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EVALUATION OF THE PRESENCE OF SOME PATHOGENIC MICROORGANISMS IN THE AIR AND THE SURFACE OF THE FACILITIES OF THE CAGUAS GYMNASTIC CLUB

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DEDICATORY

For all the people
that believe in himself.
We create our destiny each day
during the entire life.

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ABSTRACT

The Environmental Protection Agency (EPA) identifies poor indoor air quality as one of the top five environmental health hazards affecting public health. The average persons spends more than 90% of their time in enclosed environments, that is why, pollutant free air in those environments should be a priority. Exposure to indoor allergens can result in allergies, asthma, bronchial hyper-reactivity, respiratory tract inflammation, dermatitis, and sinusitis. This study analyzes the indoor air quality of a gymnasium on the municipality of Caguas, Puerto Rico. Its woeful condition can expose users to pathogenic fungi and bacteria species. During this study, we measured environmental factors in six different points inside the facility including temperature, humidity, and dust characterization, CO, CO_2 and airflow. We collected 98 samples in total for the biotic parameter, 36 surface samples in areas were the athletes are in contact with gymnastic equipment such as beams, vaults, mattresses, foam pits, and others; 32 random air samples were collected and 30 random samples for Dermathophytes were also collected. We incubated all the samples and individual colonies were isolated for their identification. Results showed the identification of fungi such as *Acremonium strictum, A. curvulum, Cladosporium cladosporoide, Curvularia brachyspora, C. clavata, C. senegalensis, Penicillium chrysogenum, P. citrinum, Aspergillus niger, A. clavatus.* Among the most prevalent pathogenic Dermathophytes were *Trichophyton soudanense, T. verrucosum, and Epidermophyton floccosum.* Identified bacteria were *Sphingomonas paucimobilis, Klebsiella pneumonia, Bacillus megaterium, Serratia odorifera, Micrococus luteus, Staphylococcus hominis and S. saprophyticus*, among others. This study has allowed us to analyze the microbial diversity of the site and potential health risk of users and athletes. Most of the microorganism isolated during this investigation represents health problems for the children that practice in the facility. Therefore cleaning, disinfection, sanitization and anti-microbial process was performs to minimize the probability of infection by those using the facility.

RESUMEN

La Agencia de Protección Ambiental Federal (USEPA, por sus siglas en inglés) ha identificado la pobre calidad de aire anterior dentro de los 5 problemas ambientales de mayor importancia que afectan a la salud pública. Las personas pasan más del 90% de su tiempo en ambientes cerrados; por tal razón, atender los contaminantes en ambientes de interiores es una prioridad. La exposición a diferentes alérgenos pueden resultar en alergias, asma, híper-reactividad bronquial, inflamación en el tracto respiratorio, dermatitis y sinusitis. Cuando esto ocurre, la situación se conoce como Síndrome de Edificios Enfermos y Enfermedades Relacionadas al Edificio. Durante este estudio, evaluamos la calidad de aire interior del Club Gimnástico de Caguas, Puerto Rico. Las condiciones lamentables existentes en el mencionado Club, pueden exponer a los visitantes a diferentes microorganismos patogénicos. Durante el estudio medimos diferentes factores abióticos en seis localizaciones dentro de dichas instalaciones incluyendo temperatura, humedad, caracterización del polvo, CO, CO_2 y flujo del viento. Evaluamos un total de 98 muestras y medimos los parámetros físico-químicos; 36 muestras de superficies en áreas donde los atletas están en contacto directo como lo son barra, viga, matress, fosa, alfombras, entre otros. Seleccionamos de manera aleatoria 32 muestras para la toma de aire y 30 muestras para la prueba de Dermatofitos. Incubamos y aislamos todas las muestras para llevar a cabo su identificación microbiológica. Los resultados evidenciaron la presencia de hongos como: *Acremonium strictum, A. curvulum, Cladosporium cladosporoide, Curvularia brachyspora, C. clavata, C. senegalensis, Penicillium chrysogenum, P. citrinum, Aspergillus niger, A. clavatus.* Dentro del grupo de los Dermatofitos encontramos, *Trichophyton soudanense, T. verrucosum y Epidermophyton floccosum.* Además, las bacterias encontradas y que identificamos son: *Sphingomonas paucimobilis, Klebsiella pneumonia, Bacillus megaterium, Serratia odorifera, Micrococus luteus, Staphylococcus hominis y S. saprophyticus,* entre otras. Mediante este estudio evaluamos la diversidad microbiológica existente en las instalaciones del Club Gimnástico de Caguas para conocer si existe riesgo potencial que afecte la salud de los usuarios. Muchos de los microorganismos aislados durante la investigación representan un problema para la salud de los niños que utilizan esta instalación. Durante la investigación llevamos a cabo acciones correctivas y procesos de limpieza tales como: desinfección, saneamiento mediante técnicas que fomenten las mejores condiciones higiénicas y antimicrobianas que ayuden a combatir los microorganismos o a controlar su aparición, así lograr minimizar la probabilidad de infección en los usuarios.

CHAPTER I

INTRODUCTION

Background of the problem

During the last decades, we have seen progress in the area of science and technology brought about by the industrial revolution. As a result, global population has increased through the years. This has brought a change in the way people visualize their houses and work places leading to the excessive construction of buildings and homes. These are constructed with weather resistant materials appropriate to our tropical climate. Due to the excess of buildings in such a small island, an urban vertical growth has been noted, allowing a greater amount of people to live in smaller spaces, even forcing them to occupy the vertical space.

All these technological advances have been increasing throughout the years producing an adverse effect in the atmosphere. Air pollution can be defined; in general terms as the introduction of biological or chemicals materials and particles that causes inconvenience or harm to human beings and other living organisms, consequently, damaging our planet and the quality of natural resources. The existing contaminants in the outdoor environment will negatively influence the quality of the indoor air.

During the 70's, it was acknowledged that the quality of the air inside non-industrial buildings, under certain circumstances like poor maintenance, is harmful to health. Exposure to indoor poor air quality pose a public health threat because the public spend 90% of their time in closed environments such as buildings. The EPA recognizes poor indoor air quality as one of the top five environmental health hazards affecting

public health. According to the US Center for Disease Control, Puerto Rico has a higher overall prevalence of lifetime (19.6%) and current (11.6%) asthma than other parts of the Americas. Incidence among children's fewer than eighteens is particularly high in the eastern part of the island (Rentas, Gonzales & Vélez, 2009).

Indoor air quality is defined by the air parameters found inside buildings, businesses, schools, and homes. The source of contamination can vary they can be biological resources or chemical resources; an examples are automobiles, paint, photocopier machines, electric generators, numerous particles, fibers, dust, bacteria, fungus, or gases (EPA, 1995a). Some environmental factors such as high temperatures and humidity, if not under adequate parameters, foster the proliferation of biological contaminants that can cause long and short term health problems. Bacteria, mold, fungi, viruses, mite, cockroaches, pollen, and animal particles contributes to indoor air quality and are known as biological indicators of air quality. These contaminants greatly contribute to the symptoms of irritation or reactivity presented in persons exposed to them (Sexton & Dyer, 2004).

Although biological allergens are very important and have priority in the health area, they have certain special properties or characteristics that make them difficult to evaluate and identify. This difficulty rests on the great amount and complexity of their surface antigens and other protein molecules of these agents, being responsible not only for their pathogenic capacity but also for their difficult evaluation. Asthma is caused by the combination of genetic and environmental factor. Hakonarson and Halapi (2002) attributed the condition to the interaction among many genes and how these genes react with the environment. Different genes have been reported to show linkage of asthma and

bronchial hyper-sensitivity. In the last decade significant progress has been made in the field of asthma but the clinical implication due the genetic variation remains indeterminate.

Asthma can be broken down into two groups based on the causes of an attack: extrinsic and intrinsic. Extrinsic asthma has a known cause, such as allergies dust mites, pollens, grass, weed, or pet dandruff. These individuals produce an excess of antibodies when exposed to triggers, like the previous. Intrinsic asthma has a known cause, but the connection between the cause and the symptoms is not clear because it doesn't have antibody hypersensitivity.

We can found a lot of investigation about asthma and allergies but during my research a lack of information about Dermathophytes fungi has been identified. These fungi are very important to identify because are the most common infectious agent of humans. Dermathophytes are filamentous fungi that are able to digest and obtain nutrient from keratin (the primary component of skin, hair, and nails). Dermathophytes are the only fungi that have evolved a dependency on human or animal infection for the survival of the species. *Trichophyton soudanense*, *Epidermophyton floccosum* and *Trichophyton verrucosum* are some of the most common fungi that inhabit the Caguas Gymnastic Club and at the same time has been identified to produce outbreak in a Judo team in Europe during 2005.

