



Designing an EHS Due Diligence Program, Four Areas of Focus, and Managing the Risks

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1.0 INTRODUCTION

Environment, health, safety, and sustainability (EHS&S) and environmental, social, and governance (ESG) risks can encompass a broad set of topics and concerns. Too often we see clients default to some standard due diligence tools in the industry that only provide a small piece of the picture, not taking the time to consider potential pitfalls that they simply may be unaware of. An experienced advisor can raise some important considerations that may not be on a client's radar screen. Designing an approach to advise a client on what they need to know for a potential acquisition takes into account many variables and can be different for every deal.

In some cases, strategic buyers (i.e., established companies doing strategic, bolt-on acquisitions, usually outside the context of a financially backed framework, such as private equity) are very experienced with EHS&S and ESG and have a specific agenda that has been well established and thought out at the corporate level, lending little doubt about the required scope and approach. What is presented herein is more the former, where the design and approach to diligence work has not been standardized to whatever degree the client has chosen and must be designed appropriately. That said, however, many of the items discussed herein should also be considered by a strategic buyer that has a well-established internal diligence program. As a consultant, the author has yet to see any diligence program on the part of any client that can be applied universally for all deal situations. It simply is not possible without losing a great deal of perspective on all of the EHS&S and ESG risks that come into play.

The concepts discussed herein can be applied to almost any transaction situation, whether it involves the simple acquisition of a greenfield property, the acquisition of a property/building, the acquisition of manufacturing operations (with or without the property), or the acquisition of an entire business including equity, stock, operations, and assets.

Note: The discussion provided in this article is largely United States-centric; however, the concepts apply to international environment, health, and safety (EHS) due diligence as well. The main difference is how the risks are interpreted, monetized, and managed at the end of the day. Specific regulations obviously differ throughout the world in various countries, although the areas of focus tend to generally be the same.

2.0 DEAL FRAMEWORK AND VARIABLES

There is no "standard" for designing an approach for any given deal, although there are some standard tools that can be used in the process, such as an ASTM E1527-21 Phase I Environmental Site Assessment (ESA). Before the elements of a due diligence program can be contemplated, it is advisable to first consider the context of the deal and the interests of the stakeholders involved.

As a starting point, the following variables should be considered for any given deal:

- **Makeup of client "deal team"**: Business development backgrounds, EHS versus non-EHS backgrounds, astuteness with respect to EHS&S and ESG, general awareness of risks, and experience with prior deal work are all factors to consider. Clients with non-EHS backgrounds may require a more business-friendly approach, whereas client representatives that are trained in EHS may engage in a more

technical manner. In some cases, the transaction may be very simple, and the “deal team” is simply an individual or small business buying a piece of property. In other cases, the deal team can comprise business development teams that are focused strictly on sourcing and executing large stock deals for a private equity firm.

