



## Business Plan • Executive Summary

JULY 14, 2014

UMBRA APPLIED TECHNOLOGIES GROUP

51 JFK Parkway, First Floor West, Short Hills, NJ 07078

[www.uatgroup.com](http://www.uatgroup.com)



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## 1. Executive Summary

### 1.1. Mission Statement

Innovation is at once the exemplar of responsibility and the paragon of social progress. Innovation breeds credibility, and innovation proliferates fortitude. Innovation is the credo of Umbra Applied Technologies. The term “valor” will be defined by this, in future generations.

UATG's resolute purpose is to better the world through technological innovation; through a paradigm shift in clean technologies in areas of defense, of national security, of medical research and alternative energies. The motivation behind this is the protection of civilians, soldiers, assets, infrastructures and Citizens.

While UAT regards these protections as paramount to the company's functions, we extend that focus towards human-, environmental- and talent-resource sustainability. Whether it's UAT's clean water technologies, its efforts to reduce humanity's carbon footprint, its focus upon medical research to save lives, or its efforts to improve the day-to-day existences of America and its allies, UATG changes the world through technology. The corporate culture at UATG is designed to foster innovation and sustain talent while commanding market share. Our company impacts the world through technology; and the community through service. We believe fervently that this corporate culture will in turn foster growth and innovation in the local communities surrounding UAT's production facilities and corporate offices.

Through responsible fiscal governance and brand management the company will build shareholder value. This is accomplished through consistently building to a standard; not a price---and through consistently delivering a portfolio of quality products.

Effective performance management, strong program execution and the delivery of innovative, proprietary solutions and services are integral to our business and are built upon our reputation for technical excellence in engineering throughout our organization.

Unmitigated progress in defense, national security, environmental sustainability and medical research is the calling of this generation. UATG stands ready to answer that call.

### 1.2. Firm Operations

Umbra Applied Technologies Group, Inc is a C-corporation duly formed under the laws of the State of Delaware with principal business office at 51 JFK Parkway, First Floor West, Short Hills, NJ 07078.

UAT Group is a diversified holding company that passionately represents some of the most advanced technology in the areas of alternative energy, conventional energy, medical innovation, environmental remediation, weapons systems, and compound recognition technologies. The company wholly owns Umbra Applied Technologies, Intrepid Innovations, Bio-Grow and ChaseDown™ with significant minority holdings in Protokinetix and Midwest Oil & Gas.

Recognizing it takes more than technology to become a leading Technology and Defense provider, UATG utilizes the executive team's aptitude for leadership, execution, and whole-systems thinking to execute the company's business model.

The company has hired and retained legal counsel, investment banking professionals, investment advisers and CPA's of only the highest caliber to aid in the evolution and completion of the company's mission.

Umbra Applied Technologies Group is proud to bring the relevant experience and the innovating minds of these people to not only serve national security interests but help solve energy and climate challenges of the United States and those aligned with U.S. interests across the globe.

### 1.3. Marketing Plan

Umbra Applied Technologies Group will be marketed in conjunction with its subsidiaries via social media, business to business, industry specific publications, news publications and television media. The successful marketing of UATG's subsidiaries product lines and brand recognition within Umbra Applied Technologies (UAT), Intrepid Innovations (I2) and Intrepid Energy will be the cornerstone of our marketing plan bolstered by the individual segment specific successes of each delivered product to market.

Every publication and market release will reference the public holding company. Each product delivered by UATG's subsidiaries will be publicly announced under UATG in tandem with subsidiaries branding. We will also capitalize on our existing consumer base from IP currently owned through previous corporate acquisitions.

## Competition

We operate in highly competitive markets and our competitors may have more extensive or more specialized engineering, manufacturing and marketing capabilities than we do in some areas. We anticipate increasing competition in our core markets as a result of defense industry consolidation, which has enabled companies to enhance their competitive position and ability to compete against us. In addition, U.S. defense spending levels in the near future are increasingly difficult to predict. Changes in U.S. defense spending and the U.S. Government procurement environment may potentially limit certain future market opportunities. We are also facing increasing competition in our domestic and international markets from foreign and multinational firms. Additionally, some customers, including the DoD, are increasingly turning to commercial contractors, rather than traditional defense contractors, for information technology and other support work. If we are unable to continue to compete successfully against our current or future competitors, we may experience declines in revenues and market share which could negatively impact our results of operations and financial condition. In the current competitive environment there may be an increase in bid protests from unsuccessful bidders on new program awards. Generally, a bid protest will delay the start of contract activities, and could result in the award decision being overturned, requiring a re-bid of the contract.

Our future success depends on our ability to develop new offerings and technologies for our current and future markets.

To achieve our business strategies and continue to grow our revenues and operating profit, we must successfully develop new or adapt or modify our existing offerings and technologies for our current core defense markets and our future markets, including new growth and emerging markets. Accordingly, our future performance depends on a number of factors, including our ability to:

1. Identify emerging technological trends in our current and future markets.
2. Identify additional uses for our existing technology to address customer needs in our current and future markets.
3. Develop and maintain competitive products and services for our current and future markets.
4. Enhance our offerings by adding innovative features that differentiate our offerings from those of our competitors.
5. Develop and manufacture and bring solutions to market quickly at cost-effective prices.
6. Effectively structure our businesses, through the use of joint ventures, collaborative agreements and other forms of alliances, to reflect the competitive environment.

We believe that, in order to remain competitive in the future, we will need to continue to invest significant financial resources to develop new and adapt or modify our existing offerings and technologies, including through internal research and development, acquisitions and joint ventures or other teaming arrangements. These expenditures could divert our attention and resources from other projects, and we cannot be sure that these expenditures will ultimately lead to the timely development of new offerings and technologies. Due to the design complexity of our products, we may in the future experience delays in completing the development and introduction of new products. Any delays could result in increased costs of development or deflect resources from other projects. In addition, there can be no assurance that the market for our offerings will develop or continue to expand as we currently anticipate. The failure of our technology to gain market acceptance could significantly reduce our revenues and harm our business. Furthermore, we cannot be sure that our competitors will not develop competing technologies which gain market acceptance in advance of our products.

### **Our "flagship" technology, CDIS, has no real competitors**

There are currently around 71 different systems in development for the detection of various types of threats that may enter the United States through freight containers, in airline baggage, and other means to threaten persons and property. None of them can effectively and accurately, detect and image a

diversity of threats simultaneously with ONE scanning device. No other technologies/scanning devices currently available on the market are proven to be more accurate than the CDIS scanning system. CDIS is uniquely positioned to be the most effective scanning system available today to protect Americans from the very real and imminent threat of terrorism within the Continental United States.

#### **1.4. Operational Plan**

Umbra Applied Technologies Group will operate primarily as a public vehicle for its subsidiary companies that will help direct its financial directives within the public markets.

The UATG Board of Directors is currently assembling a strategic Advisory Board that will be dedicated to expanding on U.S. government contracts in the areas of aerospace & defense, clean & renewable energy, intelligence & security and, biomedical technology.

#### **1.5. Executive Team Overview**

##### **Alexander L. Umbra, Chairman & Chief Executive Officer**

Alexander L. Umbra serves as Chairman and CEO of Umbra Applied Technologies. For over five years Mr. Umbra has been focused on research and development of a diverse product portfolio. His mission has been the development of cutting edge technologies in the defense and clean energy sector. Mr. Umbra has an experienced understanding of the needs of both our military and intelligence services. These technologies have been created through his expertise in strategic planning, a clearly defined corporate vision and the relentless pursuit to deliver highly efficient and reliable technologies to "the men on the ground". The corporate purpose is to work towards a safer and cleaner world.

As a veteran of the United States Navy and through his many years of experience, Mr. Umbra has gained an understanding of the technologies needed to exploit and defeat adversarial intelligence activities directed against U.S. interests. The technologies he has been developing were designed to protect the integrity of the U.S. intelligence system; provide incisive, actionable intelligence to decision-makers at all levels; protect vital national assets; and neutralize and exploit adversarial intelligence activities targeting our armed forces and U.S. Interests.

In the private sector Mr. Umbra has proven to be the consummate entrepreneur, starting, managing, and investing in companies across many sectors. The past five years Mr. Umbra has been primarily focused on the research and development of the CDIS platform and other corporate projects. As a businessman he understands the importance on human capital management, delivering quality products and services, while maintaining a focus on shareholder value. He has a proven mindset that bridges the gap between projects and business operations that result in a highly effective company that achieves its defined objectives.

##### **Blake H. Cooley, Senior Vice President of Operations**

Blake Cooley is currently serving as Director of Operations for Umbra Applied Technologies. He has spent the past 9 years in executive and upper management, developing a methodical, analytical, and efficient reputation that would allow him to be an integral part of the corporations that sought him out.

In 2012, having founded one of the nation's top ranked search marketing firms based in Los Angeles, eLocalRank INC quickly gained national acclaim. Mr. Cooley managed internet marketing and lead generation campaigns for some of the nation's largest brands. Mr. Cooley parlayed his internet marketing success to create the Epic Investment Group which invests online marketing resources into tech startups. Needless to say that his online marketing experience is a huge asset to the UATG platforms.

Mr. Cooley firmly believes that the world can be changed through innovative technologies. In early 2014 Mr. Cooley accepted an offer to join the UATG team.

Mr. Cooley has extensive experience in building company infrastructures and creating operating procedures. A unique asset to this team, he possesses considerable experience with extensive practical hands-on commitment and training.

##### **Paul P. Terry, Jr., Chief General Counsel**

Mr. Terry is the founding partner of the law firm of Angius & Terry LLP, where he has represented corporate clients as their general counsel and litigation attorney for over 28 years. In addition to handling multi-million dollar litigation, Mr. Terry has extensive experience in general corporate issues, the drafting of contracts and employment agreements and regulatory compliance.

Mr. Terry received undergraduate degrees in economics and comparative literature from the University of California, Irvine. He graduated from the University of California, Hastings College of the Law in 1984 where he served on the Editorial Board of the Hastings Constitutional Law Quarterly. He is rated "AV" by the national rating service Martindale Hubbell - the highest possible rating that it awards to attorneys in the United States. Mr. Terry is admitted to practice in California, Nevada, Colorado, Texas and soon New York.

#### **H. Mark Estrada, Director of Advanced Technologies Development Division (ATDD)**

Mark Estrada is currently Senior Director of the Advance Technology Division of UAT. He has more than twenty five years of experience in the biomedical and research & development sector with clinical, product development and sales & marketing roles; including management and executive level positions.

Over the past decade, Mr. Estrada has consulted on more than a twenty five manufacturing and technology product designs. After more than a decade of clinical experience, Mr. Estrada founded a medical device design firm in 2000 to pursue the areas of Biomedical and Durable Medical Equipment and expand into related areas of advanced biomedical and nanotechnology. Alternative Energy and Imaging Technology is a particular interest.

Mr. Estrada is a veteran of the US Navy where he served in the Naval Hospital Corps. Mr. Estrada holds an M.B.A. with a major in Business Management. He currently holds several US patents for designs in the biomedical and orthopedic field. His extensive experience with product and industrial design will help shape the UAT family of products.

His specialties include industrial design expertise as applied to medical and alternative energy product development, project management & design and manufacturing processing. Industry sector experience includes medical products and clean energy

#### **Ronald Gdovic Ph.D., Director of Signals Intelligence (SIGINT)**

Ronald Gdovic brings more than 20 years of experience to the classroom for the University of Phoenix College of Natural Sciences, College of Information Systems & Technology and School of Business. Dr. Gdovic holds a Ph.D. in Urban and Regional Planning and also holds a master's degree in Urban and Regional Planning from the Graduate School of Public and International Affairs at the University of Pittsburgh.

Dr. Gdovic is the founder of BuzzSwat, purchased by Umbra Applied Technologies in April 2012, and focused upon the explosive growth of social media as a disruptive technology for corporate intelligence, security, and brand management. BuzzSwat, now part of Umbra Applied Technologies Sentiment Analysis Platform (USAP) turns social media chatter into social media intelligence.

Most recently, Dr. Gdovic was president of a successful leading-edge public company specializing in online marketing and product development. Prior, he held the distinguished position of Executive Director of the Institute for the Study of Information Technology and Society at Carnegie Mellon University. He was also executive director of a progressive technology company resolved to establish Greater Pittsburgh as the leader in advancing social, educational and economic development agendas through innovative use of information technology.

Dr. Gdovic was Faculty Editor and is currently a member of the National Advisory Board for I/S A Journal of Law and Policy, which is an interdisciplinary journal of research and commentary concentrating on the intersection of law, policy, and information technology published by The Ohio State University.

Dr. Gdovic has launched several companies in varied industries ranging from telecommunications to industrial materials to land and natural resource management and development. He remains an active leader on the boards of these organizations and today is focused on sustainable development of natural gas resources in the United States.

Dr. Gdovic also assisted the Department of Commerce's National Telecommunications Infrastructure Administration with programs to expand broadband access and spur economic growth under the American Recovery and Reinvestment Act of 2009. He is considered an authority in radio frequency identification (RFID) and telecommunications infrastructure and policy and is a member of the Pittsburgh Technology Council and the Technology Leaders Association.

Dr. Gdovic has appeared as a visiting scientist on the Discovery Channel's MythBusters series and hosts a talk show about outdoor sports and recreation called Adventuradio.

## **Christopher J. Terry, Director of Facilities Engineering**

Christopher J. Terry is the Director of Facilities Engineering of Umbra Applied Technologies. Mr. Terry's responsibilities encompass oversight of all facets of project development, including planning, execution and finalization of projects according to strict deadlines and budgets through the use of best practices and value engineering. Mr. Terry acquires resources as needed and liaises between team members and third party contractors or consultants to deliver projects according to plan, defining project objectives and overseeing quality control throughout a projects life cycle.

Prior to joining Umbra Applied Technologies Inc. in 2011 Mr. Terry had over 20 years of experience in the Engineering and Building industries working closely with JWP International on industrial, commercial and large-scale residential communities. Since 1999 he has served as CEO of his own general engineering and general contracting companies.

## **Justin Herman, CEO Intrepid Energy**

Justin Herman is Chief Executive Officer of Intrepid Energy. Justin Herman was the Managing Director of Wallace Consulting a boutique investment advisory firm. Mr. Herman has been an executive with Morgan Stanley and Wells Fargo. He has been awarded significant corporate commendations based on his professional success. He has quality experience with public equity and debt offerings. His syndicate experience ranges from Fortune 500 firms such as Amazon, Barnes & Noble, Red Hat, Sycamore Networks, Priceline, UPS, and Bank of America. He also has strong history with public offerings on the OTC Bulletin Board.

