Emergency Spill Response

Environmental Planning and Cleanup

The world's leading sustainability consultancy

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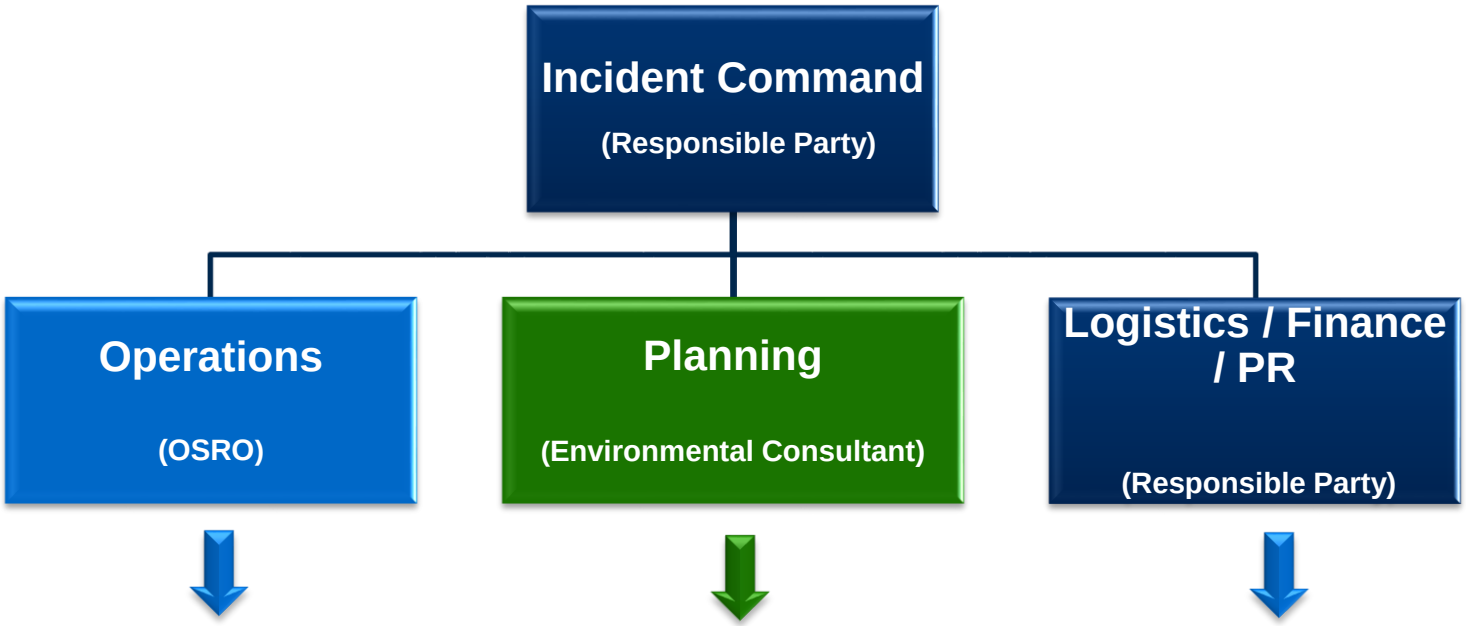
Contents – *Emergency Response Road Map*

Incident Command Structure

- Structure of the ICS is dependent on the nature and size of the response needed



- Implement the IAP (201)
- Provide resources
- Tactical response

- Response planning
- Environmental response
- Documentation
- Coordination with stakeholders

- Logistics support
- Financial response
- Public relations

Following an Incident - Safety

- Immediately following an incident – safety is crucial

Following an Incident - Traffic Control

- Draft Traffic Control Plan in advance
- Modify and submit to DOT
- Training
- Response kits

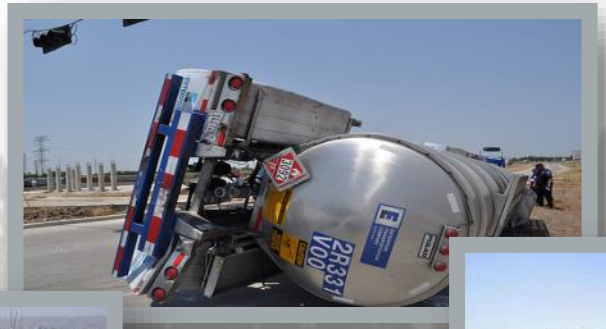
Following an Incident - Early Documentation