- **Other Advisors:** Understanding the other due diligence advisors (investment bankers, legal, accounting, finance, earnings, human resources, commercial, etc.) at the table affects how we will fit in, and we must adjust our approach and scope accordingly. Working closely with legal counsel is often essential to understanding legal exposure with the risks and potential contractual solutions for mitigating those risks.
- **Confidentiality:** Confidentiality affects how we will conduct our due diligence, navigate hurdles to soliciting target information, and manage the overall availability of information.
- **Deal Structure:** Stock deals, asset deals, spin-offs, mergers, and divestitures are all very different deal situations. Each of these deal types drastically affects our thinking in terms of potential risks and opportunities to manage the risks during buyer-seller negotiations. Most notably, a stock deal can involve additional risks tagged with the business that may not come into play with an asset deal, but not always. Sell-side often takes the form of gated transparency, while buy-side entails an aggressive approach to soliciting information. Spin-offs include considerations pertaining to loss of corporate programs and management systems (i.e., “cut off from the mother ship”).
- **Bid/Auction:** Bid situations and associated stage bids are typically encountered when a business is being taken to market by an investment banker. The level of due diligence needed as well as the timing are tied to the various bid stages. A first stage bid usually involves a very high fly with little invested in the due diligence, just looking for big red flags. The second stage bid period is usually where the rubber meets the road, and a typical 45 to 60 day due diligence period is specified in which all work must be completed (this is when most consultants are retained). Bid situations may be more restrictive to diligence teams due to the seller’s need to manage multiple bid parties and confidentiality issues.
- **Deal Source:** Family-owned businesses, private equity-owned divestitures, and sourcing through investment bankers are all factors to consider. The sophistication of the seller in terms of merger and acquisition (M&A) experience can affect how smoothly the due diligence proceeds. Working with an investment banker and a seller more experienced with M&A can be more predictable and straightforward. Family-owned businesses can be less predictable, usually involving sellers that are inexperienced with due diligence. Family-owned businesses may also be more sensitive to information requests and be easily overwhelmed with the diligence process, leading to limitations on how much information can be obtained from the seller.
- **Reps and Warranties Insurance:** Coverage may affect types and details of due diligence reporting in order to set the client up for underwriting reviews. Situations where reps and warranties insurance is not a consideration may affect how some risks are perceived in terms of the significance of any uncertainty involved (i.e., without a backstop, risks may become more difficult to manage from a buyer’s perspective).
- **Risk Tolerance:** Clients vary in terms of how much risk they typically are willing to accommodate, especially depending on the size of or the desirability of the acquisition. This in turn affects materiality for due diligence. Clients with a lower risk tolerance typically request a deeper analysis of the risks, with fewer assumptions and fewer unknowns. Smaller acquisitions will typically have a lower materiality threshold than larger acquisitions.
- **Timing/Schedule:** This variable can single-handedly have the most impact on the overall approach to due diligence, most notably determining the depth of the diligence review work. A shorter timeframe demands a higher review, demanding an ability to zero in quickly on the risks that are most material in

nature. Any timeframe can be accommodated—it's simply a matter of establishing the level of review that can be accomplished and ensuring that the client's expectations are aligned with the diligence team.

- **Investment Thesis:** Understanding a client's business thesis allows a good advisor to consider value creation opportunities as well as post-acquisition pitfalls and integration considerations that the client may encounter from an EHS perspective. For example, post-acquisition plans to close or relocate a portion of the acquired assets may trigger requirements for site investigation work in certain locales or due to contractual requirements (e.g., lease requirements). Such considerations may not be included in a simple downside risk analysis of existing operations if the diligence team is not aware of the post-acquisition planning.
- **Availability of Information:** Anticipating the available documentation that will be provided by the seller can significantly affect timing, diligence staffing, logistics for document handling, and ultimately the level of review able to be conducted.

Understanding these variables allows an advisor to cater the approach, providing the best solution to meet the deal parameters. Changing just one variable can drastically change the approach. At the end of the day, it is the advisor's job to identify the risks to the extent practicable within the framework of the deal parameters. No due diligence program can possibly identify all risks. It becomes a matter of identifying the most important risks that can affect the client's interests in a material way. The term "material" is also variable, being specific to the client and the deal at hand. The same risk can be material in one situation but immaterial in a different situation. Determining what is material requires an intimate understanding of the client's interests, their stakeholders, their investment thesis, and their risk tolerance.

3.0 AREAS OF FOCUS

After the deal framework is established, we then consider the full suite of EHS-related risks that we typically encounter and screen that list against the deal parameters for applicability and materiality. In general, there are four areas of focus (possibly five) into which the risks can be grouped:

- **Subsurface:** Contaminated soil and groundwater, including vapor intrusion issues;
- **Infrastructure:** Aboveground and below ground building components or utilities contaminated with lead paint, asbestos, hazardous substances, contaminated dust, etc.;
- **Operations:** Everything related to compliance and keeping things operational—corporate programs, management systems, operating permits, health and safety, emissions control, wastewater, air, industrial hygiene process safety management (PSM), risk assessments, etc.; and
- **Business:** Risks that are tagged with a business but not necessarily connected with an owned asset, e.g., formerly owned properties, obligations with issued indemnifications, ESG risks, and potential responsible party (PRP) obligations with off-site disposal.