## **2. Umbra Applied Technologies**

### **2.1 Overview**

Umbra Applied Technologies is a C-corporation duly formed under the laws of the State of Delaware with principal business office at 51 JFK Parkway, First Floor West, Short Hills, NJ 07078.

UAT is a global defense and security company, and the words of the preceding mission statement outline the Firm's modus operandi. The Company delivers a full range of products and services for American air, land and naval forces, as well as advanced electronics, security, information technology solutions and support services to both government and civilian consumers.

Recognizing it takes more than technology to become a leading Technology and Defense provider, UAT utilizes the executive team's aptitude for leadership, execution, and whole-systems thinking to execute the company's business model.

### **2.2 Company Divisions**

#### **2.2.1 Aerospace & Defense**

Umbra Applied Technologies (UAT) is developing and deploying superior, innovative aerospace-related technologies and solutions for its global civil, defense and intelligence community customers. Our core competencies are aligned with the current and future needs of our customers and address emerging global security challenges in key areas, such as unmanned systems, combat aircraft, and intelligence logistics that are critical to the defense of the nation and its allies. These competencies also address homeland security and large-scale civil information systems that enhance city, county and state government services. UAT is quickly becoming a leader in aerospace, possessing one of the industry's most innovative and dynamic group of professionals.

UAT delivers advanced military air capabilities through a range of aircraft programs such as developed through our LTAC program, which will revolutionize existing UAV and combat aircraft programs. We are proving capabilities in prime contracting, systems integration, rapid engineering, manufacturing, maintenance, repair and upgrade, and military training.

##### **2.2.1.1 Contraband Detection & Imaging System (C.D.I.S)**



Contraband Detection & Imaging System (CDIS) — CDIS units are used for non-intrusive detection and imaging based on Gamma Resonance Fluorescence, Gamma Resonance Absorption, Gamma induced Photofission and other proprietary technologies combined. This provides the unique capability to detect and image threats such as explosives, nuclear weapons and materials, chemical warfare components, drugs, contraband and emerging threats specifically by chemical element without the need for operator interpretation and analysis of images or data with greater than 95% accuracy. CDIS is a system designed to detect and image all types of explosive materials (liquid and solid), chemical and biological warfare components, radioactive or nuclear materials and nuclear weapons (shielded and unshielded), drugs, contraband and new emerging threats. Detection is specifically accomplished by chemical element. CDIS, will be the only existing technology capable of simultaneously detecting multiple threats with better than 95% accuracy without the need for monitoring personnel to interpret the detected images.

#### 2.2.1.2 Intelligence, Surveillance and Reconnaissance Systems (ISRS)

ISRS designs and will manufacture sensor, surveillance and targeting solutions that enable actionable information for strike, persistent surveillance and special mission applications. ISRS provides maritime and overland surveillance radars, terrain following/terrain avoidance radars, and electro-optical/infrared sensors to customers including every branch in the DoD, the Department of Homeland Security (DHS) and international governments. In addition, ISRS provides integrated solutions for all tiers of airborne intelligence, surveillance and reconnaissance systems.

#### 2.2.1.3 Tactical Airborne Systems (TAS)

TAS designs and manufactures cost-effective, high-performance integrated sensor solutions for tactical and strategic platforms, delivering trusted, actionable information and mission assurance. TAS provides sensors and integrated sensor systems with advanced fire control radars, electronic warfare and processor technologies to customers including the U.S. Navy, Marine Corps, and Air Force and classified customers.

#### 2.2.1.4 Space Systems (SS)

SS will design and manufacture space and space-qualified sensor payloads for large national programs and develops innovative solutions for emerging intelligence, defense and civil space applications. SS will provide electro-optical, infrared, radio frequency, radar and laser space-based sensors to customers including branches of the DoD, MDA, NASA, classified customers and international governments.

#### 2.2.1.5 Lighter Than Air Craft (LTAC)

LTAC will be headquartered in Denver, Colorado, operates under the authority of the Umbra Applied Technologies, Advanced Technologies Development Division's (ATDD) secured facility and is a leader in the design and development of the next generation of aircraft. With significant advantages over traditional jet aircraft our LTAC's are more fuel efficient, stealth capable-VTOL's (vertical take-off and landing) with extended loitering capabilities and dynamic maneuverability. Customers are targeted to include the U.S. Navy, Marine Corps, and Air Force and classified customers.

## 2.2.2 Alternative & Renewable Energy

Clean Energy Systems (CES) —CES, headquartered in San Antonio, Texas, is a pioneering leader in clean and renewable energy based systems designed to transform electricity into an environment and customer-focused clean energy system, through research and development of advanced technologies which will produce clean, zero emission, renewable energy.

Under the UAT Clean Energy Initiative we have searched for the best molecules and processes possible, for electricity generation, and how best to assemble those molecules/processes to make efficient platforms that are not detrimental to the environment. By searching combinatorially among thousands of potential systems, we can contribute to the global "green" effort.

About 86% of all types of energy used in the United States is derived from fossil fuels. In 2007, the largest source of the country's energy came from petroleum (40%), followed by natural gas (24%) and coal (23%). The remaining 15% was supplied by nuclear power, hydroelectric dams, and miscellaneous renewable sources. Today, this dependency has increased, not decreased, making us vulnerable.

The United States depends on imported fossil fuels to meet over 40 percent of its energy needs. This dependence leaves The United States vulnerable to supply disruptions and high energy prices with estimates showing that every 10 percent increase in world oil prices results in a 0.5 percent reduction in the State's GDP.

At the same time, The United States has abundant natural resources, including wind, sunshine, and geothermal sources for electricity generation, and land for energy crops that can be refined into biofuels to address transportation needs. Economic and culturally sensitive use of natural resources can provide energy supply security and price stability for the people of The United States as well as significant environmental benefits and economic growth opportunities. Successfully developing our clean and sustainable energy economy will make The United States a global model.

### Clean Energy Vision

Umbra Applied Technologies is pioneering new research, in partnership with others, in the areas of Solar Energy and Hydrogen Energy platforms to not only reduce but, eventually eliminate our dependency on fossil fuels. Umbra Applied Technologies is finding innovative ways to develop alternative energy sources and help customers identify and implement energy conservation and management solutions. The need for high-level capabilities in complex systems integration, project management, information technology, and advanced manufacturing techniques, along with the national security component of the effort, make energy solutions a natural fit for Umbra Applied Technologies.

Today, one by one and in ever increasing numbers, governments around the world are embracing clean energy as fundamental to their strategies of national energy security and global environmental responsibility. In so doing, they are responding to an imperative that is gaining ever greater cogency on every continent.

After assessing the human and environmental realities around them, national leaders are recognizing that clean energy today represents nothing less than an indispensable asset

if our world is to meet what must be recognized as the greatest challenge in human history.

Between now and 2050, as world population swells from 6.6 billion toward 9 billion, humankind will consume more energy than the combined total used in all previous history. Under prevailing patterns of energy use, the results will prove calamitous. The resulting pollution will damage or ruin the health of tens and likely hundreds of millions of citizens, mainly in the developing world. Far worse, the intensifying concentration of greenhouse gases will take past a point of no return as we hurdle toward climate catastrophe.

Today the world economy is producing greenhouse emissions at the rate of 29 billion tons per year – some 900 tons per second – a rate still rising despite rhetoric and negotiation. An overwhelming majority of climate scientists, and an increasing cohort of world political leaders, agree that we must, by mid-century, cut global greenhouse emissions by a full 60% – even as world energy consumption triples. In the sheer scope and urgency of this challenge, we face nothing less than a global emergency.

2010 was the largest year on record for investment in clean energy, led by China, Europe and the US, and that globally, investment opportunity in the sector continues to improve. Umbra Applied Technologies is committed to clean energy with its Clean Energy Initiative designed to transform electricity into an environment and customer-focused clean energy system, through research and development of advanced technologies which will produce clean, zero emission, renewable energy.

#### 2.2.2.1 Helix Wind Turbine (V-HET)

The V-HET platform is constructed of aluminum, carbon fiber, various composites and steel, making them heavy-duty enough to withstand the elements but light enough to harness the maximum amount of wind power. An array of 12 units can produce as much as 85,500 kilowatt-hours of energy annually – about what seven average American homes burn in a year. A buildings electrical system will take the energy when it is available and switch to power from the local utility when it is not.

This technology can cut the carbon emissions of a ten story commercial building by about 2 million pounds annually and saving the equivalent of 44,000 gallons of gasoline each year.

#### 2.2.2.2 Hydros Initiative Platforms (HIP)

HIP provides innovative solutions for a new generation of special missions. It applies advanced technology and special skills to address complex problems involving water purification and energy extraction. Under Project HYDROS, Umbra Applied Technologies has developed two new, water based, clean energy platforms listed in the next 2 sections.

#### 2.2.2.3 Water Purification & Treatment Center (WAPCEN)

WAPCEN platform is an innovative and affordable, proprietary process to clean cooling tower water using our green electrolytic technology. WAPCEN removes the minerals from the tower water so that scale cannot accumulate and diminish heat transfer efficiencies. A unique electrolytic platform that generates a mixture of gases from salt water that are then dissolved into a bypass stream of cooling tower water. This water then reacts with

minerals and causes them to separate and settle out of the water which are then filtered out. These same gases are also powerful biocides that will disinfect the cooling tower system and extend the life expectancy of the equipment, while killing bacteria, viruses, slime, molds, algae and other microbials in the water; preventing air-borne diseases to be spread through the air ducts. This process also eliminates the need for cooling tower discharge, thus reducing water consumption, eliminating chemical and salt expenses and eliminating sewer fees in their entirety.

#### 2.2.2.4 Desalination & Chemical Generation (D-Gen)

Desalination & Chemical Generation (D-Gen) —D-Gen platform is an innovative and affordable process which produces pure water from salt water, as well as prolific amounts of hydrogen gas, Sodium Hydroxide, Chlorine, Chlorine Dioxide, Hydrochloric Acid and Oxygen.

With a zero emissions footprint, a true renewable energy process and; opportunities for enhanced oil recovery, carbon credits and nitric acid production; D-Gen is poised to revolutionize water purification and clean energy production with the only emissions being water vapor. The potentially self-powered D-Gen platform is a ground breaking disruptor technology, generating clean and renewable energy as well as, 1,000+ gallons per minute, clean potable water.

#### 2.2.2.5 Sentry Alternative Power System (Power Cube)

The UAT Sentry™ Alternative Power System—Military Power Cube (SAPS—MPC) is a thermodynamic silent power supply that does not need to be charged or plugged in. Our military Sentry™ can use ambient temperature and conductive heat exchange from the environment to generate electricity to meet base power requirements. The unique design is relatively small, highly efficient and emissions free.

In an effort to support the United States Army's new initiative, called SAGE for Smart and Green Energy at Base Camps, UAT has designed a highly durable and compact mini-power plant that can be deployed from virtually any aircraft and into almost any environment.

### 2.2.3 Bio Medical Technology

The Umbra Applied Technologies Biotech Division (UATBD) performs medical reconnaissance and special operations to address critical gaps that are absent in defense medical research programs. UATBD fosters research on health informatics, telemedicine, medical training systems, computational biology, and promotes and manages, science and engineering in other key portfolios. Through an extensive network of partners, UATBD is focused at both ends of the research spectrum, exploring models of high risk and innovative research, and putting research findings into the hands of warfighters while looking toward a wider civilian utility.

The UATBD is an innovative research organization with a vision of: World-class, operationally relevant health and medical research solutions - anytime, anywhere!

In today's world, we face not only the medical threats associated with conventional warfare, but also the potential use of weapons of mass destruction and terrorism against our military forces and our citizens. Thus, research at UATBD is focusing on finding solutions to both traditional battlefield medical problems and naturally occurring infectious diseases, as well as to health problems associated with non-conventional weapons, including thermobaric blast, biological agents, and radiation. In fact, research is being conducted in each of the following areas:

- Biological Defense
- Infectious Diseases
- Combat Casualty Care

- Biomedical Research
- Directed Energy Bioeffects
- Environmental Health
- Aerospace Medicine
- Tropical Medicine
- Medical Modeling, Simulation and Mission Support
- Warfighter Performance
- Epidemiology and Behavioral Sciences

We are proud to be out in front for advanced medical research and sciences, committed to creating value for our military, by improving readiness and enhancing future capabilities through our vital work in the areas of infectious diseases, biological defense, military operational medicine, combat casualty care, and radiation research, all in support of U.S. warfighters.

As our nation and our warfighters prepare to face an uncertain future, UATBD will continue to be there to support them with world-class, operationally relevant health and medical research, development, testing, evaluation, and surveillance.

## 2.2.4 Intelligence

### 2.2.4.1 Signals intelligence (SIGINT)

(SIGINT) is intelligence-gathering via the interception of signals, whether between people; Communications Intelligence (COMINT), whether involving electronic signals not directly used in communication; Electronic Intelligence (ELINT), or combinations of the two. This type of intelligence is typically derived from electronic signals and systems used by foreign targets and/or domestically sourced communications, such as communications systems, radars, and weapons systems. SIGINT provides a vital window for our nation into foreign adversaries' capabilities, actions, and intentions.

As sensitive information is often encrypted, signals intelligence often involves the use of cryptanalysis and traffic analysis which is the process of identifying who is signaling whom and in what quantity. This can often produce valuable information, even when the messages themselves cannot be decrypted.

The National Security Agency is the primary agency responsible for providing foreign and domestic Signals Intelligence (SIGINT) to United States policy-makers and military forces. SIGINT plays a vital role in U.S. national security by providing U.S. leaders with the critical information needed to defend our country, save lives, and advance U.S. goals and alliances globally.

The SIGINT mission is specifically limited to gathering information about international terrorists and foreign powers, organizations, or persons. NSA produces intelligence in response to formal requirements levied by those who have an official need for intelligence, including all departments of the Executive Branch of the United States Government.

Umbra Applied Technologies (UAT) is a leading provider of intelligence, to include SIGINT, through geopolitical analysis and an understanding of international affairs. UAT uses an, intelligence-based approach to gathering information via rigorous open-source monitoring

(OSINT), via its revolutionary UAT Sentiment Analysis Platform (USAP), and a global network of human sources. Analysts then evaluate events looking through collected data and the objective lens of geopolitics.

#### 2.2.4.2 Open Source Intelligence (OSINT)

Web Open Source Intelligence (OSINT) is information collected and analyzed from multiple public available sources on the Internet. OSINT creates usable intelligence sources for open source intelligence, and can include any subject in any language found anywhere on the Web.

