

T a m e r l a n e

V E N T U R E S I N C . 

June 6, 2006

Ms. Sara Baines
Regulatory Officer
Mackenzie Valley Land and Water Board
7th Floor – 4910 50th Avenue
P.O. Box 2130
Yellowknife, NT X1A 2P6

RE: MDAG follow-up information for distribution

Dear Ms. Baines:

As follow-up to the Mineral Development Advisory Group meeting May 30, 2006, I would like to clarify a portion of the Pilot Project description; specifically, Dense Media Separation. I don't think the differences between the Dense Media Separation circuit and conventional mine milling were adequately explained.

Milling is an artificial modification of ore by mechanical and chemical processes that is designed to input energy through pulverizing and attrition to liberate minerals. Milling does not apply to the proposed Pilot Project. The Dense Media Separation circuit proposed for the Pilot Project is designed to screen out low density waste material from higher density ores. This process is comparable to sand and gravel operations that utilize coarse crushing and washing to obtain the ideal product for use in civil construction.

The Dense Media Separation circuit is not considered milling because additional sizing is not required once it is crushed. The materials remain coarse-sized and have minimum surface area. The waste rock is coarse and easily stacked or deposited in piles, while the ore is contained and controlled before it is removed for further testing for marketable product. Moreover, no chemical processes take place. The media, ferrosilicon, is used in the DMS circuit because it is environmentally benign and easily recoverable for reuse in a closed circuit system (please refer to the attached MSDS sheets).

I trust this explanation will confirm that the Pilot Project meets the criteria for a MVLWB Class B Water License. Please advise if you have any questions or concerns.

Sincerely,



David Swisher
Senior Project Manager
Tamerlane Ventures Inc.

EBA Engineering Consultants Ltd.

Creating and Delivering Better Solutions

June 06, 2006

EBA File: 1740149.003

Tamerlane Ventures Inc.
441 Peace Portal Drive
Blaine, Washington, 98230
USA

Attention: David D. Swisher
Project Manager

Re: Pine Point Pilot Project – Definition of Dense Media Separation Circuit

Dear Mr. Swisher:

This is to confirm that EBA Engineering Consultants Ltd. (EBA) has reviewed Tamerlane's letter of June 06 to the Mackenzie Valley Land and Water Board regarding the definitions of and differences between standard Mine Milling and the Dense Media Separation circuit being proposed for your company's Pine Point Pilot Project and concur fully with the description of the two processes provided therein.

If you require further clarification on this matter please advise.

Yours truly,

EBA Engineering Consultants Ltd.



Richard Hoos, M.Sc., R.P. Bio.
Principal Consultant

EBA Letter to Tamerlane June 05 2006



Alloy & Metal Processors, Inc
623 33rd Place North
Birmingham, Alabama 35222

75% Ferrosilicon
Material Safety Data Sheet

Emergency Phone Numbers
AMP Safety Dept: (205) 322-2344
CHEMTREC (24 HRS): (800)424-9300
Revision Date: 12-21-2004

SECTION 1: PRODUCT INFORMATION

PRODUCT NAME: 75% Ferrosilicon

SYNONYMS: Ferrosilicon, Ferro Silicon Alloys, FeSi, Fe₂Si₃, 75% Si

DESCRIPTION: Additive to metal in steel plants and iron foundries for production of steel, other metals, and foundry products. Silvery gray to metallic surface consisting of fine powders to granules and lumps/briquettes up to several inches in size. Normally odorless. Garlic like smell may occur on contact with water or humidity.

CAS NUMBER: 37322-17-1 (8049-17-0) For ingredient CAS numbers, see Section 3 – Composition and Information on ingredients)