In addition to the four focus areas listed above, a fifth area that can be considered is post-acquisition integration and investment thesis requirements. This requires a different thought process, moving away from an immediate downside risk mentality and looking at how the implementation of the investment thesis post-acquisition may be affected by EHS, sustainability, or ESG factors. Ultimately, downside risks identified throughout the diligence work can be dwarfed and/or become moot if there are significant EHS&S or ESG hurdles that will derail or significantly inhibit the investment plans post-acquisition.

The following sections provide more in-depth discussions on each of these focus points.

3.1 SUBSURFACE RISKS

Subsurface risks almost universally focus on the potential for the presence of petroleum products or hazardous substances (as defined by the United States Environmental Protection Agency). It would be nearly impossible to list every source and type of contamination that we might encounter, but some of the more typical examples are as follows:

- Releases from underground storage tanks (USTs) containing petroleum products, process chemicals, or process waste streams;
- Discharges from septic systems that have received non-sanitary waste streams (e.g., wastewater from an industrial process containing metals, solvents, or other process wastes);
- Contamination from surface spills (e.g., spilled drums, mishaps from truck unloading, or automobile accidents);
- Fugitive air emissions that are deposited on roof or ground surfaces (e.g., untreated air emissions from a plating operation);
- Leaking utility lines containing regulated substances (e.g., leaking joints in a sanitary sewer line transmitting industrial wastewater);
- Releases from historical degreasing operations (e.g., solvent-based parts washers);
- Releases from industrial process sumps and pits;
- Drywells receiving stormwater from roofs or parking areas;
- Releases of per- and polyfluoroalkyl substances (PFAS) sources during firefighting activities, such as foam in fire sprinkler systems;
- Buried wastes (e.g., waste deliberately buried by facility operators); and
- The potential for vapor intrusion, specifically vapors entering indoor workspaces from underground sources (e.g., solvent vapors migrating into indoor air spaces, emanating from subsurface solvent contamination).

When assessing subsurface risks, it helps to categorize the issues into different tiers of risk, the first being known (obvious, with a need for action), and the last being more of suspicion without hard evidence of a known problem. The following terms have been used by the author when communicating levels of concern during client communications:

- **Known** risks are defined as liabilities associated with a condition clearly identified and in need of a remedy, such as a corrective action mandated under an existing order or directive from a regulatory authority.
- **Potential** risks are defined as potential liabilities associated with clearly identified issues (e.g., a documented release of hazardous material) which may not or have not been “triggered” (i.e., no action has yet been required through regulatory actions, site redevelopment, lease exit, or site closure/decommissioning activities). These risks are considered dormant but have the potential to be triggered in the future.
- **Unknown** risks are defined as potential liabilities associated with site conditions that suggest the risk for issues to be identified in the future; however, no issues have been specifically identified to date (e.g., extended use of chlorinated solvents at a facility without a site investigation to determine if any releases occurred to the subsurface).

Defining and characterizing subsurface issues can be challenging, even to the most seasoned environmental professionals. Uncertainty is more common than not and is usually the basis for discussion when monetizing issues at the deal table. The most problematic subsurface issues typically involve one of two situations—those

involving affected third parties and those with an immediate potential to affect worker health. This is not to downplay the substantial costs associated with other risks, such as involvement with Superfund cleanup liability, which can have a tremendous amount of uncertainty in terms of duration, cost, and closure requirements. However, when third parties or human health effects are involved, the issues can become unmanageable.