In contrast to common search engines like Google, Yahoo, Bing or others, the information targeted, collected and analyzed by OSINT solutions creates an aggregated, rich and validated intelligence product including information from the Deep Web. The Deep Web accounts for about 80% of the data on the Web that is not accessible to commercial search engines such as:

- Sites requiring registration in order to access information, including publications and local directories
- Social networks
- Corporate intranets
- Market research services and all other information services;
- Files and media sharing sites and geo-spatial information around the world.

But it is not just about retrieving, collecting and analyzing targeted information -- it is about automating the process and deriving actionable intelligence by putting the pieces together and delivering it to the right place at the right time.

The importance of Open Source Intelligence (OSINT) has grown dramatically in recent years due to the Web revolution. Today, for most government agencies, OSINT is becoming the major source of intelligence, and increasingly recognized as the answer to many of today's intelligence challenges.

#### 2.2.4.3 NETWORK INTELLIGENCE

Prior to 9/11, the intelligence process and tools used by our government were primarily directed at known threats with well understood functions and activities. However, with the rising importance of non-state actors and asymmetric threats, threat-focused processes and tools are now directed at known threats whose functions and activities are not well understood. Today's intelligence environment is characterized by voluminous amount of data; with the information age exponentially increasing the volume, variety, and velocity of available data. This environment has spawned the development of an entirely new Signals Intelligence (SIGINT) sub-discipline, Network Intelligence (NETINT).

The objective of an intelligence discipline is to apply sources, sensors, and analysis to provide a decision advantage or to enhance decision confidence. The current intelligence disciplines each arose out of a change in environment and technology to provide a unique perspective on the threat. Each discipline is focused on an object, not directly on a relationship. Combined by a talented analyst, they can provide great insight. Current recognized intelligence disciplines include: Open-Source (OSINT), Human (HUMINT), Signals (SIGINT), Geographic (GEOINT), Measurements & Systems (MASINT), Technical (TECHINT), and Counter Intelligence (CI). All of

the current disciplines demand Requirements Officers, Intelligence Collectors and Analysts with unique capabilities.

Today, these disciplines leverage network analysis tools to add value to analytical products and enhance analytical capacity to spot non-intuitive linkages. NETINT provides insight into relationships to build a representation of threat functions and describe the behavior of a system of systems. This methodology can both provide decision advantage with new insights and enhance decision confidence through adapting repeatable quantitative processes. Data sources include other intelligence domains, the ubiquitous computing environment and social media. Unique sensors can produce population indexing, sentiment analysis, and models of human intent. Network Intelligence addresses many of the challenges inherent in identifying mechanisms and measuring effectiveness to support Effects Based Operations.

The network intelligence analysis process starts with a systems perspective and establishes the status, behavior and linkages of nodes within and between chosen metrics. For example, analysis may model relationships between nodes representing individuals and geographic or conceptual metrics. Multi-metric analysis can enable the development of a network model for human behavior.

Under the HERMES Directive, Umbra Applied Technologies (UAT) has leveraged NETINT with innovative know-how to create the apex sentiment metrics and intelligence gathering platform. The UAT Sentiment Analysis Platform (USAP) is a high-performance and advanced intelligence platform that uses advanced metrics and algorithms to locate and extract sentiment from Open Source Intelligence (OSINT) or digital content sources, including mainstream websites, social media outlets, internal servers and incoming news feeds. UAT's unique hybrid approach combines powerful statistical techniques with linguistics and syntax metrics to improve accuracy at an exceptionally detailed level. It summarizes the sentiment expressed in all available communications collections – identifying trends in real time so as to identify what is "Of Interest" and what is "Actionable Intelligence".

## 2.2.5 Security

### 2.2.5.1 Intelligence & Homeland Security

Umbra Applied Technologies (UAT) is looking to develop and deploy an intelligence division which ensures that information related to homeland security threats is collected, analyzed, and disseminated to the full spectrum of homeland security customers in the Department, at state, local, and tribal levels, in the private sector, and in the Intelligence Community (IC).

UAT will work closely with department component intelligence organizations as well as state, local, tribal, and private-sector entities to ensure non-traditional streams of information are fused with traditional IC sources to provide a complete assessment of threats to the nation.

UAT seeks to optimize its customer's capability to collect and analyze intelligence and information and produce finished analyses tailored to the needs of our key customers. UAT will provide the country's leaders at all levels of government with a timely, actionable, and complete understanding of homeland security threats to facilitate informed decision-making, policies, and appropriate operational responses.

### 2.2.5.2 Cyber Security

Worldwide estimates put the cost of cybercrime over \$1 trillion annually. At UAT, we work with our clients to manage risk by providing mission-critical cyber security solutions, information technology, intelligence and analytical tools, and support solutions.

We work with our clients to collect and manage information to provide intelligence, maintain security, manage risk and strengthen resilience in today's complex operating environment.

The U.S. government sector witnesses a blossoming of investments in cyber security technologies on the wave of progress that the White House and federal agencies have made in establishing interagency groups to plan and coordinate Comprehensive National Cybersecurity Initiative (CNCI) activities, setting up cyber security R&D goals and creating framework for industry-wide cooperation.

"The recent intrusions at the International Monetary Fund, the U.S. defense contractor Lockheed Martin, and at Citibank join those that occurred in the oil and gas sector, at NASDAQ, and at Google as further, troubling instances of a widespread and serious phenomenon. Even some companies employing sophisticated commercial defenses have fallen victim to intrusions that have compromised services and stolen intellectual property," said Deputy Secretary of Defense William J. Lynn, speaking at the 28th Annual International Workshop on Global Security in Paris. To respond to the cyber threat the U.S. Department of Defense (DOD) and Department of Homeland Security (DHS) have established a pilot program with leading private defense contractors and ISPs called DIB Cyber Pilot and that is only one of the many federal government programs driving the cyber security market.

Over the past few years a number of cyber-attacks perpetrated by criminals, hackers and foreign nations against the U.S. Government's networks rose sharply.

"Among the greatest concerns that impacts both military and civilian realms is cybersecurity," James G. Stavridis, Navy Adm., NATO's supreme allied commander for Europe and commander of U.S. European Command, told the Senate Armed Services Committee. "Today, we have a billion devices that are accessing the Internet," he said. "Our economies are entangled in this Internet sea, and it's an outlaw sea. Nothing exists in the norms of behavior. There is a military aspect to it, but it's all of society. At some point, there needs to be a very global conversation on this challenge."

"Federal agencies have spent more on cyber security than the entire GDP of North Korea, who some have speculated is to be involved with some of these cyber-attacks," said Senator Thomas L. Carper. "The issue of Cyber Warfare is not science fiction anymore. It's reality."

## 2.2.6 UAT Arms

Representing the highest standard of tactical weapons, all conventional small arms that UAT manufactures are built by hand at state-of-the-art and manufacturing facilities here in the United States because, if it is not built here it won't be built at all.

UAT small arms manufacturing represents the natural evolution in the American arsenal and defines a benchmark for all battle rifles to be measured against. With stricter guidelines on materials quality, machine and polish tolerances and reduced maintenance requirements, Umbra Battle Rifles are the most efficient and reliable battle rifles available. Designed and tested to be reliable in all combat environments, under the most challenging conditions, UAT ARMS offers only the pinnacle of combat firearms arms to law enforcement and U.S. Military.



Inside our small arms platforms; all points of friction, are coated and protected with self-lubricating UmbraTec™. Selected by research engineers at our Advanced Technologies Development Division (ATDD), our UmbraTec™ coating is a thermochemical process that permanently bonds to the metal substrate at the molecular level, creating a unique surface unlike any other. UmbraTec™ is designed to create an impenetrable barrier between UAT small arms and nature's harshest elements such as high humidity, saltwater and extreme temperature changes. The non-reflective coating reduces the absorption of heat from the sun to help keep the weapon cool when exposed to the heat of the desert. UmbraTec™ is resistant to the abrasion of sand, dirt, chemicals, fungus and reduces the attraction of the weapon to dirt.

#### 2.2.6.1 Special Weapons & Ordinance Research Division (S.W.O.R.D)

S.W.O.R.D (Special Weapons Ordinance Research Division) is a research, development, and engineering division formed within the arms division of UAT. With a primary focus on advanced combat arms design, SWORD includes complete weapon systems as well as functional parts and accessories that exceed the expectations of the end user, provide a definitive advantage, elite performance, and uncompromised precision. Bespoke in every sense of the word, SWORD prototypes are always innovative, precise to the point of perfection and beautiful by design. An absolute dedication to the mission and a relentless pursuit of perfection defines all of our special projects divisions but also permeates UAT's corporate culture.

#### 2.2.7 Advanced Technology Development Division (ATDD)

The Advanced Technology Development Division (ATDD) was established to create a foundation upon which UAT was to be built. ATDD supports U.S. national security needs and creates strategic surprise for U.S. adversaries by maintaining the advancement of technological superiority of the U.S. military. ATD division is the advanced prototyping arm of UAT. Its primary focus is developing advanced military products and technologies, many of them highly classified.

UAT relies on diverse performers to apply multi-disciplinary approaches to both advance knowledge through basic research and create innovative technologies that address current practical problems through applied research. UAT's scientific investigations span the gamut from laboratory efforts to the creation of full-scale technology demonstrations in the fields of biology, medicine, computer science, chemistry, physics, engineering, mathematics, material sciences, social sciences, neurosciences and more. As UATG's primary innovation engine, ATDD undertakes projects that are finite in duration but that create lasting revolutionary change.

##### 2.2.7.1 Scorpion Works

A more autonomous research and design group within ATDD unhampered by extensive bureaucracy, tasked with working on advanced and/or more sensitive projects. Scorpion Works exists to create breakthrough technologies and landmark battle systems that will continually redefine combat. The lessons learned from Scorpion Works research and development efforts will define combat solutions of the future. Its primary focus is developing advanced military products and technologies, many of them highly classified.

For Scorpion Works it is always about the future. Whether we are reimagine an existing unmanned combat aerial platform or developing a new system that could radically change the way the United States responds to conflict, Scorpion Works exists for a singular purpose, to ensure mission success.

## 2.3 Applications Of Technology

In the first twelve months' operations of the Company, the primary technologies to be produced will be in the areas of biotech, intelligence and arms. The biotech products ready for delivery to market are our patented fixation device and the interphalangeal implant. The small arms manufacturing will be predominately available to the United States Government ("Government") and United States Military ("Military"). These are, namely, UAT's Sentiment Analysis Program (USAP) and the Umbra

Battle Rifle (UBR-16). Components of the aforementioned primary technologies will also be utilized for civilian use; specifically the ceramics, plastics and clean/renewable energy production units.

### 2.3.1 CDIS Platform Applications

#### Anti-Terrorism

CDIS units are used for non-intrusive detection and imaging systems based on Gamma Resonance Fluorescence, Gamma Resonance Absorption, Gamma induced Photofission and other proprietary technologies combined. This provides the unique capability to detect and image threats such as explosives, nuclear weapons and materials, chemical warfare components, drugs, contraband and emerging threats specifically by chemical element without the need for operator interpretation and analysis of images or data with greater than 95% accuracy. This allows high detection probability without false alarms. The system designs are customized for specific applications which include imaging 2D, 3D tomographic of the total contents and the specific threats simultaneously. The unique attributes of this technology also provides standoff and remote detection for military applications for detection of improvised explosive devices (IED's) car and truck bombs at safe distances to provide adequate time to respond.

CDIS will be a system designed to detect and image all types of explosive materials (liquid and solid), chemical and biological warfare components, radioactive or nuclear materials and nuclear weapons (shielded and unshielded), drugs, contraband and new emerging threats. Detection is specifically accomplished by chemical element.

CDIS can "see" at extended distances and is thus perfect for the early detection of Improvised Explosive Devices ("IED"), car bombs and the like at military checkpoints, industrial plants, embassies, power plants and the like, throughout the world.

CDIS, will be the only existing technology capable of simultaneously detecting multiple threats with better than 95% accuracy and without the need for monitoring personnel to interpret the detected images.

#### Medical

The same gamma resonance technology has medical applications for non-invasive whole body composition scanning and imaging by chemical element. This technology was introduced at two World Whole Body Composition and Imaging conferences held at Brookhaven National Laboratory (BNL) as the "technology of the 2000's", it surpasses CAT Scan, MRI and PET Scan in its unique capability to image the human body by chemical element.

This technology that combines Magnetic Resonance Imaging (MRI) and Electron Spin Resonance (ESR) was developed by Picker Nordstar representing Picker, Nycomed and Instrumentarium. This was later produced by Phillips and is currently being used at the National Institute of Health (NIH), National Cancer Institute (NCI) for early detection of Cancer in differentiating Cancer Cells from Normal Cells.

#### Characteristics

System Characteristics include flexible, open architecture capable of integration with other screening technologies; turn-key operation with minimum operating personnel and training; automatic alarms and location coordinates that eliminate the need for operator interpretation of complex radiographic images. Multiple inspection stations can be operated from the same GRA production system. The electronics readout and displays may be centralized and remote from the screening stations through wireless technology. The use of advanced GRA techniques puts this system in a class of its own, far superior to other scanning systems in performance and capability.

The system accurately and rapidly locates concealed explosives, improvised nuclear devices (IND), and special nuclear materials (SNM) such as uranium and plutonium, even behind thick shielding. The key feature is the use of several inspection processes in parallel to enhance detection efficiency and reduce false alarms. The system uses proven, commercially available

equipment to the maximum extent. It can be utilized in various configurations for specific applications such as port security container inspection; airport security inspection of carry-on baggage, checked baggage, cargo, bulk mail, LD-3 containers and vehicles; DOD applications for portal (checkpoint), remote and standoff detection of improvised explosive devices (IED's), car and truck bombs.

The basic system utilizes precisely tuned high-energy, mono energetic gamma ray beams to resonate with the specific chemical elements and isotopes of interest to be detected thereby allowing unambiguous detection and identification of the treat materials even through shielding and clutter of other materials rapidly and reliably. This key feature provides the capability to fully automate systems to identify threats without the need for operator interpretation of image or data.

The interaction of the specifically tuned gamma ray beams with the elements and isotopes that represent threats are identified by gamma nuclear resonance fluorescence, gamma nuclear resonance absorption, gamma induced photofission and may be combined with other modalities for additional capabilities.

