Shaw Environmental, Inc.

312 Directors Drive
Knoxville, TN 37923
865.690.3211
Fax 865.690.3626

Shaw® Shaw Environmental, Inc.

January 24, 2006

SHAW-MC-CK11-0359
Project No. 800486

Mr. Lee Coker
U.S. Army Corps of Engineers, Mobile District
Attn: EN-GE/Lee Coker
109 St. Joseph Street
Mobile, Alabama 36602

Contract: DACA21-96-D-0018, Task Order CK11
Fort McClellan, Alabama

Subject: Letter Work Plan – Range 12 Supplemental Soil Removal and Erosion Control

Dear Mr. Coker:

Shaw Environmental, Inc. will conduct supplemental soil removal and erosion control activities at Range 12 located at Fort McClellan, Alabama. This scope of work continues the work conducted by Shaw in March 2005 during the interim soil removal action within the Alabama Department of Transportation (ALDOT) Eastern Bypass Corridor (EBC) at Range 12.

At your request, I have distributed copies of this work plan as indicated below. If you have questions, or need further information, please contact me at (865) 694-7361.

Sincerely,

Stephen G. Moran, P.G.
Project Manager

Attachments

Distribution: Lisa Holstein, FTMC (6 copies; 2 CDs)

bc: S. Moran
R. McBride
T. Winton
A. Mayila (letter only)
E. Hester (letter only)
Project File (letter only)
Central Files (1 copy & reproduction originals, 1 CD)

1.0 Introduction and Purpose

In 2005, Shaw removed, stabilized, and disposed of lead-contaminated soil up to the ALDOT property line within Range 12 to facilitate property transfer. However the ALDOT property line at Range 12 falls within the range's hillside impact zone. Consequently, the impact zone is divided into a lower hillside section within the EBC that was remediated and an upper hillside section outside the EBC that was not remediated. Although Shaw installed a silt fence along the ALDOT property, lead-contaminated soils from the upper section have breached the barrier and sloughed down into the lower hillside section within the EBC. Shaw will remove the lead-contaminated soil from the lower hillside section and provide erosion control measures along the ALDOT property line to help prevent further erosion and contamination of the EBC at Range 12. Also as part of this effort, Shaw will excavate additional soil from two areas within the original removal area that did not meet the cleanup goal. The work will be performed in accordance with the provisions of Prime Contract DACA21-96-D-0018 with the U.S. Army Corps of Engineers (USACE), Mobile District.

To fulfill the requirements of the SOW, the following tasks will be completed: work plan preparation, supplemental soil removal, including an x-ray fluorescence (XRF) survey and confirmation soil sampling and analysis, and implementation of erosion control measures. Unexploded ordnance (UXO) support is also required during field activities.

This work plan will be used in conjunction with FTMC Installation-wide Work Plan (IT, 1998 IT, 2002a), the Installation-Wide Sampling and Analysis Plan (IT, 2002b;), and the site-specific work plan previously prepared for Range 12 (Shaw, 2004).

2.0 Health & Safety

Field personnel will follow the health and safety procedures presented in the site-specific work plan previously prepared for Range 12 (Shaw, 2004). Two UXO safety specialists will be on-site at all times during intrusive field activities to provide UXO avoidance construction support.

3.0 Field Activities

This section describes the field activities to be performed during the supplemental soil removal and erosion control activities at Range 12.

3.1 UXO Avoidance

Shaw UXO personnel will use a magnetometer to perform a surface sweep of the sloughed material prior to commencing intrusive field activities. After the sites are cleared for access, work areas will be monitored by UXO personnel following procedures outlined in the SAP.

3.2 Soil Removal and Staging

This task encompasses the removal and management of the lead-contaminated soil that has sloughed into the EBC within the lower hillside at Range 12. Based on visual indications, an area of approximately 20 feet by 8 feet will be mechanically excavated to 1 foot below grade, generating approximately 6 cubic yards of material for disposal. If additional lifts are needed based on the post-excavation confirmation sampling results, the USACE will be contacted.

In addition to removing the sloughed soil from the lower hillside area, Shaw will further excavate two locations within the original removal area that did not meet the cleanup goal. At grid node locations S25,0 and S75,W50, Shaw will excavate additional soil to a depth of 1 foot. All removed soils will be staged on-site in a roll-off bin pending onsite stabilization and waste characterization.

3.3 Soil Stabilization and Waste Characterization

Soils staged in the roll-off bin will be stabilized using commercially available Portland cement (see Appendix A for Material Safety Data Sheet). An appropriate amount of cement (approximately 5 percent by volume) will be added to the soil and thoroughly mixed in the roll-off bin using the mechanical excavator. The objective of soil stabilization is to render the material non-hazardous for disposal purposes. If waste characterization sampling results (see below) indicate that the material is hazardous waste, Shaw will repeat the stabilization process.

