DEPARTMENT OF ENVIRONMENTAL PROTECTION
EMERGENCY RESPONSE FIELD INSPECTION REPORT

Type of incident: Frac Fluid at Marcellus Drilling Site	**Date:** 12/21/2009
Facility or Location: Cabot Oil Drilling Site (Hull Farm #2H)	
Municipality: Dimock Township	**County:** Susquehanna
Latitude: 41 42 42.92	**Longitude:** 075 54 04.72
Call Out Time: 22:30	**Return Time:** 02:00
Site Arrival Time: 23:45	**Site Departure Time:** 00:30
Beginning Mileage: 20392	**Ending Mileage:** 20488
Complainant Name and Address: Cabot Oil	
Telephone Number ( )	
Responsible Party Name and Address: Cabot Oil, Hull Farm Site	
Telephone Number ( )	
Weather Conditions: sporadic snow flurry, low 30s	

Remarks:

22:30 Telecon from Bob Bisignani. Cabot Oil Drilling Site on Hull Farm. Contact Cabot representative Steve Barrett (304-552-3757) to make arrangements to meet. Contacted Barrett meet the second blinker light in Dimock Township and travel to site.

23:45 Arrive on site with Steve Barrett, Cabot Completion Consultant. Sand in the frac fluid eroded an elbow in piping during pumping. Estimated loss of frac fluid was 15-barrels at 45-gallons per barrel. Plastic containment areas around equipment contained an estimated 12-barrels. One area outside of containment areas where spill occurred. Cabot pumped as much frac fluid as possible from the contained and uncontained areas. Residual material on surface in appearance of frozen fine sandy material.

Basic Total Spill=675 gallons Estimated Non Recovered Spill=135 gallons

The sand portion of this volume=2-pounds sand/gallon frac fluid

MSDS Information attached and summarized below:

Superior Well Services Super Scale Control TSC added at 0.1-gallon per 1000-gallons water. Discarded product as-is would be RCRA Hazardous Waste.

Superior Well Services KR-153SL Biocide added at 0.1-gallon per 1000-gallons water. Discarded product as-is non determined as a RCRA Hazardous Waste.

Superior Well Services WFR-3B Friction Reducer added at 0.5-gallon per 1000-gallons water. Product dangerous if ingested or inhaled. Discarded product status not available on RCRA.

Superior Well Services ICP-1000 Iron Control Additive added at 0.1-gallon per 1000-gallons water. Discarded product as-is would be RCRA listed D002 Waste.

MSDS Sheet attached. Note that most of above additives would be less than the respective 0.1 and 0.5 gallons for the total spill. The frac equipment on the trucks would be moved during morning and residual material would be scraped from surface and contained for disposal..

00:30 Spill appears to be contained and frozen ground and material minimizing any migration. Departed site. 11:30 arrive home and report writing.

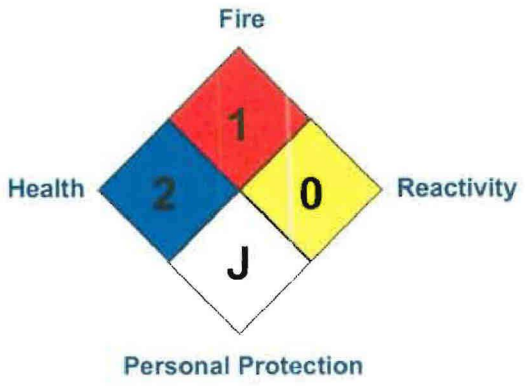
Materials Used: none

Sample Collected? no	**Sample Numbers:**	**Analysis?**
Investigated By: John S. Mellow	**PADEP**	**Northeast Regional Office**

SUPERIOR
WELL SERVICES

HMIS Hazard Rating:

4 = Severe
3 = Serious
2 = Moderate
1 = Slight
0 = Minimal



I. Chemical Product and Company Identification

Product Name:	Super Scale Control TSC
Identification #:	35-515-5020
Product Use/Class:	Scale Control
Supplier:	Superior Well Services
Manufacturer:	Superior Well Services
Emergency Contact:	CHEMTREC 1 (800) 424-9300
Prepared By:	DLG
Date Prepared:	04/13/2009

II. Composition/Information on Ingredients

Run at
.1 gal/Mg-l

Chemical Name:	propylene glycol
CAS Number:	57-55-6
Percent by Mass Less Than:	n/a
Exposure Limits	
Threshold Limit Value - Time Weighted Average:	n/a
Threshold Limit Value - Short Term Exposure Limit:	n/a
Permissible Exposure Limit - Time Weighted Average:	20-50%
Permissible Exposure Limit - Ceiling:	n/a
Company Threshold Limit - Time Weighted Average:	n/a
Skin:	n/a
Chemical Name:	2 phosphonobutane 1,2,4 tricarboxylic acid
CAS Number:	37971-36-1
Percent by Mass Less Than:	n/a
Exposure Limits	
Threshold Limit Value - Time Weighted Average:	n/a
Threshold Limit Value - Short Term Exposure Limit:	n/a
Permissible Exposure Limit - Time Weighted Average:	1-10
Permissible Exposure Limit - Ceiling:	n/a
Company Threshold Limit - Time Weighted Average:	n/a
Skin:	n/a
Chemical Name:	Anionic copolymer
CAS Number:	proprietary
Percent by Mass Less Than:	n/a
Exposure Limits	
Threshold Limit Value - Time Weighted Average:	n/a
Threshold Limit Value - Short Term Exposure Limit:	n/a
Permissible Exposure Limit - Time Weighted Average:	1-10
Permissible Exposure Limit - Ceiling:	n/a
Company Threshold Limit - Time Weighted Average:	n/a
Skin:	n/a
Chemical Name:	Anionic polymer
CAS Number:	proprietary
Percent by Mass Less Than:	n/a
Exposure Limits	
Threshold Limit Value - Time Weighted Average:	n/a
Threshold Limit Value - Short Term Exposure Limit:	n/a
Permissible Exposure Limit - Time Weighted Average:	1-10
Permissible Exposure Limit - Ceiling:	n/a
Company Threshold Limit - Time Weighted Average:	n/a
Skin:	n/a

