



ROCKEFELLER
ASSET MANAGEMENT

Company Research and ESG Risks: Supply Chain

Atlanta Society of Finance and Investment Professionals

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- Sustainability & Impact Investing
 - Company Research
 - Supply Chain Analysis
- Case Study: Lead Acid Battery Recycling
- Case Study: USG Corporation



Sustainability & Impact Investing





- **Research & Inform**
 - In-depth research
 - Material sustainability issues
 - Risks & opportunities
- **Engage & Impact**
 - Proxy voting
 - Shareholder resolutions
 - Dialogue

“I believe that every right implies a responsibility; every opportunity an obligation; every possession a duty.”

- John D. Rockefeller, Jr.

Assessing the Business Model



-  Company Performance
-  Six Sustainability Criteria
-  Intrinsic Business Model Risk
-  Individual Business Leadership



Governance



Products & Services



Work Place Issues



Environment



Community



Human Rights



- What about greenwashing?
- What is the data telling us?
- What about companies in emerging markets?
- How do you look at a global supply chain?

■ Regulatory Records

- EPA
- OSHA

■ Third Party Research

- MSCI ESG
- Bloomberg ESG
- Glass Lewis



■ Company Reported Data

- Corporate Sustainability Reports
- Form 10-K

■ On-site & Primary Research

- Field Work
- On-site Visits
- Calls & Meetings

Background Experience

-  10 years at an NGO focused on children's environmental health
-  Project implementation on 4 continents
-  Consultant to 15+ governments in Africa & Asia
-  Engagement with the private sector

Chemical Dumpsites & Industrial Estates

Tannery in Dar es Salaam, Tanzania



Chemical Dumpsites & Industrial Estates

Arsenic-laced Tailings in Wenshan, China



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Chemical Dumpsites & Industrial Estates

Cadmium in Lanzhou River, Gansu



Source: Rockefeller & Co., Inc.

Azo-dyes in Dakar, Senegal



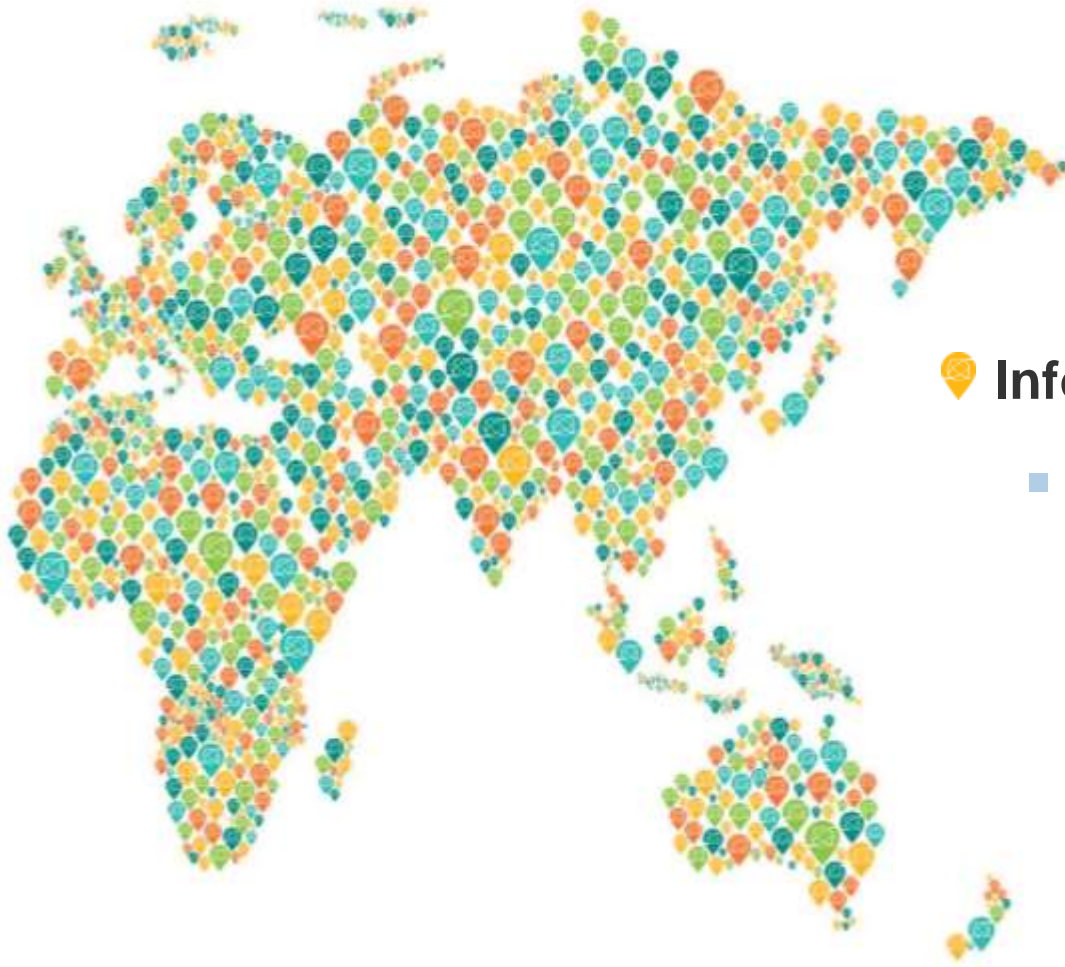
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Chromium Salts Manufacturing

