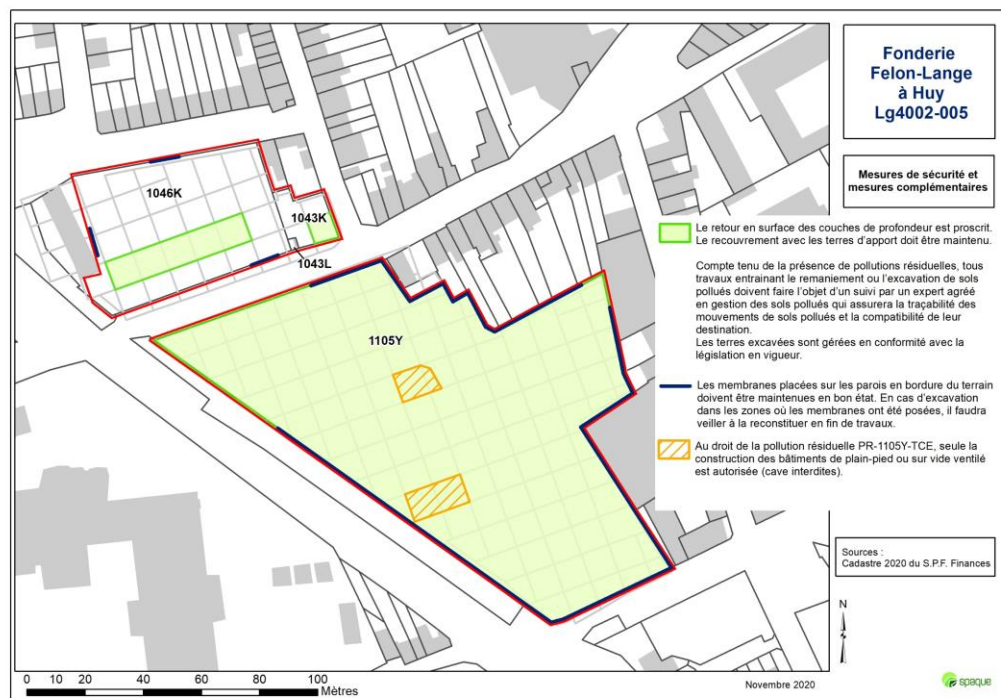
Polluted orphan site → former activity : foundry from 1868 to 2002 (130 years)

SPAQuE is in charge of the soil and groundwater investigations (2006-2010) and then in charge of the soil remediation works (2011-2012)

# 3 – Recycling brownfields

A former foundry near Liège (BELGIUM) – 1,4 ha

Soil decree. Art.71. The « Final assessment » : a study to check that the remediation works are OK and to fill in the soil certificates



The result of the final assessment is scientific report with a map containing information about :

- Which activity is authorized
- What are the use restrictions, coming from the risk assessment tool

**Step 1. The final assessment report + the soil certificates are sent to the authorities for approval**



# 3 – Recycling brownfields

## Re-use of a remediated site

### Step 2. If the final assessment report is OK, soil certificates are signed by the authorities

**CERTIFICAT DE CONTROLE DU SOL**

délivré en vertu des dispositions du décret du 1<sup>er</sup> mars 2018 relatif à la gestion et à l'assainissement des sols

**IDENTIFICATION DE LA PARCELLE**

**SITUATION CADASTRALE**  
PARCELLE CADASTREE OU L'AYANT ETE : HUY, 2EME DIVISION, SECTION A, PARCELLE 1105Y

**Adresse**  
Rue Saint-Hilaire  
CP : 4500 Commune : Huy

**SUPERFICIE** : 11270 m<sup>2</sup>

**AFFECTATION AU PLAN DE SECTEUR** : ACTIVITE ECONOMIQUE INDUSTRIELLE

**USAGE EFFECTIF** : ESPACES VERTS, TERRAINS VAGUES

**USAGE PROJETE** : LOGEMENTS RESIDENTIELS AVEC OU SANS JARDINS, COURS ET JARDINS

**Parcel : 1105y**

**Area : 11270 m<sup>2</sup>**

**Address : rue Saint-Hilaire – 4500 Huy**

**Future use : residential buildings, with or without vegetable garden**

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#### Land Use :

- residential
- recreational and commercial
- Industrial

#### Use restrictions

The movement of soil at depth > 1 m to surface (0-1 m) is forbidden

In case of excavation and evacuation of soil out of the site, the excavated soil legislation has to be applied

Geotextiles and membranes located along the limits of the parcel have to stay in place in good state.