Following soil stabilization, the waste material will be composite sampled for waste characterization purposes. The sample will be shipped to EMAX Laboratories, Inc. (EMAX) in Torrance, California for Toxicity Characteristic Leaching Procedure (TCLP) metals analysis using EPA SW-846 Methods 1311/6010B on a 72-hour turnaround time.

3.4 Waste Transportation and Disposal

Once waste characterization is complete, the roll-off bin will be loaded and transported to an appropriately licensed commercial landfill. Transportation will be provided by a licensed waste hauler. Shaw will document the quantity of waste loaded onto the truck and facilitate the Bill of Lading documentation. Because this is the same waste stream as previously generated, Shaw will use the existing ADEM-approved Waste Profile Form (#050044) for disposal of the additional material.

3.5 Post-Excavation XRF Survey and Confirmation Sampling

Once the sloughed soil has been removed from the lower hillside and the two additional areas within the original removal area have been further excavated, Shaw will perform on-site XRF analysis for lead on surface soil samples collected from these areas. A field portable, energy-dispersive XRF instrument will be used to optimize the analytical program and provide real-time data to the chemist. The XRF data in combination with fixed-laboratory confirmation data will be used to document the completion of the removal activity. This supplemental removal action will use the same 880 milligrams per kilogram cleanup goal previously established for the ALDOT EBC property. If the XRF results indicate that the cleanup goal has not been met in an area(s), then additional soil removal and XRF delineation will be performed. Approximately 30 samples will be collected and analyzed during the XRF survey.

From the 30 samples planned for the XRF survey, 4 samples (approximately 10 percent) will be selected for confirmation analysis at EMAX. Two of these samples will be collected as composite samples from the area of removed sloughed soil and one composite sample each will be collected from the two areas further excavated within the original removal area. The confirmation samples will be analyzed for lead using EPA Method 6010B. These data will be used to confirm the XRF results and document the final, post-excavation soil conditions. In

addition to these field samples, standard quality control (QC) samples will be collected including a field duplicate and a matrix spike/matrix spike duplicate. EMAX will report the results via electronic data deliverable and a certificate of analysis on a 24-hour turnaround time.

Sample documentation, custody, and tracking will follow the procedures described in the FTMC SAP. Combination sample collection and analysis forms will be used to document the XRF field screening results. Custody will be maintained at all times by the Shaw sampling team prior to shipment to EMAX using the typical chain-of-custody forms cited in the SAP.

3.6 Erosion Control

In addition to removing the sloughed soil from the lower hillside area, Shaw will perform additional work to help prevent further erosion from the upper hillside into the EBC. This will include repair of the silt fence previously installed and treatment of the exposed soil above the silt fence to encourage vegetative growth. Revegetation of the upper hillside will reduce the likelihood of further sloughing of material downslope. Vegetative growth will be promoted by applying grass seed mixed with a polymer and bonded fiber matrix (BFM) using a hydro-spraying technique. BFM is a hydraulically applied flexible erosion control blanket composed of long strand, thermally processed wood fibers and a proprietary crosslinked, hydro-colloid tackifier (see Appendix A for Material Safety Data Sheet and supplemental information). Approximately 24 to 48 hours will be required for the BFM to cure. Once cured, the BFM forms an intimate bond with the soil surface to create a continuous, flexible, and biodegradable erosion blanket that allows for rapid seed germination and accelerated plant growth. The BFM will be applied in accordance with the manufacturer's installation instructions and recommendations. Putnam Erosion Controls, Inc. will perform the erosion control treatment under subcontract to Shaw.

Shaw will not enter nor do any intrusive work in the upper hillside during this phase without UXO support.

4.0 Removal Action Report Revision

Upon completion of all fieldwork, laboratory analyses, and data validation and evaluation, Shaw will revise the draft Removal Action Report previously prepared for Range 12. The revised report will include a description of the supplemental soil removal and erosion control field activities and will present the additional analytical data.

5.0 Schedule

Shaw plans to mobilize for this effort on January 30, 2006. It is expected that the fieldwork will take approximately two weeks to complete, including waste transportation and disposal.

6.0 References

IT Corporation, 2002a, ***Draft Installation-Wide Work Plan, Fort McClellan, Calhoun County, Alabama***, Revision 3, February.

IT Corporation, 2002b, ***Draft Installation-Wide Sampling and Analysis Plan, Fort McClellan, Calhoun County, Alabama***, Revision 3, February.

IT Corporation, 2000, ***Final Installation-Wide Sampling and Analysis Plan, Fort McClellan, Calhoun County, Alabama***, March.

IT Corporation, 1998, ***Final Installation-Wide Work Plan, Fort McClellan, Calhoun County, Alabama***, prepared for the U.S. Army Corps of Engineers, Mobile District, August.

