

SPILL CLEANUP PROCEDURES

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Spill Cleanup

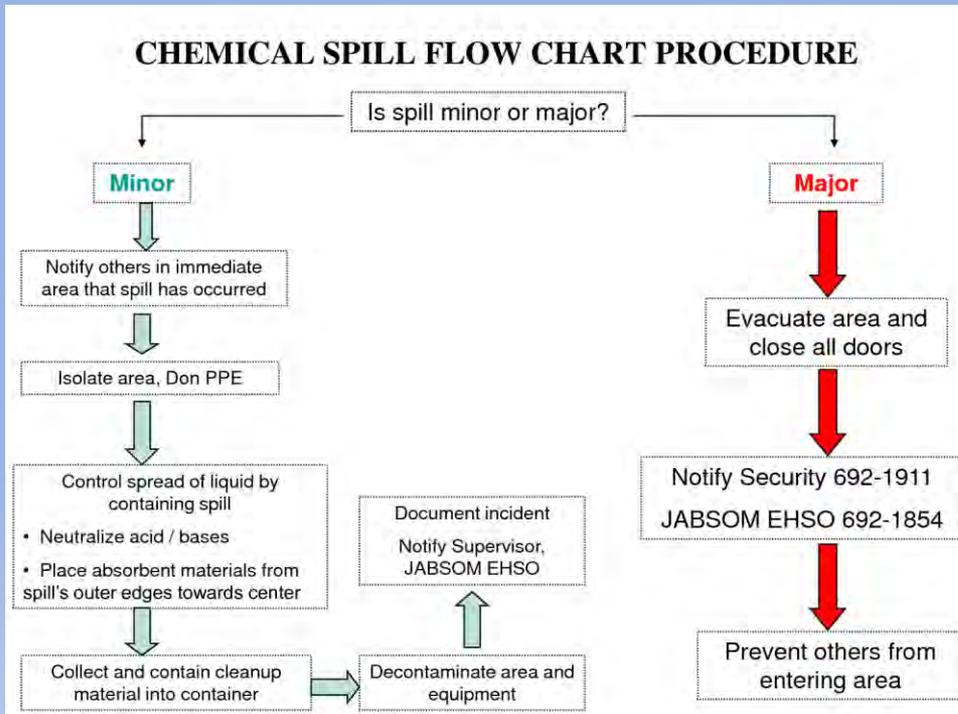
- Generally, BLM-Wyoming will use the WOGCC's cleanup standards for petroleum-contaminated soil
- The BLM may consider other standards, or will require compliance with mandatory standards provided by other agencies (such as WDEQ)
- The BLM can be more stringent when appropriate
 - BLM sensitive areas
 - Crucial wildlife areas
 - Recreation areas



Spill Response Plan

Develop a spill response plan

Make sure workers know it and abide by it



Proper Actions

Call 911, ambulance, fire department, etc.

Depending on severity of the spill:

- Initiate emergency response, if necessary
- Prevent further release
- Contain spill
- Report spill
- Remediate/Remove
- Spread
- Prevent



Written Reports via Sundry Notice

- The operator/lessee will provide written reports(s) per NTL-3A
- A proposed remediation plan
- Sampling plan(s)
- Subsequent laboratory analytical data



Restricting or Containing the Spread of Contaminants

- Safety always
- Let a spill continue to spread rather than endanger workers
- Proper PPE is essential



- Waddles
- Berms
- Portable liners

Restricting or Containing the Spread of Contaminants



Restricting or Containing the Spread of Contaminants



Frozen Conditions May Help Contain



Frozen soils may also spread the spill even further by not allowing it to infiltrate into the soil