The chemical pollutants have interest in our environment due to the mixture of pollutant and have significant health effects due to the mechanism of inflammation and are responsible of a variety of environmental stressors. Some chemicals include Carbon monoxide (CO), Ozone (O_3), Particulate matter, Tobacco smoke, Volatile Organic

Compounds (VOC's), Radon, Pesticides, Asbestos, Lead, and Arsenic. The physiological effects of these contaminants are numerous; they can trigger asthma, and irritate eyes, nose, throat, respiratory illnesses and lung cancer (Clifford et al., 2009).

Knowing this, and to maintain an indoor environment under adequate levels of quality that will keep us healthy, we need to study the environmental characteristics that promote the growth and proliferation of the organisms mentioned above. Environmental characteristics include temperature, humidity, CO, Carbon dioxide (CO_2), dust characterization and air flow, among others. One of the most important factors is the inappropriate temperatures for an indoor space is the temperature; this should be kept at 70º to 76ºF. High temperatures promote the growth of bacteria, fungi, and dust mites. Therefore, temperature controls are important since if appropriate conditions are provided for the proliferation of these pathogenic organisms, the probabilities of severely affecting the health of the people exposed to them will increase. Another important factor which is influenced by temperature is relative humidity. Relative humidity should be kept at 30-60%; higher levels could be critical for people sensitive to these organisms and could result in possible asthma episodes on chronic sufferers of this disease since the growth of these microorganisms could propagate (Lemmo et al., 2006).

The presence of skin and eyes irritation, mucus membrane secretions and other relates symptoms related with the working environment are characteristics of Sick Building Syndrome. One important characteristic of this syndrome is that it is always present in susceptible individuals while inside the building and absent or more moderate when they leave or are not present on the premises. The main complaints among the personnel that work in the premises include ear, nose, and throat problems; dermatitis,

concentration problems, headaches, and fatigue, shortness of breath, and smell sensitivity. The term building related illnesses is used when the symptoms of the disease are identified, diagnosed, and directly attributed to the air contaminants of the building. The signs and symptoms include cough, chest pain, respiratory problems, edema, palpitations, cancer, alveolitis, pneumonia, occupational asthma among others (Sumedha, 2008). Many people know the health hazards of atmospheric pollutants, but others ignored how the contaminants inside a building can significantly affect their health. Some studies on the exposure to air pollutants indicate that indoor levels of contamination can be 2 to 5 times and sometimes up to 100 times higher than the outside air (EPA, 1997).

The majority of biological contaminants that are found inside a building come are outdoor allergens. These penetrate the indoor environment through windows, doors, and ventilation systems. The aeroallergens vary with the seasons, weather conditions, geographic location, and the indoor ambient. Researchers have established the following hypothesis: the higher the flow of air from the exterior to the interior of the building, the lower is the concentration of contaminants and the probability of getting sick due to air contamination (Menzies et al., 2003). Therefore, contrary to popular belief closing our doors and windows to limit the flow of air goes against our desire to protect our health.

Until our people start to understand the symptoms, causes, conditions and the risk of airborne contaminants, we will continue to suffer illness. The excess of humidity in structures contributes to the growth of fungi and provides a favorable environment for dust, roaches, rats, and other plagues. Structural problems, plumbing deficiencies and poor maintenance in buildings provide mechanisms for those plagues to enter the

buildings. On the other hand, the fungus found in the interior comes from two sources, from the outside through doors and windows and from fungus colonization in the building. Once fungi obtain specific nutrients and sufficient humidity to grow, they will appear on walls, insulation material, carpets, mattresses, and other surfaces. The above-mentioned biological agents sensitize the immunological system producing antibodies after the first exposure. After repeated exposure, the immune responses are faster and more intense and can result in allergic asthma, bronchial hyper-reactivity and respiratory tract inflammation (Jacobs & Baeders, 2005).

In the mid- 1990's, the Health Center of the University of Michigan or UMHS began to diagnose serious infections caused by *Staphylococcus aureus* and *Streptococcus sp.* among athletes, healthy children, military recruiters, and groups of professional football players. This situation caused a great concern to the Center of Disease Control or CDC. The CDC recommends that communities and athletic centers work to develop prevention strategies since this bacterium are opportunistic especially when it comes to open skin wounds (UMHS, 2004).

There are two ways in which humans can be infected with pathogens or acquire diseases: direct contact and indirect contact. With the direct contact, the pathogenic microorganism goes directly from the infectious source to the healthy host. The indirect contact is produced through an intermediary that can be a vector. It is important to remember that for an exposition to result in an adverse health reaction the presence of a microorganism is needed along with other variables like abiotic factors. Among external factors we have temperature, humidity, changes in pressure, and microorganisms; all of them influencing for the contagion of diseases (Koren & Bisesi, 2008).

Children and the elderly are more sensitive to pets and birds allergens when in enclosed in a classroom or facility. Inhalation, skin contact, and ingestion are the most frequent ways to exposition of particles. Bacteria, dust, mites, animal epithelium, pollen, fungi, and animal excrement particles penetrate the system affecting the health like in the case of allergies, dermatitis, sinuses, and asthma among others (EPA, 1995b).

Study problem

The Caguas Gymnastic Club is a facility that receives approximately 300 children between the ages of 2½ and 18 years of age. These children use this facility six day as a week from Monday to Saturday. Some of the children, teenagers, and coaches have expressed that at one point in time they have suffered from eye irritation, dry cough, headaches, and sinuses. During the year 2008, one athlete had hospitalized because of *Streptococcus sp*., though the origin of the bacterium was not identified. Other factors that worsen the situation are the presence of pigeons, dogs, cats, mice and baby snake, elevated temperatures, and humidity. In the past, the presence of pigeons had been identified as a problem.

We evaluated the environmental conditions like temperature, humidity, airflow in the facility that was unknown. These physical parameters also influence in the growth of pathogenic microorganisms. The pigeons' excrement represents a serious health hazard. The excretion of these birds contains acids such as phosphoric acid and uric acid. The pigeons in general build their nests in the buildings' eaves. Many diseases of these birds can be transmitted to the humans through the excrement that infect the organic material in the soil and the surface can be highly infections for years. The complexity of the

infection will also depend on the time of exposure, the quantity of inoculums and the route of infection. Clamidiosis, Salmonellosis, Arizonosis, and Colibacillosis are the most traditional infections caused by pigeons' excrement and the most treated ones at hospitals and clinics. Many of the diseases transmitted by pigeons' excretion, like Histoplasmosis, can be serious and require a treatment for life.

Justification

Monitoring, identifying, and evaluating the quantity and types of microorganisms that inhabit the Caguas Gymnastic Club is an important matter, since there is the possibility that athletes and coaches are working in an environment where contaminants can affect their health. The importance of this evaluation relies on the fact that the population that uses such gymnasium is predominately children. Due to its physiological characteristics and behavior, children are one of the groups more susceptible to infections by the endogenous pathogens of the gymnasium. The diseases caused by *Streptococcus sp.* are considered sporadic, but can cause epidemics. They are common in places where there is overcrowding.

We have to remember that contamination of the indoor air has a direct impact on the health of the people that work inside the facilities. Due to the limited knowledge on this problem, research should be continuing focusing in minimizing the impact on public health. This preventable problem concerns all of us. Medical specialist identify that the most common problems found with children under eighteen are problems related with asthma, allergies and dermatitis.

Investigation question

Are some of the microorganisms, in air and surface, present in the facilities of the Caguas Gymnastic Club could affect the health of the children and coaches that use those facilities?

Goal

The goal of this research was to investigate the presence of pathogenic microorganisms in the Caguas Gymnastic Club that could be a risk to the health of the users of the Club and to propose corrective measures. The corrective measures included develop a cleaning and disinfection plan with the purpose to compare the result obtained before and after mitigation process.

Objectives

1. Identify and evaluate the presence of some microorganisms and the environmental conditions in the Caguas Gymnastic Club.
2. Determine whether the microorganisms founded were a potential risk to the health of the children that use the facilities.
3. Make a Risk Communication Plan.
4. Create a mitigation plan for the facilities.

CHAPTER II

LITERATURE REVIEW

Historical background of air quality

In 1984, the Organizational Committee for Global Health reported to the Environmental Protection Agency or EPA that 30% of the new and remodeled buildings has excessive complaints related to the indoor air quality (Global Health Alliances, 2002).

The contaminants of the outdoor air are a dynamic system in which the physical and chemical processes affect the accumulation of contaminants in the atmosphere. The emission origin is a reserve that is constantly changing. On the other hand, the indoor air contaminants are diluted in the air, but in a static environment where the physical and chemical characteristics transform, they can be found in higher concentration levels (Nazaroff, 2004).

