Superfund

EnviroBlend® has extensive knowledge of the fate and transport of heavy metal contamination, as well as remedial action experience. Our scientists have spent years developing cost-effective chemistries for rendering lead, cadmium, arsenic, hexavalent chromium, zinc and other heavy metal contaminants non-hazardous. This research has resulted in a number of patented products that have been widely applied for heavy metal remediation sites across the country.

Ashepoo Superfund Site – South Carolina

Stabilized more than 60,000 cubic yards of soil impacted by arsenic and lead from former fertilizer operations. The site goals included *in-situ* and *ex-situ* soil stabilization and groundwater treatment. Initial groundwater was as low as 0.4 standard units.

Battery Manufacturing Client - Alabama

Treated over 200,000 tons of lead-contaminated soil and battery casings at significant savings over alternative remediation technologies. Site management allowed different areas to be treated at different dosage rates resulting in a very cost-effective approach.

Industrial Waste Disposal NPL Site– South Carolina

A site surrounded by extensive residential development required stabilization of more than 57,000 cubic yards of soil impacted by arsenic, cadmium, chromium, lead, mercury, and nickel. Advanced geostatistics and XRF analysis were used to focus the site excavation and treat and handle only affected soil. Our client constructively reused treated soil, sludge, and waste. The treated soil was used as internal berms within the on-site landfill. Results included a significant reduction in the treatment of additional material by attributing the existing chromium to background sources. The project was performed for a final cost of $7 million versus the preliminary cost estimate of $12 to $25 million, based on data from the US Environmental Protection Agency (USEPA).

Salvage Company – Delaware

Treated over 11,000 tons of lead-hazardous soil *ex-situ* using EnviroBlend at a former salvage yard. Low dosage rate resulted in reduced cost for transportation and disposal of treated soil. Treated material was disposed of off-site at a Subtitle D and TSCA landfill. Project was completed in less than 7 working days.

Former Foundry – Southeastern USA

Treated approximately 2,000 cubic yards of soil in stockpiles *ex-situ* with backhoes. Treated material disposed of at a Subtitle D permitted landfill. Total treatment and non-hazardous disposal costs were less than half of the cost of hazardous waste disposal.

Speakman Company Foundry Sand Site – Delaware

EnviroBlend® remediated over 5,000 tons of lead-impacted soil *in-situ* at an operating manufacturing facility under the Voluntary Cleanup Program (VCP) in Delaware. This required the preparation of a remedial action work plan and documentation report subject to public comment and review. Work was completed on a 0.5-acre site in a mixed residential and commercial area without affecting neighboring properties. The total project cost was more than 60% less than hazardous waste disposal.

Premier Magnesia, LLC, Corporate Headquarters
75 Giles Place, Waynesville, NC, 28786
www.enviroblend.com

EnviroBlend®
Metal Waste Treatment
BY PREMIER MAGNESIA LLC

Superfund

Marina Cliffs Former Barrel Superfund Site – Wisconsin

Stockpiled waste pit soil had been previously treated unsuccessfully with cement *ex-situ* treatment of 900 tons of soil that had a pHof12. Reduced TCLP-chromium from hazardous limits to near the detection limits.

CMC Lite Yard – Former Pesticide Production Site – Minnesota

Pesticides were produced from 1938 to 1968 at this five-acre former railroad yard adjacent to a residential area. Tests identified significant contamination, both on-site and in the surrounding neighborhoods. The remedial action plan called for the arsenic to be treated in place and disposed of off-site. EnviroBlend® chemistry for arsenic was found to be the best overall chemistry for the on-site treatment due to its effectiveness at very low doses and its low cost per treated ton of soil. More than 15,000 tons of contaminated soil were treated and removed from the site.

Callahan Mine Superfund – Maine

Charter Contracting completed OU1 Callahan Mine Superfund site remedial action in Brooksville, Maine. The Callahan Mine Superfund Site is the location of a 150-acre former zinc/copper open-pit mine adjacent to a residential neighborhood. Charter executed remediation of OU1 to address mine contamination (lead, arsenic, and PCBs) present in the residential use area. Lead, arsenic, and PCBs were discovered to exceed acceptable levels for human contact and long-term exposure. The mine ore pad was the source of significant groundwater contamination.

