Table XX - Remedial Technology Screening Summary
Frank Wear Site

General Response Action	Remedial Technology	Process Options	Description	Retained	Screening Comments [a]	FS Alternative [b]
No Action	None	None	Rely on natural attenuation to reduce concentration to acceptable levels.	Yes	Retained for baseline comparison.	All
Institutional Controls	Access Restrictions	Deed restrictions	Provide restrictions to prevent access to groundwater and impacted soil.	Yes	Would be combined with other technologies.	All
	Alternate Water Supply	Hook up distribution system, new supply well	Provide an alternate supply of drinking water.	No	Impacted groundwater is not a drinking water source at the site.	NA
	Monitoring	Monitoring wells	Ongoing monitoring.	Yes	Would be combined with other technologies.	All
Containment	Capping	Soil, clay cap, asphalt, concrete, synthetic liner, multilayer cap	Placement of cap or soil cover to minimize infiltration and contaminant migration.	Yes	Would be combined with other technologies (e.g., air sparging and soil vapor extraction).	2
	Vertical Barriers	Slurry wall, sheet piling	Placement of vertical, low-permeability barriers to minimize contaminant migration.	Yes	May be combined with hydraulic control technologies.	1
	Hydraulic Control	Extraction wells/trenches, reinjection wells/trenches	Modify the groundwater gradient to minimize off-site migration of contaminants.	Yes	May be combined with other technologies (e.g., vertical barriers).	1
In Situ Treatment	Air Sparging	In well, in formation	Removal of volatile contaminants through air injection, recovery of air at the surface.	Yes	Potentially effective, implementable, and cost effective. Air/vapor recovery via soil vapor extraction and capping.	2
	Enhanced Bioremediation	Carbon source/nutrient addition, anaerobic, in well, circulation wells, injection in formation	Enhance biodegradation through modification of subsurface chemistry.	Yes	Potentially effective, implementable, and cost effective.	2
	Chemical Treatment	Oxidation, reduction, in well, circulation wells, injection in formation	Injection of chemicals for in situ treatment of contaminants.	Yes	Potentially effective, implementable, and cost effective.	2
	Thermal Treatment	Injection of hot air/water/steam, electrical resistance heating, radio frequency heating	Removal of strippable contaminants through application of heat, recovery of vapor at surface.	No	Low cost effectiveness.	NA
	Hydrofracturing	Variety of fluids, pumping schedules	Improve soil permeability to enhance contact between contaminant and remediation technology.	No	Site soils already have relatively high permeability.	NA
	Permeable Reactive Barriers	Zero-valent iron, carbon/nutrient source	Install reactive barrier across flow path of contaminant plume for abiotic/biotic treatment.	Yes	Potentially effective, implementable, and cost effective.	1

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General Response Action	Remedial Technology	Process Options	Description	Retained	Screening Comments [a]	FS Alternative [b]
	Soil Vapor Extraction	Horizontal vents, vertical vents	Removal of volatile contaminants through extraction, recovery of vapor at surface.	Yes	Would be combined with other technologies (e.g., air sparging and capping).	2
	Soil Flushing	Water, surfactants, solvents	Removal of leachable contaminants, recovery of leachate at surface.	No	Low effectiveness; higher risk of contaminant mobilization.	NA
Ex Situ Treatment [c]	Air Stripping	Packed tower, diffused aeration, tray aeration, spray aeration	Removal of volatile contaminants through volatilization in aboveground reactor.	Yes	Potentially effective, implementable, and cost effective.	1
	Bioremediation	Fixed-film, anaerobic filters	Biological treatment of groundwater in aboveground bioreactor.	No	Difficult implementability and low cost effectiveness.	NA
	Adsorption	Activated carbon, other media	Removal of adsorbable contaminants using a series of carbon canisters.	Yes	Potentially effective, implementable, and cost effective.	1
	Advanced Oxidation	Ozone, hydrogen peroxide, UV light combinations	Break down organic contaminants through chemical oxidation.	No	Difficult implementability and low cost effectiveness.	NA
	Ion Exchange	Cationic, anionic	Removal of exchangeable ions by passing groundwater through a resin bed.	No	Not effective for PCE.	NA
	Membrane Processes	Reverse osmosis, ultrafiltration, pervaporation	Removal of dissolved contaminants through various membrane separation processes.	No	Difficult implementability and low cost effectiveness (typically combined with soil flushing technology).	NA
	Chemical Treatment	Oxidation, reduction	Addition of chemicals for ex situ treatment of contaminants.	No	Difficult implementability and low cost effectiveness.	NA
	Soil Vapor Extraction	Vented soil stockpiles	Removal of volatile contaminants through application of vacuum, recovery of vapor.	Yes	Potentially effective, implementable, and cost effective. Dependent on excavated soil contaminant concentrations.	3
	Soil Washing	Water, surfactants, solvents	Removal of leachable contaminants, recovery of leachate.	No	Difficult implementability and low cost effectiveness.	NA
	Soil Thermal Desorption	Rotary dryer, thermal screw	Removal of volatile contaminants through application of heat, recovery of volatiles.	No	Difficult implementability and low cost effectiveness.	NA
	Soil Off-Site Disposal	Landfill, incineration, biological treatment	Impacted soil is removed from the site, treated, and disposed at a licensed facility.	Yes	Potentially effective, implementable, and cost effective.	3

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General Response Action	Remedial Technology	Process Options	Description	Retained	Screening Comments [a]	FS Alternative [b]
Air Emissions/Off-Gas Treatment [d]	Adsorption	Activated carbon	Removal of adsorbable contaminants using a series of carbon canisters.	Yes	Potentially effective, implementable, and cost effective.	2 & 3
	Oxidation	Catalytic, thermal, internal combustion, UV	Organic contaminants are destroyed in a high-temperature combustor.	No	Low cost effectiveness.	NA
	High-Energy Destruction	Plasma	High-voltage electricity is used to destroy organic contaminants.	No	Low cost effectiveness.	NA

Notes:
NA - Not applicable.
a) Technical feasibility criteria evaluated as part of initial technology screening include technology effectiveness (short- and long-term, reduction in toxicity, mobility, and/or volume), implementability, and cost effectiveness.
b) Feasibility study (FS) remedial alternatives are (1) containment with groundwater treatment, (2) in situ treatment, and (3) source control and treatment.
c) Ex situ remedial technologies assume groundwater pumping and/or soil excavation.
d) Air emissions/off-gas treatment technologies assume capture and treatment of contaminant vapors generated by other remedial technologies.