III. Hazardous Identification

Emergency Overview:	Caution! May be harmful or fatal if swallowed. May cause irritation to eyes, skin, and respiratory tract.
Effects of Overexposure	
Eye Contact:	May cause irritation or burning.
Skin Contact:	May cause skin irritation.
Inhalation:	May cause irritation to the respiratory tract.
Ingestion:	This material may be harmful or fatal if swallowed. Swallowing may result in irritation of the mouth, throat and gastrointestinal tract.
Chronic Harards:	Phosphates may sequester calcium and cause calcium phosphate deposits in the kidneys. Chronic ingestion or inhalation of sodium polyphosphate may induce systemic phosphorous poisoning. Liver damage, kidney damage, jaw/tooth abnormalities, blood disorders, and cardiovascular effects can result.

Primary Route(s) of Entry:

- Skin Contact
- Eye Contact
- Ingestion
- Skin Absorbtion
- Inhalation

IV. First Aid Measures

Eye Contact:	Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention if irritation persists.
Skin Contact:	Remove contaminated clothing. Wash skin with soap and water. Get medical attention if irritation persists.
Inhalation:	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:	swallowed, DO NOT induce vomiting. If victim is fully conscious, drink 1-2 glasses of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

V. Fire Fighting Measures

Flash Point:	200 F
Auto Ignition Temperature:	Not Determined
Lower Explosive Temp.:	N/A
Upper Explosive Temp.:	N/A
Extinguishing Media:	Dry Chemical , Foam ,Water Fog, CO_2 (do not use water jet stream)
Unusual Fire and Explosive Harards:	Emits highly toxic fumes. Avoid creating dust clouds.
Special Fire Fighting Procedures:	As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent) and full protective gear.

VI. Accidental Release Measures

Steps to be Taken in Case Material is Released or Spilled:	Spilled material should be contained and disposed of properly. Do not touch or walk through spilled material. Carefully shovel or sweep up spilled material and place in suitable container. Avoid generating dust. Use appropriate Personal Protective Equipment. (See section VIII.) In case of contact with water, avoid run-off from entering into storm sewers and ditch which lead to natural waterways. Comply with applicable environmental regulations.

VII. Handling and Storage

Handling:	Wash thoroughly after handling. Avoid breathing dust. Avoid contact with eyes skin and clothing.
Storage:	Keep container closed when not in use. Store in a cool, dry, well ventilated place away from incompatible materials.

VIII. Exposure Controls/Personal Protection

Engineering Controls:	Local exhaust and vetalilation may be necessary to control any air contaminants to within their TLVs during the use of this product.
Respiratory Protection:	A NIOSH/MSHA approved air purifying repirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive air supply respirator if there is any potential for an uncontrolled relase, exposure levels are not known, or any other circumstances where air purifying respiratos may not provide adequate protection.
Skin Protection:	Wear impervious gloves, shoes, and protective clothing to prevent skin contact.
Eye Protection:	Wear safety glasses with side sheilds (or goggles) and a face shield. Do not wear contact lenses.
Other Protective Equipment:	Emergency eyewash stations and deluge showers should be available in the work area.
Hygenic Practices:	Wash hands before eating. Use only with adequate ventilation. Remove contaminated clothing and wash before reuse. Follow all MSDS/label precautions even after container is emptied because they may retain product residue.

IX. Physical and Chemical Properties

Boiling Point:	No Information	Vapor Density:	Not Determined
Odor:	odorless	Odor Threshold:	Not Determined
Appearance:	Clear	Evaporation Rate:	No Information
Solubility in H20:	Complete	Specific Gravity:	1.065-1.105g/ml
Freeze Point:	14.8 F	pH at 50.0%:	1.5-3.0
Vapor Pressure:	Not Determined	Viscosity:	Not Determined
Physical State:	Liquid		
Coefficient of Water Oil Distribution:	Not Determined		

X. Stability and Reactivity

Conditions to Avoid:	Temperature extremes, humidity and creating dust.
Incompatability:	Strong oxidizing agents.
Hazardous Decomposition Products:	Thermal decomposition or combustion may produce sodium oxides, phosphorus oxides, carbon monoxide, carbon dioxide, nitrogen oxides and other potentially toxic fumes.
Hazardous Polymization:	Will not occur under normal conditions.
Stability:	This product is stable under normal storage conditions.

