Following the Waste Back to Italy: An OSINT Case Study from Croatia

Maria Cattini | 10/09/2026 | Field Notes

How to Trace a Waste Supply Chain with OSINT

The Gospić case shows how an environmental investigation can move from a physical site to satellite imagery, companies, permits and cross-border shipments — without turning suspicion into proof

On 5 September, tens of thousands of people gathered in central Zagreb for *Walk for Lika*, a protest demanding faster action over the huge quantity of waste discovered near Gospić, in Croatia's mountainous Lika region. Authorities have identified between 34,000 and 37,000 tonnes of material at the site, while reporting on the case indicates that a substantial share was imported from Italy.

The scale of the protest makes this a political and environmental story, but the case also offers something particularly valuable for OSINT investigators: a cross-border supply chain that can be reconstructed backwards from its physical destination. Waste may disappear from public view once it leaves an industrial facility or crosses a national border, yet its movement normally generates traces in company records, environmental authorisations, shipment documentation and the physical landscape itself.

Those traces do not all prove the same thing, however, and this is where the Gospić case becomes methodologically interesting. Establishing that waste originated in Italy does not establish that the Italian producer or sender committed an offence; identifying a transporter does not demonstrate that it knew what would eventually happen to the load; and finding that a Croatian company possessed a waste-management permit does not prove that every consignment it received was handled in accordance with that authorisation.

A defensible OSINT investigation should therefore begin without assuming the existence of an illegal international network. Its first objective is more limited: reconstruct the chain as far as the available evidence allows, preserve the distinction between documented facts and investigative hypotheses, and identify the points at which the documentary record stops matching what can be established on the ground.

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The physical site is the first anchor

The most useful starting point is not the name of a suspected company but a verified location. Croatia’s Office for the Suppression of Corruption and Organised Crime, USKOK, has identified the industrial complex at **Bilajska 50 in Gospić** as a site covered by its criminal investigation and in August made public an environmental expert assessment prepared by the University of Zagreb’s Faculty of Geotechnical Engineering. USKOK states that the wider investigation involves several suspects and suspected offences against the environment and economy.

Once the location is confirmed through an authoritative source, historical satellite imagery can be used to examine how the site changed during the period under investigation. An analyst could compare imagery across months or years to identify the expansion of storage areas, changes in access routes, the appearance or disappearance of large accumulations of material and alterations to previously unused ground. The dates of those visible changes could then be compared with known shipment periods or changes in the companies operating at the site.

This is useful evidence, but its limits need to remain explicit. A satellite image may show that material accumulated or that the terrain was disturbed, but it cannot establish the chemical composition, legal classification or geographical origin of what is visible. Nor can imagery alone identify the company or individual responsible for depositing it.

That limitation is particularly important in Gospić because much of the material is no longer visible from above. According to the Croatian Parliament’s account of the environmental assessment, almost 33,000 tonnes of the roughly 37,000 tonnes identified at the former PPK Velebit site had been buried. The assessment described a heterogeneous industrial mixture containing plastics, rubber, textiles and metal particles, while analyses also detected microplastics, elevated concentrations of heavy metals and ecotoxic properties. PFAS compounds were found in groundwater downstream from the site, although the Parliament reported that this groundwater is not part of the public water supply.

Satellite imagery can therefore establish changes in the landscape and help build a chronology, but the interpretation of those changes has to be connected to other evidence before it becomes attribution.

From the address to the companies

Once a site has been identified, the next investigative layer is corporate. The relevant questions concern who owned, leased or operated the facility during the period in which the waste arrived, which companies held environmental authorisations there, who controlled those companies and whether the same people or corporate entities were connected to other waste facilities.

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Croatian investigative reporting based on documentation from the case identifies **Tipos Resurs** as a central company in the waste chain and describes suspicions concerning the handling and disposal of waste at Gospić and other Croatian locations. These are allegations within an ongoing investigation, rather than findings that an OSINT researcher can independently convert into established criminal responsibility.

The company name nevertheless provides a powerful investigative pivot because corporate registries can establish information that is different in nature from a criminal allegation: registered offices, directors, ownership changes, company status and other corporate relationships. Those records can then be compared with environmental databases and permits, creating a chronology in which the site, its operators and the authorisations applicable during particular periods are considered together.

This distinction matters because an investigation becomes stronger when relationships are established through separate evidence rather than inferred from repeated media coverage. The useful chain is not simply “company named in investigation, therefore company responsible”, but **physical site → operator → corporate structure → environmental authorisation → documented activity**. Each connection has to be supported independently.