In the past, the discussion of indoor air quality focused in the constituents of the air, like for example, primary particles, bioaerosoles and chemicals, and in factors such as temperature, air flow and humidity (Samet, Splender & Mitchel, 1998). Environmental problems have acquired a higher relevance in the last years, especially those that are directly related to the health. A relationship has now been established between the building ambient and the human being. A relation has been identified between the occupants of a building and the implications that the design, operation, light, noise, and use of the building might cause, therefore, creating an added exposition that can

contribute to the health and physical discomforts of the occupants (Cummins & Jackson, 2001).

The biological reservoirs of exterior air contaminants are also found in the interior of a building (National Research Council, 2004). The air contaminants that are mostly found inside a building are gas and material particles; animals contribute to the production of these contaminants producing fecal excrement and detritus of the skin. People release epithelial cells and along with the dust accumulated in beds, rugs, and furniture contribute to the production of allergens. The poor condition of an air condition system can harbor psichrophilic bacteria like *Legionella pneumophilla,* which is responsible for the Legionnaires' disease. In this way, the microorganisms or substances that caused diseases are not only circumscribe to a specific location, but also can be transported throughout the building by ways of the air condition system. This situation has a global effect in the general population that lives, works, or uses the building facilities (World Health Organization, 2002).

Particulate Matter (PM) is one of the six current USEPA criteria air pollutants. PM are particles that consist of many different substance suspended in the air in the form of particles of solid or liquid matter, which vary in size, source, chemical composition, and remain suspended in the air for long periods (Abelsohn et al., 2002; Maynard et al., 2003). Primary coarse particles are those produced by mechanical processes and include windblown dust, road, sea salt, dust and combustion-generated particle such as fly ash and soot. Secondary PM is form by chemical reactions of dissolved gases.

PM can be classified in small or fine particle that are less or equal to 2.5μm in diameter; and PM 10 refer to all particles less than or equal to 10μm in diameter. These

entire particles are directly emitted to the environment and can produce adverse health effect. The smaller particles are considered the most damage to health (Liu et al., 2003), since they can move easily penetrate the respiratory tract and aggravates illness such asthma and bronquitis (Godish, 2003).

Effects of the pathogens found in indoor air

During the last decades, there has been a concern about the presence of fungi and other allergens in the indoor air, and their relation with the adverse effects to the health. Today, research on indoor air quality is more focused in the analysis of fungi and the measurement of air particles (Brasel et al, 2005). The exposition to these factors can influence the responses to allergic hypersensitivity and problems with asthma (American Academy of Allergy, Asthma and Immunology, 1998). The magnitude and dimension of the illnesses caused by indoor air allergens will depend on different factors: the prevalence of the disease measures the frequency in the population within a specific time, and the incidence of the disease measures the number of new cases that take place within a time frame. The incidence and prevalence will vary according to sex, age, ethnic group, socio-economic class, and geographic region (Pope & Patterson, 1993).

Fungi and other biological agents are associated with a great number of conditions including hypersensitivity to pneumonia. Fungi and spores found in indoor air with high levels of humidity produce micro toxins, which increase the possibility of introducing systemic diseases (Fisher & Dott, 2003). The clinical effects of the micro toxins include respiratory, neurological, immunological, dermatological, and gastrointestinal problems (Kuhn & Ghannoum, 2003). The most common fungi that can be found include species

of the genus *Alternaria sp., Cladosporium sp., Aspergillus sp., Penicillium sp., Stachybiotrys sp., Chaetomium,* yeast like *Candida albicans,* and members of the Basidiomycetes, Zigomicetos, and Ascomicetos (Dillon et al., 1999).

Bacterium like *Micrococcus, Bacillus sp*., and *Staphylococcus sp.* can be found in high concentrations in places with inadequate ventilation. The actinomycetes can cause hypersensitivity to pneumonia and can be found in porous surfaces and humid places (Morey et al., 1984).

Studies on pathogens in indoor air

There is a lack of exactness in the definition of health in respect to SBS, which presents confusion in the investigation of adverse health effects associated with indoor air contaminants. Surveys indicate that there is a difference in perception among men and women on what is a healthy person. The physical build is not important when is time to identify which persons are healthier. Mortality statistics failed to show the percentage of the population that suffer chronic illnesses and were never under medical treatment and if these people were healthy or not. Health is determined by factors such as genetics, physique, lifestyle, and environment (Weetman & Mumby, 1994). Daily prevention of diseases maintains the human being emotionally and physically healthy and productive.

Effects of pulmonary function

During the year 2000, the University of Washington did some studies on patients that showed a decrease in the pulmonary function. These patients resided near areas where problems with material particles and pathogenic biological agents in the

environment have been previously identified. Prior to the study, patients were examined for specific contaminants such as *Pseudomonas aeruginosa.* The participants of this study were relocated close to the Environmental Protection Agency (EPA) during the stage of investigation. The results show that the patients who reside in large cities are exposed to emissions since most of them are concentrated inside their homes, causing like this an increase in respiratory problems (Newson, Schidcrout & Kaufman, 2004).

Impetigo among athletes with direct contact

Impetigo is a very common and highly infectious condition among athletes. It is communicated through a direct link or through a transport, and it can infect undamaged skin. The responsible organisms could be *Streptococcus sp.* and *Staphylococcus aureus*. High temperatures, humidity, and poor hygiene are some of the favorable factors for the proliferation and transmission of the impetigo (Sherry & Wilson, 2002).

Outbreak of *Tinea corporis* due a *Trichophyton tonsurans* in a Judo Team

A hospital of France reports an outbreak of tinea corporis due to *Trichophyton tonsurans* infection in a Judo Team in 2005. Personal hygiene practices were founded to be very good among the athletes. The high attack rate was linked to the poor shower facilities in the gymnasium where they practiced that led them to have their showers several hours after the end of daily practice (Poisson, Rousseau, Defo & Esteve, 2005).

Furunculosis in a football team in an Illinois high school

The deteriorated physical state of sport facilities along with open wounds in a group of football players, favored the outbreak of swollen abscesses in the armpits and extremities of these athletes. The responsible organism was *Staphylococcus aureus*. The lack of hot water, soap, and poor hygiene in the shower area were factors that facilitated the outbreak of infection (Barlett, Martin & Cahill, 1982).

Swimming pools and fungi in indoor facilities

In the University of Urbino, Italy an environmental epidemiology survey was performed in indoor swimming facilities. They founded a filamentous fungi and yeast was isolated from contaminated air, water and surfaces. The result revealed a high biodiversity of fungi likes: *Aspergillus spp., Penicillium spp., Cladosporium spp., Alternaria spp.,* and *Fusarium.* The investigation considers that the biodiversity of the microorganisms in the facilities may represent a biological risk for employees and users (Brandi et al., 2007).

Meningococcal diseases

Meningococosis is a condition caused by *Neisseria meningitis*, a condition thoroughly studied in athletic facilities and universities of the United States of America. The importance and priority of these studies lay in the long and short term harmful results that this condition can have in people of all age groups. The University of Dubuque, Iowa, made a study and estimated that around 100 and 125 cases appear annually in his campuses of colleges and universities. This incidence has increased since the 1990's.

The disease is transmitted through the respiratory airways and the direct contact with the affected persons (University of Dubuque, 2008).

Outbreak of Giardiasis and Cryptosporidiosis associated with neighborhood interactive water fountain

A group of Environmental and Epidemiological investigator identified an outbreak of Giardiasis and Cryptosporidiosis in Central Florida during September 2006. The source identify was a water fountain. The population affected was children between ages of four years old. This outbreak was the first documented associated with exposure to an interactive water fountain in the United States. This outbreak and others need to design and implement more stringent disinfection practices. Giardia cyst and Cryptosporidium oocyst are small and chlorine-resistant, and they may require supplemental disinfection methods, such as ultraviolet light irradiation, ozonation, or chlorine dioxide (Leah, 2008).

People who practice contact sports are in risk of suffering infection outbreaks and skin lacerations. The most common causes of outbreaks and infections include the *Staphylococcus aureus*, herpes virus, *Streptococcus pyogenes* and various fungi. The *Staphylococcus aureus* resistant to Methicillin has been identified as an emergency problem within the community, but particularly among the athletic and military population and in care centers. Many doctors in sports medicine are not well acquainted with the epidemiology of this pathogen. It is important that health specialists adequately manage and identify the infection in order to treat it and control a possible outbreak. On the other hand, it is important to establish prevention measures among athletes, coaches, parents, schools, and administration (Rihn, Michaels & Harner, 2005).