XI. Toxicological Properties

Toxicological Properties:	No product information is available.
Oral:	>2000 mg/Kg LD50(rat)
Dermal:	>4000 mg/Kg LD50(rat)
Inhalation:	2200 mg/m3/24hr LC50 rat

XII. Ecological Information

Ecological Properties:	No product information is available.
Ecotoxicity:	Lco rainbow trout: 5300mg/l
Chemical Fate Information:	No product information is available.

XIII. Disposal Consideration

Disposal Method:	Consult local, state, and federal regulatory agencies for acceptable disposal procedures and disposal locations. Disposal in streams or sewers may be prohibited by federal, state, and local regulations.
RCRA Status:	Discarded product, as sold, would be considered a RCRA Hazardous Waste.

XIV. Transportation Information

DOT Proper Shipping Name:	Corrosive liquid, acidic, organic, n.o.s.
DOT Technical Name:	2-Phosphonobutane-1,2,4-tricarboxylic acid
DOT Hazard Class:	8
DOT Hazard Subclass:	
DOT UN/NA Number:	UN3265
Packing Group:	III
Resp. Guide Page:	

XV. Regulatory Information

OSHA: Hazardous material.

TSCA Status: All components of this product are listed on the Toxic Substance Control Act Inventory.

CERCLA SARA: This product has been reviewed according to the EPA 'Hazard Categories' promulgated under the sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: Immediate Health Hazard, Chronic Health Hazard

SARA Section 313 Required Reporting:

Chemical	CAS Number	WT/WT%
propylene glycol	57-55-6	n/a
2 phosphonobutane 1,2,4 tricarboxylic acid	37971-36-1	n/a
Anionic copolymer	proprietary	n/a
Anionic polymer	proprietary	n/a

XVI. Other Information

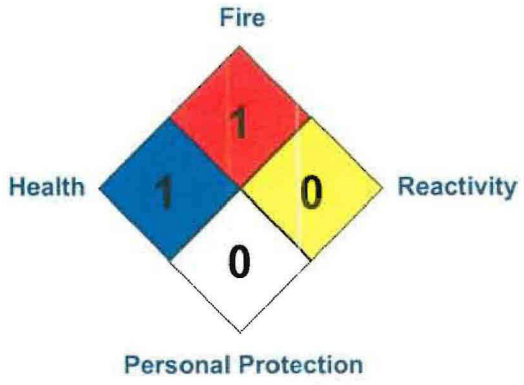
Other Information: HMIS Ratings Health=2 Flammability=1 Reactivity=0

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, or when used in conjunction with other products, exposures must be evaluated by the user so that appropriate handling practices and training programs can be established to ensure safe workplace operations. This information is confidential to Superior Well Services, Ltd. (SWSI) and intended solely for the use of the individual or entity to whom they are directly distributed. Distribution or use beyond the individual or entity is strictly prohibited without the consent of SWSI.

SUPERIOR
WELL SERVICES

HMIS Hazard Rating:

4 = Severe
3 = Serious
2 = Moderate
1 = Slight
0 = Minimal



I. Chemical Product and Company Identification

Product Name:	KR-153SL
Identification #:	35-440-xxxx
Product Use/Class:	Biocide
Supplier:	Superior Well Services
Manufacturer:	KROFF Chemical Company Inc.
Emergency Contact:	CHEMTREC 1 (800) 424-9300
Prepared By:	RAA
Date Prepared:	09/04/2008

II. Composition/Information on Ingredients

Run at
0.1 gallon per 1000

Chemical Name:	2,2-Dibromo-3-nitrilo-propionamide (DBNPA)
CAS Number:	10222-01-2
Percent by Mass Less Than:	20
Exposure Limits	
Threshold Limit Value - Time Weighted Average:	NI
Threshold Limit Value - Short Term Exposure Limit:	NI
Permissible Exposure Limit - Time Weighted Average:	NI
Permissible Exposure Limit - Ceiling:	NI
Company Threshold Limit - Time Weighted Average:	NI
Skin:	NI
Chemical Name:	Polyethylene Glycol (PEG)
CAS Number:	25322-68-3
Percent by Mass Less Than:	50
Exposure Limits	
Threshold Limit Value - Time Weighted Average:	NI
Threshold Limit Value - Short Term Exposure Limit:	NI
Permissible Exposure Limit - Time Weighted Average:	NI
Permissible Exposure Limit - Ceiling:	NI
Company Threshold Limit - Time Weighted Average:	NI
Skin:	NI
Chemical Name:	Diethylene Glycol
CAS Number:	111-46-6
Percent by Mass Less Than:	1.5-3.5
Exposure Limits	
Threshold Limit Value - Time Weighted Average:	NI
Threshold Limit Value - Short Term Exposure Limit:	NI
Permissible Exposure Limit - Time Weighted Average:	NI
Permissible Exposure Limit - Ceiling:	NI
Company Threshold Limit - Time Weighted Average:	NI
Skin:	NI
Chemical Name:	Ethylene Glycol
CAS Number:	107-21-1
Percent by Mass Less Than:	1
Exposure Limits	
Threshold Limit Value - Time Weighted Average:	NI
Threshold Limit Value - Short Term Exposure Limit:	100 mg/m3 (aerosol only)
Permissible Exposure Limit - Time Weighted Average:	NI
Permissible Exposure Limit - Ceiling:	NI
Company Threshold Limit - Time Weighted Average:	NI
Skin:	NI

III. Hazardous Identification

Emergency Overview:	Warning! Clear, yellow liquid. Causes burns.
Effects of Overexposure	
Eye Contact:	Corrosive. Will cause eye burns and permanent tissue damage.
Skin Contact:	May cause skin irritation or burns. Allergic reactions are possible. May cause skin sensitization, an allergic reaction which becomes evident on re-exposure to this material.
Inhalation:	Mist may cause irritation of upper respiratory tract.
Ingestion:	This material may be harmful or fatal if swallowed. May be irritating to mouth, throat, and stomach. Single dose oral toxicity is considered moderate.
Chronic Harards:	Chronic exposure to propylene glycol and ethylene glycol can cause kidney, liver, and brain damage and may cause skin sensitization.