Shaw Environmental, Inc. (Shaw), 2004, ***Draft Soil Remediation, Interim Removal Action Work Plan, Safety and Health Plan, Iron Mountain Road Ranges on ALDOT EBC Property, Skeet Range, Parcel 69Q, Range 12, Parcel 70Q, and Range 13, Parcel 71Q, Fort McClellan, Calhoun County, Alabama***, August.

APPENDIX A

MATERIAL SAFETY DATA SHEETS AND SUPPLEMENTAL INFORMATION

BONDED FIBER MATRIX

Hydro-Blanket® BFM

Bonded Fiber Matrix



The Best Slope Protection at the Lowest Overall Cost

HYDRO-BLANKET® BFM BONDED FIBER MATRIX CONTROLS EROSION ON STEEP SLOPES IN A QUICK, SAFE, EASY HYDRAULIC APPLICATION.

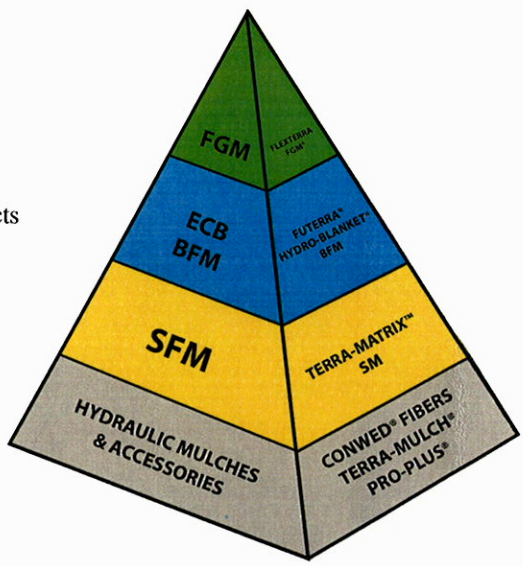
It is less expensive and faster to install than blankets or sod and more effective than blankets, competitive BFMs and conventional hydraulic mulches. Extensive testing proves that Hydro-Blanket BFM controls erosion more completely than competitive BFMs on steep slopes subjected to heavy rains. The combination of Thermally Refined™ wood fibers and multi-dimensional tackifiers provides greater water holding capacity for more complete germination and faster vegetation establishment. Proprietary cross-linked,hydro-colloid tackifiers and activators anchor the fiber mulch matrix to the soil surface.

HYDRO-BLANKET® BFM

- Dries to form a breathable, built-in-place blanket
- Contours with the surface to maintain intimate soil contact
- Less expensive and faster to install versus blankets or sod
- Environmentally safe and biodegradable
- Greater coverage than other BFMs for more cost-efficient application
- Replaces Conwed Fibers® Hydro-Mulch® 2500 and Terra-Mulch® BFM products

LEADING THE INDUSTRY

Profile Products LLC is the world's largest producer of erosion control blankets, hydraulic mulches, flexible growth media, bonded fiber matrices, storm water treatment devices and complementary accessories. Many of today's standards were innovations introduced by Profile. Those products, along with on-site consultation and on-going service comprise Profile Erosion Control Solutions™ (PECS). PECS is designed to help you find the most cost-effective means of controlling erosion, establishing vegetation and ensuring NPDES Phase II Compliance.



THE PROFILE PERFORMANCE PYRAMID
Hydro-Blanket is the industry's most effective BFM

Hydro-Blanket® BFM Specification

The Bonded Fiber Matrix (BFM) shall be a hydraulically applied flexible erosion control blanket composed of long strand, thermally processed wood fibers and a proprietary crosslinked, hydro-colloid tackifier. The BFM may require a 24-48 hour curing period to achieve maximum performance. Once cured, the BFM forms an intimate bond with the soil surface to create a continuous, absorbent, flexible and biodegradable erosion resistant blanket that allows for rapid germination and accelerated plant growth.

The BFM shall be Hydro-Blanket® BFM, and conform to the following property values when uniformly applied at a rate of 3500 pounds per acre (3900 kilograms/hectare) under laboratory conditions.

	TEST METHOD[1]	ENGLISH	SI
PHYSICAL			
Mass Per Unit Area	ASTM D-6566	11.5 oz/yd²	390 g/m²
Thickness	ASTM D-6525	0.12 in	3 mm
% Ground Cover	ASTM D-6567	99%	99%
Water Holding Capacity	Profile Products[2]	1350%	1350%
Cure Time	Observed	24-48 hr	24-48 hr
Color (fugitive dye)	Observed	Green	Green
ENDURANCE			
Functional Longevity	Observed	Up to 8 months	Up to 8 months
PERFORMANCE			
Cover Factor[3] (6 in/hr event)	ECTC Test Method #2	0.10	0.10
% Effectiveness[4]	ECTC Test Method #2	90%	90%
Vegetation Establishment	ECTC Test Method #4	600%	600%

1. ASTM and ECTC (Erosion Control Technology Council) test methods developed for Rolled Erosion Control Products.

2. Water Holding Capacity test developed by Profile Products LLC.

3. Cover Factor is calculated as soil loss ratio of treated surface versus an untreated control surface.

4. % Effectiveness = One minus Cover Factor multiplied by 100%.