At the residual pollution indicated on the map (in red and in blue), only buildings with crawl space or slab-on-grade are authorized (basement forbidden)

#### Other management measures

/ (it could be a groundwater survey)

**PLAN INDICATIF DE LOCALISATION DE LA PARCELLE, DES ZONES ET DES INFRASTRUCTURES A CONSERVER ET A ENTREtenir**

Parcelle cadastrée ou l'ayant été : HUY, 2EME DIVISION, SECTION A, PARCELLE 1105Y

Le présent plan, dressé par l'expert agréé en gestion des sols pollués en charge de(s) l'étude(s), est joint au CCS à titre indicatif et ne préjuge en rien de la localisation précise des éléments y figurant qui pourrait être définie, par exemple, au terme d'opérations de bornage réalisées par un géomètre.

Vu pour être annexé au CCS de la parcelle cadastrée ou l'ayant été : HUY, 2EME DIVISION, SECTION A, PARCELLE 1105Y délivré le

08 FEV. 2021

La Directrice,  
Bénédicte Dusart.

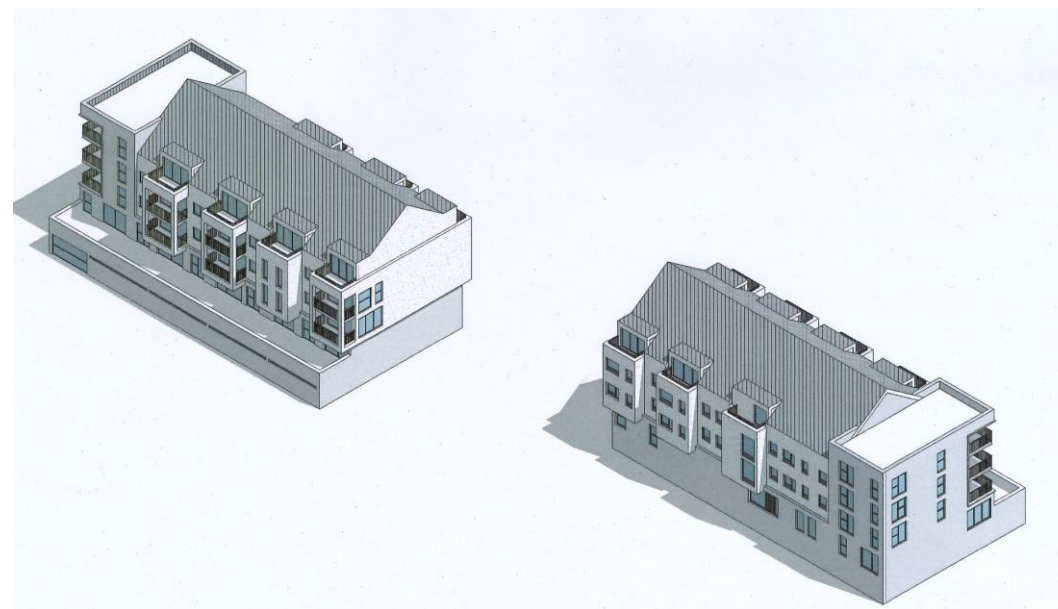
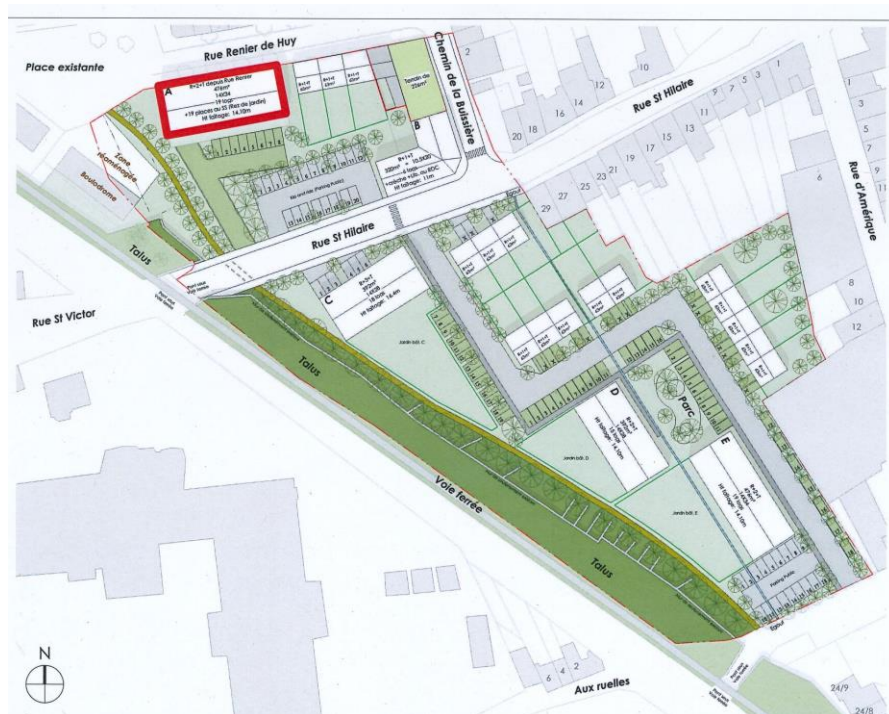
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# 3 – Recycling brownfields