A permit is not evidence that the rules were followed

Environmental permits provide another layer, but they are easily misunderstood if treated as a binary question of whether a company was “authorised to handle waste”. What matters is the scope of the authorisation: the categories of waste covered, the permitted operations, the location to which it applied, the quantities allowed and the period during which the permit was valid.

According to Croatian reporting based on investigative documentation, Tipos Resurs possessed a permit covering certain types of non-hazardous waste at Gospić. A permit issued in October 2022 reportedly allowed limited operations and a maximum of 100 tonnes of waste to be present at any one time. The same reporting states that investigators suspect quantities far exceeding those limits were brought to the site and that some of the material contained harmful or hazardous substances.

For an OSINT investigation, the significant question is therefore not merely whether a permit existed but whether the documented activity was compatible with what that permit actually allowed. This requires comparing the authorisation with shipment records, quantities, waste classifications, dates and evidence from the destination site.

The distinction is fundamental: a permit demonstrates that specified activities were authorised under specified conditions. It does not demonstrate that the operator complied with those conditions.

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Following the shipments backwards

The investigation becomes genuinely transnational when the physical and corporate evidence is connected to the movement of the waste. Croatian reporting based on investigative documentation provides a much more precise picture than the general claim that “much of the waste came from Italy”: between 16 May 2022 and 11 April 2024, **12,338 tonnes of plastic waste were reportedly transported from Italy to Gospić in 576 shipments**. The same documentation indicates that another 1,480 tonnes arrived from Slovenia in 54 shipments, while additional material came from Germany and Croatian companies.

These figures do not account for the entire 34,000–37,000 tonnes identified at the site, and keeping those two datasets separate is important. The total quantity found at Gospić is one evidentiary fact; the amount for which reporting has identified a specific Italian shipment trail is another. Conflating them would create a stronger claim than the available evidence supports.

The 576 Italian shipments nevertheless provide an unusually concrete starting dataset. Rather than investigating an abstract flow of “Italian waste”, an analyst can begin looking for individual consignments and recurring relationships among senders, recipients and transporters, comparing shipment dates with the operating history of the Croatian site and the permits in force at the time.

Cross-border movement itself should never be treated as evidence of illegality. Waste circulates legally between EU Member States under a regulatory framework in which different procedures apply according to the type of waste, its destination and the intended treatment. Hazardous waste, most mixed waste destined for recovery and waste destined for disposal are subject to prior notification and consent, while certain non-hazardous “green-listed” waste destined for recovery follows general information requirements.

This means that a border crossing establishes movement, while the accompanying documentation may establish what was declared, where the material was supposed to go and how it was classified. Evidence collected at the destination can then be used to investigate whether what happened after arrival corresponds with that documentary trail.

Reconstructing the Italian side without assigning guilt

Once Italian shipments have been identified, the investigation can move further upstream. For each consignment, the relevant questions concern the identity and role of the sender, the waste classification used, the quantity transported, the carrier, the declared Croatian recipient and the intended treatment operation. Company and environmental records can then be used to examine the facilities and authorisations associated with the Italian entities involved.

Roles must remain separate throughout this process because a waste producer, broker, exporter and

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transporter can be different entities with different responsibilities and different levels of knowledge. Even if the complete logistical chain from an Italian facility to Gospić can be reconstructed, that fact alone would not establish that every participant knew that material would subsequently be handled or disposed of unlawfully.

This is precisely the point at which a visually persuasive network diagram can become analytically dangerous. Connecting companies, directors, trucks and locations is relatively easy once enough public data have been collected; demonstrating what those relationships mean is much harder. An OSINT graph should therefore represent documented relationships, not silently transform proximity or commercial contact into complicity.

Build the evidence matrix before writing the story

The most reliable way to prevent that analytical drift is to construct the evidence chain before constructing the narrative. Each shipment can be treated as a row in a working matrix containing, where available, its origin, sender, waste code, quantity, shipment date, transporter, Croatian recipient, authorised destination, intended treatment and evidence of what happened after delivery.

Every field should retain its source, while missing information should remain visibly missing. Contradictions between records should also be preserved rather than resolved through assumption, because a discrepancy may eventually prove more important than the information that already matches.

A shipment document identifying a destination, for example, can be combined with corporate records showing who operated that facility and historical satellite imagery showing physical changes during the same period. Together these sources strengthen the chronology, but they still do not prove that a particular load is the material visible in an image. If additional documentation establishes receipt of the consignment, the chain becomes stronger; if environmental analysis subsequently connects the waste found at the site with the documented category, another evidentiary layer has been added.

The strength of the investigation comes from this accumulation of independent relationships rather than from any single apparently decisive source.