COMPOSITION

All components of the BFM shall be pre-packaged by the Manufacturer to assure material performance and in compliance with the following values. **Under no circumstances will field mixing of additives or components be accepted.**

Thermally Processed Wood Fibers – 79.5% ± 2.5%
Proprietary Crosslinked Hydro-Colloid Tackifier – 10% ± 1%
Moisture Content – 10.5% ± 1.5%

INSTALLATION

Strictly comply with manufacturer's installation instructions and recommendations. Use approved hydro-spraying machines with fan-type nozzle (50-degree tip) whenever possible to achieve best soil coverage. Apply BFM from opposing directions to assure 95% soil surface coverage. Slope interruption devices or water diversion techniques are recommended when slope lengths exceed 70 ft (21m).

Erosion Control and Revegetation:

Step One: Apply seed, fertilizer and other soil amendments with a small amount of BFM for visual metering.
Step Two: Mix 50 lb of BFM per 125 gallons (23 kg/475 liters) of water over freshly seeded surfaces; confirm loading rates with equipment manufacturer.

SLOPE GRADIENT/CONDITION	ENGLISH	SI
≤ 3H to 1V	3000 lb/ac	3400 kg/ha
>3H to 1V and ≤2H to 1V	3500 lb/ac	3900 kg/ha
>2H to 1V and ≤1H to 1V	4000 lb/ac	4500 kg/ha
Below ECB or TRM	1500 lb/ac	1700 kg/ha
As infill for TRM	3500 lb/ac	3900 kg/ha

Consult comprehensive CSI formatted BFM specification for additional details.

PACKAGING

Bags: Net Weight - 50 lb, UV resistant plastic film.
Pallets: Weather-proof, stretch-wrapped with UV resistant pallet cover, 40 bags/pallet, 1 ton/pallet.

Profile™
Your Trusted Partner In Soil Solutions

IECA

HBFM-01 2/05

ECTC

For technical information call 1-866-325-6262. For distributor location and customer service call 1-800-366-1180.

750 Lake Cook Road · Suite 440 · Buffalo Grove, IL 60089

www.profileproducts.com

MATERIAL SAFETY DATA SHEET

CONWED FIBERS® ENVIROBLEND® w/SlikShot™

PROFILE PRODUCTS LLC
750 LAKE COOK ROAD - SUITE 440
BUFFALO GROVE, IL 60089

847-215-1144
800-366-1180
FAX 847-215-0577

HAZARDOUS COMPOUNDS	CAS NO	NIOSH	ACGIH	IDLH MG/CU METER
POPLAR, PINE & OAK WOOD DUST			5 MG / CUBIC METER	

HAZARDOUS RATINGS

HEALTH	2	FLAMMABILITY	1	REACTIVITY	0	DUST EXPLOSION	1

PHYSICAL / CHEMICAL CHARACTERISTICS

BOILING POINT	N/A	VAPOR PRESSURE	N/A
SPECIFIC GRAVITY	0.6444	VAPOR DENSITY	N/A
MELTING POINT	N/A	EVAPORATIVE RATE BuAc=1	N/A
SOLUBILITY IN WATER		"SLIGHT TO INSOLUBLE"	
APPEARANCE AND ODOR		"DARK GREEN WITH WOOD ODOR"	

FIRE AND EXPLOSION HAZARD DATA N/A **"NOT APPLICABLE"**

FLASH POINT	N/A	FLAMMABLE LIMITS	N/A	LEL	UEL

EXTINGUISHING MEDIA	"WATER"
FIRE FIGHTING PROCEDURES	"NORMAL – AVOID FUMES (IF ANY)"
UNUSUAL FIRE AND EXPLOSION HAZARDS	"DUST MAY FORM AN EXPLOSIVE MIXTURE IN AIR"

REACTIVITY DATA

STABILITY		CONDITIONS TO AVOID	
STABLE	UNSTABLE	YES	"AVOID OXIDIZERS / REDUCERS"

INCOMPATIBLE MATERIALS "AVOID STRONG OXIDIZERS / REDUCERS"

MATERIAL SAFETY DATA SHEET

CONWED FIBERS® ENVIROBLEND® w/SlikShot™

PAGE 2

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS **NONE**

HAZARDOUS POLYMERIZATION	MAY OCCUR? "WILL NOT OCCUR"	CONDITIONS TO AVOID "WILL NOT OCCUR"	NONE

HEALTH HAZARDS DATA

ROUTE OF ENTRY:	INHALATION? X	SKIN? X	INGESTION? X

HEALTH HAZARD: AVOID INHALATION OF ANY DUST, AVOID SKIN CONTACT, PROTECT EYES, AVOID INGESTION AND PROLONGED EXPOSURE.

