



# Leading Global Producer of Halloysite Clay

**Investor Presentation June 2011** 

# Safe Harbor Statement and SEC Cautionary Note

- Information provided and statements contained in this presentation that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended Section 21E of the Securities Exchange Act of 1934 as amended and the Private Securities amended, Section 21E of the Securities Exchange Act of 1934, as amended, and the Private Securities Litigation Reform Act of 1995. Such forward-looking statements only speak as of the date of this presentation and the Company assumes no obligation to update the information included in this presentation. Such forward-looking statements include information concerning our possible or assumed future results of operations, including descriptions of our business strategy. These statements often include words such as "believe," "expect," "anticipate," "intend," "plan," "estimate," or similar expressions. These statements are not guarantees of performance or results and they involve risks, uncertainties, and assumptions. For a further description of these factors, see Item 1A, Risk Factors, included within our Form 10-K for the year ended December 31, 2010, which was filed on April 15, 2011. Although we believe that these forward-looking statements are based on reasonable assumptions, there are many factors that could affect our actual financial results or results of operations and could cause actual results to differ materially from those in the forward-looking statements. All future written and oral forward-looking statements by us or persons acting on our behalf are expressly qualified in their entirety by the cautionary statements contained or referred to above. Except for our ongoing obligations to disclose material information as required by the federal securities laws, we do not have any obligations or intention to release publicly any revisions to any forward-looking statements to reflect events or circumstances in the future or to reflect the occurrence forward looking statements to reflect events or circumstances in the future or to reflect the occurrence of unanticipated events.
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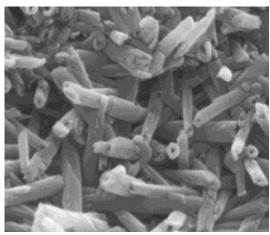
### **Company Overview**

- Applied Minerals is an industry-leading producer of Halloysite Clay and related technology solutions
  - Vertically integrated through its 100% ownership of the Dragon Mine
  - 1 of 2 known measured resources of Halloysite in the world
  - Dragon Mine Halloysite is globally recognized for its exceptional purity
  - JORC compliant underground resource to date of 1.4mm tons
- World-renowned technical experts in the fields of geology, mineralogy, production engineering and R&D/product development
- Attractive portfolio of strategic assets
  - Prospective copper/gold porphyry target
  - Iron ore resource to date of 2.8mm tons direct shipping/pigment grade
  - Extensive land package located in the heart of the Idaho silver valley
    - Owner of the Atlas Silver Mine

# What is Halloysite Clay?

- Halloysite is an aluminosilicate clay exhibiting a rare, naturally occurring hollow tube structure
  - Non-toxic, biocompatible and natural clay
  - Chemically identical to kaolin clay
- Formation occurs under extremely rare geological conditions
  - Kaolin sheets roll into tubes due to the strain caused by a lattice mismatch between the adjacent layers
- Unique characteristics of Halloysite resource adds functionality to a host of applications
- The only other large-scale commercial source of Halloysite clay is located in New Zealand



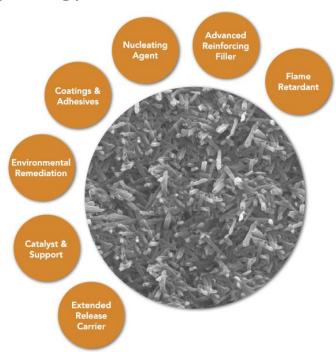


### Mission Statement

 To be the world leading, vertically integrated source of Halloysite Clay and related technology solutions for advanced applications

Continued innovation of the highest & best uses of Halloysite which benefit from its unique tubular morphology to displace specialty chemicals, carbon & oil based products over a wide range of industries

 To deliver these solutions to meet the world's growing demand for high performance, environmentally sustainable products