Document the incident

Communicate ASAP

Notify and initiate planning

Liability



Following an Incident - Identify Stakeholders

- Identify stakeholders
  - Land owners & residents
  - Regulators & resource agencies
- Document notification
- Schedule daily meetings
- Document approvals and concurrences
- Engage throughout

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Site Reconnaissance – First Responders

- Trained First Responders
- Buddy System
- First Responder Equipment

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Site Reconnaissance - First Responders

Identify Environs

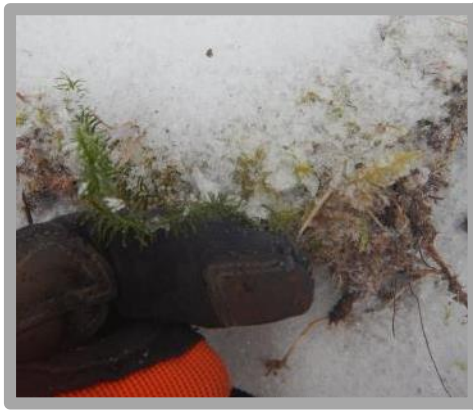
- Sensitive areas?
- Nearby water bodies?
- Tundra or gravel pad?
- Critical infrastructure?

Determine potential impact

- Spill?
- How much?
- Area impacted?
- Threatened resources?

Document and communicate

- Equipment needed?
- Personnel needed?
- Additional stakeholders?
- Exact location




Site Reconnaissance - Identifying Spill Location

Site Reconnaissance - Tools of the Trade

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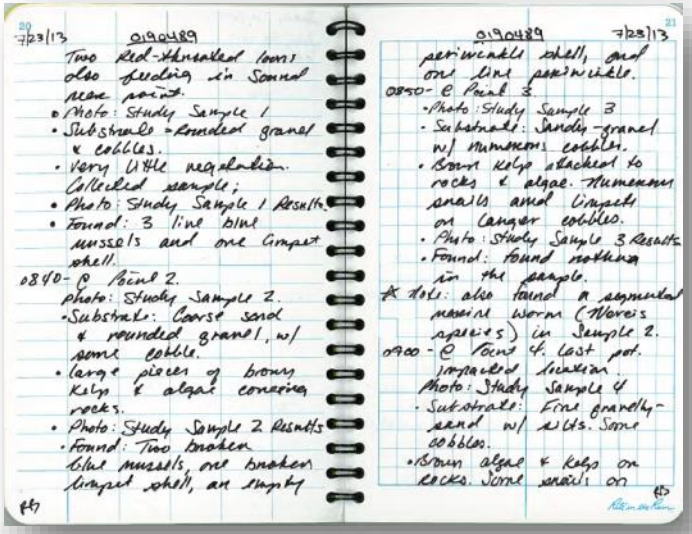
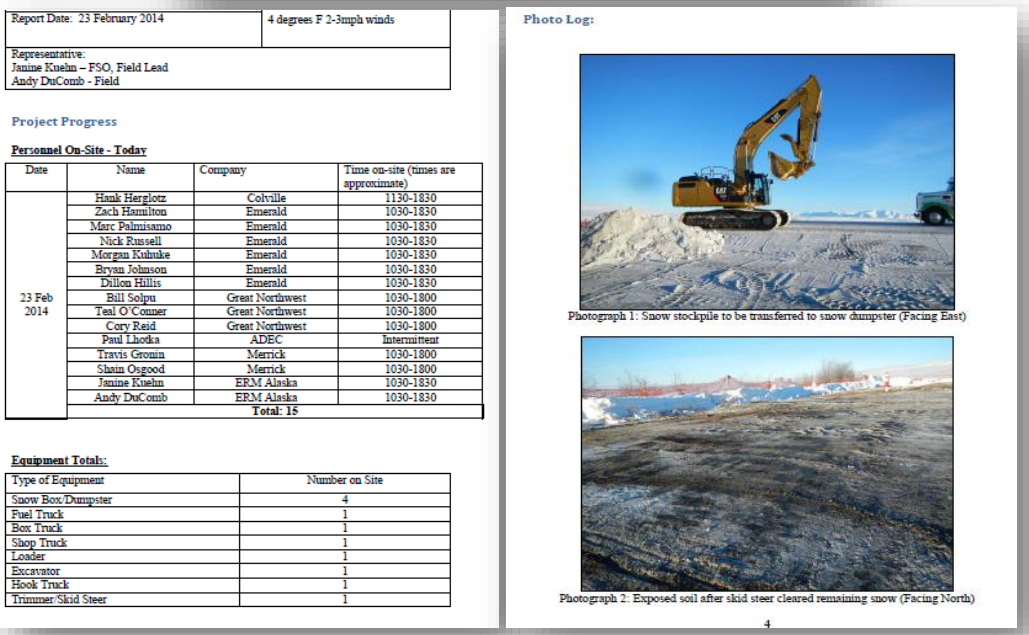
Initial Response - Communication Plan