OBSERVE FOR DEVELOPMENT OF ALLERGENIC REACTIONS AND CALL A PHYSICIAN

CARCINOGENICITY:	**NPT?**	**IARC MONOGRAPHS?**	**OSHA REGULATED?**
	"NO"	"NO"	"NO"

SYMPTOMS OF EXPOSURE: IRRITATES SKIN, EYE IRRITATION; BURNING, TEARING, SWELLING.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

ALLERGIES, DERMATITIS

EMERGENCY FIRST AID PROCEDURES: USE WATER TO CLEANSE AREA, EYES FLUSH WITH WATER, CONTACT PHYSICIAN IF ALLERGIC REACTIONS OCCUR WITHIN 0-2 HOURS.

PRECAUTIONS FOR SAFE HANDLING AND USE

GOGGLES FOR EYES, GLOVES FOR HANDS, WEAR CLOTHING TO PREVENT SKIN CONTACT

STEPS TO BE TAKEN IN CASE OF SPILL

SPRINKLE SPILLAGE COMPOUND TO MINIMIZE DUST AND SWEEP UP SPILLED DEBRIS, ABSORB AND SWEEP UP / COLLECT; AVOID INHALATION AND / OR INGESTION OF ANY DUST.

WASTE DISPOSAL METHOD	NO SPECIAL DISPOSAL METHOD	STANDARD LANDFILL

DISPOSAL ACCORDING TO LOCAL, STATE AND FEDERAL ENVIRONMENTAL REQUIREMENTS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

"NO SPECIAL REQUIREMENTS EXCEPT FOR CONTAINER DAMAGE". 1-1-03

Material Safety Data Sheet

Identity: Finn HydroStik

Section I-Product and Company Information

A500 Hydrostik, manufactured for Finn Corporation, 9281 LeSaint Dr. Fairfield, Ohio 45014 Information Phone (513)-874-2818

Section II-Composition/information on ingredients

Ingredient:	Guar Gum
CAS #:	900-30-0
% Weight:	90-100
Exposure Limits:	5 mg/m3 (respirable) PEL-TWA 3 mg/m3 (respirable) TLV-TWA 10 mg/m3 (inhalable dust) TLV-TWA

Section III-Hazards Identification

Emergency Overview:
This product is a natural product. High concentration of dust suspended in the air present a fire and explosion hazard. Excessive inhalation of dust may cause respiratory irritation and possible lung injury with symptoms of shortness of breath and reduced lung function.

Acute Health Effects:
Eye contact: Contact may cause irritation based on studies with laboratory animals

Skin contact: Contact may cause dryness

Inhalation: Inhalation of dust may cause irritation of the nose, throat and respiratory passages. Symptoms include coughing, sore throat, nasal congestion, sneezing, wheezing and shortness of breath. May cause allergic reaction in susceptible individuals.

Ingestion: DO NOT INGEST. While this product is non-toxic by ingestion, swallowing small amounts could cause complete blockage of the mouth, pharynx, trachea, esophagus and/or gastrointestinal system which may cause choking, suffocation and/or other life threatening medical conditions. Get medical attention immediately.

Chronic Health Effects: Prolonged overexposure to any nuisance dust may cause lung injury. Symptoms include cough, shortness of breath and reduced pulmonary function.

Carcinogenicity: None of the components of this product are listed as carcinogens or suspected carcinogens by OSHA, IARC or NTP.

Medical Conditions Aggravated by Exposure: Persons with pre-existing skin and respiratory disorders may be at an increased risk from exposure.

Material Safety Data Sheet
Identity: Finn HydroStik

Section IV-First Aid Measures

Eye: Flush immediately with large amounts of water. Eyelids should be held away from the eyeball to ensure thorough rinsing. If irritation persists get medical attention.

Skin: No first aid should normally be needed. Wash exposed skin with soap and water after use. If irritation or rash develops get medical attention. Use skin lotion if dryness occurs.

Inhalation: If symptoms of irritation or allergy develop, remove person from source of exposure to fresh air. If symptoms persist get medical attention.

Ingestion: Swallowing even small amounts may have serious, life-threatening effects. Get immediate medical attention.

Section V-Firefighting Measures

Flash point:	Not applicable
Lower explosion limit:	0.04 oz/cf
Autoignition temperature:	Not Determined
Upper explosion limit:	Not Determined

Extinguishing Media: Use water fog, dry chemical, carbon dioxide or foam. Do not use streams of water as dust dispersed by water streams an explode.