Soil Sample

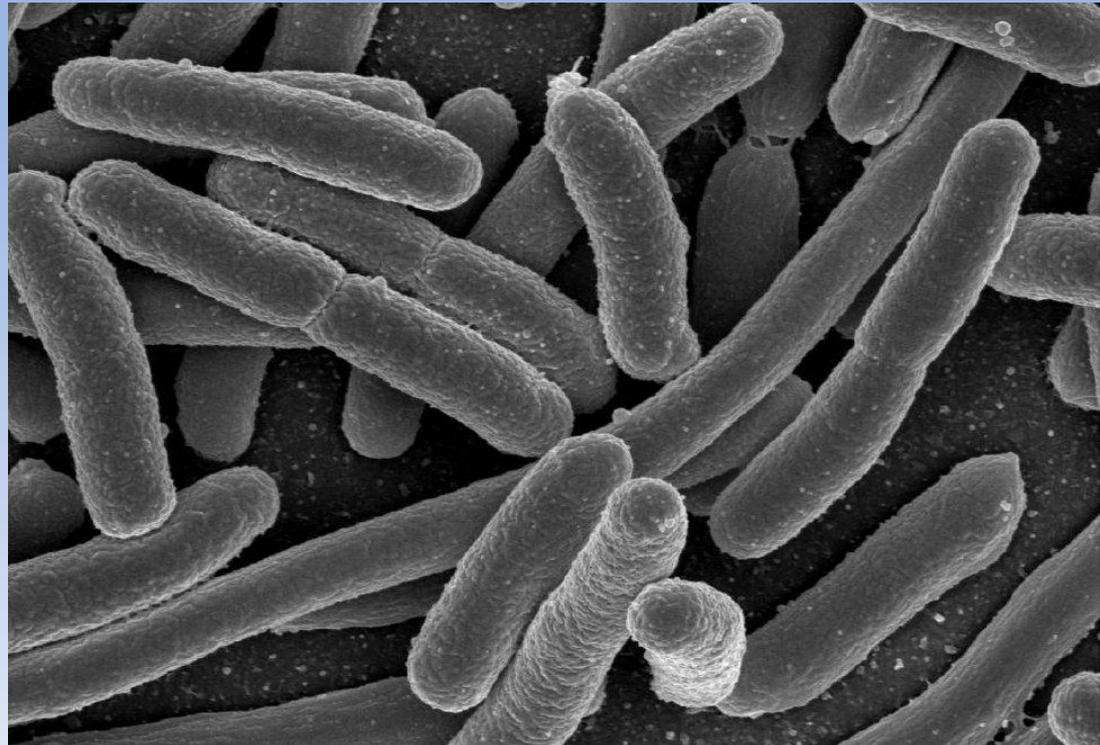
- Generally, contaminated soils above 10,000 parts per million (PPM) total petroleum hydrocarbons (TPH) will need remediation or removed
- PPM= mg/kg= mg/liter
- Sensitive areas may have more stringent acceptable TPH levels (up to 1,000 PPM TPH)
 - Wilderness study areas
 - Near residences
 - Adjacent to waterways



Remediating the Soil



- Dilution
- Biological control
- Chemical Control



Remediating the Soil

Instruction Memorandum WY-2009-021 states “where feasible and practical, onsite bioremediation of contaminated soil is preferable to-off site treatment.”