Report Date: 23 February 2014 | 4 degrees F 2-3mph winds

Representative:
Janine Kuehn – FSO, Field Lead
Andy DuComb - Field

Project Progress

Personnel On-Site - Today

Date	Name	Company	Time on-site (times are approximate)
23 Feb 2014	Hank Herglotz	Colville	1130-1830
	Zach Hamilton	Emerald	1030-1830
	Marc Palmisano	Emerald	1030-1830
	Nick Russell	Emerald	1030-1830
	Morgan Kuhuke	Emerald	1030-1830
	Bryan Johnson	Emerald	1030-1830
	Dillon Hillis	Emerald	1030-1830
	Bill Solpu	Great Northwest	1030-1800
	Teal O'Conner	Great Northwest	1030-1800
	Cory Reid	Great Northwest	1030-1800
	Paul Lhotka	ADEC	Intermittent
	Travis Gronin	Merrick	1030-1800
	Shain Osgood	Merrick	1030-1800
	Janine Kuehn	ERM Alaska	1030-1830
	Andy DuComb	ERM Alaska	1030-1830
	Total: 15		

Equipment Totals:

Type of Equipment	Number on Site
Snow Box/Dumpster	4
Fuel Truck	1
Box Truck	1
Shop Truck	1
Loader	1
Excavator	1
Hook Truck	1
Trimmer/Skid Steer	1

Photo Log:

Photograph 1: Snow stockpile to be transferred to snow dumpster (Facing East)

Photograph 2: Exposed soil after skid steer cleared remaining snow (Facing North)

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- Stakeholder meetings
- Meeting minutes
- Documented approvals
- Daily reports
- Records of equipment and personnel on site
- Documented concurrence from stakeholders – including insurance company!