The imaging capabilities include 2D, 3D, 3D Tomographic of total contents for verification of manifest and simultaneous 2D, 3D, 3D Tomographic of specific threats. Automated threat algorithms identify the threats by type, quantity and location.

## **2.4 Intellectual Property**

The aerospace and defense industries in which UAT operates are technology-focused and our competitive advantage is built around our ability to innovate better than our competitors. Protecting our innovations enables us to have profitable business results and to continue to develop market-leading products.

UAT is fervently protective of its inventions, so we follow a multi-staged and fairly detailed process. Because patents are public documents, we regularly consider whether the disclosure of a specific invention through a published patent application is in UAT's long-term best interest. Innovations that are visible on our products and services, as well as innovations that can be easily reverse-engineered are prime candidates for patent protection.

We often decide not to patent many military-specific or military related innovations that can effectively be kept out of the public domain as trade secrets. Inventions that fall in between are further evaluated for the scope of potential patent claims, likely use on products or in services, licensing potential and other factors.

## **2.5 Government Funding Acquisition**

The current U.S. Administration continues to support market segments relevant to UAT operations by investing in the nation's military service members and their families and provides them with the training, equipment, and infrastructure needed to maintain military readiness. The President's 2012 Budget for the Department of Defense (DOD) reflects that commitment, proposing \$553 billion - an increase of \$22 billion above the 2010 appropriation.

The Budget includes a series of management and acquisition reforms that will produce a net of \$78 billion in savings through 2016 so that this savings can be redirected to intelligence support operations. DOD supports the provision of an additional \$2.2 billion for National Nuclear Security Administration (NNSA) weapons activities between 2013 and 2016.

The new budget maintains ready forces with \$172 billion allocated to support training and readiness and continues efforts to rebalance military forces to focus on both today's wars as well as potential future conflicts. The new budget prepares for emerging threats by fully funding the \$31.8 million reorganization of a chemical, biological, radiological, nuclear and high-yield explosive response element and the addition of eight Homeland Response Forces, which will were in place prior to the end of fiscal year 2012; \$200 million for a public-private partnership of a vaccine manufacturing facility in support of the Administration's new Medical Counter Measure Initiative; and \$138 million to continue building DOD's Institute of Infectious Disease at the new Interagency Biodefense Campus.

This facility will support products like UAT's Blood Managements System (BMS), Hygeia and Propestat™™ and will be an important asset to help protect the Nation from public health threats like emerging infectious diseases and deliberate biological attacks.

The new budget further provides an additional \$500 million for DOD's global military "train and equip" assistance programs. In the past, DOD has used these programs to fund counterterrorism training which could potentially include several UAT products.

With an investment of 12.2 Billion in long-term scientific and technological innovation to ensure that the Nation has access to the best defense systems available in the world and an initiative in modernized weapons systems, that will provide \$11.3 billion to ensure service members have the modern, cost-effective tools they need to address current and emerging threats; UAT is well poised to grab a significant market share of the defense industry.

In addition, the new budget approved by congress invests \$2.3 billion in new and ongoing cybersecurity research and development and improvements to existing cybersecurity capabilities and \$119 million to support full operational capability for U.S. Cyber Command, which was established in 2010 to direct the operation and defense of specific DOD information networks.

#### U.S. Government Contracts and Regulation

We will act as a prime contractor or major subcontractor for numerous U.S. Government programs. As a result, we will be subject to extensive regulations and requirements of the U.S. Government agencies and entities that govern these programs, including with respect to the award, administration and performance of contracts under such programs. We are also subject to certain unique business risks associated with U.S. Government program funding and appropriations and government contracts, and with supplying technologically-advanced, cutting edge defense-related products and services to the U.S. Government.

U.S. Government contracts generally are subject to the Federal Acquisition Regulation (FAR), which sets forth policies, procedures and requirements for the acquisition of goods and services by the U.S. Government, department-specific regulations that implement or supplement FAR, such as the DoD's Defense Federal Acquisition Regulation Supplement (DFARS), and other applicable laws and regulations. These regulations impose a broad range of requirements, many of which are unique to government contracting, including various procurement, import and export, security, contract pricing and cost, contract termination and adjustment, and audit requirements. A contractor's failure to comply with these regulations and requirements could result in reductions to the value of contracts, contract modifications or termination, and the assessment of penalties and fines and lead to suspension or debarment, for cause, from government contracting or subcontracting for a period of time. In addition, government contractors are also subject to routine audits and investigations by U.S. Government agencies such as the Defense Contract Audit Agency (DCAA) and Defense Contract Management Agency (DCMA). These agencies review a contractor's performance under its contracts, cost structure and compliance with applicable laws, regulations and standards. The DCAA also reviews the adequacy of and a contractor's compliance with its internal control systems and policies, including the contractor's purchasing, property, estimating, compensation and management information systems.

U.S. Government contracts include both cost reimbursement and fixed-price contracts. Cost reimbursement contracts, subject to a contract-ceiling amount in certain cases, provide for the reimbursement of allowable costs plus the payment of a fee. These contracts fall into three basic types: (i) cost plus fixed fee contracts which provide for the payment of a fixed fee irrespective of the final cost of performance, (ii) cost plus incentive fee contracts which provide for increases or decreases in the fee, within specified limits, based upon actual cost results compared to contractual cost targets, and (iii) cost plus award fee contracts which provide for the payment of an award fee determined at the discretion of the customer based upon the performance of the contractor against pre-established criteria. Under cost reimbursement type contracts, the contractor is reimbursed

periodically for allowable costs and is paid a portion of the fee based on contract progress. Some costs incident to performing contracts have been made partially or wholly unallowable for reimbursement by statute, FAR or other regulation. Examples of such costs include charitable contributions, certain merger and acquisition costs, lobbying costs, interest expense and certain litigation defense costs.

Fixed-price contracts are either firm fixed-price contracts or fixed-price incentive contracts. Under firm fixed-price contracts, the contractor agrees to perform a specific scope of work for a fixed price and as a result, benefits from cost savings and carries the burden of cost overruns. Under fixed-price incentive contracts, the contractor shares with the government savings accrued from contracts performed for less than target costs and costs incurred in excess of targets up to a negotiated ceiling price (which is higher than the target cost) and carries the entire burden of costs exceeding the negotiated ceiling price. Accordingly, under such incentive contracts, the contractor's profit may also be adjusted up or down depending upon whether specified performance objectives are met. Under firm fixed-price and fixed-price incentive type contracts, the contractor usually receives either milestone payments equaling up to 90% of the contract price or monthly progress payments from the government generally in amounts equaling 80% of costs incurred under government contracts. The remaining amount, including profits or incentive fees, is billed upon delivery and acceptance of end items under the contract. Through recent initiatives, the DoD has expressed a preference to utilize progress payments based on costs incurred on new fixed-price contract awards as opposed to performance-based payments (PBPs) unless the contractor negotiates for PBPs. Generally speaking and subject to a number of factors, PBPs can provide improved cash flows as compared to progress payments but introduce risk to contractors in return. In the event we experience a greater proportion of progress payments for our fixed-price DoD contracts in the future than historically, it could have an adverse effect on our operating cash flow and liquidity.

U.S. Government contracts generally also permit the government to terminate the contract, in whole or in part, without prior notice, at the government's convenience or for default based on performance. If a contract is terminated for convenience, the contractor is generally entitled to payments for its allowable costs and will receive some allowance for profit on the work performed. If a contract is terminated for default, the contractor is generally entitled to payments for its work that has been accepted by the government. The U.S. Government's right to terminate its contracts has not had a material adverse effect upon our operations or financial condition.

U.S. Government programs generally are implemented by the award of individual contracts and subcontracts. Congress generally appropriates funds on a fiscal year basis even though a program may extend across several fiscal years. Consequently, programs are often only partially funded initially and additional funds are committed only as Congress makes further appropriations. The contracts and subcontracts under a program generally are subject to termination for convenience or adjustment if appropriations for such programs are not available or change. The U.S. Government is required to equitably adjust a contract price for additions or reductions in scope or other changes ordered by it.

In addition, because we are engaged in supplying technologically-advanced, cutting edge defense-related products and services to the U.S. Government, we are subject to certain business risks, some of which are specific to our industry. These risks include: the cost of obtaining and retaining trained and skilled employees; the uncertainty and instability of prices for raw materials and supplies; the problems associated with advanced designs, which may result in unforeseen technological difficulties and cost overruns; and the intense competition and the constant necessity for improvement in facility utilization and personnel training. Our sales to the U.S. Government may be affected by changes in procurement policies, budget considerations, changing priorities for national defense, political developments abroad and other factors.

We will also be involved in U.S. Government programs, principally through our IIS and ABP business segments that are classified by the U.S. Government and cannot be specifically described in this

Business Plan. The operating results of these classified programs will be included in the applicable business segments and our consolidated results of operations. The business risks and considerations associated with these and our international classified programs generally do not differ materially from those of our other programs and products.

## 2.6 Partners & Distributors

We are dependent upon the delivery of materials by suppliers and the assembly of major components and subsystems by subcontractors used in our products. Some products require relatively scarce raw materials. In addition, we must comply with specific procurement requirements which may, in effect, limit the suppliers and subcontractors we may utilize. In some instances, for a variety of reasons, we are dependent on sole-source suppliers. We enter into long-term or volume purchase agreements with certain suppliers and take other actions to ensure the availability of needed materials, components and subsystems. We generally have not experienced material difficulties in procuring the necessary raw materials, components and other supplies for our products.

UAT (Umbra Applied Technologies) has already had preliminary discussions and evaluated the capabilities of Brookhaven National Laboratories, AES and IBA to contract with and bring the CDIS to market.

### 2.6.1 Brookhaven National Laboratories

One of ten national laboratories overseen and primarily funded by the Office of Science of the U.S. Department of Energy (DOE), Brookhaven National Laboratory conducts research in the physical, biomedical, and environmental sciences, as well as in energy technologies and national security. Brookhaven Lab also builds and operates major scientific facilities available to university, industry and government researchers. Brookhaven is operated and managed for DOE's Office of Science by Brookhaven. Over several decades, Brookhaven has developed expertise in specific areas of science and associated applications through the conception, design, construction, and operation of advanced facilities like the Alternating Gradient Synchrotron (AGS), RHIC, NSLS, and CFN. These capabilities include: Particle and nuclear physics, Accelerator science and technology, Condensed matter, physics and materials science, Chemical and molecular science, Climate change science, Biological systems science, Applied nuclear science and technology, Applied materials science and engineering, Chemical engineering, Systems engineering and integration, and large-scale user facilities and advanced instrumentation.

### 2.6.2 AES (Advanced Energy Systems, Inc.)

Advanced Energy Systems (AES) is a privately held company founded in September 1998 and incorporated in the State of New York. The Company was formerly an operating group of the Northrop Grumman Corporation and is located in Medford, NY and Princeton, NJ. The CEO of AES is Anthony Favale who was the Director of Advanced Energy Systems at Northrop Grumman as well as Joseph Sredniawski, now employed at AES and who was the Project Manager and Chief Engineer at Northrop Grumman that designed and engineered the original CDS (Contraband Detection System) prototype based on the principles of GRA (gamma resonance absorption) for the federal government. Since its inception AES, whose principal product line is advanced radiation sources utilizing accelerator technology, has evolved to become the leading commercial provider of high-brightness photocathode injectors and the first US supplier of superconducting accelerator components. AES is a certified ISO 9001:2000 with Design supplier offering a broad spectrum of physics and engineering design and analysis capabilities that rival the National Laboratories. AES also possesses the manufacturing know-how to bring designs to life. The 17,000 square foot Medford facility houses a state-

of-the-art numerical control (NC) machine shop, a large electron beam welder, class 1000, class 100, and class 10 clean rooms, ultra-pure water systems, chemical processing facilities, RF measurement and tuning facilities, and coordinate measurement capability. AES can offer us cutting-edge design, analysis, and manufacturing services and will work closely with UAT personnel to design and manufacture the first CDIS.

#### 2.6.3 IBA

IBA Industrial offers world-class expertise in the production of high-power electron accelerators supporting a wide range of industrial applications. With more than 250 Dynamitron and Rhodotron electron accelerators installed worldwide, IBA is the global leader in the supply of high-power electron beam accelerator industry. Over the last 10 years, more than 50% of the power installed worldwide has been supplied by IBA. IBA Industrial, the world leader in electron accelerators, offers a unique range of E-beam & X-ray equipment and customized irradiation solutions aimed at many different applications; such as medical devices sterilization, polymer enhancement (crosslinking & degradation).

## 2.7 Research Projects

UAT is currently expanding research efforts in the areas bio-electricity, unmanned aerial combat systems, power cells and combat exoskeleton systems technology. Current research efforts combine manned and unmanned airborne capabilities, intelligence and security systems, communications architectures and extensive integration expertise across several diverse operational segments.

Our strategy is to understand the enduring needs of customers and provide capability-based solutions to meet their rapidly evolving requirements. The strategy includes understanding the art of using current and emerging technologies to improve the capabilities of existing products and deliver new solutions.

Our R&D success will continue to be driven by its ability to provide customers with the right solutions at the right time and the right cost. To effectively address future evolving requirements for capability-driven solutions, the business is organized around capabilities to further improve execution, reduce organizational complexity and improve competitiveness, helping to better serve customers and compete for and capture new business.

### 2.7.1 Future Research Projects

Project Paeon will study the effects of Cytokine Activation Factor (CAF) of polypeptides on H5N1 via Phagocytosis. Under project Paeon we will be researching the possibility of creating a polypeptide glycoprotein extraction of bioactive neutralizing proteins and cytokines to treat H5N1 and Influenza-A.

Project BATS (Battle Armored Tactical Suit/BAT-Suit) is currently making the transition from conceptual design to implementation. For 2 years ATDD has been developing and manufacturing prototype components that will eventually find their way into the BAT Suit. Under various projects within the company we have researched and tested various materials and components to meet the needs of this exoskeleton that we imagined 2 years ago. The resulting products from the BATS program have been numerous; Apex implant (ceramic zirconia), Blood Management System (BMS), Hygeia, Hydros, UAT Power Cube, UAT Power Cell, bioelectricity, Scepter, multiple power systems and defense technology.

## 3. Intrepid Innovations

### 3.1 Company Overview

Intrepid Innovations Corporation operates as a holding company which through its subsidiaries operates in alternative energies, natural resource exploration, and medical technologies sector. The company is based in the United States. Intrepid Innovations Corporation operates as a subsidiary of Umbra Applied

Technologies Group, Inc. Intrepid strives to incorporate powerful companies and their products to create a robust portfolio that best represents a positive change in the world through technology and innovation. We believe that the future is not what finds us tomorrow, but what we choose to find for tomorrow. We are proud to be behind some truly wonderful companies, and look to continue to enjoy the growth of our diversified and advancing portfolio in the years to come.