# Recent Commercial Developments

- Entered into a Joint Development masterbatch agreement with KibbeChem
  - Leading compounder and supplier of foaming agents to the polymer industry
  - Toll pelletize a range of high-performance Dragonite™ branded Halloysite Clay products
- Launch of DRAGONITE-HP
  - Multi-functional polymer additive grade (1% -2% loadings)
  - Addresses largest market size with lowest time to entry
  - Complements Dragonite-XR™ product which is tailored for the functional filler and flame retardancy market (5% - 40% loadings)
- O Announced first commercial order for Dragonite-HP™
  - Heavy-duty large mat & temporary roadway system (HDPE)
  - Dragonite-HP™ being used to reduce coefficient of thermal expansion (CTE) and increase strength without affecting impact resistance
  - Reduce warpage as interlocking parts require tight tolerances
  - More order announcements to follow
- Hiring of Chief Technology Officer: Chris DeArmitt Ph.D.
  - Recognized expert in plastics, functional fillers and additives





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# Applications in Focus

### **Unmet Market Needs**

### Halloysite's unique properties provide significant application alternatives

- Light weighting
  - Replace metal parts with advanced polymer nanocomposites to reduce fuel consumption without a sacrifice in performance or cost
- Improvement in manufacturing cycle time
  - Reduced energy consumption + lower emissions = \$\$\$ to the bottom line
- Reduction of oil-based materials
  - Replace with sustainable/recyclable materials
- Phase-out toxic chemicals that are harmful to the environment
  - Example: the major shift from use of Brominated/Halogenated chemical flame retardants
- Remediation and reduction of the release of emissions into the environment
  - Waste/ drinking water
  - Emissions
  - Toxic cleanup



# Light Weighting: HDPE Temporary Flooring

### Case Study #1

### Objective:

- To increase strength and stiffness of a 1,000 lb compression molded part currently loaded with 10% calcium carbonate
- Retaining the excellent impact resistance of HDPE
- Reduce warpage caused by thermal expansion and contraction (CTE)

### Solution:

- Increased strength and stiffness with little as 1% loading of Dragonite-HP™
- Reduced part weight by 10%
- Reduced warpage & CTE and retained the impact resistance of the control
- Drop-in solution



# Cycle Time Reduction

### Case Study #2

### Benefits of Dragonite-HP™:

- Cycle time reduced by 25%
- Mechanicals increase by +20%
- Surface appearance improved
- Cost savings: 11% reduction in the effective cost of HDPE for an end-user
- Thin-walling of products made possible to enable additional cost reduction
- Also validated in PP copolymer and homopolymer

### Market Size Potential:

- Huge market size potential
  - HDPE is a 50mm ton market
- Only 1 known competing product
  - Chemical-based additive
  - \$15-30 per lb
  - Independently proven to be less effective than Dragonite-HP<sup>™</sup>

	Virgin HDPE	HDPE + 1% Dragonite-HP	Savings
Cycle time per part (seconds)	107	80	25%
Parts per hour	34	45	32%
Cost per part	\$8.07	\$7.53	7%
Effective cost of HDPE (\$/lb)	\$0.85	\$0.76	11%

# Environmentally Friendly Flame Retardants

### Case Study #3

- Global demand growth for non-halogenated flame retardants due to new government regulations and environmental awareness
- Most mineral-based FR agents do not offer sufficient FR performance and severely degrade mechanical properties of the polymer
- Dragonite-XR™ able to achieve V0 rating while also retaining or improving mechanical properties
- Capable of performing as a synergist with other minerals or as a stand alone solution in a range of resins
- Key industries: Automobile, cables, electronics and building materials, and lighting
- High growth industry

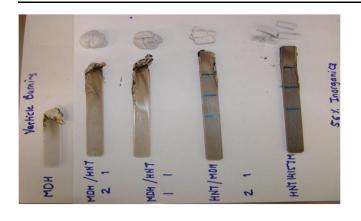
### Flame Retardant Additive Market for Polymers (1)

Additive	Market Size (tons)	Market Price per Ton
Total Market	1,650,000	\$1,500 average
ATH	650,000	\$1,500-2,000
MDH	50,000	\$2,000-3,500

# **Environmentally Friendly Flame Retardants**

### Case Study #3 (cont.)

PP 20 MFR pellets (%)	100 (Control)	40	40	40	40	40
DRAGONITE-XR <sup>™</sup> Loading Percentage	0	0	20	30	40	60
MDH Loading Percentage	0	60	40	30	20	0
Total	100	100	100	100	100	100
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Flex Modulus Tangent (kpsi)	207	432	467	464	521	557
Flex Modulus 1% (kpsi)	212	373	391	392	440	461
Flex Strength (psi)	6,517	5,131	5,350	5,347	5,666	6,200
Tensile Strength (psi)	5,180	3,242	3,182	3,189	3,650	3,818
Tensile Modulus (kpsi)	150 İ	277 Ï	275	285	300	294
Notched Izod Impact (ft-lb/in)	0.44	0.54	0.54	0.50	0.45	0.43
Smoke	i	Low	Low	Very Low	Very Low	Low
UL 94 Rating		V2	V1	V1	V1	V1