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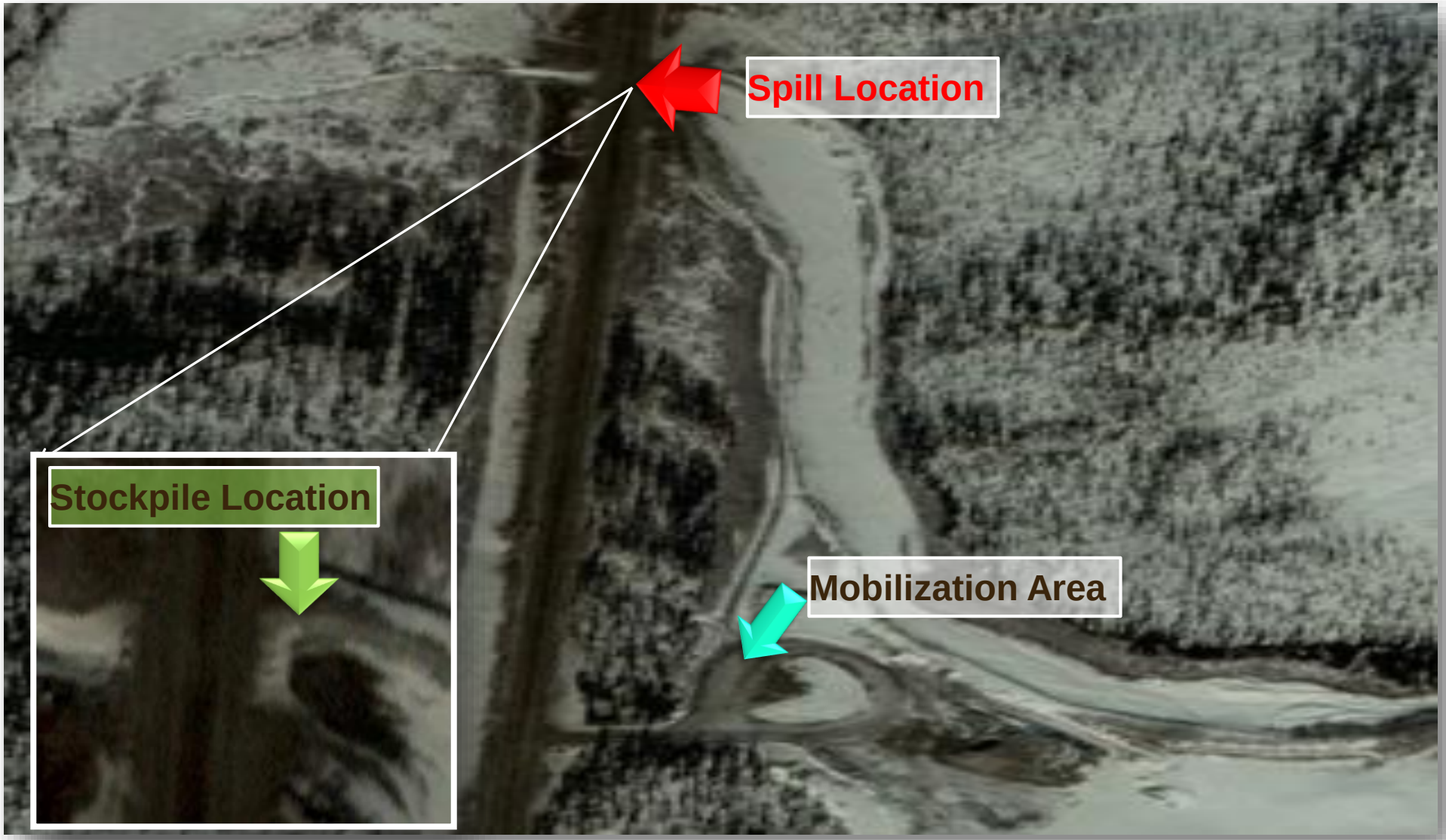
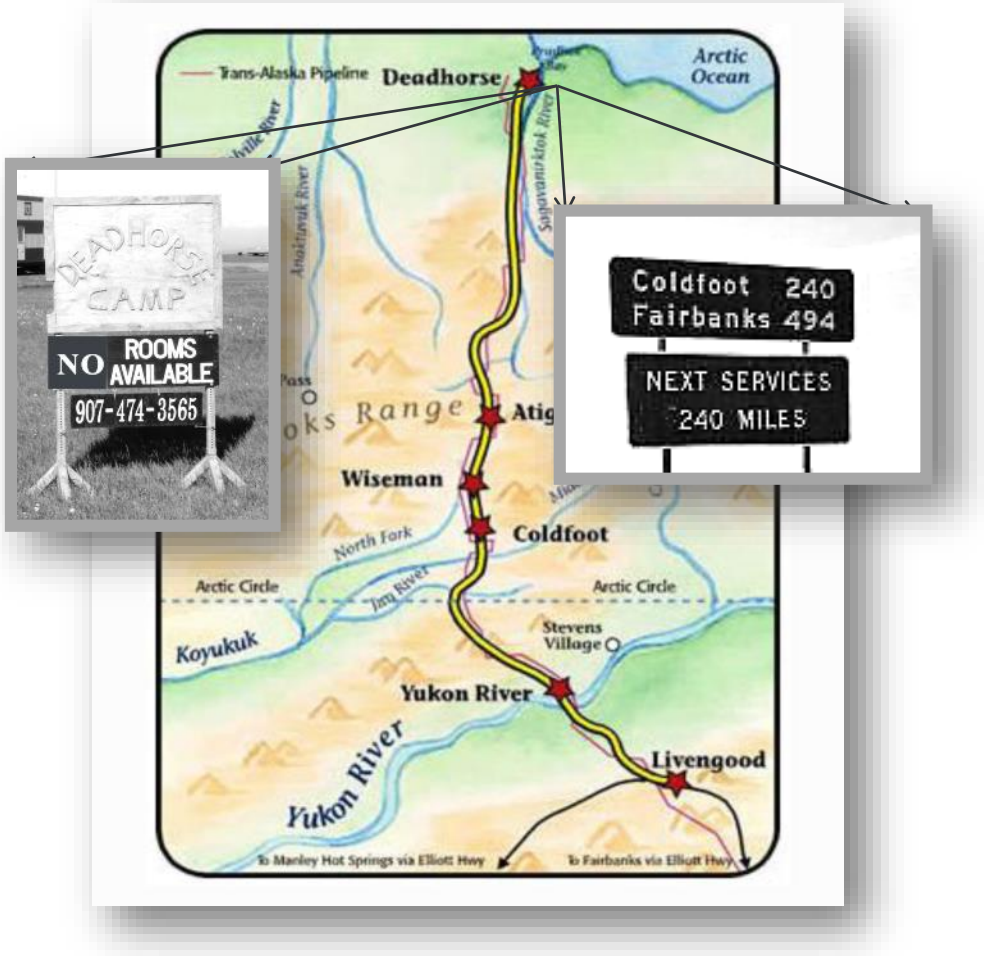
Initial Response - Logistics