Ranipet, India



Case Study: Lead Battery Recycling



Informal Lead Acid Battery Recycling

- Lead Smelters
 - Crude operations
 - No regulatory enforcement

Lead Smelters in Low/Mid-Income Countries



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Kenya



India



Informal Battery Recycling

Let's See How It's Done



Impacts of Lead on Children

- 📍 Lead affects **neurological development** in young children
- 📍 High amounts of lead impact immune response, resulting in increased **infection** and **mortality** rates
- 📍 Children are **disproportionately** affected due to dose-to-size ratios and developing neurological systems



Lead Exposure Pathways in Children

📍 Residential

- 📍 Dust ingestion
- 📍 Maternal exposure

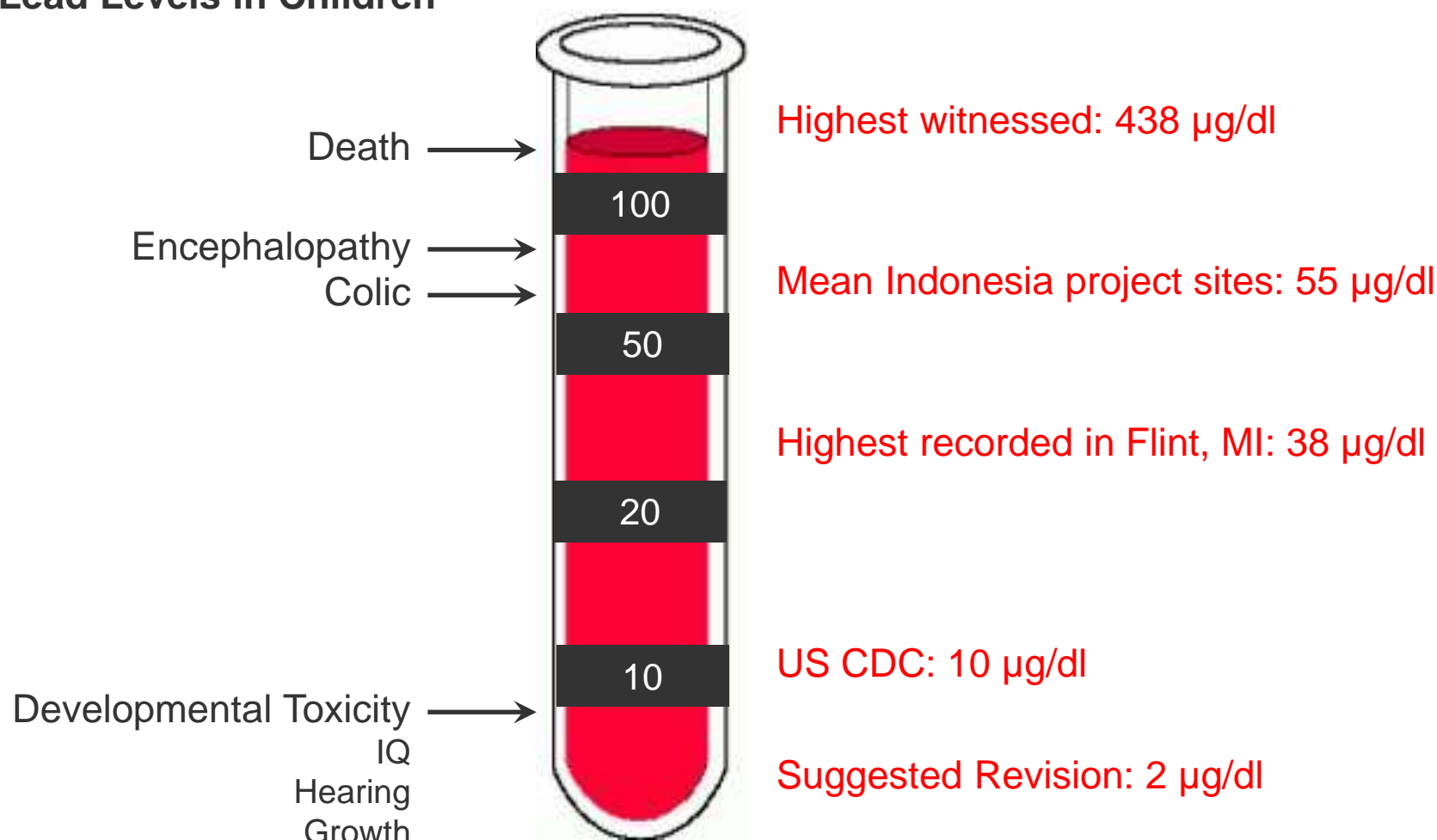
📍 Occupational

- 📍 Fumes inhalation
- 📍 Clothing contamination



Source: Rockefeller & Co., Inc.

Blood Lead Levels in Children



Sources:

Creative Commons

David C. Bellinger, Andrew M. Bellinger. (2006). *J Clin Invest*; 116(4): 853-857.

Gilbert SG, Weiss B. *A rationale for lowering the blood lead action level from 10 to 2 microg/dL. Neurotoxicology*. 2006;27(5):693–701. doi: 10.1016/j.neuro.2006.06.008 ;

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RT. (2015, Dec. 29). *Toxic Stress*. <http://on.rt.com/70lf>.

Scope of Lead Exposure

Blood Lead Levels (µg/dl)	IQ Deficits in 0-4 year olds (points)	
	Lanphear	Schwartz
2	-1.87	-0.51
4	-3.74	-1.03
6	-4.83	-1.54
8	-5.61	-2.06
10	-6.21	-2.57
15	-7.31	-3.86
20	-8.08	-5.14
30	-9.18	-7.71
40	-9.96	-10.28
50	-10.56	-12.85
60	-11.05	-15.42

Sources:

CDC. *Interpreting and Managing Blood Lead Levels <10 µg/dL in Children and Reducing Childhood Exposures to Lead*. MMWR 2007; 56(RR08);1-14;16.

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Environmental Remediation Site

Highly Contaminated: Cinangka Village, Bogor, West Java, Indonesia



Environmental Remediation Site

Cinangka Primary School



Environmental Remediation Site






Key Risks Hidden in the Supply Chain and Global Considerations