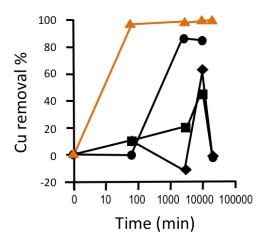
1) All MDH in PP 20	Burned most/ flaming drip	V2 Rating
2) 2:1 MDH/Dragonite-XR™	Some drip	V1 Rating
3) 1:1 MDH/Dragonite-XR™	No drip	V1 Rating
4) 1:2 MDH/Dragonite-XR™	No drip	V1 Rating
5) All Dragonite-XR™ in PP 20	No drip	V1 Rating

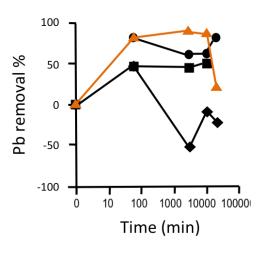
Note: Dragonite-XR™ not optimized – no surface modification.

### **Environmental Remediation**

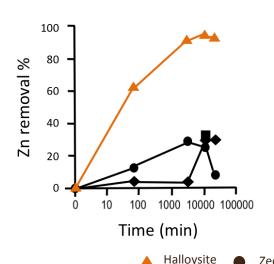
### Case Study #4

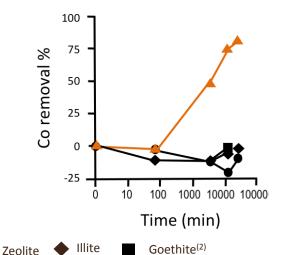
- Environmental Remediation
   Market<sup>(1)</sup>
  - \$35 Billion Market (worldwide)
  - 250,000 contamination sites (U.S)





 Remediation of PCB's, toluene, phenols, methylene blue, chromium-6, ammonium, uranium and heavy/alkali metals





### **Environmental Remediation**

### Case Study #4 (cont.) – Oil from the Marshlands

#### Scenario A

 $Dragonite^{TM} \ placed \ on \ top \ of \ sand-oil \ mixture \ which \ is \ on \ top \ of \ clean \ sand \ layer$ 

Water level: on top of the clean sand layer

	Results after Day 1		Results after Day 30	
	Run 1	Run 2	Run 1	Run 2
% of oil captured by Dragonite <sup>TM</sup>	62.0%	23.2%	50.3%	47.6%

#### Scenario B

Dragonite TM placed on top of sand-oil mixture and below supernatant

Water level: on top of Dragonite TM layer

	Results after Day 1		Results after Day 30	
	Run 1	Run 2	Run 1	Run 2
% of oil captured by Dragonite <sup>TM</sup>	73.0%	52.4%	85.0%	49.0%

#### Scenario C

Dragonite<sup>TM</sup> placed on top of oil which is on top of clean sand

Water level: on top of clean sand layer

	Results after Day 1		Results after Day 30	
	Run 1	Run 2	Run 1	Run 2
% of oil captured by Dragonite <sup>™</sup>	98.6%	97.8%	98.3%	97.0%

#### Scenario D

 $Dragonite^{TM} \ placed \ on \ top \ of \ oil \ which \ is \ on \ top \ of \ clean \ sand$ 

Water level: no water present

	Results after Day 1		Results after Day 3		
	Run 1	Run 2	Run 1	Run 2	
% of oil captured by Dragonite <sup>TM</sup>	60.1%	71.8%	80.2%	80.5%	

# High-End Competition: Carbon Nanotubes

- Market expected to grow to \$7.72B by 2015<sup>(1)</sup>
- Strong demand growth due to excellent mechanical properties, electrical conductivity and the ability to bear high working temperatures
- Growth led by multi-walled carbon nanotubes (MWCNT's)
  - Industry actively investing to increase capacity from 3,400 tons in 2010 to 9,400 tons by 2015
  - Still limited capacity
  - Price >\$125,000 per ton<sup>(2)</sup>
  - Carbon-based with safety concerns