Initial Response - Logistics



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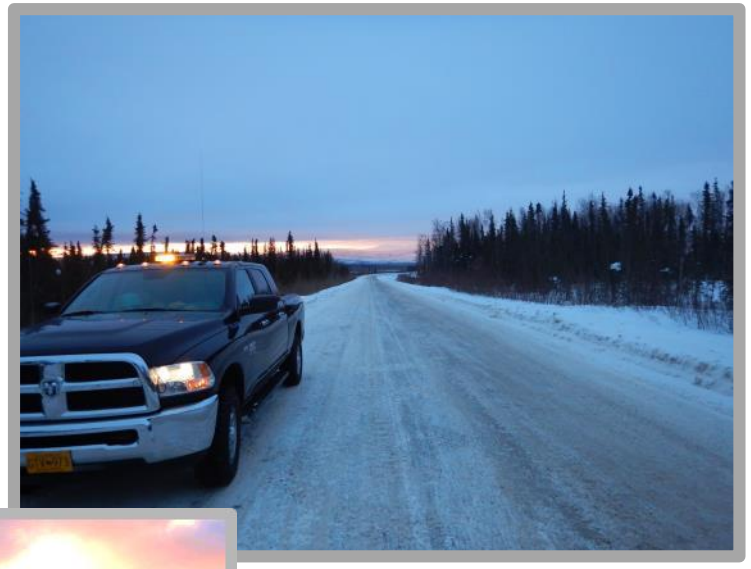
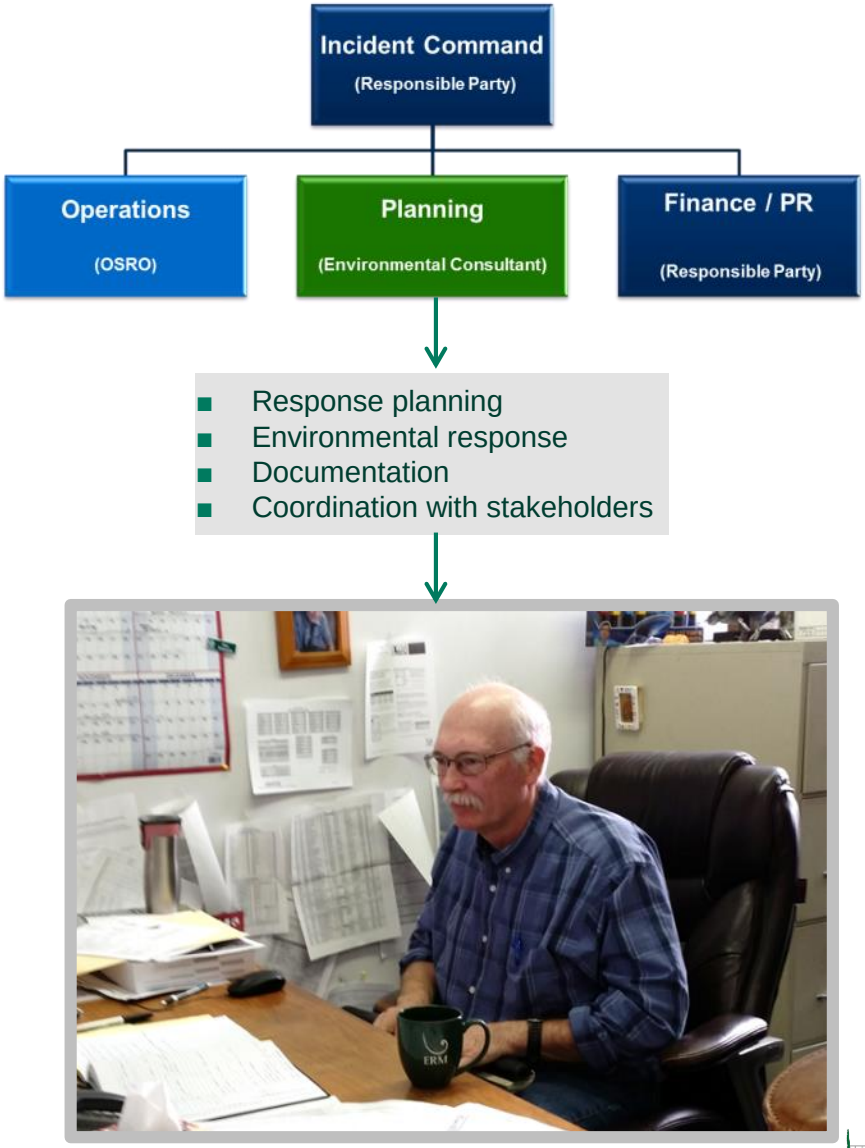
Managing Fatigue