3.2 INFRASTRUCTURE

Contaminated infrastructure is typically more routine and easier to manage than subsurface risks, although it can in many cases still involve uncertainty that requires characterization and management. Infrastructure issues typically encountered include the following:

- Asbestos-containing materials in roofing, flooring, ceilings, mastic, and various types of insulation (pre-1980s);
- Lead paint;
- Contaminated dust (e.g., metals in dust from industrial processes);
- Contaminated sumps and pits (e.g., oils, solvents, or metals);
- Contaminated sprinkler systems containing PFAS from aqueous film-forming foam (AFFF);
- Contaminated process equipment (e.g., tanks or piping); and
- Contaminated heating, ventilation, and air conditioning (HVAC) systems (e.g., systems that transmitted air discharges with hazardous substances, such as hoods from metal plating operations).

Often, contaminated infrastructure does not pose a risk for ongoing operations, assuming proper management, employee notification, labelling, and procedural instructions for engaging with such infrastructure. However, when considering operational changes, particularly associated with post-acquisition investment thesis plans such as expanding, selling or shutting down an operation, contaminated infrastructure can involve large capital expenditures that need to be accounted for during due diligence.

Lastly, asbestos in itself can be very manageable (e.g., identifying the presence of asbestos, labeling it, creating management plans, and conducting abatement activities where necessary); however, situations involving potential employee exposures due to improper historical management can quickly become unmanageable in terms of monetization and assessing future risks to the business.

3.3 OPERATIONS

By operational risks, we typically mean risks associated with any EHS-related issue pertaining to the continued operation of a facility in accordance with applicable rules and regulations. EHS-related operational risks can be equally concerning as subsurface, infrastructure, and business risks. They can be thought of in two categories: (1) environmental; and (2) health and safety. Example topics are listed below. Note that these are not all-inclusive lists but instead, they are provided as examples of typical areas of focus.

Environmental

- Air emissions compliance (e.g., permitting or emissions control devices);
- Wastewater emissions compliance (including capacity analysis and plans for operational changes);
- Ozone-depleting substances (e.g., storage and management of refrigerants);
- Stormwater control and pollution prevention plans;
- Sanitary sewer discharge compliance;
- Hazardous waste management;
- Universal waste management;

- Toxic chemical reporting (Toxic Release Inventory [TRI]);
- Tank registrations and testing;
- Toxic Substances Control Act (TSCA);
- Radon;
- Wetlands; and
- Ecological impacts.

Health and Safety

- Safe workplace rules and regulations;
- Noise monitoring and protection;
- Personal protective equipment (PPE);
- Machine guarding;
- Hazard communications and planning;
- Industrial hygiene (e.g., worker safety associated with hazardous materials and workplace exposures);
- PSM;
- Explosives atmospheres;
- Plans, programs, and recordkeeping;
- Training programs;
- Emergency planning;
- Lockout/tagout electrical system controls;
- Confined spaces;
- Ingress/egress (fire safety);
- Risk-based hazard planning; and
- Safety culture and safety awareness.

Other than a strict analysis of regulatory compliance, a thorough due diligence program should also give thought to planned operational changes and associated capital expenditures (e.g., expanding an operation post-acquisition, thereby affecting volumes and types of emissions; changes to a process due to banned substances, thereby affecting the makeup of wastewater discharges; or modifications to and transfers of permits and any associated nuances).

Obviously, costs to maintain compliance with EHS-related operations can be substantial and material if corrective actions are required. However, beyond the immediate costs for corrective actions, costs associated with the perhaps unlikely event of operational interruption can dwarf any costs associated with corrective actions. In other words, identifying operational risks that could shut down a facility is paramount. Examples may include a worker fatality or a gross violation of a discharge permit that causes a regulator to impose a cease and desist order.

3.4 BUSINESS

The term *business risk* can be difficult to define, being perceived by different stakeholders to mean something quite different depending on their vantage point. In general, business risks are risks that can be tagged to a business but are not necessarily associated with a current asset. In other words, traditional asset-based due diligence would not necessarily reveal a business risk.