## 3.2 Company Divisions

### 3.2.1 Intrepid Medical

Intrepid Medical is a subsidiary of Intrepid Innovations dedicated to creating innovative medical technological advances working hand in hand with UAT Bio Tech.

#### 3.2.1.1 Propestat™

Blood storage and platelet preservation is a major issue facing American healthcare. Every day in the U.S., approximately 41,000 units of blood are required in hospitals and emergency treatment facilities for patients needing treatment with cancer, organ transplants, and accident/trauma. There is a constant, vital demand for greater blood supply and storage management. The aim of Propestat™ is to increase the viability of blood products and platelets. Propestat™ has the potential to help doctors save the lives of their patients by creating a better, more stable supply of blood and blood platelets.

Propestat™ is anti-aging glycopeptide. It is a small (580.96 Daltons), stable property has been found to have protective properties. The small size of Propestat™ enables it to penetrate cells and allows it to pass through both cell and capillary junctions in vivo.

Propestat™'s impact on cell survival and protection is foundation behind why it has the potential to be a disruptive technology in the field of blood management and storage.

Platelets are small blood components that help the clotting process by sticking to the lining of blood vessels. Platelets are made in the bone marrow and survive in the circulatory system

Platelets are prepared by using a centrifuge to separate the platelet-rich plasma from the donated unit of whole blood.

Platelets may also be obtained from a donor by a process known as apheresis, or plateletpheresis. In this process, blood is drawn from the donor into an apheresis instrument which separates the blood into its components, retains some of the platelets, and returns the remainder of the blood to the donor.

This single donor platelet product contains about four to six times as many platelets as a unit of platelets obtained from whole blood. Platelets are used to treat a condition called thrombocytopenia, in which there is a shortage of platelets, and they are also used to treat platelet function abnormalities.

Platelets may only be stored for up to 7 days with current storage technologies, due largely to their greater potential for contamination, which is in turn due largely to a higher storage temperature. Propestat™ can extend that up to 29 days.

### 3.2.2 Intrepid Energy

Intrepid Energy (IE) is dedicated to playing a role in declaring American Energy Independence. The company plans to create the country's first "Energy Farm." IE targeted the Mississippi Lime formation for the initial Energy Farm.



The IE land portfolio has its foundation in southeast Kansas. Kansas was selected for its total energy potential. Among the significant tight oil plays in the U.S., one of the Mississippian Lime's distinguishing traits is its lower-cost, shallower nature. Production per well in this play, which straddles the Oklahoma and Kansas border, may sometimes average less than other plays, but countering these lower production numbers are the advantages of lower well costs and increased access to infrastructure. The Mississippian Lime remains one of the nation's more active plays after North Dakota's Bakken, Texas' Eagle Ford, and the Permian. It's one of several plays that have helped turn around crude oil production in the region. Combined Oklahoma and Kansas crude oil production in 2012 surpassed that of 2005 by 37 percent, or 100,000 barrels per day, with the largest part of the increase in Oklahoma. About 22 percent of Oklahoma's crude production was in Mississippian Lime counties in 2012, according to the Oklahoma Corporation Commission's Oil and Gas Division.

Taking the name apart, the "Mississippian" refers to a geologic period roughly 320 to 360 million years ago. "Lime" refers to marine limestones laid down during the Mississippian when an inland sea covered parts of the North American continent. This thick limestone section does diverge slightly from other plays that have a bigger shale component as part of their interbedded zones. The oil and natural gas play of that name focuses on a specific part of this area centered along the Kansas/Oklahoma border, with some experts estimating it to extend as far as southern Nebraska. While the largest share of activity has been in northern Oklahoma, areas now considered as part of the play stretch farther north and west within Kansas. Earlier descriptions put the area of interest at around seven million acres, but with extensions to the north and west, estimates now range to 17 million acres. The play's surface area is similar to that of West Virginia or South Carolina

The company started its plan within the Mississippi Lime with the reworking of "stripper wells." A stripper well produces 10 barrels of oil or 60 thousand cubic feet of natural gas per day or less. According to the Energy Information Administration, the United States consumed 7.1 billion barrels of crude oil during 2008. An estimated 18% of that oil was produced domestically. Stripper wells represent 20% of the total domestic production component and stripper wells supply about 10% of America's total consumption of natural gas, an estimated 23 trillion cubic feet in 2008.

While United States is the only country in the world that produces oil and natural gas in economically significant percentages from stripper wells, IE believes that our company and our country can do better.

Two of the major challenges that confront management of stripper wells is the power supply to wells and the disposition of water. IE has invested heavily into alternative energies. IE recognizes that traditional oil & gas fields are poor uses of land. IE will combine the traditional field with a wind and solar farm. Additionally, IE will employ geo-pressure to complete the implementation of alternative energies.

The other major challenge is the disposition of frac and produced water. Traditionally, the water has a burdensome cost, that threatened profitability. However, IE will be employing a proprietary water cleaning system that will be powered by the field's use of alternative energy. The water then evolves from a problem into a profit center.

IE is transforming forgotten and overlooked traditional hydrocarbon fields into the "Energy Farm" concept. The "Energy Farm" will make hydrocarbon farming, green energy production, and clean water sales the foundation of its success.

#### 3.2.2.1 ChaseDown™

CHASEDOWN™ is an emulsion base developed to assist in the recovery and extraction of heavy based hydrocarbons and separation of hydrocarbons that are saturated with high metals and paraffin content. Extensive field and lab tests have proven CHASEDOWN™ to be superior than other products by permanently reducing the

viscosity of heavy oil at ambient temperatures. CHASEDOWN™ does not require external heat and works very well at normal temperatures.

Tests performed have shown the CHASEDOWN™ emulsion acts in a two phase process. Unique chemical properties in CHASEDOWN™ integrates fully with target subjects and proves itself as an extremely effective and efficient emulsifier. Once allowed to remain dormant without any agitation a de- emulsifying phase automatically takes place allowing the contaminants to drop to the bottom and the good oil flow to the top of the containment tank. CHASEDOWN™ is a very stable emulsion that is not affected by external forces making it very safe for the end user.

There are several variations of the base CHASEDOWN™ formula that permits it to be applicable with the most viscous crude oils being produced today. CHASEDOWN™ has shown to permanently change oil viscosity therefore increasing the API gravity by removing most solids and heavy metals typically found in heavy oil and tank bottoms. CHASEDOWN™ is truly a breakthrough heavy oil technology that promises to revolutionize the current tank cleaning processes presently being utilized in the field. Injecting CHASEDOWN™ directly into the tank port holes, at the tank bottom, with the emulsifies turning into an extractable slurry. Utilization of CHASEDOWN™ thus significantly reduces or eliminates much of the extensive labor time and costs.

CHASEDOWN™ is a monumental breakthrough for oilfield tank cleaning with the potential of saving tens of thousands of dollars in time and expenses. Once again this is all done without the need for heat. Once the tank bottoms have been recovered, the only work left is for the solids and water to settle out and be ready for the refinery. CHASEDOWN™ is changing the long standing practice of how tank cleaning is dealt with. What was previously viewed as a liability has now become an asset available for sale.

With the stringent enforcement of Tank Cleaning Law API 653, CHASEDOWN™ will be positioned to play a vital role in the removal and treatment of oil and fracking tanks. With these new innovations, tank cleaning companies and oil re-claimers will have a technology that will reduce costs, create a new profit center, improve efficiency and significantly add thousands to their bottom line when using CHASEDOWN™™. The use of CHASEDOWN™ will greatly benefit all sectors of the oil industry both with topside and down-hole recovery.

The company will use the CHASEDOWN™ technology to increase its own production through the IE subsidiary. The company will also sell the production while maintaining control of the installation of the technology. The profit margins on the product can be as high as 300 %.

### 3.3 Asset Deployment

#### 3.3.1 Kansas Energy Farms

##### Objective

Nationwide, the energy crunch has led American companies to expand their search for sources of petroleum based energy here in the USA. America is now the number one oil

producer in the world at around 11 million barrels per day. Kansas is one of the places in the USA that has been experiencing an “oil boom” since 2012.

UAT Group (UATG) and its subsidiary Intrepid Energy aim to capitalize on this growth right here at home by leasing oil fields in Montgomery County Kansas. There are currently 66,406 oil producing wells in the state of KS as of 2014. UATG believes strongly that this can be a great addition to its asset base and provide strong bottom lines for its shareholders by being a large player in the Mississippi lime formation.

#### The Operation

UATG concentrates on prospecting in known producing trends and in proven trap configurations. UATG Pursues three-way highside closures and downthrown rollover features along lateral extensions of know producing lineaments and the basinward projection of established deltaic fairways. UATG is aware of the identification of lower risk and less expensive shallow structural traps.

UATG, keeping with its overall exploration strategy, seeks a balance between the high risk / high return deep prospects with shallower lower risk / lower return prospects.

#### Alternative Energy Utilization

UATG has plans in motion utilizing technology from Umbra Applied Technologies Green Tech division, primarily the HELIX wind turbine, to take advantage of favorable Kansas wind conditions for producing clean energy on its existing energy properties. This effort is through a joint venture with Intrepid Energy Solutions as part of the UATG Clean Energy Initiative. This effort will create complete “Energy Farms” synergistically using conventional energy production combined with clean energy technologies.

UATG plans to take advantage of the federal governments Business Energy Investment Tax Credit (ITC) through this “joint venture”. These tax credits can be as much as \$200 per KW generated.

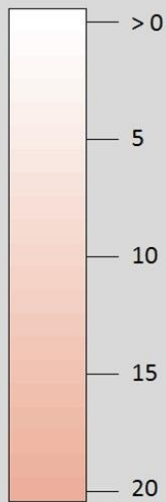
#### Historical Proof

The Mississippi Lime has been producing for more than 50 years from mostly traditional, vertical wells. According to the Kansas Independent Oil and Gas Association, more than 4,000 vertical wells have been drilled thus far in the Mississippi Lime. The first well that demonstrated the value of this approach was drilled in 2009, and horizontal activity picked up soon after.

The fact that the formation is relatively shallow and can be drilled horizontally, and can benefit from hydraulic fracturing has given new potential to the field. As recent as 2011 the horizontal rig count was as few as 20, most recently it has shot up to the 80s and 90s range.

## Horizontal Drilling Activity, January-June 2013 in Oklahoma and Kansas

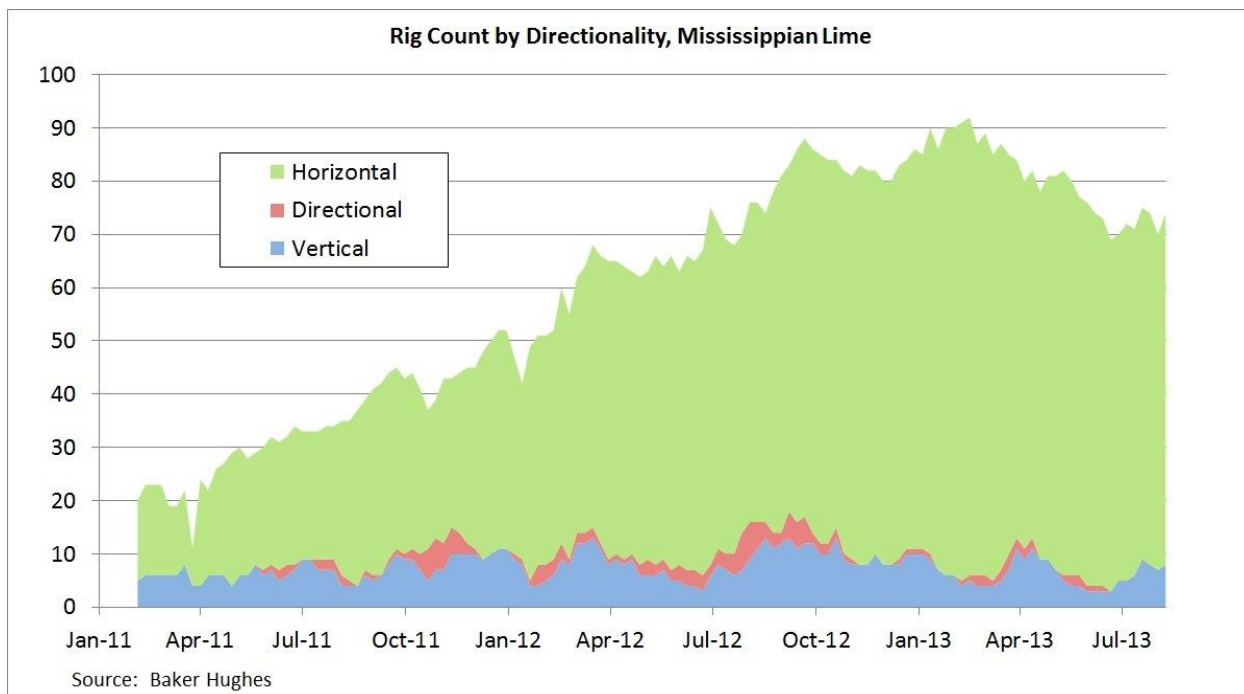
Average  
Active Rigs



Mississippian Lime

Source: Rig Data, Baker Hughes

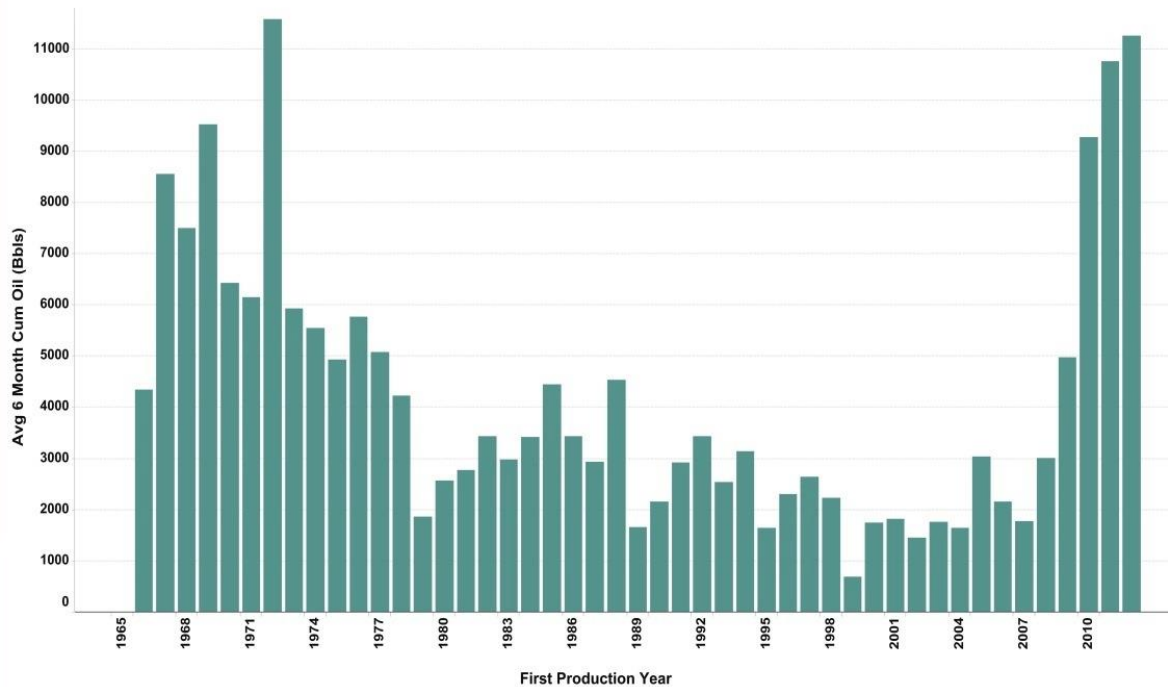
The shallower Mississippian Lime, in comparison with other major plays across the country, typically means lower per well cost. That being said, the complex geology, mix of porosities, and place-to-place variations in rock types and other characteristics mean that accurate downhole measurements, practical reservoir modeling, and attention to the specifics of each location can help optimize stimulation plans. Water content, often a factor in producing oil and natural gas, is often particularly high in the Mississippian Lime and especially in the “Chat.” Precise targeting to increase hydrocarbons and reduce by-product water production is a major consideration in project design. Proper handling typically involves drilling disposal wells routing the excess water into deeper formations below the Mississippian Lime from which it originated.