### Comparison of Dragonite-HP<sup>TM</sup> vs. MWCNT (1% loading) in Polypropylene

		Flex Strength (% inc/control)	Tensile Strength (% inc/control)	Notched Izod Imp (% inc/control)
Dragonite HP <sup>TM</sup>	+28%	+23%	+7%	+40%
Multi-Walled Carbon Nanotubes	+25%	+22%	+9%	+16%

### Marketing and Brand Awareness

### **Execution of marketing initiatives**

- Presenter and sponsor at the 241<sup>st</sup> ACS National Meeting & Exposition: from Nanoplates to Nanotubes in Polymer Composites: Anaheim, CA
- Invited presenter and exhibitor at the Yet2.com Open Innovation Conference: Cambridge, MA
- Attendee at the SPE Polyolefins 2011 Conference: Houston, TX
- Presenter at the Innoplast Solutions Plastic Additive Conference: Chicago
- Exhibitor at the BCC Flame Retardant Conference: Stamford, CT
- Presenter at the Society for Mining, Metallurgy & Exploration (SME) Dreyer
   Conference on "Specialty Clays Geology, Production & Markets": Chicago
- Attendee at the K Show: Dusseldorf, Germany

## **Processing and Logistics**

### **KaMin LLC Plant:**

- Toll process agreement with KaMin LLC
  - Leading kaolin producer
  - Significant volume capacity
  - Capable of adding surface treatment and loading active ingredients on location
- Benefits of outsourcing
  - Commercial scale capacity
  - No upfront capital investment
  - Assure quality control
  - Handling of all logistics







### **Dragon Dry Milling Plant:**

- Existing plant at Dragon Mine currently online
- Will be used to process material with no impurities
- Micronizing with 95-100% recovery

Combined capacity of 30k+ tpa









# The Dragon Mine

# Overview of the Dragon Mine

- Located in Tintic District of North Central Utah
  - 75 miles southwest of Salt Lake City
  - Sits on ~230 acres, 38 patented claims
- Existing infrastructure
  - Accessed via state highway and county road
  - Located near Union Pacific Railroad spur line
  - Electrical power ~1.5 miles from site
- Mined by Filtrol Corporation (1949-1976)
- 5 waste piles left by Filtrol Corporation
- 2 underground mines
- Fully Permitted including large mine permit
- Currently in production



# Halloysite Resource Base



Underground: Measured Resource		
	<b>Old Statement</b>	<u>Updated</u>
Tonnage	415,000	596,700
Halloysite	61.0%	61.9%
Kaolinite	17.0%	19.4%
Illite-smectite	6.0%	10.3%
Clay content	84.0%	91.6%
*Certain areas contain up to 100% Hall	oysite	

New Underground: Inferred Resource	
Tonnage	776,500
Halloysite	4.1%
Kaolinite	47.4%
Illite-smectite	24.4%
Clay content	75.9%

### **Surface Piles: Inferred Resource**

5 surface piles left by previous mine operators

5 surface piles left by O Varying % Halloysite

 can be upgraded by wet process 
 Old Statement
 Updated

 3,527,262
 4,526,989







# Other Strategic Assets

# Iron Ore at Dragon Mine

- Previous mining focused on iron ore extraction and records indicate presence of additional iron ore at lower depths
- Mineralogy is a mixture of hematite and goethite

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- Currently evaluating direct shipping offtake agreements with major players in the field
- Pigments, sinter feed, direct shipping ore, fluxing agent for lead smelting

Grade	Market Size	Price (per ton)
Commodity Grade	2.6B tons (global)	\$180 <sup>2</sup>
Pigment Grade	200k tons (U.S) <sup>1</sup>	\$1,400 avg <sup>1</sup>