Search for the point where the records stop agreeing

Once the chain has been reconstructed, the most interesting investigative questions concern discrepancies. If material was shipped for recovery, what documentation establishes that recovery actually occurred? If a facility was authorised for particular waste categories and quantities, do the incoming shipments correspond with those limits? If the exporting side records a particular quantity leaving the country, does the receiving side account for the same amount? If thousands of tonnes

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were supposedly processed, is there evidence of the capacity, operations and outputs that such treatment would require?

These discrepancies are leads rather than conclusions, but they narrow the investigation by identifying exactly which records need further examination. They can also reveal where public-source research reaches its limit and where access to regulatory files, court documents, freedom-of-information material or investigative records becomes necessary.

The same logic applies to transport data. Repeated journeys between the same facilities may establish a commercial pattern, but they do not establish the contents of a particular truck unless another source connects the vehicle to the consignment. A transport company appearing repeatedly in shipment documentation establishes its logistical role, not its knowledge of what may have happened after delivery.

What OSINT can verify, and what it cannot

The Gospić case demonstrates why environmental investigations require unusually strict separation between reconstruction and attribution. Public records can establish that companies existed, that individuals held corporate positions, that environmental permits were issued and that particular operations were authorised. Shipment documentation can connect businesses across borders, while satellite imagery can document physical changes at a known location and official environmental assessments can establish what authorities or experts subsequently found there.

Taken together, those sources can reconstruct a substantial part of a waste supply chain. What they cannot automatically establish is criminal intent or the knowledge possessed by every participant.

That distinction becomes even more important because Gospić is not merely an environmental controversy but the subject of an ongoing criminal investigation. USKOK has stated that its case involves a larger number of suspects and suspected offences against the environment and economy, while making the environmental expert assessment publicly accessible because of the level of public interest.

The task of an independent OSINT investigation is therefore not to duplicate the prosecutor’s conclusions or to decide guilt from public records. Its value lies in establishing which parts of the physical and commercial chain can be independently reconstructed and which remain dependent on evidence that is not publicly available.

The remediation itself creates another documentary trail

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The story does not end with the discovery of the waste because remediation generates its own records, contracts and timelines. On 25 August, Croatia’s Ministry of Environmental Protection and Green Transition announced that bids had been received for two initial phases: the removal of approximately 4,500 tonnes of loose waste with hazardous properties and around 650 tonnes stored in large bags. The ministry said the offers were under evaluation and that work would begin according to the required procedures.

A later ministry update also described preparations for temporarily covering the buried waste while work continued on the more difficult phase involving excavation, removal and final treatment. The ministry reported that monitoring of the site and surrounding environment was continuing and that tests of the public water supply had confirmed its safety.

For an investigator, this creates a second chain that can be followed alongside the first: procurement notices, bidders, awarded contracts, quantities removed, destination facilities, treatment methods and completion records. Comparing what authorities promise to remove with what is subsequently transported and treated can become an independent method of monitoring the remediation itself.

There is also a new European dimension. Since 21 May 2026, most provisions of the revised EU Waste Shipment Regulation have applied, together with the launch of the Digital Waste Shipment System, DIWASS. The European Commission describes the system as a central platform for exchanging waste-shipment documentation and improving traceability, although transitional arrangements remain in place during 2026 for some documents concerning green-listed waste.

This does not retrospectively solve the Gospić investigation, since the shipments reported from Italy occurred mainly between 2022 and 2024. It does, however, change the environment in which future cross-border waste investigations can be conducted and may make discrepancies between declared movements and actual destinations easier for competent authorities to identify.

Follow the evidence backwards, not the theory forwards

The Gospić case begins with something that cannot easily be abstracted away: tens of thousands of tonnes of material accumulated or buried at a physical location, followed by an environmental assessment, a criminal investigation and a protest large enough to turn a local problem into a national political issue.

For OSINT, however, the most useful way to approach the case is to resist beginning with the most dramatic possible explanation. The investigation can instead move backwards from the verified location, comparing satellite imagery with the chronology of the site, identifying the companies operating there, examining the scope of their permits, reconstructing incoming consignments and then following documented shipments towards their origins in Italy and elsewhere.

At every stage, the evidence should answer only the question it is capable of answering. A satellite

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image can establish a physical change but not the composition of a waste pile; a permit can establish an authorisation but not compliance; a shipment document can establish a declared movement but not what happened after delivery; and a corporate relationship can establish a connection without demonstrating criminal knowledge.

If those layers eventually converge, the investigation becomes progressively stronger. If they diverge, the discrepancy becomes the next lead. The operational value of OSINT in a case such as Gospić is therefore not that it allows an investigator to declare an international waste-trafficking scheme before the evidence is complete, but that it can reveal precisely where the traceable chain ends, where the records conflict and which missing evidence would be required to move from suspicion to proof.

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