- Short-term (day)
  - 12-hour shifts
- Long-term (multi-day)
  - Responders should be rotated out after 3 weeks maximum
- Activities
  - Labor-intensive
  - Mentally taxing
  - Driving
  - Operating equipment



The Response Plan

- **Requires input and concurrence from:**
  - Government agencies
  - Responsible party
  - Insurance Company
  - Right of way/land owners
  - Utility companies
- **Approvals must be documented**
- **Include robust communications list**
- **Identify cleanup end points and limits**
- **Decision makers must be available 24-hrs a day**

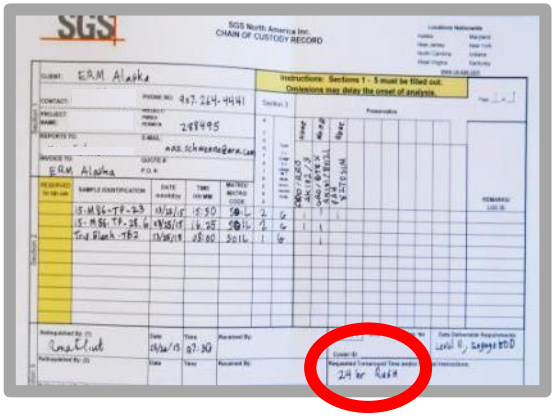


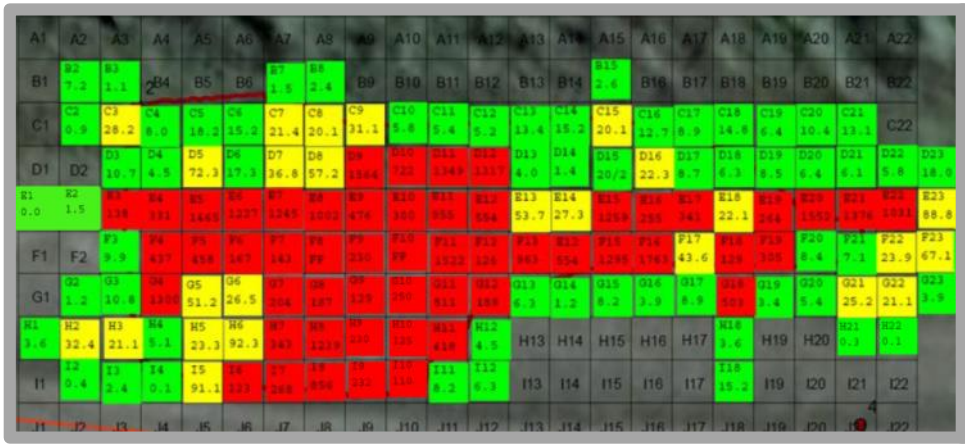
Additional Plans

- Health and Safety
- Environmental Assessment
- Restoration
- Hazing
- Traffic Control
- Sampling Plan
- Water Management
- Materials Mining Permit
- Materials Management
- Waste Management