Skin infections including MRSA have been reported mostly in high-physical-contact sport such as football, rugby players, soccer, basketball, volleyball, field hockey, martial arts, fencing and baseball. Little physical contact occurs in some sport during participation, skin contact or activities that may lead to spread of MRSA. Skin infection may take place before or after participation such as in locker room or showers. Therefore, anyone participating in organized, competitive or recreational sports should be aware of the signs of possible skin infections and follow prevention measure.

Legal framework

Clean Air Act (CAA)

The Clean Air Act of 1970 requires that the Environmental Protection Agency or EPA develops and regulates the exposition of air contaminants that are dangerous to the health. Furthermore, it regulates air emissions, stationary sources, and mobile sources. This law authorizes the EPA to establish the National Ambient Air Quality Standards or NAAQS.

During the creation of this law, the federal government authorized the EPA to reinforce the quality of air in forty-nine states with the exception of California. The EPA allows each state to take responsibility over the observance of the regulations and to create their own limits. In order to comply with the Clean Air Act, the state can write and submit a State Implementation Plan or SIP for EPA's approval. The SIP should comply with the minimum criteria established by the EPA. If this plan is not acceptable, then the EPA needs to reinforce the Clean Air Act in that state.

National Ambient Air Quality Standards (NAAQS)

The National Ambient Air Quality Standards are established by the EPA and apply to the outdoor air through the cities. The standards are designed to protect the health with an adequate margin of safety including sensitive populations like children, adults, and individuals with respiratory illnesses. Furthermore, they are designed to protect the public from any adverse health effect that can present a contaminant of unknown origin.

The NAAQS requires that the EPA indicates the standards on six criteria of air contaminants: ozone, material particles, carbon monoxide, sulfur dioxide, nitrogen oxide, and lead. When an area does not meet the air quality standard for one of these criteria pollutants it may be subject to a process that designates it as nonattainment area. This classification is used to specify what air pollution reduction measures an area must adopt, and a deadline for when the goal must be reached.

Annual and 24-hrs NAAQS for particulate matter were first set in 1971. Total Suspended Particle (TSP) was the first indicator used to represent suspended particles in the ambient air. The Title 40, Part 50, Section50.6 sets the National Primary and Secondary ambient air quality standards for PM10: 150 $\mu m/m^3$ for 24 hrs, not to be exceeded, more than once per year and 50 $\mu m/m^3$ annual arithmetic mean averaged over three years not to be exceed. Section 50.7 sets the National primary and secondary ambient air quality standards for PM 2.5 these include 65$\mu m/m^3$ for 24 hrs based on the 98^{th} percentile concentration averaged over three years, not to be exceeded and 15$\mu m/m^3$ annual arithmetic mean averaged over three years, not to be exceeded.

The National Environmental Policy Act (NEPA)

The purpose of the Law is that if requires that federal agencies conduct thorough assessments of the environments impacts of all mayor activities undertaken or funded by the federal government. Many states have enacted similar laws governing state activities.

Law of the Department of Health of Puerto Rico (DSPR)

The Department of Health creates rules and regulations to prevent infectious or contagious diseases or epidemics. These rules also protect the public health in any service, business, activity, or situation that could be affected such as water supply, building construction, building ventilation, drainage, schools, workshops, hospitals, barber shops, beauty salons, and public baths among others.

The Secretary of Health or his or her representatives are authorized to enter any building to examine the sanitary conditions. They have the authority to order the closure of any facility when it is proven that the sanitary conditions, or the way it operates constitute a public health problem.

Organic Law of the Department of Recreation and Sports

This law promotes the mental, physical, and emotional health of the individual. It states that the proper use of resources can foster the development of recreational activities and sports that are essential for a better quality of life. It also promotes the development of programs on physical efficiency and education about recreational alternatives.

The secretary of the Department of Recreation and Sports has the power to regulate and supervise any sports or recreation program or facility of Puerto Rico. He or

she will make studies on the effect of recreation and sports in the physical, emotional, and mental health of the citizens. The secretary through by-laws will establish guides for the planning, designing, location, construction, maintenance, and use of sports and recreation facilities in the island. Bilateral cooperation will be fostered between the department and the different municipalities, in relation to the construction, improvements, maintenance, and administration of sports facilities; always taking into consideration the socio-economic characteristics of each municipality.

CHAPTER III

METHODOLOGY

In this study, our objective was to evaluate the presence of pathogenic microorganisms in the air and the surface and the indoor air quality at the Gymnastic Club in Caguas Puerto Rico. We conducted this investigation following a preliminary visual assessment and the identification of some pathogenic microorganisms that may be a potential risk to the health of the children and coaches that use those facilities.

Objectives

1. Identify and evaluate the presence of some pathogenic microorganisms and the environmental conditions in the Caguas Gymnastic Club.
2. Determine whether the microorganisms found are a potential risk to the health of the children that use the facilities.
3. Make a Risk Communication Plan.
4. Create a mitigation plan for the facilities.

Field of study

The Caguas Gymnastic Club is located inside the sports complex of the Autonomous Municipality of Caguas. Located in front of the Club is the Roger Mendoza Coliseum, to the right is the Caguas Department of Recreation and Sports, to the left cardinals is a manufacturing plant of biomedical equipment called Saint Jude Medical,

and in the back cardinals, there is the parking lot of the Héctor Solá Bezares Coliseum (Figure. 1).

The Caguas Gymnastic Club measures approximately 17,500 square feet, and 25 feet in height. The lower level is made of concrete and the upper level including the roof, which is made of zinc. The facilities include bathrooms, administration offices, and a warehouse for cleaning equipment, a kitchen, and a training area. The training area includes shower for the athletes and the different practice implements like the foam pit, beams, bars, a floor covered with a rug used for the floor exercises, floor mats, rings, pommel horse, and containers to store the lime, wooden cubicle, and other equipment. (Figure. 2) The Club is visit by six days a week, approximately 300 children between the ages 2½ and 18 years of age.

The method used to assess the indoor air quality is characterized by the collection of information. The assessment included an inspection of the relevant areas for visual microorganism growth, air and surface sampling. The visual inspection was important to us because allowed the identification of possible factors that affect the quality of indoor air. Beside the visual inspections environmental factors likes temperature, humidity, Carbon monoxide (CO), Carbon dioxide (CO_2) Particulate matter were analyzed with direct reading instrumentation and Spore Trap Air Filter was collected utilizing a Air-O-Cell cassette.

For the identification of the sampling spot, we created a quadrangle following the asbestos quadrangle. We divided the quadrangle in 134 equal squares; each one has length of $10ft^2$. Using the statistical program RANDOM.ORG, we selected 30 sample points for the local identification of the air sampling using the SAS 100 (Figure 3). This

program will be used to selecting random samples from large data sets with a uniform distribution. We used the same grid for the identification of the physical and chemical parameters but divided in six equal parts (Figure 4). The physical parameter evaluated in those points was temperature, humidity, CO, CO_2, Particle matter and Spore Trap Air Filter. We also collected two samples as background for the microbiological and physical parameter to compare with the sample inside the training area.

Length of time of the research

We conducted this research in three phases. The first phase was performs on June 9, 2009. We sampled during the first phase sterile carpet test, exposure plates and measure of direct reading instrumentation. On June 15, 2009 the sampling of air and surfaces was performed to identify microbial presence. We measured physical and chemical parameters like Temperatures, Relative humidity, CO, and CO_2 utilizing an IAQ Calc. manufactured by TSI. We measured particulate matter with direct reading instrument and Spore Trap Air Filter.

We conducted the second phase on September 26 to September 30, 2009. The purpose of this phase is to perform the mitigation process for fungi and bacteria in Caguas Gymnastic Club. During this phase, we perform a cleaning and disinfestations process using Microban QGC Disinfectant Cleaner manufactured by Sylvane. Microban is a product approved by EPA for the use as disinfectant, fungicide, virucide, sanitizer, mildewstat, deodorizer and heavy duty cleaner. Microban has been used in microbial remediation, pest control and odor removal. On October 6, 2009 the second sampling of sterile carpet test, air and surfaces was performed to compare the efectivity of the

cleaning procedure. Temperature, Relative humidity, CO, CO_2, Particulate matter and Spore Trap Air Filter was taken.

We conducted the third phase on October 10, 2009. The purpose of this phase was the application of the Anti-microbial product (Trimethoxysilyl Quaternary Ammonium Chloride) H.E.L.P Technologies that can prevent the presence of a broad spectrum of microorganisms during 90 days.

Physical parameter procedure

Temperature and Relative humidity (%RH)

We analyzed these parameters utilizing a direct reading instrument model TSI-8760, IAQ-Calc™. The field calibration was performs before the sample collection as recommended by manufacturer. The samples were collected in each of six different points identifies in the quadrangle. Two different samples as background were also collected, one in the office and other in the exterior of the building.