According to the Kansas Independent Oil and Gas Association, traditional, vertical wells in the Mississippian Lime have recovered an average of 86,000 barrels of oil equivalent (boe) per well. The association estimates horizontal wells may recover from 250,000 to 450,000 boe per well, just one measure of the dramatic changes brought about by horizontal drilling techniques. The IHS tight oil study estimated the typical Mississippian Lime well would produce 219,800 boe, a mix of crude, NGLs and dry gas.

The Mississippian Lime has drawn considerable interest from international joint venture partners, which has provided additional capital to finance activity in the play. Some of the partners include Sinopec (with Chesapeake, Devon), the South Korean firm Atinum (with SandRidge Energy) and Spanish Repsol (with SandRidge Energy).

## Average 6 Month Cumulative Oil by Year - Mississippian



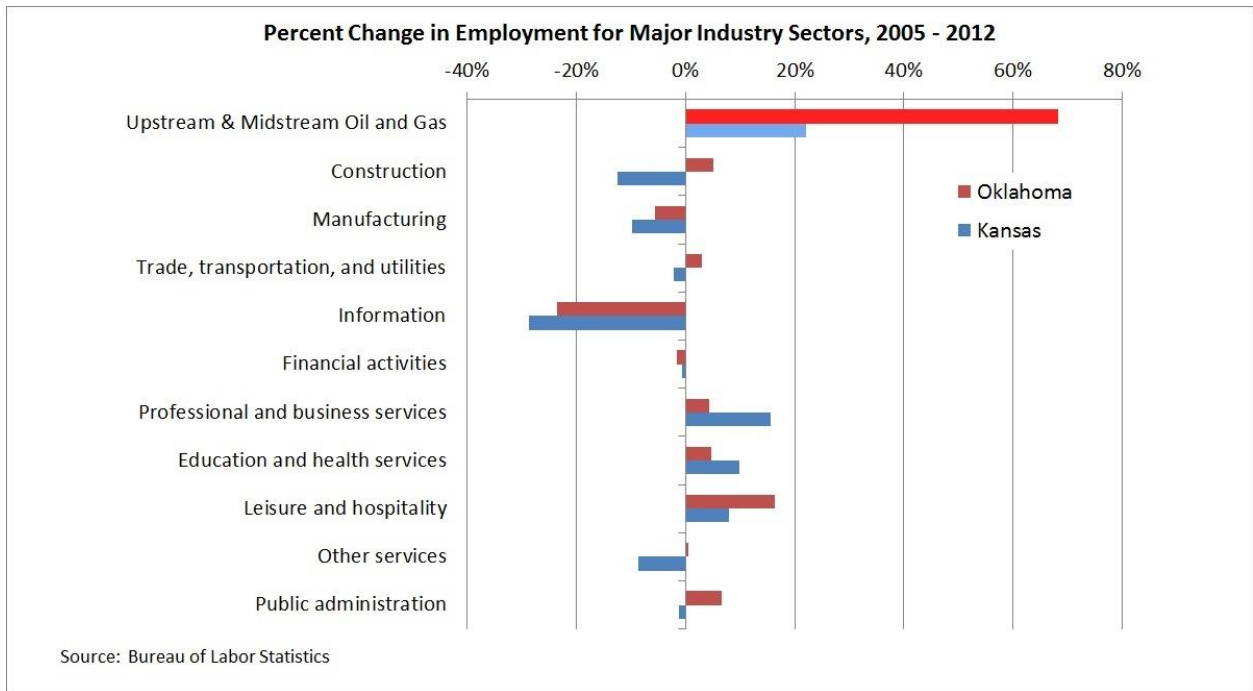
Source: DI Analytics

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### Economic Impact

As activity has grown in the Mississippian Lime, so have the jobs directly related to drilling, completing, and servicing the wells. The resulting growth in production has also increased the need for additional pipeline capacity, natural gas processing facilities, and other infrastructure, as well as for all the goods and services used as inputs by these varied activities. In 2012, according to IHS, unconventional oil and gas activity, including the Mississippian Lime in both states and the Granite Wash in Oklahoma, led to economic activity which directly and indirectly supported more than 65,000 jobs in Oklahoma and 11,000 jobs in Kansas. Oil and gas accounted for 38 percent of the net jobs added for these two states between 2005 and 2012, which is to say 34,000 out of about 88,000. IHS projects these figures to rise to 150,000 for Oklahoma and 25,000 for Kansas by 2020 and to rise further in the following years.

The Mississippian Lime is another case that demonstrates how the technological innovation of independent producers is reviving a historical play, bringing jobs and economic growth to the region.



General Plan of Action:

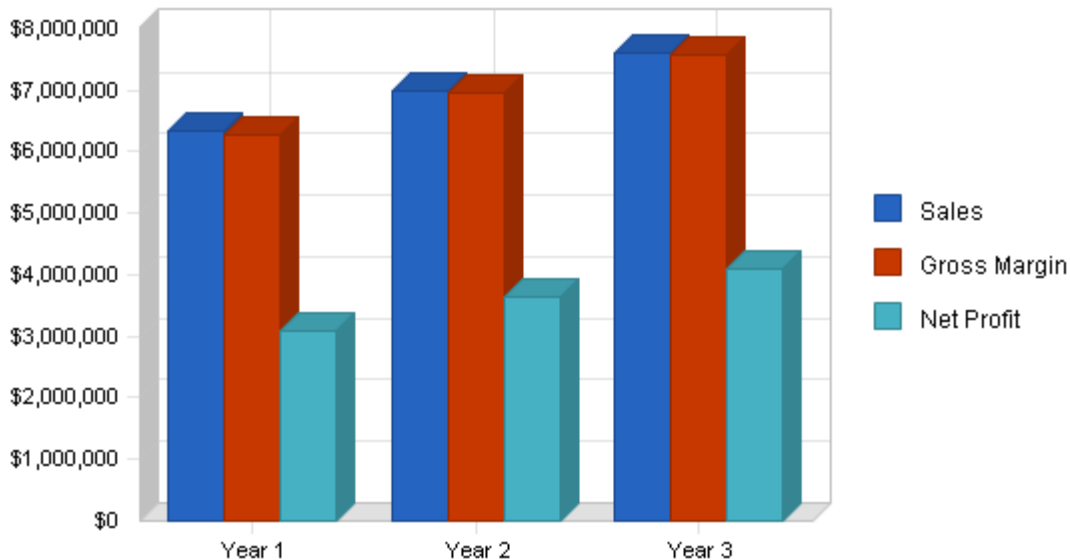
1. Exploration.
2. Well Development.
3. Production / Product Sales.
4. Site Abandonment
5. Environmental Remediation Of Sites

Drilling Methods:

1. Horizontal drilling - starts with a vertical well that turns horizontal within the reservoir rock in order to expose more open hole to the reservoir. These horizontal “legs” can be over a mile long; the longer the exposure length, the more oil and natural gas is drained and the faster it can flow. Horizontal wells are attractive because they (1) can be used in situations where conventional drilling is impossible or cost effective, (2) reduce surface disturbance by requiring less wells to reach the reservoir, and (3) can produce as much as 15 to 20 times as much oil and gas compared to a vertical well.
2. Multilateral Drilling - Sometimes oil and natural gas reserves are located in separate layers underground. Multilateral drilling allows operators to branch out from the main well to tap reserves at different depths. This dramatically increases production from a single well and reduces the number of wells drilled on the surface.
3. Extended Reach Drilling - Extended reach drills allow producers to reach deposits that are great distances away from the drilling rig. This can help producers tap oil and natural gas deposits under surface areas where a vertical well cannot be drilled, such as under developed or environmentally sensitive areas. Wells can now reach out over 5 miles

from the surface location and, dozens of wells can be drilled from a single location, reducing surface impacts.

### Highlights



### Keys to Success

1. Integration of HSE during all phases of the project to avoid accidents, losses, or damages.
2. Early involvement of rig operations teams
3. Early integration of all project team members and third parties
4. Early integration of all project team members and third parties
5. Early integration of all project team members and third parties
6. Early integration of all project team members and third parties
7. Early integration of all project team members and third parties

### Project Summary

UATG, through its sister company Intrepid Energy Corporation plan to explore, develop and produce crude oil on its existing oil leases in Montgomery County Kansas. We will use the vertical and horizontal drilling methods to maximize the well's output.

In phase one, the first funds will be utilized to develop teams and purchase equipment to capture crude oil output

In phase two, management will identify, develop and begin producing new horizontal drilling rigs and work to increase the well count on property.



Platelets, a vital component of blood, are primarily responsible for cessation of bleeding by forming blood clots.

The collection, storage, distribution, and transfusion of human platelets are a \$3 billion worldwide market opportunity within the \$17 billion blood products industry. Though platelets represent only 15% of the value of all blood components, they are a critical resource for any patient with a bleeding problem. Note that the average value of a transfusable platelet unit (~\$600/unit) is 2-4 times that of packed red cells (\$150-\$300/unit). Platelets, unlike red blood cells and plasma, require room temperature (20° to 24° C) storage to preserve function and survival. The trade-off is a higher metabolic rate (leading to more rapid platelet degradation) and an environment more conducive to bacterial growth whenever a unit is contaminated (dramatically increasing the risk to the patient receiving the transfusion). Because of this and the fragile nature of platelets, the storage time or shelf life was limited to 5 to 7 days before Propestat™ existed. Differences in Random Donor platelet manufacturing between U.S. and European blood agencies have led to a maximum five-day shelf life in the U.S., but a seven-day shelf life in Europe when combined with bacterial testing. Nonetheless, platelet storage times remain short, losses due to outdating approach 20%, and the entire blood industry continues to seek ways to improve the quality of transfused platelets. Propestat™ can dramatically extend the viability of platelets to close to 28 days according to our testing.

We can provide platelet preservation services to:

- 1) Hospitals for patient care. Patients lacking adequate number of platelets can experience spontaneous bruising and bleeding. Platelets are most often transfused to trauma patients or to cancer and leukemia patients undergoing therapies that depress the production of platelets in the bone marrow.
- 2) Biotech companies using platelets as a component of their therapeutic compounds. For example, platelets are often used in wound healing products.
- 3) Therapeutic or life science companies using platelets as an ancillary production component.
- 4) Device, diagnostic or drug companies using platelets for research and development.

#### 4. Forward Looking Plan

UAT Group believes that innovation breeds success. Such innovation is not achieved by standing still and accepting things for what they are. The company is on an ongoing mission to change the world through technology. Looking forward UAT Group has every intention of achieving fortune 500 level success through its unique technologies, dedicated employees and tireless efforts. At UATG “Innovation is a way of life”.

UATG has identified multiple companies and technologies that would be a good fit for the UATG “family of companies”. Through a calculated acquisition strategy that will be set in motion over the next 36 months the company plans to begin bringing these companies and technologies under its umbrella. Each of these targets represent a fit for current and planned products as well as manufacturing and supply chain purposes. These efforts will allow UATG to maximize profits and streamline the manufacturing process.

##### 4.1 Expanding Infrastructure

###### 4.1.1 Office Locations

UATG plans to operate multiple office locations located in the United States of America.

**Planned Office Locations:**

Corporate Office Headquarters – Short Hills, NJ  
Regional Corporate Office – Las Vegas, NV  
Regional Corporate Office – Tampa, FL

UATG plans to build and operate its own research facilities in the United States Of America. Having these facilities will allow UATG to hire and train some of the brightest minds in America to work on some of the most cutting edge projects this country has ever seen.

**Planned Locations Include:**

Advanced Technology Development Division – Austin, TX  
Advanced Medical Research (AMR) - Denver, CO  
Aerospace Based Platforms (ABP) -Denver, CO

## 5. Investor Relations

### Available Information

Our websites are [www.uatgroup.com](http://www.uatgroup.com) , [www.i2-inc.com](http://www.i2-inc.com) , [www.umbrabattlerifle.com](http://www.umbrabattlerifle.com) and [www.umbraappliedtechnologies.com](http://www.umbraappliedtechnologies.com) . We use our Investor Relations page as a routine channel for distribution of important information, including news releases, analyst presentations, and financial information. We will make available free of charge on or through our Investor Relations web site our annual reports and quarterly reports on Forms 10-K and 10-Q (including related filings in XBRL format), current reports on Form 8-K and amendments to those reports as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission (SEC). Our SEC filings will also be available at the Public Reference Room of the SEC at 100 F Street, N.E., Washington, D.C. 20549. You may obtain information on the operation of the Public Reference Room by calling 1-800-SEC-0330. In addition, the SEC also maintains an internet site at [www.sec.gov](http://www.sec.gov) that contains reports, proxy statements and other information regarding registrants that file electronically, which will eventually include Umbra Applied Technologies Group.