Primary Route(s) of Entry:	■ Skin Contact	■ Eye Contact	■ Ingestion
	☐ Skin Absorbtion	■ Inhalation	

IV. First Aid Measures

Eye Contact:	Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention if irritation persists.
Skin Contact:	Remove contaminated clothing. Wash skin with soap and water. Get medical attention if irritation persists.
Inhalation:	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:	If swallowed, DO NOT induce vomiting. If victim is fully conscious, drink 1-2 glasses of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

V. Fire Fighting Measures

Flash Point:	NI
Auto Ignition Temperature:	Not Determined
Lower Explosive Temp.:	N/A
Upper Explosive Temp.:	N/A
Extinguishing Media:	CO2, Dry Chemical, Water Spray
Unusual Fire and Explosive Harards:	May emit toxic fumes in fire.
Special Fire Fighting Procedures:	As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent) and full protective gear.

VI. Accidental Release Measures

Steps to be Taken in Case Material is Released or Spilled:	Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Decontaminate with 10% sodium bicarbonate solution, then absorb with inert material. Once clean up is complete, wash spill site. Wear a self-contained breathing apparatus and appropriate personal protective equipment. Spilled material should be contained and disposed of properly.

VII. Handling and Storage

Handling:	Avoid contact with eyes, skin or clothing. Avoid breathing vapors . Use with adequate ventilation. DO NOT take internally. Wear appropriate PPE. Wash thoroughly after handling. Wash contaminated clothing before reuse. Discard contaminated leather articles. Do not eat, drink or smoke when handling this product.
Storage:	Keep container closed when not in use. Store in a cool, dry, well ventilated place away from incompatible materials. Store below 104F/40C. Storage must be in original container. Keep container tightly closed.

VIII. Exposure Controls/Personal Protection

Engineering Controls:	Local exhaust and vetalilation may be necessary to control any air contaminants to within their TLVs during the use of this product.
Respiratory Protection:	A NIOSH/MSHA approved particulate respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by particulate respirators is limited.
Skin Protection:	Where contact is likely, wear chemical resistant gloves and rubber boots.
Eye Protection:	Wear safety glasses with side sheilds (or goggles) and a face shield.
Other Protective Equipment:	Emergency eyewash stations and deluge showers should be available in the work area.
Hygenic Practices:	Wash hands before eating. Remove contaminated clothing and wash before reuse. Use only with adequate ventilation. Avoid contact with eyes, skin, and clothing.

IX. Physical and Chemical Properties

Boiling Point:	> 158 F	Vapor Density:	<1
Odor:	Sharp odor	Odor Threshold:	No Information
Appearance:	Clear yellow liquid	Evaporation Rate:	No Information
Solubility in H20:	Complete	Specific Gravity:	NI
Freeze Point:	<-7.6 F	pH at 50.0%:	2-6.5 @ 25 C
Vapor Pressure:	4X10 (-5) mmHg	Viscosity:	No Information
Physical State:	Liquid		
Coefficient of Water Oil Distribution:	No Information		

X. Stability and Reactivity

Conditions to Avoid:	Avoid temperatures above 158 DegF and exposure to light.
Incompatability:	Avoid contact with strong bases, reducing agents, and oxidizing agents.
Hazardous Decomposition Products:	May include oxides of carbon and/or nitrogen, bromine gas, cyanogen bromide and/or hydrogen bromide.
Hazardous Polymization:	Will not occur under normal conditions.
Stability:	This product is stable under normal storage conditions.

XI. Toxicological Properties

Toxicological Properties:	No Information
Oral:	DBNPA LD50 rat: 308 mg/kg Diethylene Glycol LD50 rat: 12,565 mg/kg Ethylene Glycol LD50 rat: 4,700 mg/kg
Dermal:	Diethylene Glycol LD50 rabbit: 11,890 mg/kg Ethylene Glycol LD50 rabbit: 9,530 ml/kg
Inhalation:	DBNPA LC50 rat: .32 mg/L/4hr Ethylene Glycol LC50 rat: 12,111 mg/L

XII. Ecological Information

Ecological Properties:	No Information
Ecotoxicity:	DBNPA Aquatic Toxicity Data 96hr LC50: range from .37 mg/L to 3.4 mg/L Ethylene Glycol Aquatic Toxicity Data from 24hr to 96 hr LC50: range from 5,000 mg/L to 51,000 mg/L
Chemical Fate Information:	No product information is available.