Carbon monoxide (CO) & Carbon dioxide (CO_2)

We analyzed these parameters utilizing a direct reading instrument model TSI-8760, IAQ-Calc™. The field calibration was performs before the sample collection as recommended by manufacturer. We collected the samples in each of six different points identified in the quadrangle. Two different samples as background were also collected, one in the office and other in the exterior of the building.

Particulate matter (PM)

These parameters were analyzed utilizing a direct reading instrument IAQ model 316 manufactured by LIGHTHOUSE World Wide Solution. We collected six samples of non-viable particles in the training area using the above-mentioned quadrangle. Two different samples as background were also collected, one in the office and other outside of the building. The instrument read the concentration of the most common particulate matter of air in ft^3; 0.3 microns, 0.5 micron, 1.0 micron, 2.5 micron, 5.0 micron, 10.0 micron and Total Suspended Particle (TSP).

Spore trap air filter

This sampling consisted in trapping the dust in a Bioaerosol Sampling Cassette, a unique sampling device specially designed for the rapid collection and analysis of a wide range of airborne aerosols. These include mold, spores, pollen, insect parts, skin cell fragment, fibers and inorganic particulate. We collected six sample of viable and non-viable particle in the training area using the quadrangle and two different samples as background, one in the office and other in the exterior of the building.

Sampling materials

- Air-O-Cell Cassette
- Rotameter
- Flexible Tubing
- High Volume Air Pump

Sampling procedures

Removed and retained the tape seal covering the Air-O-Cell inlet and outlet. We connected the pump tubing into the outlet. The sampling pump flow rate was set of 15 liter during five minutes. We removed the Air-O-Cell Cassette from the tubing and resealed with the original tape. We placed all the samples in a plastic bag and send to RAMS Environmental Laboratory, Inc in Miami, Florida for the Dust Characterization by Optical Microscopy techniques.

Sampling analysis

We removed the glass slide from the Cassette. We placed the glass slide into a microscope slide with one drop of Lacto Phenol Cotton Blue. We covered the microscope slide with the cover slip. We conducted the counting and quantification by counting cross-sections of the deposited trace. The particle deposit area is approximately 1.1mm wide by 14.5mm an approximate area of 15.95mm^2.

Biological parameter procedure

Exposure plate

The purpose of this sampling method was to estimate the contamination level in the study area. We conducted this sampling technique following the SOP 300-021 of Clendo Industrial laboratories Inc. and APHA. 4th Edition (2001). We selected Tripticase Soy Agar (TSA) media to identify bacteria, and Rose Bengal Agar (RBA) was choosing for the collection of fungi. The RBA is a selective medium since the antibiotic inhibits the growth of bacteria, consequently, avoiding the contamination of the samples. We

placed a totally of 30 TSA plate and 30 RBA plate in different point selecting the random samples given by the program RANDOM.ORG and the quadrangle. Two different samples as background were also collected, one in the office and other in the conference room. We collected one plate of TSA and RBA as negative control for sterility test purpose.

Sampling materials

- TSA plates
- RBA plates
- Personal Protective Equipment
- Biological Waste Disposal Autoclave Bags
- Incubator 30º-35ºC
- Incubator 20º-25ºC

Sampling procedure

We placed the exposure plates immediately after the athletes had left the training area. We placed all samples at 9:00 pm and removed the next day at 8:00 am in the morning. We packed and transported all samples in a cooler to the laboratory for analysis. We incubated all TSA plates in inverted position at 30º-35ºC for 48 hours. We incubated also the RBA plates in inverted position at 20º-25ºC for 48 hours.

Sampling analysis

We removed all the samples from the incubator at the 48 hours due an overgrowth in all TSA and RBA plates. We evaluated all the samples only for macroscopic identification and counted. All the samples were disposed as biohazard material.

Sterile carpet test

Dermathophytes are one of the most pathogenic fungi that have been identifying in human skin, hair or nails infections. Usually is transmitted by contact, particularly in common showers and gym facilities. This testing is a modification of the technique follow by Calcanti, 2002 and Bentubo 2006. We collected 30 samples in equipment were athletes are in direct contact. We also collected one sample for sterility check purpose.

Sampling materials

- 2 x 2 Sterile carpet
- Mycosel Agar Petri dishes

Sampling procedure

We removed the sterilized carpet from the bag and rubbed in the area of interest. We pushed the piece of carpet into the Mycosel Agar plate and then removed from the agar plate. After packing, we transported all the samples in a cooler to the laboratory for analysis. We incubated all the Mycosel agar plates in inverted position at 25ºC during four week.

Sampling analysis

We removed all the samples from the incubator when presenting sufficient growth for identification. We evaluated all samples by their macroscopic and microscopic morphological characteristics. For the microscopic identification, we used a slide and cover slip mounting with Lactophenol Aniline Blue. The analysis techniques was

conducted following the Clendo Industrial Lab specification and different taxonomic guide

Surface monitoring using swabs

We taked the surface samples with Tecra Enviroswabs in areas where athletes have greater contact. This type of sample is not destructive method in evaluating the presence of microorganisms on surface. We collected 35 samples, 33 inside the training area and two as background, one in the office and other in the Conference Room. We collected one swab as negative control for sterility test purpose. We conducted this sampling technique following the SOP 300-021 of Clendo Industrial laboratories Inc. and APHA 4th Edition (2001). The sampling technique, sampling analysis, incubation period were also followed the procedure that have been previously validated and approved by the laboratory. For the specific steps in the process of isolating and identifying bacteria, we used the Vitec 2 Compact and followed the SOP 300-008. We evaluated all the samples for fungi identification by their macroscopic and microscopic morphological characteristics.

Sampling materials

- Trypticase Soy Agar (TSA) plates
- Trypticase Soy Broth (TSB) - 10 ml
- Eosin Methylene Blue (EMB) agar plates
- Sterile Tecra Enviroswabs
- Personal Protection Equipment
- 20º-25ºC incubator
- 30º-35ºC incubator
- Rose Bengal Agar (RBA)
- Lactophenol Aniline Blue

Sampling procedure

We labeled each swab with the date, the spot of the sample and the control number of the laboratory. We removed each swab from the tube and pushed the tip of the swab to the side of the tube to remove excess diluents. We rubbed the sterile swab over the surface of a diameter that measures 2 x 2 centimeters. We placed the swab again in its packing and sealed. We transported all Enviroswabs to the laboratory for analysis.

Sampling analysis

We worked aseptically all Enviroswabs samples in the Biological Safety Cabinet to avoid contamination. In each Enviroswabs, we added 20 ml of Trypticase Soy Broth (TSB). We closed each tube and swirled in the vortex during one minutes. For each Enviroswabs sample, we used TSA plates in duplicate. In each plate, we added 1.0 ml in duplicate and 0.1 ml in duplicate of the sample. After added the samples in each Petri dish we added TSA using pour plate technique. We incubated all plates at 30º-35ºC for 48 hour. We counted all colonies and calculated the number of colonies recovered from 50 cm^2 (equivalent to 1 ml of poured media). We re-incubated the plates at 20º-25ºC for another 120 hours. All TSA plates were counted and then calculate the number of colonies recovered from 50 cm^2 (Colonies/50cm^2) and reported in CFU. Use appropriate selective and differential media like EMB, Nutrient Agar, TSA and Sabouraud Dextrose Agar and incubated as required.

Air sampling

The objective of this study is to capture and quantify the different cultivable fungal and bacteria present in the air to determinate if the level present indicate a problem in the indoor environment. The samples was taken with the instrument SAS SUPER 100, a portable instrument that use the impaction of a medium of solid culture using Petri dishes of 100mm. We selected TSA media to identify bacteria and RBA was choosing for the collection of fungi. We conducted this sampling technique following the SOP 100-023 of Clendo Industrial laboratories Inc and the EMLab P & K IAQ Pocket Reference Guide 2008. We sampled a totally of 30 TSA plate and 30 RBA plate using SAS 100 in different point selecting the random samples given by the program RANDOM.ORG and the quadrangle. We also collected two different samples as background, one in the Office and other in the exterior of the building. We collected one plate of TSA and RBA as negative control for sterility test purpose.

Sampling materials

- SAS SUPER 100 Air Sampler
- 70% ethanol
- TSA plates
- RBA plates
- 20º-25ºC incubator
- 30º-35ºC incubator
- Personal Protective equipment

Sampling procedure

We removed the coverlid from the Air Sampler. We inserted the contact plate into the Air Sampler. As manufacture recommendation, the air aspiration cycle was three

minutes for each TSA and RBA plates. We removed the contact plate from the instrument and replaced with the lid of the SAS. After finished each sample we identified each contact plate with the sample ID point and the control number of the Clendo laboratory. After finished all the samples, packed it and sent to the laboratory in a cooler for analysis. We incubated all the samples for the specific time at the appropriate temperature: TSA at 30º to 35ºC for 48 hours and RBA at 20º to 25ºC for 5 days.