A former foundry near Liège (BELGIUM) – 1,4 ha

Current owner : SPAQuE → Next owner : a land developer

Development project : 5 residential buildings (80 flats) and 16 houses

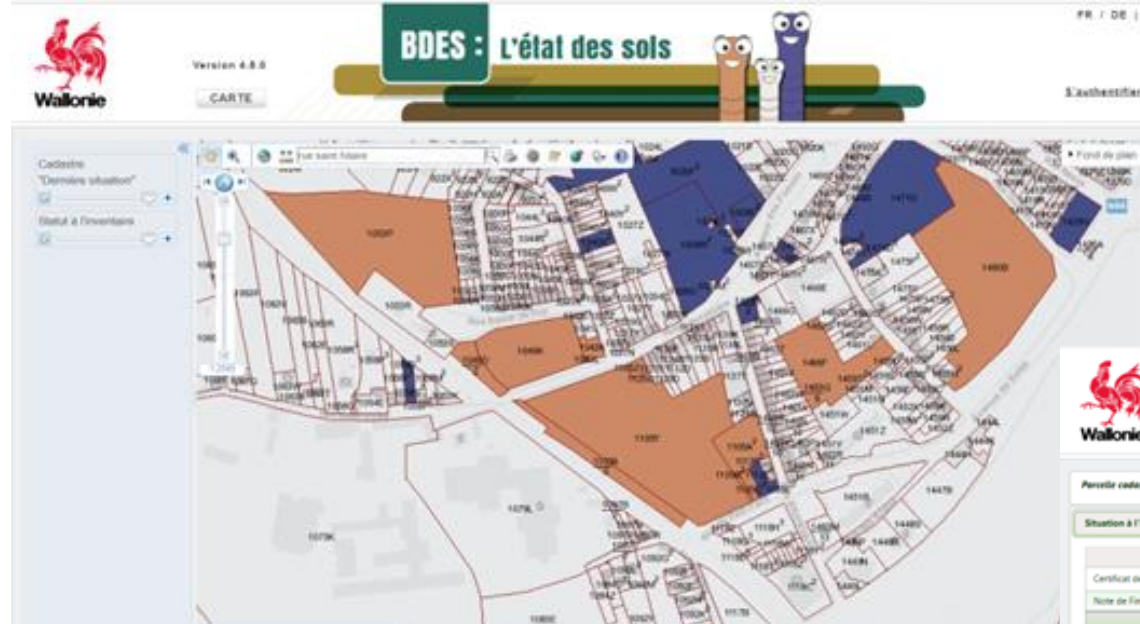


# 3 – Recycling brownfields

Re-use of a remediated site

Step 3. Look at the « state of soil » Database (free access) → in orange color

Step 4. The soil certificates are available to the buyer for the sale agreement (free access)