Environmental Response

- Prepare a sampling plan
- Coordinate with the regulators
- Obtain concurrence on sampling locations and frequency
- Grid approach
- Manage expectations (Ex: 24-hour turn around)





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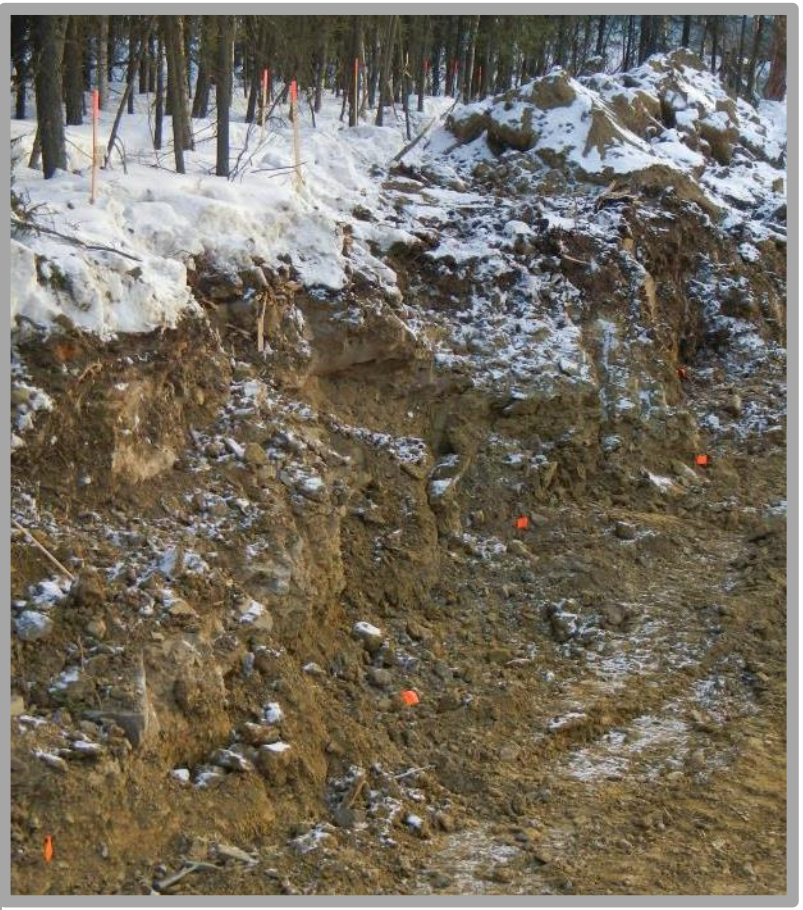
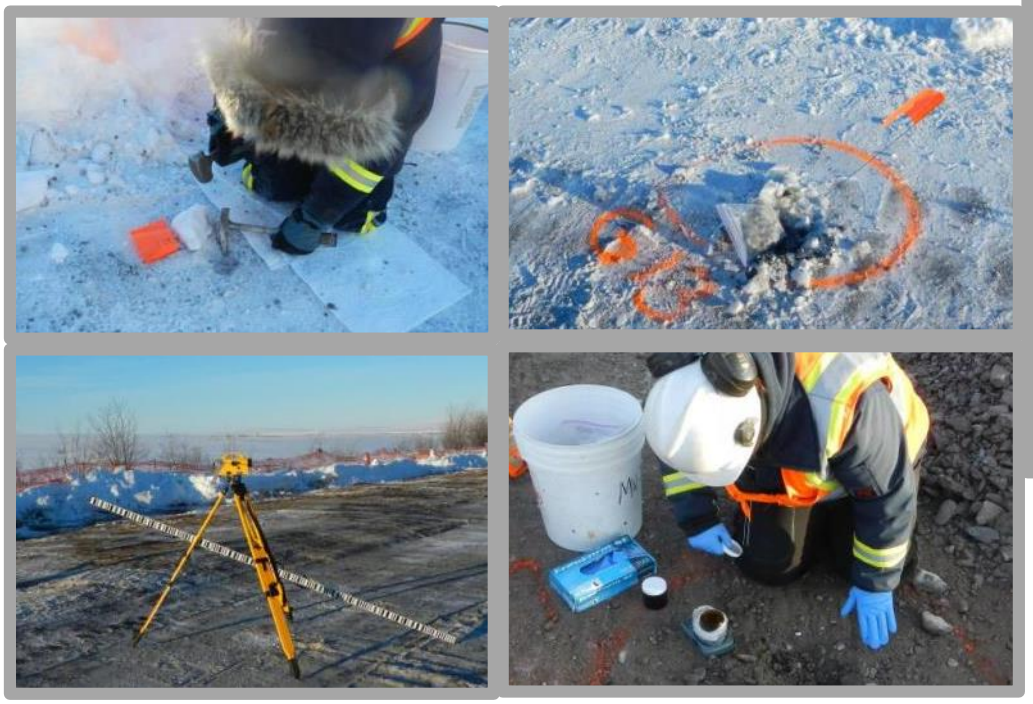
Screening and Confirmation Sampling