Sampling analysis

We counted all cultivable microorganisms at the end of the incubation period and related this number to the volume of air sampled. We made subculture of representative isolates for identification using an appropriate selective and differential media like EMB, Nutrient Agar, and Sabouraud Dextrose Agar. We incubated all the subcultures as required. We identified all the bacteria with gram stain. For the specific steps in the process of isolating and identifying bacteria, we used the Vitec 2 Compact and followed the SOP 300-008. We evaluated for fungi identification, all the samples by their macroscopic and microscopic morphological characteristics.

Result calculation

We applied a correction factor to each sample prior to calculation of concentration of fungi and bacteria in each sample, expressed in CFU per cubic meter of air. We used the Most Probable Number (MPN) given by the manufacturer for the correction factor

because more bacteria could be aspirate from the same hole and land on top of another bacterium on the surface media.

Example of calculation results: $X = \frac{Pr \times 100}{V}$

Where:

V = Volume of sampled air = 200 liters of air

R = Colony Forming Units counted on "55mm Contact Plates" = 67

Pr = Probable count obtained by positive hole correction = 80

X = Colony Forming Units per 1000 liters = $1m^3$ of air

$X = \frac{80 \times 100}{200}$

To express the result in CFU/ft^3, multiply the CFU/m^3 value by 0.02832.

(Note conversion formula = 1 cubic foot = 20.32 liters

CHAPTER IV

RESULTS AND DISCUSSION

During our research a series of testing, we need to conduce with the purpose to meet our objective. Our goal is evaluate the presence of pathogenic microorganisms in the air and the surface and Indoor Air Quality at the Caguas Gymnastic Club. The assessment included an inspection of different areas that athletes and coaches have direct contact, physical-chemical testing and biological testing we need to perform to present strategy to avoid repeated contamination in the facility. We conducted this research in three phases, in order to present our results; a detail description of the finding is presented below.

The visual assessment was perform in the interior of the facility on June 9, 2009 including training area, office, meeting room, bathrooms, storage room, kitchen and bleachers. We observed evidence of water intrusion evidence from the ceiling to the front carpet area. We observed a lot of dust in the entire training area specialty in the foam pit area and in the back carpet. We observed mold growth in the pommel horse, wooden cubicle, beams, carpet, and mats and in the foam pit area. We observed the presence of pigeons dropping, cats and dog excrement, cockroaches, mice and the dead of a baby snake in front of the door close to the training area. We also observed plant debris inside the training area specialty in the back of the gym around the back carpet and in the foam pit area. We observed pigeon evidence in the training area.

Temperature and Relative humidity (% RH)

During the first phase performed on June 9, 2009, the average temperature in the training area was 91.1ºF and the relative humidity was 52.7%. The temperature in the office collected as background inside the building was 89.1ºF and the relative humidity was 56.7%. The temperature in the exterior of the building collected as background was 89.6ºF and the relative humidity was 55.8% (Table 1).

During the second monitoring in the first phase performed on June 15, 2009, the average temperature in the training area was 93.0ºF and the relative humidity was 52.3%. The temperature in the office collected as background inside the building was 90.0ºF and the relative humidity was 59.3%. The temperature in the exterior of the building collected as background was 82.2ºF and the relative humidity was 55.3% (Table 1).

During the second phase performed on October 6, 2009, the average temperature in the training area was 82.5ºF and the relative humidity was 72.6%. The temperature in the office collected as background inside the building was 81.5ºF and the relative humidity was 74.0%. The temperature in the exterior of the building collected as background was 80.8ºF and the relative humidity was 74.6% (Table 1).

Carbon monoxide (CO) and Carbon dioxide (CO_2)

During the first phase performed on June 9, 2009, the average Carbon monoxide measured in the training area was 1.6ppm and the CO_2 measured was 407ppm. The CO measured in the office collected as background inside the building was 1.7ppm and the CO_2 measured was 382ppm. The CO measured in the exterior of the building collected as background was 1.4ppm and the CO_2 measured was 384ppm (Table 1).

During the second monitoring in the first phase performed on June 15, 2009, the average CO measured in the training area was 2.5ppm and the CO_2 measured was 542ppm. The CO measured in the office collected as background inside the building was 2.3ppm and the Carbon Dioxide measured was 618ppm. The Carbon Monoxide measured in the exterior of the building collected as background was 2.4ppm and the Carbon Dioxide measured was 562ppm (Table 1).

During the second phase performed on October 6, 2009, the average Carbon Monoxide measured in the training area was 1.4ppm and the Carbon dioxide measured was 389ppm. The Carbon monoxide measured in the office collected as background inside the building was 1.5ppm and the Carbon dioxide measured was 388ppm. The Carbon monoxide measured in the exterior of the building collected as background was 1.5ppm and the Carbon dioxide measured was 496ppm (Table 1).

Particulate matter (PM)

During the first phase performed on June 9, 2009, the average of PM measured in the training area was PM0.5 = 2.22 ug/m^3, PM1.0 = 7.93 ug/m^3, PM2.5 = 37.30 ug/m^3, PM5.0 = 192.40 ug/m^3, PM10 = 252.60 ug/m^3 and TPM = 298.50 ug/m^3. The average of PM measured in the office collected as background inside the building was PM0.5 = 1.72ug/m^3, PM1.0 = 6.91 ug/m^3, PM2.5 = 33.03 ug/m^3, PM5.0 = 161.18 ug/m^3, PM10 = 188.87 ug/m^3 and TPM = 201.35 ug/m^3. The PM measured in the exterior of the building collected as background was PM0.5 = 1.72ug/m^3, PM1.0 = 6.88 ug/m^3, PM2.5 = 32.90 ug/m^3, PM5.0 = 153.56 ug/m^3, PM10 = 180.28 ug/m^3 and TPM = 189.53 ug/m^3 (Table 2).

During the second monitoring in the first phase performed on June 15, 2009, the average of PM measured in the training area was PM0.5 = 1.35 ug/m^3, PM1.0 = 2.98 ug/m^3, PM2.5 = 12.32 ug/m^3, PM5.0 = 62.91 ug/m^3, PM10 = 87.84 ug/m^3 and TPM = 115.36 ug/m^3. The average of PM measured in the office collected as background inside the building was PM0.5 = 1.24 ug/m^3, PM1.0 = 2.92 ug/m^3, PM2.5 = 12.34 ug/m^3, PM5.0 = 63.75 ug/m^3, PM10 = 87.93 ug/m^3 and TPM = 117.05 ug/m^3. The PM measured in the exterior of the building collected as background was PM0.5 = 1.17 ug/m^3, PM1.0 = 2.65 ug/m^3, PM2.5 = 10.51 ug/m^3, PM5.0 = 51.42 ug/m^3, PM10 = 60.39 ug/m^3 and TPM = 71.48 ug/m^3 (Table 2).

During the second phase performed on October 06, 2009, the average of PM measured in the training area was PM0.5 = 2.07 ug/m^3, PM1.0 = 8.51 ug/m^3, PM2.5 = 39.51 ug/m^3, PM5.0 = 196.82 ug/m^3, PM10 = 241.64 ug/m^3 and TPM = 260.21 ug/m^3. The average of PM measured in the office collected as background inside the building was PM0.5 = 1.95 ug/m^3, PM1.0 = 8.02 ug/m^3, PM2.5 = 35.82 ug/m^3, PM5.0 = 167.06 ug/m^3, PM10 = 191.83 ug/m^3 and TPM = 205.70 ug/m^3. The PM measured in the exterior of the building collected as background was PM0.5 = 3.64 ug/m^3, PM1.0 = 9.44 ug/m^3, PM2.5 = 24.82 ug/m^3, PM5.0 = 64.48 ug/m^3, PM10 = 68.38 ug/m^3 and TPM = 76.70 ug/m^3 (Table 2).

Spore trap air filter

We collected air samples using the Air-O-Cell Cassette for particle dust characterization. During the first phase performed on June 09, 2009, were collected six samples inside the training area (REL09219PCA-01 to REL09219PCA-06). Sample

REL09219PCA-07 collected in the offices as background inside the building. Sample REL09219PCA-08 collected in the exterior of the building as background. The air samples in the training area indicated the presence of carbonaceous materials, dust and skin cells. The results in samples REL09219PCA-01 to REL09219PCA-06 indicated the presence of several fungal spores being the predominant the *Penicillium/Aspergillus* and *Cladosporium* spores. Sample REL09219PCA-07 indicated a presence of dust and skin cells. Sample REL09219PCA-08 indicated a presence of dust (Appendix 1).