# 3 – Recycling brownfields

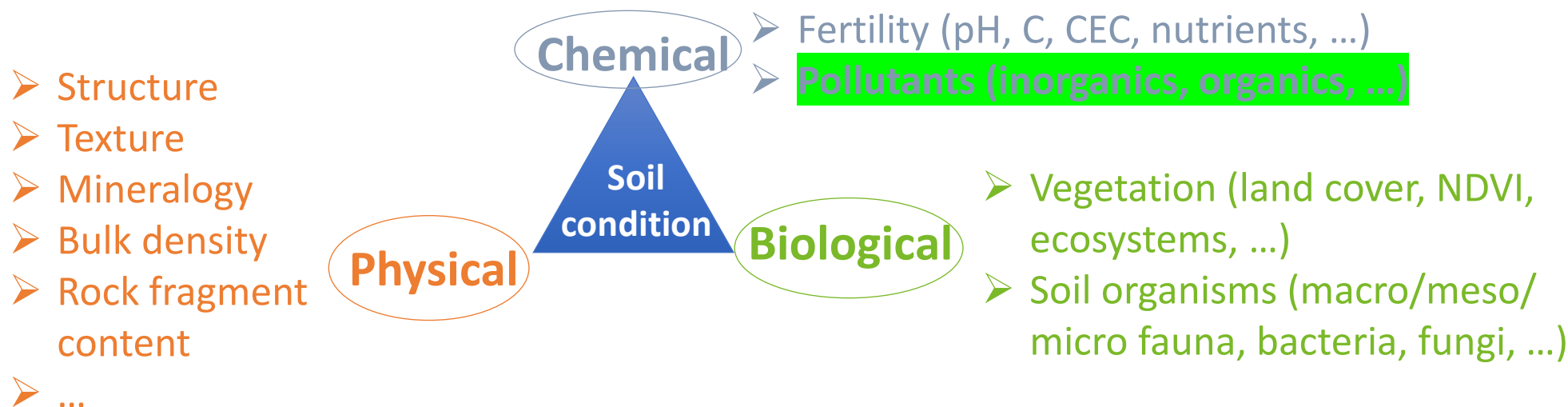
SPAQUE feedback about the soil certificates after 2 years



Advantages	Key issues
<p><b>Identity card</b> of a site : to keep in mind information of the site, sale after sale</p> <p><b>Transparency principle</b> OK during the sale agreement : no hidden pollution (confidence)</p> <p><b>Harmonization, standardization</b></p> <p><b>Guarantee</b> for foreigner land developers to buy a land in Wallonia</p> <p><b>Environmental liability</b> for each owner of a land in Wallonia</p>	<p><b>Cost and time consuming</b> for Authorities about the management of files (IT, database, maps), the validation of soil certificates</p> <p><b>Transitional phase</b> : quid for sites remediated before the soil certificate implementation?</p> <p><b>Deadline</b> for validation by Authorities</p> <p><b>Public vulgarisation</b> : Difficulties to communicate the environmental information to notaries, architects, land developers → time consuming, after-sales service necessary</p> <p>Registered parcel : Risk of loss of <b>value of the land</b></p>

# 4 – Towards a soil health certificate?

Soil health = Soils are healthy when they are in **good chemical, biological and physical condition**, ... (New EU soil strategy, 2021)



Databases + Obligations + Actors...



# 4 – Towards a soil health certificate?

Soil health = Soils are healthy when they are in **good chemical, biological and physical condition**, ... (New EU soil strategy, 2021)

Geoportal (INSPIRE directive) <https://geoportail.wallonie.be/home.html>



- *Soil map, geological map, karstics zones, ...*
- *Remote sensing maps (LU/LC, relief, NDVI, ...)*
- *Local pollution (BDES)*
- *Soil organic carbon (agricultural)*
- *Soil erosion risk (diffuse + run-off axes)*
- *Marginal/sensitive ecosystems for biodiversity*
- *Land Parcel Identification System (agriculture)*

Databases + Obligations + Actors...

BDES  
conform  
extract

Soil control  
certificate

Soil  
passport

Soil quality  
control  
certificate



## 4 – Towards a soil health certificate?

Soil health = Soils are healthy when they are in **good chemical, biological and physical condition**, and thus able to continuously provide as many of the following ecosystem services as possible (New EU soil strategy, 2021)

- ✓ *provide food and biomass production, including in agriculture and forestry;*
- ✓ *absorb, store and filter water and transform nutrients and substances, thus protecting groundwater bodies;*
- ✓ *provide the basis for life and biodiversity, including habitats, species and genes;*
- ✓ *act as a carbon reservoir;*
- ✓ *provide a physical platform and cultural services for humans and their activities;*
- ✓ *act as a source of raw materials;*
- ✓ *constitute an archive of geological, geomorphological and archaeological heritage.*

⇒ From parameters assessment to soil ecosystem services scoring...  
*How to integrate it into current system?*

# Thanks for your attention !



*Marie*



*Esther*



*Frédéric*