Dilution

- Add more soil to dilute
contaminates
- Turn and mix new
soil



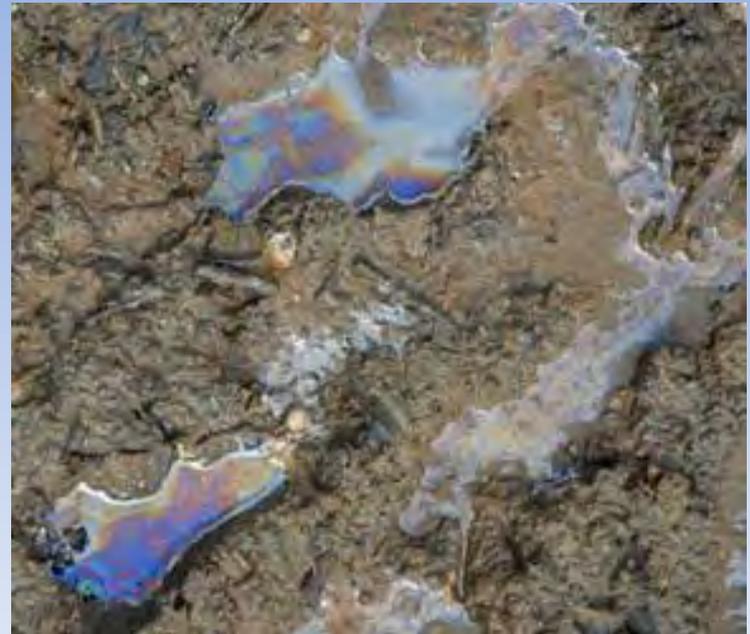
Biological Control (Bioremediation)

- Using microorganisms or their enzymes to remove toxic hydrocarbons from the environment
- Hydrocarbon eating bacteria
- Can significantly cut costs and time



Chemical Control

- Often water based surfactants
- Accelerates hydrocarbon degradation
- Does not contain enzymes/microbes
- Suppresses
 - Volatile organic compounds
 - Lower explosive levels



Removal

- If the contaminated soil is to be excavated and removed, it must go to an authorized disposal facility and BLM written approval is required, and other requirements may apply



Depending on the contaminants, some facilities may not accept soil for disposal

Haul tickets must be retained to document this action

Not all Wyoming landfills accept petroleum contaminated soils

WYDEQ can provide more approved locations

Removal

- WYDEQ Solids & Hazardous Waste Division (307) 777-7753
- Rock Springs Landfill accepts petroleum contaminated soils at \$50 per ton.



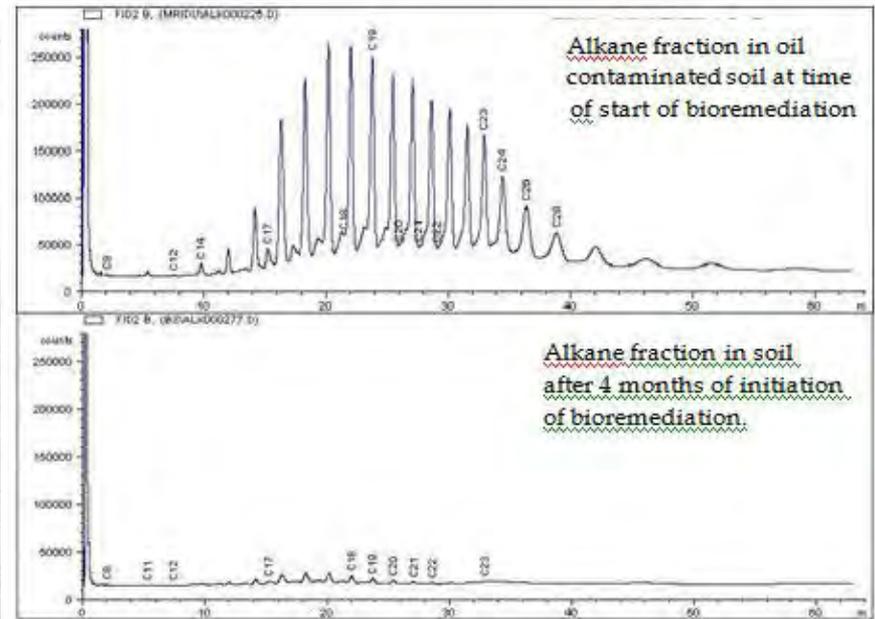
Monitoring the Site



- Visual inspection (frequency dependent upon severity)
- Laboratory analysis as needed
- Photo document progress

Cleaning Up

- The BLM will require confirmation that appropriate cleanup levels have been reached
- Include receipt of sampling results



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