**[CRIME SCENE ANALYSIS FOR ENVIRONMENTAL BASED SCENES: LANDFILL](https://trevisoforensic.it/en/1632-2/) LEACHATE UNCONTROLLED SPILL**

**Workshop Worksheet**

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**Aims of Workshop**

1. To introduce key crime scene activities that can be employed in an environmental based scenario, including scene documentation, sampling and continuity of evidence.
2. To apply new crime scene knowledge to a landfill leachate spill scene.
3. To identify key issues in scene investigation that would need consideration by a forensic engineer.

**Case Scenario**

During the routine control activities, a worker noticed a leachate spill from the Forte Village Landfill, an above-ground landfill filled with municipal solid waste, 15 m high.

He reported that the leachate spill was located on the northern side: a fraction of the leachate was collected by the rainwater collection trench and was discharged in the Sardinia River; the uncollected fraction, due to the surface runoff, reached a nearby agricultural field, creating several wastewater ponds.

Few minutes after being informed, the landfill's manager activated the emergency procedures: the supplementary pumps were activated to drain the landfill body and stop the spill.

After 2 weeks, (no rain), evidence of the accident is still present:

* no presence of grass in the field in which leachate ponds were observed
* the soil exhibits a black/dark colour
* no apparent loss of biodiversity in the Sardinia River (fishermen are still fishing in the nearby areas)

As a Forensic Environmental Engineer, you are requested to assess the potential environmental damage due to the reported accident. The local legal court assigned you the duty to plan and supervise the sampling campaign in order to gather data useful to justify whether environmental contamination occurred and the possible need for remediation.

You have been informed that the landfill is located in a rural area in which several vineyards are present.

**Case Questions**

1. What are your initial thoughts about the scene? What key evidence is present? *(you may want to refer to your initial observation sheet here – Annex 1)*
2. What questions do you need to answer about the scene? What do you need to know about the scene? *(you may want to think about what you would want to achieve from the scene analysis and what you would want to find out in your investigations)*
3. What health and safety issues need to be considered? *(you may want to refer to your risk assessment table here - Annex 2)*
4. What factors may affect your investigation? What ishe main evidence found? *(see Annex 3)*
5. What information have you included on your scene sketch? Why is this important for the investigation? *(you may want to refer to scene sketch – Annex 4)*
6. What are the main photographs you have of the scene? Why are these important? *(you may want to refer to your photographic log here – Annex 5)*
7. What samples have you taken? How many? How have you ensured continuity of evidence? Are there any issues in sample collection to be considered? *(you may want to refer to your evidence list here - – Annex 6)*
8. What are your initial conclusions about the scene?