Arguably, EHS due diligence traditionally focuses on the presence of contamination, contaminated materials, and operational regulatory compliance. Accordingly, an assessment of business risks tends to follow suit, although it really should not be so narrowly focused. In other words, advisors tend to focus on business risks revolving around contamination or compliance as opposed to broader EHS-related topics such as ESG, sustainability, or operational continuity. The term can be so broad that it really behooves the advisor team to work with its client to understand the deal context, nature of the business, investment thesis, and all of the topics discussed in **Section 2.0** in order to identify what the term should entail for any given deal situation. To sum it up, there is no standard checklist for business risks.

Examples of business risks identified in some of our work relating to contamination or hazardous material management include the following:

- Use of chlorinated solvents for more than 30 years at a formerly owned property that was sold by the business and for which there are no records of site characterization, with legal indemnities provided by the business (to the buyer) in a purchase and sale agreement (risk: potential liability to the business for any contamination that may be discovered in the future at the formerly owned property);
- Historical handling of asbestos gaskets by unprotected workers associated with a small engine manufacturer that was reported to have taken place in the past (risk: potential for worker health claims that have not yet manifested themselves); and
- Involvement in a third-party Superfund site (United States) as a PRP, where the business' hazardous wastes were ultimately disposed by a licensed waste hauler (risk: as a PRP, the business may be responsible, in part, for cleanup costs at the third-party site).

Examples of other less tangible business risks identified in some of our work include the following:

- Identification of labor force practices that conflict with investor requirements for responsible investing criteria;
- Water source vulnerability study that shows significant risks for future water supply (e.g., groundwater extraction rights or competing with regional competition for limited aquifer yields);
- New facility construction with regional social risks pertaining to water rights and perceptions of depleting limited supplies (despite adequate supplies being verified); and
- Critical EHS staffing lost in connection with an acquisition or the spinoff of a manufacturing division, resulting in a gap in institutional knowledge and operational leadership.

More broadly, the topics of ESG risks and sustainability programs under the business risk category are becoming increasingly mandated during EHS due diligence work, particularly in connection with European operations. ESG screening tools are commonly deployed in due diligence work to help profile a target specific to the ambitions of the buyer. ESG concerns are typically driven by third-party stakeholders, but not always. The understanding of a client's ESG ambitions and drivers ultimately determines the focus for ESG screening work during due diligence. For clients that are at the early stages of their ESG journey, an ESG due diligence program may simply be focused on some very specific sustainability topics. For example, having a decarbonization plan is increasingly expected, and the lack of one may be perceived as a substantial risk. At a minimum, the development of a decarbonization plan should be a cost item to address post-acquisition.

4.0 RISK IDENTIFICATION

Too often, due diligence work becomes blinded with an intense focus on easily identified and known issues and the associated costs to fix those issues. Broader circumstances surrounding those issues, including root causes, may be missed, which can prove costly to the business if not recognized. Examples of due diligence findings and their potential risks are provided in the table below.

| Diligence Tool | Finding and/or Pertinent Data | Short Term Cost to Remedy | Extended Risk |
|---------------------------------------|--|--|--|
| Phase I ESA | Long history of extended chlorinated solvent use without any indication of releases | \$0 – Not a recognized environmental condition (REC). | \$\$\$\$ – Future site investigations may reveal unidentified contamination, even though the information did not qualify as an REC under the ASTM E1527-21 Phase I ESA standard. |
| Material EHS Compliance Review (MCR) | Deficient air permit | \$ – Minimal cost to hire a consultant and file for a new air permit. | <p>\$\$ – Even without a deficiency, there may be a material cost to update permits or reapply as part of an acquisition.</p> <p>\$\$\$\$ – Modifications to a permit may require significant capital expenditures for air treatment systems.</p> <p>\$\$\$\$ – Potential process changes may be needed to meet new permitting requirements.</p> <p>\$\$\$\$\$ – Potential operational interruption may occur if the regulatory agency denies or delays permit issuance.</p> |
| Facility interview during Phase I ESA | Facility formerly operated at another location with a long history of chlorinated solvent usage (no prior Phase I ESA or Phase II ESA completed) | \$0 – Not an issue with respect to identification of RECs at the current operating location. | <p>\$\$\$\$ – Potential liability may exist for past contamination remaining at former property if discovered in the future.</p> <p>\$\$\$ – Indemnifications may have been issued to a buyer with the sale of a property with latent liabilities.</p> |
| Management Call | Discussion reveals that a facility’s lease is ending, and it may need to relocate | \$0 – Not an issue with respect to Phase I ESA or MCR. | \$\$\$ – Lease provisions or regulatory requirements may include triggers for site characterization upon exit. |