During the second phase performed on October 06, 2009, were collected six samples inside the training area (REL09400PCA-01 to REL09400PCA-06). Sample REL09400PCA-07 collected in the offices as background inside the building. Sample REL09400PCA-08 collected in the exterior of the building as background. The results in samples REL09400PCA-01 to REL09400PCA-06 indicated the presence of dust. Air samples REL09400PCA-04 and REL09400PCA-06 indicated the presence of several fungal spores being the predominant the *Penicillium*/*Aspergillus* and *Cladosporium* spores. Air sample REL09400PCA-07 indicated a presence of dust. Sample REL09400PCA-08 indicated a presence of dust (Appendix 2).

Exposure plate

During the first phase performed on June 09, 2009 samples of TSA and RBA were carefully collected after has been exposure during 10 hours. The results indicated the presence of fungi and several bacteria. Due an overloaded growing in all the TSA and RBA plates all samples were observe for macroscopic identification. The result indicated Too Numerous to Count for all TSA and RBA plates (TNTC) (Table 3).

Sterile carpet test

During the first phase performed on June 09, 2009, we carefully collected samples with a sterile carpet. The result indicated the presence of various species of Dermathophytes likes *Microsporum ferrugineum*, *Microsporum cookei*, *Microsporum audouinii*, *Trichophyton verrucosum* and *Epidermophyton floccosum*. Other species of fungus identified was *Blastomyces dermatidis, Fonsecaea pedrosoi, Aspergillus avenaceus, Aspergillus hollandicus, Scopulariopsis asperula, Penicillium citrinum, Paecilomyces viridis, Phialophora reptans, Phialophora richardsiae, Phialophora verrucosa, Cladosporium cladosporoide, Scytalidium infestans, Polypaecilum insolitum, Candida albicans* and *Histoplasma capsulatum* (Table 4 and Appendix 3).

During the second phase performed on October 06, 2009, were collected the sterile carpet test followed by the cleaning and disinfestations of the CGC. The result indicated no growth of fungi in all Mycosel Agar plates after 21 days of incubation period.

Surface monitoring using swab

During the first phase performed on June 15, 2009, were carefully collected samples with Tecra Enviroswabs. The result indicated the presence of various species bacterias. The most common pathogenic bacteria found with the Enviroswabs were *Micrococcus lylae*, *Sphingomonas paucimobilis*, *Brevibacillus choshinensis*, *Staphylococcus epidermidis* and *Kocurria kristinae* (Table 5 and Appendix 4).

During the second phase performed on October 6, 2009, were collected Enviroswabs samples followed by the cleaning and disinfestations of the CGC. The

result demonstrated that the process of cleaning and disinfection was effective with a cleaning efectivity of 97.44%.

Air sampling

During the first phase performed on June 15, 2009, were collected air samples using SAS instrument. The result indicated the presence of various species of microorganisms. The most common pathogenic fungi founded in Air sampling was *Aspergillus niger, Aspergillus avenaceus, Aspergillus clavatus, Acremonium curvulum, Curvularia clavata* and *Penicillium chrysogenum* (Table 6). The most common bacteria were *Staphylococcus haemolyticus, Staphylococcus saprophyticus, Pantoea spp., Klebsiella pneumoniae, Bacillus megaterium* and *Staphylococcus epidermidis* (Table 7 and Appendix 5).

During the second phase performed on October 06, 2009, were collected air samples followed by the cleaning and disinfestations of the CGC. The result demonstrated that the process of cleaning and disinfestations was effective with a cleaning efectivity of 80% (Figure 3 and Figure 4).

Discussion

At this moment, there are no state of federal regulation for fungi, bacteria and indoor air quality standards. The industrial hygiene profession and ASHRAE have recommended airborne concentrations of one-tenth the ACGIH Threshold Limit Value (TLV). This limit of concentrations will not produce compliance in non-industrial populations such schools, offices and others public buildings.

Temperature and Relative humidity (%RH)

Air temperature and relative humidity are measure to assess thermal comfort and the possibility of mold growth. According to ASHRAE Standard 55, indoor air humidity levels should be maintain between 30 and 65 percent for optimum comfort and the temperature should be kept at 70º to 76ºF.

After been evaluated the result during three different days, the average temperature measured was 88.8ºF and the relative humidity 59.2% in the training area. These results are above the recommending limit and the results were consistent with the background measurements obtained from the exterior of the building. The relative humidity in the training area is between the recommending limits and was consistent with the background.

Carbon monoxide (CO) and Carbon dioxide (CO_2)

Carbon monoxide is a colorless, odorless, and tasteless gas. It results from incomplete oxidation in combustion. Auto, truck or bus exhaust from attached garages, nearby roads, or parking areas can also be a source. No standards for CO have agreed for indoor air. The US National Ambient Air Quality Standards for outdoor air are 9ppm (40,000ug/m^3) for eight hours, and 35ppm for one hour. The Carbon monoxide measurements were below the permissible exposure limit during our study.

Carbon dioxide (CO_2) is a colorless, odorless product of carbon combustion. Human metabolic processes and all combustion processes of carbon fuels are sources of CO_2. Exhaled air is usually the largest source of CO_2. ASHRAE Standard 62 recommends an indoor level not to exceed about 700ppm above outdoor ambient air,

which is typically between 300 to 400ppm. The Carbon dioxide measurements result were below the permissible exposure limits during our study.

Particulate matter (PM)

There are currently no federal government standards for PM2.5 in indoor air environments. The annual limit in National Ambient Air Quality Standards list is 15 ug/m^3 and 65 ug/m^3 is known as the 24-hours limit for PM2.5 in indoor air. The particulate matter in homes are related to carpet and clothing fibers, dust and dirt tracked into the home by its occupants, particles from food preparation, insect parts, plants, etc. These particles can cause symptoms such asthma, cardiac function and allergies in people, especially young children.

The result of particulate matter indicated an increase in all size range compared with the background samples from the exterior of the building. This size range of abnormal particles can be an indicator of potential risk for athletes and coaches inside the CGC.

Spore trap air filter

Spore trap samplers are capable of capture viable and non-viable fungal spores present in air. This sampler technique also captures particulate matter; quantify pollen, fiberglass, hair, skin cells, and hyphae fragments among others. If use this technique alone may miss a potential indoor air quality problem. That is why in our study we use cultivable samples and non-cultivable samples with the purpose to compare results.

The analytical result obtained from RAMS Environmental Laboratory, Inc in Miami, Florida for dust characterization by Optical Microscopy techniques indicated the presence of several fungal spore were the most predominant are *Aspergillus, Penicillium* and *Cladosporium* spp. These results are consistent with the cultivable samples using SAS instrument. During the visual inspection, we observed dust accumulation throughout the training area especially around the foam pit and the back rug. These finding are consistent with the dust characterization result. The results indicated the presence of dust, carbonaceous material and skin cell. After the cleaning and disinfestations process, the result obtained from the spore trap sampler indicated that the quantity of carbonaceous material, skin cell and fungal spore was decreasing significantly. Good housekeeping practices can lower the levels of the skin cell in indoor environment. However, at the same time, the quantity of dust are both >800. We observe during the cleaning process all the windows were close and actually are still close. The problem of bad ventilation in addition to maintain close window in the training area do not allow that the particulate going out the building.

Exposure plate

The purpose of this sampling technique was estimate the contamination in the study area. The results obtained in a short incubation period allow us to create strategy for obtain accurately results and avoid technical mistake in the laboratory.

Sterile carpet test

This kind of testing is very uncommon for the indoor air quality specialist. Dermathophytes are the only fungus that has evolved in a dependency of human body that is why is very common to produce coetaneous infections in peoples. This group is composed of three genera (*Microsporum, Trichophyton* and *Epidermophyton*). During our study, we identified different species for each genus. We performed after the cleaning and disinfestations process in CGC a second monitoring of sterile carpet test. The sterile carpet test results indicate that no evidence of Dermathophytes after 21 days of incubation period.

Surface monitoring using swabs

There are no governmental or federal regulations concerning permissible level of fungi and bacteria. The result obtained from this testing indicated that 98% of the total microorganisms founded in CGC was bacteria and 2% fungi (Figure 7). For the bacteria identification, we used the Vitec Senior Model 120. Before the identification, we need to have confirmed Gram stain from isolated colonies in purity plates. The result indicated that the most common pathogenic bacteria found with the Enviroswabs are Gram-positive bacteria. *Micrococcus lylae, Brevibacillus choshinensis, Sthaphylococcus epidermidis* and *Kocurria kristinae* are Gram-positive bacteria. Most pathogenic bacteria in humans are Gram-positive microorganisms. Two of these groups are *Streptococcus* and *Staphylococcus*. *Sphingomonas paucimobilis* is Gram-negative bacteria. Gram-negative bacteria are associated with nosocomial infections.