SECTION 2 – Hazardous Material Identification System (HMIS)									
HEALTH		1							
FLAMMABILITY		1							
REACTIVITY		1							
PERSONAL PROTECTION		E							
SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS									
COMPONENT	TRADE NAMES AND SYNONYMS	CAS #	% BY WEIGHT						
Silicon (Si)	Silicon Alloy, Elemental Silicon, Amorphous Powder	7440-21-3	70-80						
Iron (Fe)	Ferric Oxide, Iron Oxide	7439-89-6	20-30						
Chromium (Cr)	Chromium Compounds II & III	7440-47-3	<0.5						
Nickel (Ni)	Nickel Catalyst	7440-02-0	<0.5						
Aluminum (Al)	Aluminum Metal, Aluminum Powder, Elemental Aluminum	7429-90-5	0.1 - 2.0						
Calcium (Ca)		7440-70-2	<2.0						
Trace Elements: As, C, Cu, Mg, Mo, Pb, P, S, Sb, V, Zn, Zr			<0.1						
SECTION 4: HAZARDS IDENTIFICATION									
LISTED CARCINOGEN									
COMPONENT	CAS#	% BY WEIGHT	OSHA PEL (mg/m ³)	OSHA CEILING (mg/m ³)	ACGIH TVL (mg/m ³)	ACGIH STEL (mg/m ³)	NTP	IARC	OSHA
Silicon (Si)	7440-21-3	70-80	15T/5R	NA	10T	NA	No	No	No
Iron (Fe)	7439-89-6	20-30	None	NA	None	NA	No	Yes	No
Chromium (Cr)	7440-47-3	<0.5	0.1T	NA	0.5T	NA	Yes	No	Yes
Nickel (Ni)	7440-02-0	<0.5	1T	NA	10T/5R	NA	Yes	Yes	Yes
Aluminum (Al)	7429-90-5	0.1 – 2.0	15T/5R	NA	10T	NA	No	Yes	No
Calcium (Ca)	7440-70-2	<2.0	None	NA	None	NA	No	No	No

NOTE(S): T = Total dust; R = Respirable Dust; F = Fume

Exposure limits listed for each ingredient is for exposure to dust that may be generated during product transfer and handling.

EMERGENCY OVERVIEW: Not a fire or spill hazard. Low toxicity; dry dust is a nuisance particulate. Generally, health effects are provided for exposure to dust that may be generated during product transfer and handling.
POTENTIAL HEALTH EFFECTS:
Primary Route of Exposure: Inhalation
Relevant Route(s) of Exposure
<ul style="list-style-type: none"> Eye Contact: Contact with particulate may cause slight to moderate eye irritation. Abrasive action of dust particulate can damage eye. Rinse eyes with water/saline solution. Seek medical attention for persistent feeling of discomfort. Skin Contact: Prolonged or repeated contact may cause slight to moderate skin irritation. Wash skin with water and/or a mild detergent. Inhalation: Overexposure by inhalation of airborne particulate, dust, or fumes is irritating to the nose, throat, and respiratory tract. Inhalation of excessive levels of dust or fumes may be harmful. Potential for phosphine/arsine intoxication. Seek medical attention. Ingestion: Ingestion is an unlikely route of exposure; no hazard in normal industrial use. Small amounts (<tablespoon) swallowed during normal handling operations are not likely to cause injury, however, swallowing larger amounts may cause injury. If ingested in sufficient quantity, may cause gastrointestinal disturbances. Symptoms include irritation, nausea, vomiting, abdominal pain, and diarrhea.
Target Organs: Respiratory system and eyes
Acute Effects of Exposure: Excessive, short-term exposure to airborne mineral dusts and particulate may cause upper respiratory and eye irritation.
Chronic Effects of Exposure: Excessive, long-term inhalation of airborne mineral dusts and particulate may contribute to the development of bronchitis, reduced breathing capacity, and may lead to the increased susceptibility to lung disease.
Signs and Symptoms of Exposure: (Dust) Tearing of eyes, burning sensation in the throat, cough, and chest discomfort.
Medical Conditions Generally Known to be Aggravated by Exposure: The excessive inhalation of mineral dust may aggravate pre-existing lung conditions such as, but not limited to, bronchitis, emphysema, and asthma.
<ul style="list-style-type: none"> Reproductive Hazards: No known reproductive hazards
POTENTIAL ENVIRONMENTAL EFFECTS: Derived from natural ores; no adverse environmental effects known. However, prevent spilled product from entering streams, water bodies, and waste water systems. This material is used as an agricultural product.
SECTION 5: FIRST AID MEASURES

FIRST AID PROCEDURES:

- EYE CONTACT:** Remove material by immediately flushing with clean, flowing, lukewarm water (low Pressure) for at least 15 minutes. Get medical attention if pain or irritation persists.
- SKIN CONTACT:** Immediately wash affected area with mild soap and water to remove any dust adhering to the skin. Get medical attention if irritation develops or persists.
- INHALATION:** If exposed to excessive levels of dusts or fumes. Remove to fresh air and get medical attention if cough or other symptoms develop. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek medical attention.