XIII. Disposal Consideration

Disposal Method:	Consult local, state, and federal regulatory agencies for acceptable disposal procedures and disposal locations. Disposal in streams or sewers may be prohibited by federal, state, and local regulations.
RCRA Status:	Not Determined.

XIV. Transportation Information

DOT Proper Shipping Name:	Not DOT Regulated
DOT Technical Name:	Non-Bulk Shipments
DOT Hazard Class:	
DOT Hazard Subclass:	
DOT UN/NA Number:	
Packing Group:	
Resp. Guide Page:	

DOT Proper Shipping Name:	Environmentally hazardous substances, liquid, n.o.s.
DOT Technical Name:	(contains 2,2-Dibromo-3-nitrilopropionamide)
DOT Hazard Class:	9
DOT Hazard Subclass:	
DOT UN/NA Number:	UN3082
Packing Group:	III
Resp. Guide Page:	

XV. Regulatory Information

OSHA:	Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)
TSCA Status:	All components of this product are listed on the Toxic Substance Control Act Inventory.
CERCLA SARA:	This product has been reviewed according to the EPA 'Hazard Categories' promulgated under the sections 311 and 312 of the Superfund Amendment and Reautorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: Immediate Health Hazard, Chronic Health Hazard

SARA Section 313 Required Reporting:

Chemical	CAS Number	WT/WT%
Diethylene Glycol	111-46-6	1.5-3.5
Ethylene Glycol	107-21-1	1

XVI. Other Information

Other Information: NA = Not applicable ND = Not Determined NI = No Information NE = Not Established

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, or when used in conjunction with other products, exposures must be evaluated by the user so that appropriate handling practices and training programs can be established to ensure safe workplace operations. This information is confidential to Superior Well Services, Ltd. (SWSI) and intended solely for the use of the individual or entity to whom they are directly distributed. Distribution or use beyond the individual or entity is strictly prohibited without the consent of SWSI.

SUPERIOR
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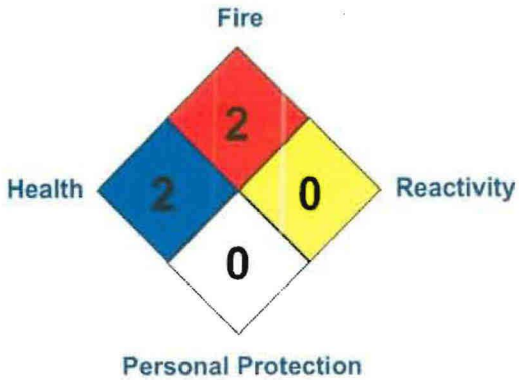


I. Chemical Product and Company Identification

Product Name:	WFR-3B
Identification #:	35-470-1300
Product Use/Class:	Friction Reducer
Supplier:	Superior Well Services
Manufacturer:	Superior Well Services
Emergency Contact:	CHEMTREC 1 (800) 424-9300
Prepared By:	RAA
Date Prepared:	03/12/2008

II. Composition/Information on Ingredients

Run at
.5 gal/Mgal

Chemical Name:	Hydrotreated Light Distillate
CAS Number:	64742-47-8
Percent by Mass Less Than:	10-30
Exposure Limits	
Threshold Limit Value - Time Weighted Average:	oil mist- 5 mg/m3
Threshold Limit Value - Short Term Exposure Limit:	NI
Permissible Exposure Limit - Time Weighted Average:	oil mist- 5 mg/m3
Permissible Exposure Limit - Ceiling:	NI
Company Threshold Limit - Time Weighted Average:	NI
Skin:	NI
Chemical Name:	Mineral Spirits
CAS Number:	8052-41-3
Percent by Mass Less Than:	10
Exposure Limits	
Threshold Limit Value - Time Weighted Average:	100 ppm
Threshold Limit Value - Short Term Exposure Limit:	NI
Permissible Exposure Limit - Time Weighted Average:	500 ppm
Permissible Exposure Limit - Ceiling:	NI
Company Threshold Limit - Time Weighted Average:	NI
Skin:	NI
Chemical Name:	Propylene Glycol
CAS Number:	57-55-6
Percent by Mass Less Than:	25
Exposure Limits	
Threshold Limit Value - Time Weighted Average:	NI
Threshold Limit Value - Short Term Exposure Limit:	NI
Permissible Exposure Limit - Time Weighted Average:	NI
Permissible Exposure Limit - Ceiling:	NI
Company Threshold Limit - Time Weighted Average:	NI
Skin:	NI
Chemical Name:	Ethoxylated Alcohols
CAS Number:	68551-12-2
Percent by Mass Less Than:	4
Exposure Limits	
Threshold Limit Value - Time Weighted Average:	NI
Threshold Limit Value - Short Term Exposure Limit:	NI
Permissible Exposure Limit - Time Weighted Average:	NI
Permissible Exposure Limit - Ceiling:	NI
Company Threshold Limit - Time Weighted Average:	NI
Skin:	NI

III. Hazardous Identification

Emergency Overview: Danger! Pale, off-white, viscous liquid, hydrocarbon odor. Combustible liquid and vapor. May cause eye and skin irritation. Harmful if ingested or inhaled.

Effects of Overexposure

Eye Contact: May cause eye irritation and damage. This product contains mineral spirits. Vapors of mineral spirits may be irritating at concentrations of 450 ppm and above (15 minute exposure).