Special Fire Fighting Procedures: Wear positive pressure, self-contained breathing apparatus and full protective clothing.

Unusual Fire and Explosion Hazards: Powder has the potential to form explosive mixtures with air. Avoid creating dust. Keep away from heat, sparks, and open flames.

Combustion Products: Oxides of carbon and nitrogen

Section VI-Accidental Release Measures

Wear appropriate protective clothing and equipment. Sweep up or vacuum, avoiding the creation of airborne dusts, and collect into a suitable container for disposal. Keep spilled product away from flammable and combustible materials. Wash residual traces with hot water after clean-up is complete. Caution: guar gum is very slippery when wet.

To the best of our knowledge, the information contained herein is accurate. However, Finn Corporation assumes no liability whatsoever for the accuracy or completeness of the information contained herein.

Material Safety Data Sheet
Identity: Fine HydroStik

Section VII-Handling and Storage

Handling: Avoid generating and breathing dust. Avoid eye contact. Use with adequate local exhaust ventilation and dust collection to maintain the concentration of airborne dusts below the exposure limits. If clothing becomes contaminated, remove and launder before re-use. Wash thoroughly after handling.

Storage: Keep product dry. Store in a cool and dry area. Keep containers closed to avoid moisture absorption.

Section VIII-Exposure Controls/Personal Protection

Engineering Controls: Use explosion proof local exhaust ventilation as needed to maintain exposure concentrations below the recommended limits.

Personal Protective Equipment (PPE):
Eye Protection: Safety glasses or goggles recommended.

Skin Protection: Robber, plastic or leather gloves recommended.

Respiratory Protection: If the concentrations exceed the Threshold Value Limit (TLV), a NIOSH approved dust respirator, supplied air respirator or self-contained breathing apparatus is recommended. Select appropriate respiratory protection for the respirable particulates based on consideration of the airborne workplace concentrations and duration of exposure. Select and use respirators in accordance with 29 CFR 1910.134, ANSI Z88.2, the NIOSH Respirator Decision Logic and good industrial hygiene practice. http://www.access.gpo.gov/nara/cfr/cfr-retrieve.html1#page1, ANSI Z88.2 http://www.ansi.org/, the NIOSH Respirator Decision Logic an good industrial hygiene practice http://www.cdc.gov/niosh/homepage.html.

Section IX-Physical and Chemical Properties

Boiling point:	Not Applicable
Melting point:	Decomposes
Vapor pressure:	Not Applicable
% Solubility in water:	Complete
Odor/appearance:	Yellow powder with bean-like odor
Specific Gravity:	Not applicable
% volatile:	Not applicable
Evaporation rate (butyl acetate=1):	Not applicable
pH:	Not applicable
Octanol/water partition coefficient:	Not applicable

Material Safety Data Sheet
Identity: Finn HydroStik

Section X-Stability and Reactivity

Stability: Material is stable
Incompatibility: Avoid high temperatures, sparks, open flames and moisture. Avoid contact with strong oxidizing agents.

Hazardous Reactions-Decomposition Products: Combustion may produce carbon dioxide, carbon monoxide and oxides of nitrogen.

Hazardous Polymerization: Will not occur.

Section XI-Toxicological Information

Guar Gum: Oral rat LD50: 9.4g/kg

Guar gum is a natural food additive, although direct use in powder or pill form is banned by the FDA due to the risk of respiratory or gastrointestinal blockage.

Section XII-Ecological Information

No ecotoxicity data is available at this time.

Section XIII-Disposal Considerations

Dispose in compliance with all applicable federal, state and local regulations. Do not dump down sewers or drains as this may cause blockage.

Section XIV-Transport Information

U.S. Department of Transportation (DOT)	
Proper shipping name:	No regulated
Hazard class:	N/A
UN/NA code:	N/A
Packing group:	N/A
Labels required.	N/A
IMDG code:	
Proper shipping name:	Not regulated
Hazard class:	N/A
UN/NA code:	N/A
Packing group:	N/A
Labels required:	N/A

Material Safety Data Sheet

Identity: Finn HydroStik

Section XV-Regulatory Information

U.S. Regulations
Comprehensive Environmental Reponse and Liability Act of 1980 (CERCLA)
Reportable Quantity:
This product is not subject to CERCLA reporting requirements as it is sold.

OSHA hazard categories: Irritant, sensitizer, combustible dust

Superfund Amendments and Reauthorization Act (SARA) Title III Information:
SARA Section 311/312 hazard categories: Fire Hazard, Acute Health
This product contains the following toxic chemical(s) subject to reporting requirements of SARA Section 313: None

California Proposition 65: This product is not known to contain chemical regulated under California Proposition 65.