- **INGESTION:** Ingestion is an unlikely route of exposure. If ingested in sufficient quantity and victim is conscious give 1-2 glasses of water. Never give anything by mouth to an unconscious person. Leave decision to induce vomiting to qualified medical personnel, since particles may be aspirated into the lungs. Seek immediate medical attention.
- **NOTE(S) TO PHYSICIANS:** None

SECTION 6: FIRE FIGHTING MEASURES

- **FLAMMABLE PROPERTIES:** This product does not represent a hazard to health, safety, or environment when handled and stored as advised. Flammable and noxious gases may be formed in contact with moisture, acids, or bases. Ferrosilicon dust suspended in air may under certain conditions cause dust explosions.
- **EXTINGUISHING MEDIA:** Dry sand, CO₂, or dry powder. Dry ferrosilicon in the form of granules is not combustible. Ferrosilicon dust suspended in air may under certain conditions cause dust explosions. Use extinguishing media appropriate to combustibles in the surrounding area.
- **PROTECTION FOR FIREFIGHTERS:** Wet material should be kept out of eyes and off skin. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved and equivalent) and full protective gear.

SECTION 7: ACCIDENTAL RELEASE MEASURES

- **CONTAINMENT:** Product is dry solid (granular or powder) and not readily soluble in water. However, prevent spilled product from entering streams, water bodies, and waste water systems.
- **CLEANUP:** Vacuum or sweep up dry material and place in a container for reuse. Avoid creating excessive airborne dust. Cleanup personnel need to wear approved respiratory protection (air-purifying or air supply), gloves, long sleeved clothing and goggles to prevent irritation from contact and inhalation.
- **COLLECTION:** If possible collect and reuse spilled product.
- **REPORTING:** SEE SECTION 16: REGULATORY INFORMATION
- **EVACUATION:** Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

SECTION 8: HANDLING AND STORAGE

- **HANDLING:** Minimize dust generation and accumulation. Avoid breathing dust. Avoid contact with skin and eyes.
- **AVOID IGNITION SOURCES:** Avoid generating sparks and other ignition sources (e.g., welding) in areas with high dust concentrations. Ferrosilicon particles suspended in air at concentrations above 100-300 g/m³ can cause dust explosions. For a given particle size, the ignition sensitivity and the violence of the explosion decrease with decreasing Si/Fe ratio. Addition of wet material to molten metal may cause explosions.

- **STORAGE:** Ferrosilicon must be kept in a dry and well ventilated place, and away from acids and bases. Keep container closed when not in use.

SECTION 9: EXPOSURE CONTROLS/PERSONAL PROTECTION EQUIPMENT

ENGINEERING CONTROLS: If user operations generate dust, fume, or mist, use ventilation to keep exposure to airborne contaminants below the exposure limits listed in Section 4.

PERSONAL PROTECTIVE EQUIPMENT:

- **Eye and Face Protection:** Corrosive to eyes. Wear protective safety glasses when dust generation is likely.
- **Skin Protection:** Wear clothing sufficient to cover skin, safety shoes, and split leather palm gloves for hand protection against dry materials.
- **Respiratory Protection:** Use NIOSH/MSHA approved respiratory protection (air purifying or air supplying) when concentrations are above exposure limit value. A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant the use of a respirator.
- **General Hygiene Considerations:** Wash thoroughly after using product. Wash contaminated clothing. Wash hands before eating, drinking or smoking.

EXPOSURE GUIDELINES: SEE SECTION 4

SECTION 10: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Silvery gray to metallic surface consisting of fine powders to granules and lumps up to several inches in size.

ODOR: Odorless

PHYSICAL/CHEMICAL PROPERTIES:

Density: Approximately 4.5	Freeze Point: Solid	%Volatile by Volume: NA
Water Solubility: Slightly Soluble	Melting Point: 1100°C	Vapor Density: NA
PH: NA	Boiling Point: NA	Vapor Pressure: NA

SECTION 11: STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions of storage.

CONDITIONS TO AVOID: Wet or areas with excessive humidity.