Skin Contact: Skin contact may cause irritation or burning of the skin, especially with prolonged contact, due to the defatting nature of some product components. Symptoms may include soreness, inflammation, a burning sensation, dryness, cracking, and possibly dermatitis. Mineral spirits can be absorbed through the skin causing the effects listed under inhalation if the area of exposure is large.

Inhalation: Inhalation of vapors of mineral spirits may cause cantral nervous system depression with symptoms that include dizziness and euphoria leading to unconciousness in severe cases. Vapors may irritate the respiratory trract. Symptoms may include coughing, difficult breathing, and chest pain.

Ingestion: Ingestion of the product component mineral spirits may be harmful or fatal causing irritation of the gastrointestional tract and central nervous effects. Symptoms may include a burning sensation of the mouth and esophagus, nausea, vomiting, dizziness, staggering gait, drwosiness, loss of conciousness, delerium, and other central nervous effects. Due to its light viscosity, there is a danger of aspirating mineral spirits into lungs during vomiting. Aspiration can result in severe lung damage or death. Progressive CNS depression, respiratory insufficiency, and ventricular fibrillation may also result in death. Ingestion of large quantities of the product component propylene glycol may cause gastrointestional upset and temporary nervous system depression. The effects appear more severe inindividuals with kidney problems.

Chronic Harards: Chronic exposure to mineral spirits may lead to central nervous system complications, blood changes (aplastic anemia, a rare occurance that is potentially fatal), and dermatitis. Animal studies have indicated the potential for liver and kidney damage. Based upon animal testing, the C9 aromatic hydrocarbon components (trimethylbenzenes and ethylmethylbenzenes of mineral spirits) may cause fatal effects. Lactic acidosis, stupor, and seizures have been reported following chronic ingestion of propylene glycol.

Primary Route(s) of Entry:

- Skin Contact
- Eye Contact
- Ingestion
- Skin Absorbtion
- Inhalation

IV. First Aid Measures

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention if irritation persists.

Skin Contact: Immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention immediately. Wash clothing and shoes seperately before reuse.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: This product may present an aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE VOMITING. If vomiting occurs, keep head below hips to prevent aspiration into the lungs. Never give anything by mouth to an unconcious person. Get medical attention immediately.

V. Fire Fighting Measures

Flash Point:	145 F (63 C)
Auto Ignition Temperature:	NI
Lower Explosive Temp.:	mineral spirits: .8 propylene glycol: 2.6
Upper Explosive Temp.:	mineral spirits: 6.0 propylene glycol: 12.5
Extinguishing Media:	CO2, Dry Chemical, Foam, Water Fog or Fine Spray Do not use direct water stream as it will spread the fire.
Unusual Fire and Explosive Harards:	Spills of this product produce extremely slippery surfaces. Spills of organic liquids on hot fibrous insulations may lead to lowering of the auto ignition temperatures possibly resulting in spontaneous combustion. Containers may explode when involved in a fire. Toxic gases and vapors may be released in a fire.
Special Fire Fighting Procedures:	Containers can build up pressure if exposed to heat (fire). As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equvalent) and full protective gear.

VI. Accidental Release Measures

Steps to be Taken in Case Material is Released or Spilled:	Wear appropriate personal protectective equipment as specified in Section VIII. Ventilate the area of the leak or spill. Remove all sources of ignition. Use non-sparking tools and equipment. Isolate the hazard area. Keep unnecessary and unprotected personnel from entering the area. Do not flush with water. Contain and recover the liquid when possible. Collect the liquid in an appropriate container. Then absorb the residue with an inert material (e.g. vermiculite, dry sand, earth), and place the used absorbent in a chemical waste container. Do not use combustible materials such as raw dust. Do not flush to the sewer! After cleaning, flush away traces with water.

VII. Handling and Storage

Handling:	Avoid contact with eyes, skin or clothing. Avoid breathing vapors . Use with adequate ventilation. DO NOT take internally. Wear appropriate PPE. Wash thoroughly after handling.
Storage:	Keep container closed when not in use. Store in a cool, dry, well-ventilated safety storage cabinet or room with appropriate labels. Do not allow to freeze. Avoid elevated temperatures. Keep away from ignition sources and ground all equipment containing this material. Containers must be able to withstand expansion and/or pressures expected from warming and cooling in storage.Empty containers contain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Containers should be bonded and grounded for transfers to avoid static sparks.

VIII. Exposure Controls/Personal Protection

Engineering Controls:	Local exhaust and ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product.
Respiratory Protection:	A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.
Skin Protection:	Wear impervious gloves, shoes, and protective clothing to prevent skin contact.
Eye Protection:	Wear safety glasses with side sheilds (or goggles) and a face shield.
Other Protective Equipment:	Emergency eyewash stations and deluge showers should be available in the work area.
Hygenic Practices:	Wash hands before eating.

