

A risk profile is a structured management tool for identifying the various exposures associated with an operation. Typically, a risk profile will encompass a review of an organization's operations with a focus on administrative strategies / protocol for reducing or managing particular risks. Environmental risk should not be exempt from this process. In fact, many organizations create stand-alone Environmental Risk Profiles (ERPs) to specifically address the area of environmental liability. This process adds to an organization's ability to systematically identify environmental risk and effectively manage it. Below is an excerpt from an ERP for Asphalt Batch Plants, which identifies some major exposures. A completed ERP can show the impact such exposures can have on the organization, as well as the risk management strategies available.

Asphalt Batch Plants confront environmental liability every day. Specifically, they face environmental exposures in five major areas: property development, operations, transportation, disposal liabilities and owned premises. Each area must be explored to identify risks that may expose the organization to environmental liability. This hypothetical ERP identifies some of the major exposures and associated claims.

EXPOSURES

PROPERTY DEVELOPMENT

- Contamination from historical usage of property. Large parcels of undeveloped property tend to have fewer environmental issues. As a result, many times, there are poor or inadequate records of activity on those lands. Environmental assessments, especially Phase I's, are cursory reviews of the site with a "walk-through" of the property to physically identify issues. In the event there was illegal or "midnight" dumping of waste or materials on these lands, no environmental reports would identify them. The contamination may only be revealed during development.
- Errors and omissions in environmental site assessments, especially Phase Is due to their limited scope of work, can lead to unidentified underground structures or contamination.

OPERATIONAL EXPOSURES

- Inadvertent disturbances of natural occurring substances and / or in-place contamination in the site preparation / construction activities.

- Leaking of fluids during storage of trucks and equipment.
- Poor housekeeping and preventive maintenance for operations equipment and pollution control equipment.
- Poor underground and aboveground tank management programs, resulting in surface and subsurface soil and groundwater contamination.
- Poor waste storage / handling of incompatible materials, resulting in fires or explosion.
- Resulting property damage and clean-up costs, from accidental damage / interruption of utility and product supply lines.
- Drums of spent solvents, acids and caustics causing residual contamination on- and off-site.
- Violations of various environmental permits - air, water discharge, etc. resulting in fines for exceedances.

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EXPOSURES (CONT'D)

- Natural Resource Damages, resulting in substantial costs for state- and federal- mandated clean-up requirements and potential fines.
- The use of Recycled Asphalt Pavement (RAP) is common, but proper testing is needed to ensure it does not leach pollutants into groundwater in certain applications.
- Emissions of a complex mixture of gases and particulate matter, the composition of which can vary depending on the crude oil source, process type (batch vs drum mix), and fuel used. Some key air pollutants include:
 - Particulate Matter (PM): Inhalable particles (PM10 and PM2.5) generated from aggregate handling (fugitive dust) and the production process, which can cause respiratory issues.
 - Asphalt (Bitumen) Fumes: A vapor that condenses into fine particles as it cools, containing thousands of different chemicals.
 - Volatile Organic Compounds (VOCs): Including benzene, formaldehyde, toluene, and xylene, which contribute to smog formation and can cause eye / throat irritation, headaches, and in some cases, central nervous system or liver damage with high exposure.
 - Polycyclic Aromatic Hydrocarbons (PAHs): Some PAHs are known carcinogens and can be found in asphalt fumes and emissions, particularly during loading into trucks.
 - Gaseous Pollutants: Such as carbon monoxide (CO), nitrogen oxides (NOx), and sulfur dioxide (SO₂), primarily from the combustion of fuel used to heat the aggregate and maintain the asphalt temperature.
 - Hazardous Air Pollutants (HAPs) and Metals: Trace amounts of substances like arsenic, cadmium, and mercury have been detected in emissions.

TRANSPORTATION EXPOSURES

- Inadvertent transport and subsequent disposal of unknown contaminated soil from on-site activities such as small spills resulting in waste product.
- Loading and unloading of product at rail cars, tankers, etc.
- Fuel / oil spills / leaks from vandalism during the transport of any materials.

- Upset / overturn during transport of high-temperature asphalt can result in localized soil contamination that is difficult to remediate quickly.

DISPOSAL EXPOSURES

- Potential soil and groundwater contamination from compounds such as PAHs, heavy metals, phenols and other semi-volatile organic compounds when solid asphalt is processed for disposal.
- Misclassification of waste when the asphalt is potentially mixed with hazardous materials, such as asbestos, can lead to unintended contamination at landfill sites.
- Crushing asphalt in preparation for disposal can result in the release of silica dust, a known carcinogen.
- Clean up and liability associated with the disposal of waste / materials at disposal facilities or recyclers. This has potential Superfund ramifications.
- Improper disposal of potentially contaminated soil.

OWNED PREMISES EXPOSURES

(maintenance garages, plant facilities, offices, etc.)

- Leaking underground / aboveground storage tanks.
- Residual contamination from minor spills of oils, fuel, lubricants, etc., and poor housekeeping during maintenance operations.
- Generation of fugitive dust and particulates due to vehicular movement on and around the plant site, as well as wind erosion from aggregate stockpiles. This dust can contain silica, lead and other contaminants.
- Leaks from vehicles and / or equipment stored on premises.
- Improper disposal of waste materials on site.
- Unidentified, pre-existing contamination from past owners of the premises.
- If the firm owns commercial or habitational structures, there is a major exposure from mold growth. Mold could result from construction defect, inadequate maintenance from both property manager and / or occupant, poor HVAC systems etc.

ASPHALT BATCH PLANTS

Name of Organization: _____

Last Updated: _____

SAMPLE ENVIRONMENTAL RISK PROFILE

Below is the start of a sample ERP for Asphalt Batch Plants. A complete ERP can be added to provide a detailed profile: reference documents, website links, details on prior claims / incidents and the organization's response.

A complete ERP can be used to help risk and insurance managers better identify, manage, reduce and even eliminate the organization's exposures to environmental liability and the related costs.

| EXPOSURE | IMPACT ON ORGANIZATION | RESPONSIBILITY | RISK MANAGEMENT TECHNIQUE | PRIOR INCIDENTS |
|--|---|--|---|-----------------|
| OPERATIONAL EXPOSURES: Leakage from underground / aboveground storage tanks (UST/AST) | <ul style="list-style-type: none"> • Soil and groundwater contamination leading to costly remediation • Regulatory penalties for permit exceedances • Business interruption during investigation / cleanup | <ul style="list-style-type: none"> • Plant Manager • Environmental Health & Safety Manager • Risk Manager | <ul style="list-style-type: none"> • Annual tank integrity testing • Secondary containment installation • Regular SPCC (Spill Prevention, Control & Countermeasure) inspections • Environmental insurance to protect from liability associated with offsite contamination | |
| OWNED PREMISES EXPOSURES: | | | | |
| TRANSPORTATION: | | | | |
| DISPOSAL EXPOSURES: | | | | |

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