- 💡 2nd, 3rd, Nth-tier suppliers
- 💡 Relationship with the informal sector
- 💡 Inefficiencies in the supply chain can lead to negative externalities, possibly posing material risk:
 - 💡 Environmental liabilities
 - 💡 Reputational risk
 - 💡 Government shutdowns

How can an investor identify supply chain risks?

Challenges

-  Weak regulatory capacity
-  Highly diversified suppliers
-  Lack of data standards or consistency

Available Tools:

-  Reconcile CSR reporting & SEC filings
-  Engage with management
-  Site visits

Case Study: USG Corp

- USG Corporation (USG)
 - American company that manufactures and distributes building materials
 - Subsidiaries: U.S. Gypsum Co., USG Interiors, LLC, L&W Supply Corp.
- Site visit
 - October 1, 2015
 - Manufacturing facility in East Chicago, Indiana
 - Facility manufactures wallboard & joint compound adhesive



Manufacturing Facility



Environmental Controls

- Advanced dust control
 - HVAC
 - Fugitive Emissions
- Waste disposal
- Water management
- VOC emissions



Environment



Products & Services



Work Place Issues



Occupational Health and Safety

- 11 years without a “lost-time” incident
- Bilingual signage
- Lockout procedures
- Remuneration for performance



Community



Products & Services



Work Place Issues

Material Concerns



💡 Coal Byproducts as Industrial Ingredients

- 💡 Flue Gas Desulfurization (FGD) gypsum is used for over 33% of USG's wallboard and joint compound manufacturing

💡 Automation

- 💡 Necessary to remain competitive

💡 Green Materials Marketplace

- 💡 Highly competitive and growing (according to USG study)

What's Next?: Integrating ESG Analysis

💡 Risk Management

- 💡 Environmental and social risks
- 💡 Reputational and headline risks
- 💡 Regulatory and compliance risks

💡 Research & Engagement

- 💡 Reconcile 3rd party and company reported data
- 💡 Talk to management
- 💡 Engage with supply chain officers



Asbestos Mine, India



Source: Rockefeller & Co., Inc.

Questions and Comments?



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