IX. Physical and Chemical Properties

Boiling Point:	Not Determined	Vapor Density:	Not Determined
Odor:	hydrocarbon	Odor Threshold:	Not Determined
Appearance:	White to off white	Evaporation Rate:	Not Determined
Solubility in H20:	Water dispersible	Specific Gravity:	.98-1.06 g/ml
Freeze Point:	-15 F (-26 C)	pH at 50.0%:	5-8
Vapor Pressure:	Not Determined	Viscosity:	Not Determined
Physical State:	Viscous Liquid		
Coefficient of Water Oil Distribution:	Not Determined		

X. Stability and Reactivity

Conditions to Avoid:	Heat, sparks, flames, other sources of ignition, and incompatibles.
Incompatability:	Avoid contact with strong acids and strong oxidizers.
Hazardous Decomposition Products:	Carbon dioxide which can act as a asphyxiant. Carbon monoxide which is toxic if inhaled. Nitrogen oxides, ammonia, hydrocarbons, aldehydes, lactic acid, pyruvic acid, and/or acetic acid.
Hazardous Polymization:	Will not occur under normal conditions.
Stability:	This product is stable under normal storage conditions.

XI. Toxicological Properties

Toxicological Properties:	No product information is available.
Oral:	No product information is available.
Dermal:	No product information is available.
Inhalation:	No product information is available.

XII. Ecological Information

Ecological Properties:	No product information is available.
Ecotoxicity:	No product information is available.
Chemical Fate Information:	No product information is available.

XIII. Disposal Consideration

Disposal Method:	Consult local, state, and federal regulatory agencies for acceptable disposal procedures and disposal locations. Disposal in streams or sewers may be prohibited by federal, state, and local regulations.
RCRA Status:	No product information is available.

XIV. Transportation Information

DOT Proper Shipping Name:	Combustible liquid, n.o.s.
DOT Technical Name:	(Contains Mineral Spirits)
DOT Hazard Class:	Comb liq
DOT Hazard Subclass:	
DOT UN/NA Number:	NA1993
Packing Group:	III
Resp. Guide Page:	

XV. Regulatory Information

OSHA:	Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)
TSCA Status:	All components of this product are listed on the Toxic Substance Control Act Inventory.
CERCLA SARA:	This product has been reviewed according to the EPA 'Hazard Categories' promulgated under the sections 311 and 312 of the Superfund Amendment and Reautorization Act of 1986 (SARA Title III) and is concidered, under applicable definitions, to meet the following categories: Immediate Health Hazard, Chronic Health Hazard, Fire Hazard
SARA Section 313 Required Reporting:	

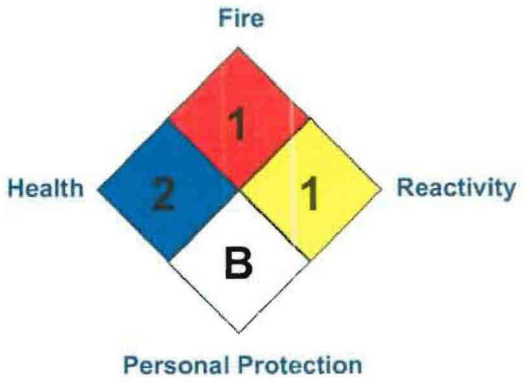
XVI. Other Information

Other Information:	NA = Not applicable	ND = Not Determined	NI = No Information	NE = Not Established

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, or when used in conjunction with other products, exposures must be evaluated by the user so that appropriate handling practices and training programs can be established to ensure safe workplace operations. This information is confidential to Superior Well Services, Ltd. (SWSI) and intended solely for the use of the individual or entity to whom they are directly distributed. Distribution or use beyond the individual or entity is strictly prohibited without the consent of SWSI.

HMIS Hazard Rating:

4 = Severe
3 = Serious
2 = Moderate
1 = Slight
0 = Minimal



I. Chemical Product and Company Identification

Product Name:	ICP-1000
Identification #:	35-490-0100
Product Use/Class:	Iron Control Additive
Supplier:	Superior Well Services
Manufacturer:	Superior Well Services
Emergency Contact:	CHEMTREC 1 (800) 424-9300
Prepared By:	DLG
Date Prepared:	04/14/2009

Run
• 1 gallon per Thousand

II. Composition/Information on Ingredients

Chemical Name:	Propylene glycol
CAS Number:	57-55-6
Percent by Mass Less Than:	n/a
Exposure Limits	
Threshold Limit Value - Time Weighted Average:	n/a
Threshold Limit Value - Short Term Exposure Limit:	n/a
Permissible Exposure Limit - Time Weighted Average:	20-50
Permissible Exposure Limit - Ceiling:	n/a
Company Threshold Limit - Time Weighted Average:	n/a
Skin:	n/a
Chemical Name:	Anionic Copolymer
CAS Number:	Proprietary
Percent by Mass Less Than:	n/a
Exposure Limits	
Threshold Limit Value - Time Weighted Average:	n/a
Threshold Limit Value - Short Term Exposure Limit:	n/a
Permissible Exposure Limit - Time Weighted Average:	20-50
Permissible Exposure Limit - Ceiling:	n/a
Company Threshold Limit - Time Weighted Average:	n/a
Skin:	n/a

III. Hazardous Identification

Emergency Overview:	May cause eye and skin irritation.
Effects of Overexposure	
Eye Contact:	This product is irritating to the eyes resulting in stinging, redness, tearing, and swelling.
Skin Contact:	Prolonged or repeated contact may cause irritation.
Inhalation:	May cause irritation to the respiratory tract.
Ingestion:	Ingestion of large amounts may cause intestional distress.
Chronic Harards:	lactic acidosis,stupor and seizures have been reported following chronic ingestion of the product component, propylene glycol