MATERIALS TO AVOID: Water/excessive humidity, acids and bases. Garlic like smell may occur on contact with water or humidity.

SECTION 11: STABILITY AND REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS:

- Highly flammable hydrogen gas (H_2) and highly flammable and toxic gases of phosphine and arsine (garlic-like smell), both heavier than air, may be formed if Ferrosilicon comes in contact with moisture, acids, or bases.
- A reaction with hydrofluoric acid (HF) or nitric acid (HNO_3) can lead to the formation of toxic gases such as silicon tetra fluoride (SiF_4) or nitrous gases (NO_x).
- Wet product will form highly flammable hydrogen gas if added to molten metal, due to decomposition of water.

SECTION 12: ECOLOGICAL INFORMATION

Derived from mineral ores. No data available on any adverse effects of this material on the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

- **RCRA:** This product, as manufactured, is not a RCRA listed hazardous waste and does not exhibit any characteristics of a hazardous waste, including toxicity by EPA TCLP method.
- **Disposal Method:** This product is generally suitable for landfill disposal. Follow all applicable Federal, State, and local laws, rules, and regulations regarding the safe disposal of this material. If this product has been altered or contaminated with other hazardous materials, appropriate waste analysis may be necessary to determine proper method for disposal. A qualified environmental professional should determine waste characterization, disposal, and treatment methods for this material in accordance with applicable Federal, State, and local regulations and requirements.

SECTION 14: TRANSPORTATION INFORMATION

USDOT INFORMATION: This product is not regulated by USDOT as a hazardous material (49 CFR 172.101). No UN code assigned. No placard required for transportation.

LABEL INFORMATION:

CAUTION:

Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling and use. Keep in a closed container in a well ventilated area.

FIRST AID MEASURES

- **EYE CONTACT:** Remove material by immediately flushing with clean, flowing, lukewarm water (low Pressure) for at least 15 minutes. Get medical attention if pain or irritation persists.
- **SKIN CONTACT:** Immediately wash affected area with mild soap and water to remove any dust adhering to the skin. Get medical attention if irritation develops or persists.
- **INHALATION:** If exposed to excessive levels of dusts or fumes. Remove to fresh air and get medical attention if cough or other symptoms develop. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek medical attention.

Alloy & Metal Processors, Inc. Material Safety Data Sheet: 75% Ferrosilicon

- **INGESTION:** Ingestion is an unlikely route of exposure. If ingested in sufficient quantity and victim is conscious give 1-2 glasses of water. Never give anything by mouth to an unconscious person. Leave decision to induce vomiting to qualified medical personnel, since particles may be aspirated into the lungs. Seek immediate medical attention.

SECTION 15: REGULATORY INFORMATION

COMPONENTS LISTED IN FEDERAL REGULATIONS AND STATE "RIGHT-TO-KNOW" LAWS:

FEDERAL AGENCIES						
Product	CAS #	RCRA	CERCLA	SARA III	EHS	TSCA
75% Ferrosilicon	37322-17-1	NO	NO	YES	NO	YES

SECTION 16: OTHER INFORMATION**HAZARDOUS MATERIAL IDENTIFICATION SYSTEM**

HEALTH	REACTIVITY
0 - No hazard: Exposure to this substance offers No significant risk to health.	0 - Stable: substances which will remain stable when exposed to heat, pressure, or water.
1 - Slight Hazard: Irritation or minor injury would result from exposure to this substance. Protective measures are indicated.	1 - Normally Stable: Substances may become unstable at elevated temperatures and pressures or when mixed with water. Approach with caution.
2 - Dangerous: Exposure to this substance would be hazardous to health. Protective measures are indicated.	2 - Unstable: Violent chemical changes are possible at normal or elevated temperatures and pressures. Potentially violent or explosive reaction may occur when mixed with water. Monitor from a safe distance.
3 - Extreme Danger: Serious injury would result from exposure to this substance. Do not expose any body surface to these materials. Full protective measures should be taken.	3 - Explosive: Substances that are readily capable of detonation or explosion by a strong initiating source, such as heat, shock, or water. Monitor from behind explosion resistant barriers.
4 - Deadly: Even the slightest exposure to this substance would be life threatening. Only specialized protective clothing, for these materials, should be worn.	4 - May Detonate: Substances are readily capable of detonation and/or explosion at normal temperatures and pressures. Evacuate area if exposed to heat or fire.