Additionally, we also make available on or through our website copies of our key corporate governance documents, including our Governance Principles, Certificate of Incorporation, By-laws and charters for the Audit Committee, Management Development and Compensation Committee, Governance and Nominating Committee, Public Affairs Committee and Special Activities Committee of the Board of Directors and our code of ethics entitled “Code of Conduct”. Stockholders may request free copies of these documents from our Investor Relations Department by writing to Umbra Applied Technologies, Investor Relations, 51 JFK Parkway, First Floor West, Short Hills NJ 07078, or by calling (973) 218-2626 or by sending an email request to [ir@umbraappliedtechnologies.com](mailto:ir@umbraappliedtechnologies.com).

## 6. Legal & Disclaimers

This document does not constitute an offer to sell or a solicitation to purchase securities.

This business plan has been prepared by Umbra Applied Technologies (“UAT”) solely for information purposes and is not to be used as a basis to form an investment decision. The business plan is neither an offering document nor is it for public distribution. Distribution of this material without the written consent of UAT may result in a violation of corporate and securities laws and is therefore prohibited.

The information contained in this business plan does not purport to be all inclusive or to contain all of the information that a prospective investor may require. This business plan includes certain statements, estimates, projections and assumptions that reflect management’s subjective views regarding the anticipated future performance of UAT. Such statements, estimates and projections reflect various assumptions concerning projected results, which may or may not prove to be correct. While management has made every effort to ensure the reasonableness of these projections based upon all available data, no guarantees can be made as to their accuracy because of the data’s forward-looking nature and as such there can be no assurance that any projected results will be achieved.

This business plan may include a current executive summary of UAT, copies of its recent news releases, and reports by securities analysts. Opinions, forecasts, projections or other forward-looking statements expressed in those reports are the responsibility of the analysts and or/the firms they represent and do not necessarily

represent the views of UAT. Any analyst's report included in the enclosed materials provided for information purposes only and is not to be construed as indicating UAT's agreement or disagreement with any forecast, projection or other forward-looking statement.

Certain parts of the business plan may contain "forward-looking statements" within the meaning of the Securities Exchange Act of 1934. All statements that address expectations or projections about the future, including statements about UAT's strategy for growth, product development, market position, expenditures and financial results, are forward-looking statements. Actual results could differ materially from those in the forward-looking statements due to a number of risks and uncertainties. To the extent that the uncertainties do or do not occur, the outcome may vary substantially from anticipated or projected results, and accordingly, no opinion is expressed on the achievability of those forward-looking statements. No assurance can be given that any of the assumptions relating to the forward-looking statements specified in the enclosed material are accurate, and UAT assumes no obligation to update any such forward-looking statements.

This business plan was intended only for the party or parties to whom it was directed. If you have received the business plan in error or by other means, it must be destroyed and by no means circulated, copied or otherwise duplicated without the express permission of UAT. Nothing in the contents transmitted should be construed as an investment advice, nor should it be used to make investment decisions. There is no express or implied solicitation to buy or sell securities. Readers are advised to conduct their own due diligence prior to considering buying or selling any stock. All information should be considered for information purposes only. No stock exchange or regulatory authority has approved or disapproved of the information contained in this business plan.

## 7. Financials

### 7.1 Current Financials

Period Ending	Dec 31, 2013	Dec 31, 2012	Dec31,2011
<b>Total Revenue</b>	-	-	-
Cost of Revenue	-	-	6
<b>Gross Profit</b>	-	-	<b>(6)</b>
<i>Operating Expenses</i>			
Research and Development	-	-	-
Sales, General and Admin.	-	10,060	100
Non-Recurring Items	-	-	100
Other	-	-	3
<b>Operating Income</b>	-	<b>(10,060)</b>	<b>(210)</b>
<i>Income From Continuing Operations</i>			
Add'l Income/Expense Items	-	(22)	2
Earnings Before Interest and Tax	-	(10,082)	(207)
Interest Expense	-	11	7
Earnings Before Tax	-	(10,093)	(214)
Income Tax	-	-	-
Minority Interest	-	-	-
Equity Earnings Unconsolidated Subsidiary	-	-	-
Net Income Cont. Operations	-	(10,093)	(214)
<i>Non Recurring Events</i>			
Discontinued Operations	-	-	-
Extraordinary Items	-	-	-
Effect of Accounting Changes	-	-	-
Other Items	-	-	-
<b>Net Income</b>	-	<b>(10,093)</b>	<b>(214)</b>
Preferred Stock and Other Adjustments	-	-	-
<b>Net Income Applicable to Common Shareholders</b>	-	<b>(10,093)</b>	<b>(214)</b>

### 7.2 Umbra Applied Technologies Projections

UAT		Financial Projections	
		2 Year Estimates	
Assets			
UAT Green Tech Gross Revenue	2015	2016	
V-HET Wind Turbine (INTERNAL USAGE) @\$0.01265 Per K/W	108,517.50	270,393.75	
V-HET Wind Turbine SALES @\$17,500 Per Unit	1,750,000.00	4,375,000.00	
Sentry Power Pad @\$99 Per Unit	990,000.00	2,475,000.00	
Sentry Power Cube @ \$15,000 Per Unit	1,500,000.00	3,750,000.00	

<b>Total current assets</b>	<b>4,348,517.50</b>	<b>10,870,393.75</b>
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<b>UAT ARMS Gross Revenue</b>	<b>2015</b>	<b>2016</b>
Umbra Battle Rifle @\$3800 Per Unit	1,900,000.00	7,600,000.00
Sceptor (HANDHELD) @\$7,900 Per Unit	-	790,000.00
	-	-
<b>Total fixed assets</b>	<b>1,900,000.00</b>	<b>8,390,000.00</b>

<b>Bio Tech Gross Revenue</b>	<b>2015</b>	<b>2016</b>
ClearView Sales @\$2400 Per Unit	2,400,000.00	6,000,000.00
Apex Implant Sales @\$2800 Per Unit	2,800,000.00	7,000,000.00
<b>Total Gross Bio Tech Revenue</b>	<b>5,200,000.00</b>	<b>13,000,000.00</b>

<b>Total Gross Revenue</b>	<b>11,448,517.50</b>	<b>32,260,393.75</b>
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#### **Liabilities and owner's equity**

<b>Current liabilities:</b>	<b>2015</b>	<b>2016</b>
V-HET Production Costs @ \$675 Per Unit	135,000.00	337,500.00
Sentry Power Pad Production Costs @ \$15 Per Unit	150,000.00	375,000.00
Sentry Power Cube Production Costs @ \$900 Per Unit	90,000.00	225,000.00
Umbra Battle Rifle Production Costs @ \$800 Per Unit	800,000.00	1,600,000.00
Sceptor (HANDHELD) Production Costs @ \$2650 Per Unit	-	265,000.00
Apex Implant Production Costs @ \$300 Per Unit	300,000.00	750,000.00
ClearView Production Costs @ \$140 Per Unit	140,000.00	350,000.00
<b>Total Production Costs</b>	<b>1,615,000.00</b>	<b>3,902,500.00</b>

<b>Employment Costs</b>	<b>2015</b>	<b>2016</b>
Salaries	2,500,000.00	7,000,000.00
Legal Team	340,000.00	650,000.00
Accounting	180,000.00	300,000.00
<b>Total Employment Costs</b>	<b>3,020,000.00</b>	<b>7,950,000.00</b>

<b>Marketing Costs</b>	<b>2015</b>	<b>2016</b>
V-HET Wind Turbine	150,000.00	400,000.00
Sentry Power Pad	500,000.00	750,000.00
Sentry Power Cube	50,000.00	50,000.00
Umbra Battle Rifle	500,000.00	1,000,000.00
Sceptor (HANDHELD)	-	-
Apex Implant	250,000.00	750,000.00
ClearView Wrist Fixator	250,000.00	750,000.00
<b>Total owner's equity</b>	<b>1,700,000.00</b>	<b>3,700,000.00</b>

<b>Infrastructure Expense</b>	<b>2015</b>	<b>2016</b>
Office Build Outs	250,000.00	1,000,000.00
IT Equipment	550,000.00	2,000,000.00
Office Security Equipment	150,000.00	400,000.00
Research Facility Build Out	500,000.00	4,000,000.00
Research Facility Equipment	1,000,000.00	2,500,000.00
Real Estate Purchase	-	1,500,000.00
<b>Total Infrastructure Costs</b>	<b>2,450,000.00</b>	<b>11,400,000.00</b>

<b>Total Liabilities</b>	<b>8,785,000.00</b>	<b>26,952,500.00</b>
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<b>Net Income</b>	<b>2,663,517.50</b>	<b>5,307,893.75</b>
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<b>UAT</b>	<b>Financial Projections</b>	
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**2 Year Estimates**

**Assets**

<b>UAT Green Tech Gross Revenue</b>	<b>2015</b>	<b>2016</b>
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Sentry Power Pad @\$99 Per Unit	990,000.00	2,475,000.00
Sentry Power Cube @ \$15,000 Per Unit	1,500,000.00	3,750,000.00
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	-	-
<b>Total fixed assets</b>	<b>1,900,000.00</b>	<b>8,390,000.00</b>

<b>Bio Tech Gross Revenue</b>	<b>2015</b>	<b>2016</b>
ClearView Sales @\$2295 Per Unit	2,295,000.00	5,737,500.00
Apex Implant Sales @\$2200 Per Unit	2,200,000.00	5,500,000.00
<b>Total Gross Bio Tech Revenue</b>	<b>4,495,000.00</b>	<b>11,237,500.00</b>

<b>Total Gross Revenue</b>	<b>10,743,517.50</b>	<b>30,497,893.75</b>
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**Liabilities and owner's equity**

<b>Current liabilities:</b>	<b>2015</b>	<b>2016</b>
V-HET Production Costs @ \$675 Per Unit	135,000.00	337,500.00
Sentry Power Pad Production Costs @ \$15 Per Unit	150,000.00	375,000.00

Sentry Power Cube Production Costs @ \$900 Per Unit	90,000.00	225,000.00
Umbra Battle Rifle Production Costs @ \$800 Per Unit	400,000.00	1,600,000.00
Sceptor (HANDHELD) Production Costs @ \$2650 Per Unit	-	265,000.00
Apex Implant Production Costs @ \$400 Per Unit	400,000.00	1,000,000.00
ClearView Production Costs @ \$100 Per Unit	100,000.00	250,000.00
<b>Total Production Costs</b>	<b>1,275,000.00</b>	<b>4,052,500.00</b>
<b>Employment Costs</b>	<b>2015</b>	<b>2016</b>
Salaries	2,500,000.00	7,000,000.00
Legal Team	340,000.00	650,000.00
Accounting	180,000.00	300,000.00
<b>Total Employment Costs</b>	<b>3,020,000.00</b>	<b>7,950,000.00</b>
<b>Marketing Costs</b>	<b>2015</b>	<b>2016</b>
V-HET Wind Turbine	150,000.00	400,000.00
Sentry Power Pad	500,000.00	750,000.00
Sentry Power Cube	50,000.00	50,000.00
Umbra Battle Rifle	500,000.00	1,000,000.00
Sceptor (HANDHELD)	-	-
Apex Implant	250,000.00	750,000.00
ClearView Wrist Fixator	250,000.00	750,000.00
<b>Total owner's equity</b>	<b>1,700,000.00</b>	<b>3,700,000.00</b>
<b>Infrastructure Expense</b>	<b>2015</b>	<b>2016</b>
Office Build Outs	250,000.00	1,000,000.00
IT Equipment	550,000.00	2,000,000.00
Office Security Equipment	150,000.00	400,000.00
Research Facility Build Out	500,000.00	4,000,000.00
Research Facility Equipment	1,000,000.00	2,500,000.00
Real Estate Purchase	-	1,500,000.00
<b>Total Infrastructure Costs</b>	<b>2,450,000.00</b>	<b>11,400,000.00</b>
<b>Total Liabilities</b>	<b>8,445,000.00</b>	<b>27,102,500.00</b>
<b>Net Income</b>	<b>2,298,517.50</b>	<b>3,395,393.75</b>

### 7.3 Intrepid Innovations Projections

Intrepid Energy  
Pro Forma Balance Sheets  
As at January 31,

(Stated in United States Dollars)

	1/31/2015	1/31/2016	1/31/2017	1/31/2018	1/31/2019	1/31/2020
Cash	\$2,081,823	\$4,297,663	\$6,043,898	\$7,618,898	\$9,042,535	\$10,333,17
capital costs	\$8,700,000	\$8,400,000	\$8,100,000	\$7,800,000	\$7,500,000	\$7,200,000
total assets	\$10,781,83	\$12,697,63	\$14,143,88	\$15,418,88	\$16,542,55	\$17,533,17
Liabilities	\$76,513	\$76,513	\$76,513	\$76,513	\$76,513	\$76,513
Loan	\$3,600,000	\$2,880,000	\$2,160,000	\$1,440,000	\$720,000	\$0
Equity	\$8,115,715	\$8,115,715	\$8,115,715	\$8,115,715	\$8,115,715	\$8,115,715
Retained Earnings	\$1,010,405	\$1,625,435	\$3,791,670	\$5,786,670	\$7,630,307	\$9,340,919
total liabilities & Equity	\$10,781,83	\$12,697,63	\$14,143,88	\$15,418,88	\$16,542,55	\$17,533,147

See notes to financial statements  
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**Intrepid Energy**  
**Pro Forma Statement of Operations and Deficit**  
(Stated in United States Dollars)

	1/31/2015	1/31/2016	1/31/2017	1/31/2018	1/31/2019	1/31/2020
gross income-oil	\$2,161,735	\$4,468,454	\$3,795,722	\$3,502,955	\$3,232,769	\$2,983,422
gross income -gas	<u>\$216,173</u>	<u>\$446,845</u>	<u>\$379,572</u>	<u>\$350,295</u>	<u>\$323,277</u>	<u>\$298,342</u>
total gross income	\$2,377,908	\$4,915,300	\$4,175,294	\$3,853,250	\$3,556,046	\$3,281,765
Less lease operating costs	<u>-\$270,000</u>	<u>-\$585,000</u>	<u>-\$540,000</u>	<u>-\$540,000</u>	<u>-\$540,000</u>	<u>-\$540,000</u>
net operating income	\$2,107,908	\$4,330,300	\$3,635,294	\$3,313,250	\$3,016,046	\$2,741,765
Other deductions						
cost depletion	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000
Interest expense-loan	\$270,000	\$490,500	\$382,500	\$274,500	\$166,500	\$58,500
corporate overhead	<u>\$61,250</u>	<u>\$245,000</u>	<u>\$245,000</u>	<u>\$245,000</u>	<u>\$245,000</u>	<u>\$245,000</u>
sub-total other deductions	\$631,250	\$1,035,500	\$927,500	\$819,500	\$711,500	\$603,500
Net income before taxes	\$1,476,658	\$3,294,800	\$2,707,794	\$2,493,750	\$2,304,546	\$2,138,265
income tax (20%)	<u>\$295,332</u>	<u>\$658,960</u>	<u>\$541,559</u>	<u>\$498,750</u>	<u>\$460,909</u>	<u>\$427,653</u>
Net income after taxes	<u>\$1,181,327</u>	<u>\$2,635,840</u>	<u>\$2,166,236</u>	<u>\$1,995,000</u>	<u>\$1,843,637</u>	<u>\$1,710,612</u>
number of outstanding shares	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000
earnings per share	\$0.024	\$0.053	\$0.043	\$0.040	\$0.037	\$0.034

See notes to financial statements  
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**Intrepid Energy**  
Notes to Proforma Financial Statements  
*January 31, 2015 to 2020*  
(Stated in United States Dollars)

**Loan**

The Company borrows \$3,600,000 at 15% per annum with interest only payments for the first six (6) months. Beginning with the seventh month the Company pays the principal balance over sixty (60) equal monthly payments.