Primary Route(s) of Entry:	■ Skin Contact	■ Eye Contact	■ Ingestion
	☐ Skin Absorbtion	■ Inhalation	

IV. First Aid Measures

Eye Contact:	Immediately flush with water for at least 15 minutes. Remove contact lenses before water flush. Get medical attention.
Skin Contact:	Remove contaminated clothing and discard. Wash skin with soap and water. Call a physician.
Inhalation:	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:	If swallowed, DO NOT induce vomiting. If victim is fully conscious, drink 1-2 glasses of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

V. Fire Fighting Measures

Flash Point:	N/A but expected to exceed 200F
Auto Ignition Temperature:	Not Determined
Lower Explosive Temp.:	Not Determined
Upper Explosive Temp.:	Not Determined
Extinguishing Media:	Alcohol Foam, CO2, Dry Chemical, Foam, Water Fog
Unusual Fire and Explosive Harards:	None expected.
Special Fire Fighting Procedures:	Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes.

VI. Accidental Release Measures

Steps to be Taken in Case Material is Released or Spilled:	Use appropriate PPE. Isolate area and remove sources of friction, impact, heat, low level electrical current, electrostatic or RF energy. Only competent, experienced persons should be involved in cleanup procedures. Sweep up with non-sparking tools and remove.

VII. Handling and Storage

Handling:	Wash thoroughly after handling. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin or clothing.
Storage:	Keep container closed. Store at a maximum temperature of 405 F (207 C) (product deteriorates). Reseal containers immediately after use. Store in a cool, dry, well ventilated place away from incompatible materials.

VIII. Exposure Controls/Personal Protection

Engineering Controls:	Local exhaust and ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product.
Respiratory Protection:	Work ambient concentrations should be monitored and if the recommended exposure limit is exceeded, a NIOSH/MSHA approved dust respirator should be worn.
Skin Protection:	Wear natural rubber gloves. Wear long sleeved shirts and pants to minimize skin contact.
Eye Protection:	Wear chemical splash goggles or chemical safety goggles.
Other Protective Equipment:	Emergency eyewash stations and deluge showers should be available in the work area.
Hygenic Practices:	Employees should wash their hands and face before eating, drinking, or using tobacco products.

IX. Physical and Chemical Properties

Boiling Point:	N/A	Vapor Density:	Not Determined
Odor:	Odorless.	Odor Threshold:	N/A
Appearance:	Clear	Evaporation Rate:	No Information
Solubility in H20:	Complete	Specific Gravity:	1.125-1.165 g/ml
Freeze Point:	14.8 F	pH at 50.0%:	3.5-5.0
Vapor Pressure:	N/A	Viscosity:	No Information
Physical State:	Liquid		
Coefficient of Water Oil Distribution:	No Information		

X. Stability and Reactivity

Conditions to Avoid:	Heat, sparks, and open flames.
Incompatability:	Reaction with caustic can create heat. Avoid strong acids, strong bases, alkali metals, organic acids, oxides of sulfur and heavy metals.
Hazardous Decomposition Products:	Thermal decomposition products are highly dependent on the combustion conditions. A complex mixture of airborne solid, liquid, particulates, and gases will evolve when this material undergoes combustion. Carbon monoxide and other unidentified organic compounds may be formed upon combustion.
Hazardous Polymization:	Will not occur.
Stability:	This product is stable under normal storage conditions.

XI. Toxicological Properties

Toxicological Properties:	No product information is available.
Oral:	LD50 rat=20,000-34,000mg/kg >1,400mg/kg
Dermal:	>10,000mg/kg(rabbit) >560mg/kg
Inhalation:	No product information is available.

XIII. Disposal Consideration

Disposal Methods:	Consult local, state, and federal regulatory agencies for acceptable disposal procedures and disposal locations. Disposal in streams or sewers may be prohibited by federal, state, and local regulations.
Ecotoxicity:	No product information is available.
Chemical Fate Information:	No product information is available.
RCRA Status:	D002-Characteristic of corrosivity.

XIV. Transportation Information

DOT Proper Shipping Name:	Not DOT Regulated
DOT Technical Name:	
DOT Hazard Class:	
DOT Hazard Subclass:	
DOT UN/NA Number:	
Packing Group:	
Resp. Guide Page:	

XV. Regulatory Information

OSHA:	Hazardous material.
TSCA Status:	All components of this product are listed on the Toxic Substance Control Act Inventory or are excluded from the listing requirements.
CERCLA SARA:	This product has been reviewed according to the EPA 'Hazard Categories' promulgated under the sections 311 and 312 of the Superfund Amendment and Reautorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: Immediate Health Hazard, Chronic Health Hazard, Fire Hazard

SARA Section 313 Required Reporting:

Chemical	CAS Number	WT/WT%
Propylene glycol	57-55-6	n/a
Anionic Copolymer	Proprietary	n/a

XVI. Other Information

Other Information: HMIS Ratings Health=1 Flammabbility=1 Reactivity=0

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, or when used in conjunction with other products, exposures must be evaluated by the user so that appropriate handling practices and training programs can be established to ensure safe workplace operations. This information is confidential to Superior Well Services, Ltd. (SWSI) and intended solely for the use of the individual or entity to whom they are directly distributed. Distribution or use beyond the individual or entity is strictly prohibited without the consent of SWSI.