FLAMMABILITY	PERSONAL PROTECTIVE EQUIPMENT- PPE
0 - Will not burn: Substances that will not burn.	A - Safety Glasses
1 - Flash point above 200 ° F: This substance must be preheated to ignite. Most combustible solids would be in this category.	B - Safety Glasses + Gloves
2 - Flash Point below 200°F: Moderately heated conditions may ignite this substance. Caution procedures should be employed when handling.	C - Safety Glasses + Gloves + Synthetic Apron
3 -Flash point below 100°F: Flammable, volatile or explosive under almost all normal temperature conditions. Exercise great caution in storage or handling of these materials.	D - Face Shield + Gloves + Synthetic Apron
4 - Flash point below 73°F: This substance is very flammable, volatile or explosive depending on its state. Extreme caution should be used in handling or storing these materials.	E - Safety Glasses + Gloves + Dust Respirator
	F - Safety Glasses + Gloves + Synthetic Apron + Dust & Vapor Respirator
	G - Safety Glasses + Gloves + Dust & Vapor Respirator
	H - Splash Goggles + Gloves + Synthetic Apron + Vapor Respirator
	I - Safety Glasses + Gloves + Dust and Vapor Respirator
	J - Splash Goggles + Gloves + Synthetic Apron + Dust And Vapor Respirator
	K - Air line Hood or Mask + Glove + Full Suit + Boots
	X - Ask Supervisor or Safety Coordinator for Guidance and handling instructions.

SECTION 17: ACRONYMS AND ABBREVIATIONS USED IN THIS MSDS	
ACGIH	American Conference of Governmental Industrial Hygienists
ANSI	American National Standards Institute
CAA	Clean Air Act; 40 CFR Subchapter C – Air Programs (Parts 50-99)
CAS	Chemical Abstract Service
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act, 40 CFR 302.4; Designation, Reportable Quantities, and Notification (Table 302.4)
CWA	Clean Water Act ; 40 CFR Subchapter D – Water Programs (Parts 100-149)
EPA	United States Environmental Protection Agency
HMIS	Hazardous Materials Identification System of the National Paint & Coating Association
IARC	International Agency for Research on Cancer
Mg/m3	Milligrams per cubic meter
MSHA	Mine Safety and Health Administration
N/A	Not Applicable
NFPA	National Fire Protection Association
NIOSH	Nation Institute of Occupational Safety and Health
NTP	United States National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit (OSHA)
RCRA	Resource Conservation and Recovery Act (EPA), 40 CFR 261 – Identification and Listing of Hazardous Waste.
REL	Recommended Exposure Level (NIOSH)
RQ	Reportable Quantity
RTECS	Registry of Toxic Effects of Chemical Substances. This database contains toxic effects data on some 140,000 chemicals. Researched and maintained by NIOSH
SARA	Superfund Amendments and Reauthorization Act, 40 CFR 372.65 – Toxic Chemical Release
SARA EHS	SARA Extremely Hazardous Substances , 40 CFR 355 – Emergency Planning and Notification (Appendices A & B)
STEL	Short Term Exposure Limit (ACGIH)
STP	Standard temperature and Pressure (T = -70 Deg F, P = 1 atm)
TCLP	Toxicity Characteristics Leaching Procedure (EPA Method 1311)
TLV	Threshold Limit Value (ACGIH)
TSCA	Toxic Substance Control Act, 40 CFR 716.120 – Health and Safety Data Reporting
TWA	Time Weighted Average based on 8 Hour Exposure
USDOT	United States Department of Transportation

SECTION 18: DISCLAIMER

This Material Safety Data Sheet (MSDS) is to be used only for this product in its present form. If this product is altered or used as a component in another material, the information on this MSDS may not be applicable. This document is generated for the purposed of distributing health, safety, and environmental data. This MSDS is not specification document sheet, nor should any data be constructed as a specification. Some of the information and conclusions are not based on direct test data of the product, but from information obtained from agencies and programs such as OSHA, EPA, NIOSH, NTP, NFPA and ACGIH. The user of this product has sole responsibility to determine the suitability of this product for any use and manner of use intended, and for determining the regulations applicable to such use in the relevant jurisdiction. This MSDS is updated on a periodic basis in accordance with applicable health and safety standards.