**Initial Production**

The initial production for each well is 15 Barrels of oil per day commencing November 1, 2014.

**Production and decline curve**

There is no decline curve estimates on Intrepid existing leases. There is limited public data on decline curves for Kansas Oil production. However there is one report prepared by Melland PE, PG in April 2013 the annual decline rate for the Anderson Leases (Barton County) was estimated to be 2.5%, the Asmussen Lease (Butler County) was estimated to be 10.0%, and the Sanders Lease (Stafford County) was estimated to be 6%.

Although the technical reports states an initial production of 31 BOPD for the purposes of these proforma financial we will use assumed initial production rate of 15BOPD and an annual decline of 8%. This 8% decline is based ignoring the 2.5% rate (the lowest rate) and the average of the two highest known decline curves from the leases Asmussen at 10% and Sanders at 6%.

**Existing Debt**

The Company's existing debt is primarily owed to management and shareholders. This proforma assumes that \$4,000,000 of that debt is converted into equity.

**Income Taxes**

The current corporate tax rate is 35% however there are certain tax incentives for oil and gas companies such as percentage depletion, the write off of intangible costs and faster tax depreciation than financial depreciation. Reuters estimates that Chevron, ConocoPhillips, and ExxonMobil paid effective federal tax rates of 19 percent, 18 percent, and 13 percent, respectively, in 2011.

For the purposes of these proforma financial statements an effective tax rate of 20% was used.

**Corporate overhead**

As the Company's revenues expand the corporate overhead was calculated to be 3% of the net revenues from the oil and gas leases.

A constant price of \$80 per barrel of oil was used.

### **Gas revenues**

These wells have not been connected to gas pipelines due to the historical lack of nearby gas pipelines. Gas revenues have been projected to be 10% of the oil income.

### **Lease Operating Costs**

The lease operating cost is based on a constant \$3,000 per month per well.

### **Excess cash**

The Company keeps the excess cash generated from operations and does not reinvest the proceeds into other wells and does not generate any interest income.

### **No Dividends**

The Company pays no dividends to its shareholders.

## **7.4 Investment Request Summary**

Umbra Applied Technologies Group is requesting \$19,720,000.00 USD to expand operations and manufacturing capabilities. Investment capital will be used to add additional offices so we can increase internal human capital to improve efficiency in design, prototyping and delivery of final product. This would also further enhance our ability to become more profitable. General funding requirements are as follows:

### **Intrepid Energy**

Oil Field Operations \$3,600,000.00

ChaseDown \$400,000.00

### **UAT**

Biotech \$500,000.00

Aerospace & Defense \$1,000,000.00

Arms \$800,000.00

Green Tech \$375,000.00

Intelligence & Security \$1,900,000.00

Liabilities & Infrastructure \$8,845,000.00

Packaging & Tooling \$600,000.00

Additional Marketing Reserve \$1,700,000.00

## **7.5 Financial Disclaimer**

## **COMPANY RESPONSIBILITY FOR FINANCIAL STATEMENTS**

The financial statements and related information contained in this Business Plan have been prepared by and are the responsibility of our management. Our financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America and reflect judgments and estimates as to the expected effects of transactions and events currently being reported. Our management is responsible for the integrity and objectivity of the financial statements and other financial information included in this Business Plan. To meet this responsibility, we maintain a system of internal control over financial reporting to provide reasonable assurance that assets are safeguarded and that transactions are properly executed and recorded. The system includes policies and procedures, internal audits and our officers' reviews.

Our Audit Committee of our Board of Directors is composed solely of directors who are independent under applicable SEC and New York Stock Exchange rules. Our Audit Committee meets periodically and, when appropriate, separately with representatives of the independent registered public accounting firm, our officers and the internal auditors to monitor the activities of each.

Grassi & Co. LLP, is an independent registered public accounting firm, and will be appointed by our Audit Committee to audit our financial statements and our internal control over financial reporting once UATG is a fully SEC reporting company.

## **MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING**

Management is responsible for establishing and maintaining adequate internal control over financial reporting for the Company. In order to evaluate the effectiveness of internal control over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act, management has conducted an assessment, including testing, using the criteria in Internal Control – Integrated Framework, issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's system of internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

## **NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

### **Summary of Significant Accounting Policies**

**Consolidation and Classification**—The consolidated financial statements include the accounts of Umbra Applied Technologies, and all wholly-owned, majority-owned and otherwise controlled domestic and foreign subsidiaries. All intercompany transactions have been eliminated. For classification of certain current assets and liabilities, we use the duration of the related contract or program as our operating cycle, which is generally longer than one year. In addition, certain prior year amounts have been reclassified to conform with the current year presentation. As used in these notes, the terms “we”, “us”, “our”, “UAT” and the “Company” mean Umbra Applied Technologies and its subsidiaries, unless the context indicates another meaning.

**Use of Estimates**—Our consolidated financial statements are based on the application of U.S. Generally Accepted Accounting Principles (GAAP), which require us to make estimates and assumptions about future events that affect the amounts reported in our consolidated financial statements and the accompanying notes. Future events and their effects cannot be determined with certainty. Therefore, the determination of estimates requires the exercise of judgment. Actual results could differ from those estimates, and any such differences may be material to our consolidated financial statements.

**Revenue Recognition**—We account for our long-term contracts associated with the design, development, manufacture, or modification of complex aerospace or electronic equipment and related services, such as certain cost-plus service contracts, using the percentage-of-completion accounting method. Under this method, revenue is recognized based on the extent of progress towards completion of the long-term contract. We combine closely related contracts when all the applicable criteria under GAAP are met. Similarly, we may segment a project, which may consist of a single contract or a group of contracts, with varying rates of profitability, only if all the applicable criteria

under GAAP are met.

We generally use the cost-to-cost measure of progress for all of our long-term contracts unless we believe another method more clearly measures progress towards completion of the contract. Under the cost-to-cost measure of progress, the extent of progress towards completion is measured based on the ratio of costs incurred-to-date to the total estimated costs at completion of the contract. Revenues, including estimated earned fees or profits, are recorded as costs are incurred. Incentive and award fees are generally awarded at the discretion of the customer or upon achievement of certain program milestones or cost targets. Incentive and award fees, as well as penalties related to contract performance, are considered in estimating profit rates. Estimates of award fees are based on actual awards and anticipated performance, which may include the performance of subcontractors or partners depending upon the individual contract requirements. Incentive provisions that increase or decrease earnings based solely on a single significant event are generally not recognized until the event occurs. Such incentives and penalties are recorded when there is sufficient information for us to assess anticipated performance. Our claims on contracts are recorded only if it is probable the claim will result in additional contract revenue and the amounts can be reliably estimated.

UAT has a Company-wide standard and disciplined quarterly Estimate at Completion (EAC) process in which management reviews the progress and performance of our contracts. As part of this process, management reviews include, but are not limited to, any outstanding key contract matters, progress towards completion and the related program schedule, identified risks and opportunities, and the related changes in estimates of revenues and costs. The risks and opportunities include management's judgment about the ability and cost to achieve the schedule (for example, the number and type of milestone events), technical requirements (for example, a newly-developed product versus a mature product), and other contract requirements. Management must make various assumptions and estimates related to contract deliverables regarding labor productivity and availability, the complexity of the work to be performed, the availability of materials, the length of time to complete the contract (to estimate increases in wages and prices for materials and related support cost allocations), performance by our subcontractors, the availability and timing of funding from our customer, and overhead cost rates, among other variables. These estimates also include the estimated cost of satisfying our industrial cooperation agreements, sometimes referred to as offset obligations required under certain contracts. Based on this analysis, any adjustments to net sales, costs of sales, and the related impact to operating income are recorded as necessary in the period they become known. These adjustments may result from positive program performance and an increase in operating profit during the performance of individual contracts if we determine we will be successful in mitigating risks surrounding the technical, schedule, and cost aspects of those contracts or realizing related opportunities. Likewise, these adjustments may result in a decrease in operating profit if we determine we will not be successful in mitigating these risks or realizing related opportunities. Changes in estimates of net sales, costs of sales, and the related impact to operating income are recognized using a cumulative catch-up, which recognizes in the current period the cumulative effect of the changes on current and prior periods based on a contract's percent complete. A significant change in one or more of these estimates could affect the profitability of one or more of our contracts. When estimates of total costs to be incurred on a contract exceed total estimates of revenue to be earned, a provision for the entire loss on the contract is recorded in the period the loss is determined.

To a much lesser extent, we enter into other types of contracts such as service, commercial, or software and licensing arrangements. Revenue under service and commercial contracts generally is recognized upon delivery or as services are rendered once persuasive evidence of an arrangement exists, our price is fixed or determinable, and collectability is reasonably assured. Costs on fixed-price service contracts are expensed as incurred, unless they otherwise qualify for deferral. We recognize revenue on contracts to sell software when evidence of an arrangement exists, the software has been delivered and accepted by the customer, the fee is fixed or determinable, and collection is probable. For software arrangements that include multiple elements, including perpetual software licenses and undelivered items (e.g., maintenance and/or services; subscriptions/term licenses), we allocate and defer revenue for the undelivered items based on vendor specific objective evidence (VSOE) of the fair value of the undelivered elements, and recognize revenue on the perpetual license using the residual method. We base VSOE of each element on the price for which the undelivered element is sold separately. We determine fair value of the undelivered elements based on historical evidence of our stand-alone sales of these elements to third parties or from the stated renewal rate for the undelivered elements. When VSOE does not exist for undelivered items, we recognize the entire

arrangement fee ratably over the applicable performance period. Revenue from non-software license fees is recognized over the expected life of the continued involvement with the customer. Royalty revenue is recognized when earned.

We apply the separation guidance under GAAP for contracts with multiple deliverables. We analyze revenue arrangements with multiple deliverables to determine if the deliverables should be divided into more than one unit of accounting. For contracts with more than one unit of accounting, we allocate the consideration we receive among the separate units of accounting based on their relative selling prices, which we determine based on prices of the deliverables as sold on a stand-alone basis, or if not sold on a stand-alone basis, the prices we would charge if sold on a stand-alone basis, and we recognize revenue for each deliverable based on the revenue recognition policies described above.

**Research and Development Expenses**—Expenditures for Company-sponsored research and development projects and bid and proposal costs are expensed as incurred. Customer-sponsored research and development projects performed under contracts are accounted for as contract costs as the work is performed and included in contracts in process in our consolidated balance sheets.

**Federal, Foreign and State Income Taxes**—The Company and its domestic subsidiaries provide for federal income taxes on pretax accounting income at rates in effect under existing tax law. Foreign subsidiaries record provisions for income taxes at applicable foreign tax rates in a similar manner. Such provisions differ from the amounts currently payable because certain items of income and expense are recognized in different time periods for financial reporting purposes than for income tax purposes. The payments made for state income taxes are included in administrative and selling expenses as these costs can generally be recovered through the pricing of products and services to the U.S. Government in the period in which the tax is payable. Accordingly, the state income tax provision (benefit) is allocated to contracts in future periods as described below in Deferred Contract Costs.

**Other (Income) Expense**—Other (income) expense consists primarily of gains and losses from our investments held in rabbi trusts used to fund certain of our non-qualified deferred compensation plans, gains and losses on the early repurchase of long-term debt and certain financing fees.

**Cash and Cash Equivalents**—Cash and cash equivalents consist of cash and short-term, highly liquid investments with original maturities of 90 days or less at the date of purchase.

**Contracts in Process**—Contracts in process are stated at cost plus estimated profit, but not in excess of estimated realizable value. Included in contracts in process is accounts receivables, which includes amounts billed and due from customers. We maintain an allowance for doubtful accounts to provide for the estimated amount of accounts receivable that will not be collected. The allowance is based upon an assessment of customer credit-worthiness, historical payment experience, the age of outstanding receivables and collateral to the extent applicable.

**Deferred Contract Costs**—Included in contracts in process are certain costs incurred in the performance of our U.S. Government contracts which are required to be recorded under GAAP but are not currently allocable to contracts. Such costs are deferred and primarily include a portion of our environmental expenses, asset retirement obligations, certain restructuring costs, deferred state income taxes, workers' compensation and other accruals. These costs are allocated to contracts when they are paid or otherwise agreed. We regularly assess the probability of recovery of these costs. This assessment requires us to make assumptions about the extent of cost recovery under our contracts and the amount of future contract activity. If the level of backlog in the future does not support the continued deferral of these costs, the profitability of our remaining contracts could be adversely affected.

Pension and other postretirement benefit costs are allocated to our contracts as allowed costs based upon the U.S. Government cost accounting standards (CAS). The CAS requirements for pension and other postretirement benefit costs differ from the financial accounting standards (FAS) requirements under GAAP. Given the inability to match with reasonable certainty individual expense and income items between the CAS and FAS requirements to determine specific recoverability, we have not estimated the incremental FAS income or expense to be recoverable under our expected future contract activity, and therefore did not defer any FAS expense for pension and other postretirement benefit plans.