- Delineating the impacted area
- Consider land surveying support
- Consider soil borings or temporary well point



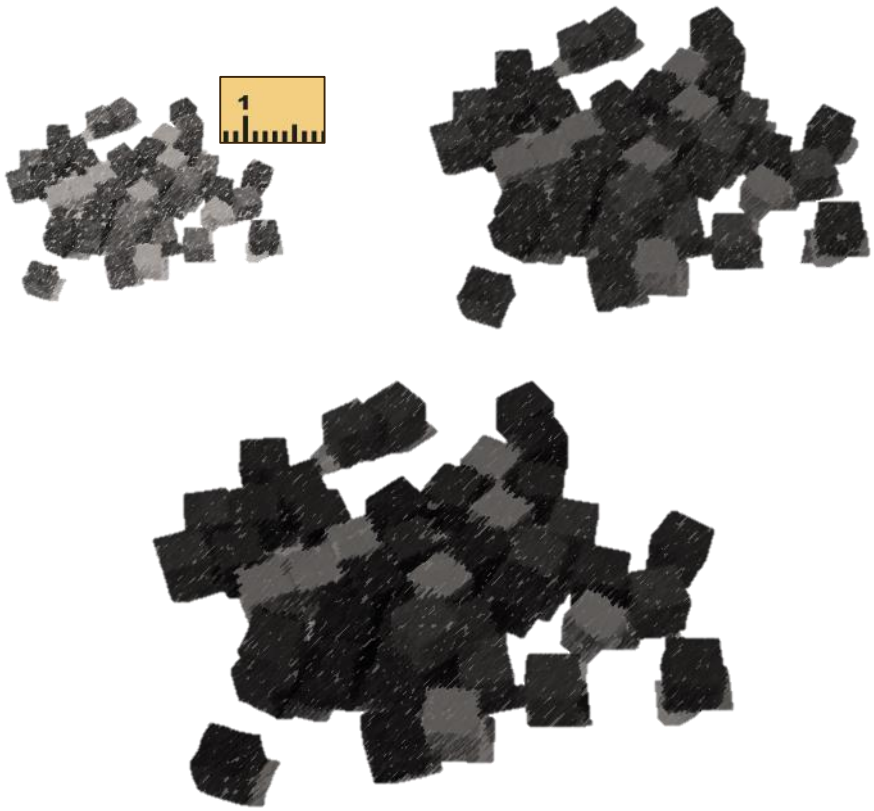


Documenting Fuel Recovered

- Critical to estimate and document throughout a response

Soil Screening based on Size

- Consider soil screening based on size to reduce waste & disposal



“What to do when you don’t get a clean hole?”

- A reason why documentation is so important
- Objective is to demonstrate effort and assess feasibility
- Managing realistic expectations
- Ensuring cleanup does not do more harm than good

End of Spill

- Critical to not rush this process
- Backfill, vegetation, restoration
- Demobilization logistics – can be as challenging as mobilization
- Managing waste & securing the site
- Archiving