| Diligence Tool | Finding and/or Pertinent Data | Short Term Cost to Remedy | Extended Risk |
|----------------|---|--|---|
| Phase I ESA | Activity and use limitation (AUL) is listed in connection with a property | \$0 – Typically not an issue with respect to the identification of RECs (qualifies as a controlled recognized environmental condition [CREC]). Regardless, typically not viewed as an issue. | \$\$\$ – Although the past contamination issue may have been remediated, the AUL provisions may be problematic with respect to the following: (1) may incur ongoing maintenance costs; (2) may hinder post-acquisition plans for site expansion; or (3) may cause significant difficulties with site maintenance (e.g., need for minor excavation work within the AUL area to service utilities). |
| Phase I ESA | Vapor intrusion concerns | \$\$ – Costs to mitigate the vapor intrusion are typically the focus and can be reasonably estimated. | \$\$\$\$ – Potential liability may exist for exposures to past or present employees prior to the mitigation of vapor intrusion. |

The example findings and relative costs outlined within the bold border in the table above denote the typical extent of due diligence when the scope requires only a Phase I ESA and perhaps an MCR. The bottom line is the magnitude of the extended risks can dwarf the costs for remedying short term downside risks.

5.0 RISK MANAGEMENT

A good EHS advisor’s due diligence work extends beyond being the carrier of bad news through the identification of the downside risks. The essential work comes with providing solutions on how the risks can be mitigated and conveying what the most probable scenario looks like post-acquisition. Anyone can lay out a worst-case scenario for a particular risk; however, it is usually not very helpful for a client’s deal team to hear the worst of the worst, especially when it is not very likely that any one risk, and certainly not all (collectively), is likely to manifest itself into a worst-case scenario. It is incumbent on the advisor to take a reasonable approach to the potential mitigating circumstances and to provide a most probable scenario that takes a very realistic approach on how the risks will play out post-acquisition. Some “sleeping dogs” may stay exactly that and may never be triggered into an actual liability. Other risks can be translated into a cash flow scenario where a known liability can be carried realistically without having a large and immediate financial burden. Assisting the client in understanding how to manage the risks (liabilities, if known) is essential.

Understanding available contractual mechanisms (e.g., opportunities to seek indemnifications in the purchase and sale agreement or the ability to establish escrows, carve-outs, and set-asides) directly affects an EHS advisor’s thought process when considering solutions for addressing risks. However, not all deals are set up to afford contractual solutions, particularly in stock deals where there is no surviving entity.

The biggest thing to keep in mind when designing a due diligence program is how to best identify and characterize the potential risks such that the client can understand the risks, manage the risks, build the risks into their financial model, and ultimately get comfortable with their potential exposures. Not all risks can be fully mitigated. Some risks will continue to remain uncertain throughout the due diligence period. It becomes a

matter of whether the client can balance the risk against the return they expect on their investment thesis (i.e., how badly they want the deal to happen).

Lastly, from a risk management standpoint, it is okay to have a problem or issue (e.g., a known liability with significant monetary implications) as long as it can be characterized without an unreasonable amount of uncertainty. If the client understands what the issue is and the expected costs to mitigate, the issue can usually be accommodated by the deal team in the financial modeling. Issues that involve high levels of uncertainty, particularly those concerning third parties, are the most difficult to manage and can be deal killers.