Iron Ore Resource	
Measured	2,104,000
Inferred	688,300
Total	2,792,300





# Dragon Mine Copper / Gold Exploration Target

- Dragon Mine is located between the Silver City quartz monzonite stock and limestone and dolomite of the Paleozoic formation
  - Gold and silver is found in veinlets immediately south of the Dragon Mine
- Approximately 315k tons of gold-bearing iron was mined with values of gold from 0.1 to 0.3 ounce per ton (pre-1900 production data)<sup>1</sup>
  - Between 1904 and 1930 the Dragon Mine was credited with 18k oz of gold and 928k oz of silver as by-product credits from iron ore production<sup>2</sup>
- Exploration is being carried out within 5km of the Dragon Mine by a major mining company
  - Possibility of a large, buried porphyry copper-gold deposit
  - Evaluating opportunities with 3<sup>rd</sup> parties interested in drilling the deposit at depth via a JV agreement or earn-in



## Atlas Silver Mine in Silver Valley, Idaho

- Own 1,000 acres of property in Idaho's Silver Valley
  - Includes the Atlas Mine
  - Rights to the land, mineral and timber
  - 2008 land transactions valued comparable properties at ~\$2,500 per acre
- Strategic land position in a prolific mining region
  - Surrounded by Sterling Mining Company claims and adjacent to Hecla Mining's property
- Largest property in northern Idaho's historic Coeur d'Alene district "Silver Valley"
  - World's second largest silver district, having produced over 1.2B ounces from 1884-2009
- Property was partially explored by Noranda from 1975-1977
  - Deemed uneconomic to mine with silver prices then averaging \$4.60/ounce
- Entered into an exploration agreement with neighboring Hecla Mining, the largest silver producer in the region, in 1981, with silver prices as high as \$16/ounce
  - \$1.3 million commitment was made for furthering exploration
  - Agreement was terminated in 1985 after silver prices fell to an average \$6.14/ounce
- Possesses over 7,000 feet of tunnels, fully preserved core shed, a rail system and a
   2,000-foot internal shaft that can be used as an access for future exploration
- Accessible by interstate freeway and a county-maintained road

# Silver: Atlas Mine in Silver Valley, Idaho



**Properties owned and leased by Sterling Mining Company** 

Atlas Mine	540 acres fee simple	
	180 unpatented	
Sierra Trapper Creek	80 acres patented	
Aulbach, Sections 6 & 7	100 acres patented	
Sierra Silver, Woodland Pk & 9 Mi	60 acres patented	
	80 acres mineral rights	

# Capital Structure and Insider Holdings

### Capital Structure:

Fully Diluted Capital Structure <sup>(1)</sup>			
Shares outstanding (mm) Price per share	83.5 \$1.43		
Market capitalization (mm)	\$119.4		
Cash balance (mm)	\$1.80		
Enterprise value	\$117.6		

### **Insider Holdings:**

Insider	Shares Owned	% Ownership <sup>(2)</sup>
IBS Capital (3)	21,089,052	27.1%
Andre Zeitoun	1,447,350	1.9%
Chris Carney	852,976	1.2%
Eric Basroon <sup>(4)</sup>	190,315	0.3%
John Levy	95,957	0.1%
Evan Stone	71,110	0.1%
Total	23,746,760	30.7%

Option Holder	Options (vested and unvested)	Weighted Avg. Strike Price
Management and Board	9,973,411	\$0.75

Upon exercise of all options, insiders own 38.4% on a fully diluted basis (5)

Note: Capital structure does not include \$24.4mm NOL available to the company - for further information regarding the NOL, refer to Note-10 Income taxes, of the Company's 2010 Form 10-K.

<sup>(5)</sup> Pro forma as of June, 2011 for exercise of all outstanding "in the money" options vested and unvested, exercised on a cash basis. Assumes the conversion of \$3.1mm principal amount of October 2010 PIK Notes.



<sup>(1)</sup> Pro forma as of June, 2011 for exercise of all outstanding "in the money" options vested and unvested, exercised on on a cashless basis using a 5-day average closing price at June 13th, 2011. Also assumes the conversion of \$3.1mm principal amount of October 2010 PIK Notes

<sup>(2)</sup> Percentage ownership based on proforma common shares outstanding of 77,783,318 (includes the conversion of \$3.1mm principal amount of October 2010 PIK Notes).

<sup>(3)</sup> Managed by Director David Taft. IBS shares include 1,103,353 shares owned through currently unconverted October 2010 Notes.

<sup>(4)</sup> Management personnel

# **Thank You For Your Time**