Toxic Substances Control Act (TSCA): All components of this product are listed on the TSCA inventory or exempt from notification requirements.

European Inventory of Commercial Chemical Substances: All of the components of this product are listed on the EINECS Inventory or exempt from notification requirements.

Australian Inventory of Chemical Substances: All of the components of this product are listed on the EINECS inventory or exempt from notification requirements.

Canadian WHIMIS Classification: Class B, Division 4 (flammable solid)

Section XVI-Other Information

NFPA Ratings:
Health: 1 Flammability: 2 Reactivity: 0

HMIS Ratings:
Health: 1 Flammability: 2 Reactivity: 0

Abbreviations:

ACGIH	American Conference of Governmental Industrial Hygienists
ANSI	American National Standards Institute
CAS	Chemical Abstracts Service
CDC	Center for Disease Control and Prevention
CFR	The Code of Federal Regulations
EEC	European Economic Community
EINECS	European Inventory of Existing Commercial Chemical Substances
EPA	United States Environmental Protection Agency

Material Safety Data Sheet

Identity: Finn HydroStik

FDA	United states Food and Drug Administration
HMIS	Hazardous Material Identification System
IARC	International Agency for Research on Cancer
IMDG	International Maritime Dangerous Goods
LD50	Lethal Dose expected to cause death in 50% of the test animals
MITI	Ministry of International Trade and Industry
NFPA	National Fire Protection Association
NIOSH	CDC-National Institute for Occupational Safety
NTP	National Toxicological Program
OSHA	U.S. Department of Labor, Occupational safety and health administration
PEL	OSHA-permissible exposure limit
TLV	ACGIH-threshold
TWA	Time weighted average
UN/NA	United Nations/North America
US	United States
WHMIS	Workplace Hazardous Materials Information System

Applied Polymer Systems, Inc.

Material Safety Data Sheet

1. IDENTIFICATION OF THE PRODUCT AND THE COMPANY

Product Name: APS 702 Silt Stop

Supplied:
Applied Polymer Systems, Inc.
517 Industrial Drive
678-494-5998
678-494-5299 Fax
www. siltstop.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

Identification of the preparation: Anionic water-soluble Co-polymer

3. HAZARD IDENTIFICATION

Aqueous solutions or powders that become wet render surfaces extremely slippery.

4. FIRST AID MEASURES

Inhalation: Move to fresh air.

Skin contact: Contact with wet skin could cause severe irritation and / or burning. Wash with water and soap. In case of persistent skin irritation, consult a physician.

Eye contact: Rinse thoroughly with plenty of water, also under the eyelids, seek medical attention in case of persistent irritation.

Ingestion: Consult a physician

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Water, water spray, foam, carbon dioxide, dry powder.

Special fire-fighting precautions: Aqueous solutions or powders that become wet render surfaces extremely slippery.
Protective equipment for firefighters: No special equipment required.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: No special precautions required.

Methods for cleaning up: Do Not flush with water. Clean up promptly by sweeping or vacuum. Keep in suitable and closed containers for disposal. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Handling: Avoid contact with skin and eyes. Avoid dust formation. Do not breath dust. Use dust mask during handling. Wash hands after handling.
Storage: Keep in a cool, dry place. (0-30° C)

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering controls: Use local exhaust if dusting occurs. Natural ventilation is adequate in absence of dust.

Personal protection equipment

Respiratory Protection: Dust safety masks are recommended where dusting may occur.
Hand protection: Dry cloth, leather or rubber gloves.
Eye Protection: Safety glasses with side shields or face mask. Do not wear contact lenses.
Skin protection: No special protective clothing required.
Hygiene measures: Wash hands before breaks and at end of work day.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form: Granular solid
Color: White
Odor: None
pH: 5-6
Melting point: N/A
Flash point: N/A
Vapor density: N/A

10. STABILITY AND REACTIVITY

Stability: Product is stable, no hazardous polymerization will occur.

Materials to avoid: Oxidizing agents may cause exothermic reactions.

Hazardous decomposition products: Thermal decomposition may produce nitrogen oxides (NO_x), carbon oxides.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral: LD 50/oral/rat > 5000 mg/kg

Inhalation: The product is not expected to be toxic by inhalation.

Dermal: The results of testing on rabbits showed no toxicity even at high dose levels.

Chronic toxicity: A two year feeding study on rats did not reveal adverse health effects. A one year feeding study on dogs did not reveal adverse health effect

12. ECOLOGICAL INFORMATION

Fish: LC 50/Fathead minnows/96h>1000 mg/l

Water Flea: LC 50/*Daphnia Magna*/48h/>420mg/l

Algae: EC 50/*Selenastrum capricornutum*/96h>500mg/l

Bioaccumulation: The product is not expected to bioaccumulate.