Project Highlights

- On-site treatment with EnviroBlend of 3,000 tons of TCLP-failed lead mine waste prior to off-site disposal
- Excavate and relocate metal-impacted soils from residential properties: 5,000 cy of lead and arsenic-contaminated soil removed
- Excavate, stockpile, characterize and dispose of PCB contamination: 15,000 tons of PCB impacted soils
- Total of 65,000 tons of contaminated soil excavated and staged
- 22,000 cubic yards of ore material relocated and installed as a multi-layer soil and geotextile cap to cover <10ppm PCBs
- Site improvements to minimize discharge runoff

C&R Battery Superfund Site – Virginia

EnviroBlend was used to remediate 38,000 cubic yards of soil with a pugmill. Treated material was disposed of off-site at a Subtitle D landfill. The project averaged throughput of 1,000 tons per day and reduced bulking of treated material by over 7,500 tons compared to treatment with Portland cement. In total, the client saved $300,000 compared to alternative technologies.

Former ABSCO Scrap Yard – Pennsylvania

The former ABSCO Scrap Yard had been utilized for 40 years, and previous to that had been used as a rail yard. As a result of its long history of industrial use, site soils were contaminated with polychlorinated biphenyls (PCBs), petroleum, lead, and other metals. The site was designated as a Superfund site and the former owner was under a consent order agreement with the United States Environmental Protection Agency (USEPA) and the Pennsylvania Department of Environmental Protection (PADEP) to remediate the property. Once sold, the remediation became the responsibility of the new owner prior to plans for redevelopment.

The untreated soil was found to be hazardous for lead, containing total lead concentrations in excess of 3,000 parts per million. EnviroBlend was added at 1%-3% by weight of the soil.

Post-treatment, the soil of the former ABSCO Scrap Yard was transported off-site and disposed of at a non-hazardous Subtitle-D landfill. This work was conducted in close contact with the USEPA and the agency approved the remediation and disposal option upon its completion. The client found the use of EnviroBlend to be a technically sound, environmentally acceptable, and cost-effective solution.

NYSDEC Erie Canal Frankfort Section – New York

The New York State Department of Environmental Conservation (NYSDEC) used EnviroBlend to remediate soil contaminated with cadmium and remove it offsite. TCLP levels prior to treatment were leaching above the TCLP standards. The use of EnviroBlend helped NYSDEC save $30,000 while working to restore the Erie Canal Frankfort Section in New York.

The Erie Canal – Town of Frankfort Section site is part of New York's Inactive Hazardous Waste Disposal Site (NYHWDS) Program, also known as the State Superfund Program. Contaminants of concern in the sediment and wetland soils were polychlorinated biphenyls (PCBs), cadmium, chromium, copper, lead, and mercury. Key components of the cleanup included: dredging and off-site disposal of approximately 24,000 cubic yards of canal sediments; restoration of the excavated canal bed to promote the re-establishment of the ecological environment; imported soil fill and native plantings; and monitoring the restored areas for erosion, settlement, and growth of plantings.

MRI Superfund Site - Florida

The MRI Corp Superfund site is an area where a recycling facility operated from 1961 to 1968 leaving contaminated soil and groundwater as result from facility operations. Over 60,000 tons of lead-contaminated soil was treated with a 2% dosage rate specialty EnviroBlend reagent. The project took bulk pneumatic deliveries, stored material on-site in silos and used a pugmill for mixing. The treated soils were rendered non-hazardous as confirmed by TCLP testing.

Railroad Company - Minnesota

On-site stabilization with EnviroBlend® recently saved a large railroad company over $8 million in hazardous waste transportation and disposal costs. Historical sandblasting operations had generated a stockpile of over 90,000 tons of hazardous lead-impacted soil. The site had been included on both the Superfund National Priorities List (NPL) and the Minnesota Permanent List of Priorities.

EnviroBlend treatment additives were mixed with the stockpile of lead-impacted soil to stabilize the hazardous material on-site. The stabilized soil was then disposed of at an off-site Subtitle D non-hazardous landfill.

By using EnviroBlend, this railroad company realized a number of benefits in addition to substantial cost savings, including:

- EnviroBlend was mixed with the contaminated material using conventional construction equipment.

- Soil treated with EnviroBlend is stable over a wide pH range and will not leach in the environment. This translates into long-term liability protection as supported by the USEPA's National Risk Management Laboratory.
- EnviroBlend has been used on over 50 remediation sites across the country and is widely accepted by regulatory agencies.

Marina Cliffs Barrel Site - Illinois

Reduced TCLP-chromium from hazardous limits to near the detection limits. The 11,600 tons of stockpiled waste pit soil were pre-treated to address other metals of concern. Additionally, 1,000 tons of this segregated stockpile soil were treated *ex-situ* for chromium.