Persistence / degradability: Not readily biodegradable (~40% after 28 days).

13. TRANSPORT AND REGULATORY INFORMATION

Not regulated by DOT. **RCRA status-Not a hazardous waste**

NFPA and HMIS ratings:

NFPA	**Health:**	3	**Flammability:**	0	**Reactivity:**	1
HMIS	**Health**	2	**Flammability**	0	**Reactivity**	1

PORTLAND CEMENT

GIANT CEMENT CO -- TYPE I-II PORTLAND CEMENT -- 5610-00-892-3985

========== Product Identification ==========

Product ID:TYPE I-II PORTLAND CEMENT
MSDS Date:11/26/1991
FSC:5610
NIIN:00-892-3985
MSDS Number: BPFFV
=== Responsible Party ===
Company Name:GIANT CEMENT CO
Box:218
City:HARLEYVILLE
State:SC
ZIP:29448
Country:US
Info Phone Num:803-496-5033
Emergency Phone Num:803-496-5033
CAGE:GIANT
=== Contractor Identification ===
Company Name:GIANT CEMENT CO
Box:218
City:HARLEYVILLE
State:SC
ZIP:29448
Country:US
Phone:803-496-5033
CAGE:GIANT

========== Composition/Information on Ingredients ==========

Ingred Name:SILICIC ACID, CALCIUM SALT; (CALCIUM SILICATE)
CAS:1344-95-2
RTECS #:VV9150000
OSHA PEL:15 MG/M3 TDUST;5RESP
ACGIH TLV:10 MG/M3 TDUST

Ingred Name:ALUMINATES

Ingred Name:FERRITE (FERROSPINEL); (FERRITE)
CAS:1317-54-0
RTECS #:LK0495000

Ingred Name:GYPSUM
CAS:13397-24-5
RTECS #:MG2360000
OSHA PEL:15MG/M3 TDUST;5RESP
ACGIH TLV:10 MG/M3 TDUST

========== Hazards Identification ==========

LD50 LC50 Mixture:NONE SPECIFIED BY MANUFACTURER.
Routes of Entry: Inhalation:YES Skin:NO Ingestion:YES
Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO
Health Hazards Acute and Chronic:EYE AND SKIN IRRITATION.
Explanation of Carcinogenicity:NOT RELEVANT
Effects of Overexposure:SEE HEALTH HAZARDS.
Medical Cond Aggravated by Exposure:NONE SPECIFIED BY MANUFACTURER.

========== First Aid Measures ==========

First Aid:SKIN: FLUSH OFF WITH CLEAN WATER. EYES: IMMEDIATELY FLUSH W/POTABLE WATER FOR A MINIMUM OF 15 MINUTES, SEEK ASSISTANCE FROM MD . INHAL: REMOVE TO FRESH AIR. SUPPORT BREATHING (GIVE O*2/ARTF RESP) . INGEST: CALL MD IMMEDIATELY .

========== Fire Fighting Measures ==========

Extinguishing Media:MEDIA SUITABLE FOR SURROUNDING FIRE .
Fire Fighting Procedures:WEAR NIOSH/MSHA APPROVED SCBA & FULL PROTECTIVE EQUIPMENT .

========== Accidental Release Measures ==========

Spill Release Procedures:NORMAL CLEAN UP.
Neutralizing Agent:NONE SPECIFIED BY MANUFACTURER.

========== Handling and Storage ==========

Other Precautions:AVOID PROLONGED CONTACT BETWEEN SKIN SURFACES AND WET PORTLAND CEMENT AND CLOTHING SATURATED WITH WET PORTLAND CEMENT. CLOTHING COMING IN CONTACT SHOULD BE WASHED WITH CLEAN WATER.

========== Exposure Controls/Personal Protection ==========

Respiratory Protection:NIOSH/MSHA APPROVED DUST RESPIRATOR.
Protective Gloves:IMPERVIOUS GLOVES .
Eye Protection:CHEMICAL WORKERS GOGGLES .
Other Protective Equipment:NONE SPECIFIED BY MANUFACTURER.
Work Hygienic Practices:NONE SPECIFIED BY MANUFACTURER.
Supplemental Safety and Health
NONE SPECIFIED BY MANUFACTURER.

========== Physical/Chemical Properties ==========

Spec Gravity:3-3.2 (H*2O=1)
Solubility in Water:NOT SOLUBLE
Appearance and Odor:GRAY POWDER - ODORLESS.

========== Stability and Reactivity Data ==========

Stability Indicator/Materials to Avoid:YES
Hazardous Decomposition Products:NONE

========== Disposal Considerations ==========

Waste Disposal Methods:NORMAL DISPOSAL. DISPOSAL MUST BE IN ACCORDANCE WITH FEDERAL, STATE, OR LOCAL REGULATIONS .