Air sampling

Actually there are none federal and governmental regulation concerning permissible levels of fungi and bacteria in indoor air. All the resent standards and guidelines range from 200cfu/m^3 is an acceptable level for indoor environments. The ACGIH have guidelines that less than 500cfu/m^3 is acceptable for certain species except for pathogenic species.

During our study, the 60.4% of the microorganisms identified were fungi and 39.6% bacteria (Figure 8). We identified 13 different fungi and 12 different bacteria. The most common pathogenic fungi are *Aspergillus spp.* These results are consistent with the spore trap technique. *Aspergillus* and *Penicillium* spp was the most common fungi identified in spore trap sampler. *Aspergillus spp.* has been associate with Aspergillosis, human carcinogenicity and be involved in respiratory cancers among food and grain workers. The result indicated that the most common pathogenic bacteria found in air samples are Gram-positive bacteria, for example *Sthaphylococcus haemolyticus*, *Sthaphylococcus saprophyticus*, *Sthaphylococcus epidermidis* and *Bacillus megaterium*. The Gram-negative bacteria are *Pantoea spp*. and *Klebsiella pneumonia*. *Sthaphylococcus epidermidis* is a human commensal bacterium. An increase number of human commensal bacteria in indoor environment may indicate high occupant density and poor ventilation; this situation may suggest an environment where airborne pathogens can be more easily spreader from person to person.

Risk communication plan

After the Caguas Gymnastic Club was monitored, evaluated and analyzed, we requested a meeting with Mr. Francisco, Director of the Department of Recreation and Sport in the Caguas municipality, in August 2010. In this meeting we discuss the results obtained on our study and some recommendations were given to him regarding a periodical disinfection plan and cleaning program of the facility (Appendix 7). This document was worked in Spanish because the people that would use this document, the first language is Spanish. The information gathered also should be shared with athletes, coaches and visitors public health specialist, empowering them with health information vital for everyone wellbeing.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The gymnastics is a high-risk sport. Cuts and abrasion are inevitable for gymnastics athletes creating an elevated risk of infectious disease spread by skin-to-skin contact and contaminated equipment shared by athletes. Gymnastic mats, bars, beams, pommel horse and carpet are constant sweated increasing the environment for the growth of pathogenic microorganisms. The Caguas Gymnastic Club was builder in 1972. At the beginning the facilities was for volleyball court. For this purpose the airflow, need to be controlling for the practice of this sport. During our study, we identify the lack of airflow using the Drager Rohrchen air tube. The Caguas Gymnastic Club is a facility with high traffic of children during six day a week. During the visual assessment we can observed a lack of cleaning inside the training area.

Our results demonstrate a lot of dust, skin cell, particulate matter, fungi and bacteria inside the training area. The temperature levels in the facilities exceed the recommended by ASHRAE standards 55-2204. The Particulate matter result could be an indicator of potential risk health effect. The monitory before mitigation process revealed the presence of Dermathophytes and pathogenic microorganisms in the air and the surface that could pose a heath hazard to those in the facilities. The monitory after mitigation process demonstrated that the microbial remediation was effective. With a cleaning efectivity of Enviroswabs test = 97.44%, SAS air sampling = 80% and Sterile carpet test = 100%. After the mitigation process was performed a statistically significant difference (P-value = 0.000) between the number of cultivable bacteria and fungi before

and after the process was detected. Indicating that the process is effective in dismissing bellow the public health concerns the number of potential pathogenic microorganism in the Caguas Gymnastic Club.

With an effective method of cleaning and disinfestations of the facility we can made the microbiology remediation for Caguas Gymnastic Club. The use of an antimicrobial product (Trimethoxysilyl Quaternary Ammonium Chloride) H.E.L.P Technologies we can prevent the presence of a broad spectrum of microorganisms during approximately 90 days. With a good cleaning monitoring and good housekeeping practice, we can prevent the risk to the health of the children and coaches that use the facility.

To avoid repeated contamination we have a series of recommendations for the facilities. Is important performs a general cleaning of Caguas Gymnastic Club at least two times on a year. We recommended cleaning the carpet every six months. We recommended the fumigation each two weeks. The training area must be clean every day using Microban Disinfectant Cleaner. We highly recommended the application of XMICROBE Neutral Disinfectant Cleaner and the XMICROBE Antimicrobial-Biostatic Agent each three month. Install window screens in the training area and the side doors to avoid the entrance of insects and organic materials debris. Install nets in bars to avoid the entrance of dove. Install ceiling fan in the training area.

We have a series of limitation during our study. The Risk Communication Plan will be performed by specialized personnel, A lack of money don't give the opportunity to make other testing like Mycotoxins, Endotoxins, Fungal glucan, Fungal ergosterol, microbial volatile organic chemicals, allergens and pollens. Those testing have been use

like indicator because the identification of a fungus and bacteria is not necessary proving the presence of Mycotoxins, bioactive agent associated with fever, flu symptoms and other respiratory illness; study the assess fungal biomass, allergic symptoms among others.

This study has the opportunity to other student follow our investigation with the purpose to evaluate the athletes and coaches of this facility. Is important to perform an epidemiologic survey to evaluate if athletes or coaches have been present symptoms or conditions associate with the microorganisms founded during our research.

We know that the microorganisms found during our study have a potential risk of infection for athletes and coaches in Caguas Gymnastic Club. The lacks of Standards and Guidelines for indoor environments do not give us the opportunity to evaluate the dose/responds and the exposition to humans. It is very important that the local agency and the Department of Sport create a cleaning and disinfection plan for all sports facilities to avoid bacterial and fungal infections acquired in athletic settings, including ringworm, athlete's foot, community acquired Methicillin-resistant *Staphylococcus* infection (MRSA), herpes and impetigo.

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TABLES

Table 1. *Physical characteristics of the facilities during the first, second and third monitory*

Id point	Date			Temp (ºF)			RH%			CO			CO_2		
1	Jun 09	Jun 15	Oct 06	92.0	82.8	93.8	51.8	74.5	49.9	1.7	2.9	1.3	398	460	382
2	Jun 09	Jun 15	Oct 06	92.0	82.6	94.1	51.5	72.5	49.5	1.8	2.6	1.1	390	546	378
3	Jun 09	Jun 15	Oct 06	92.7	82.4	93.1	51.5	73.6	51.7	1.8	2.3	1.3	497	690	376
4	Jun 09	Jun 15	Oct 06	90.7	82.2	93.2	52.6	72.4	53.1	1.5	2.6	1.7	380	503	393
5	Jun 09	Jun 15	Oct 06	89.8	82.4	92.3	52.7	72.3	54.9	1.5	2.6	1.2	385	570	392
6	Jun 09	Jun 15	Oct 06	88.9	82.8	91.8	56.1	70.2	55.0	1.6	2.0	1.7	395	484	411
Bkg 1	Jun 09	Jun 15	Oct 06	89.1	81.5	90.0	56.7	74.0	59.3	1.7	2.3	1.5	382	618	388
Bkg 2	Jun 09	Jun 15	Oct 06	89.6	80.8	82.2	55.8	74.6	55.3	1.4	2.4	1.5	384	562	496

Table 2. *Particulate matter (PM) result during the first, second and third monitory*

Id point	PM 0.5			PM 1.0			PM 2.5			PM 5.0			PM 10			TPM		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1	2.70	1.43	2.26	9.55	2.98	9.22	46.63	11.99	44.97	241.95	57.35	236.09	332.83	76.07	314.48	434.06	91.79	378.28
2	2.67	1.42	2.09	8.38	3.10	8.48	37.95	13.21	39.28	201.04	69.76	195.86	270.08	98.43	237.98	321.85	136.86	246.77
3	2.31	1.34	2.03	8.23	2.93	8.39	38.64	11.42	38.73	201.63	55.18	189.94	273.20	66.29	226.80	326.82	79.24	235.12
4	2.02	1.33	2.09	7.35	3.00	8.53	33.99	12.55	39.38	172.24	66.42	190.11	215.14	103.09	230.87	239.18	150.24	242.42
5	1.78	1.31	2.02	7.06	3.05	8.31	33.67	13.22	37.95	169.45	71.33	186.04	219.38	106.43	221.53	245.26	145.73	229.39
6	1.85	1.25	1.95	7.02	2.84	8.11	33.21	11.54	36.79	168.23	57.45	182.88	205.29	76.75	218.18	223.78	88.31	229.27
Bkg 1	1.72	1.24	1.95	6.91	2.92	8.02	33.03	12.34	35.82	161.18	63.75	167.06	188.87	87.93	191.83	201.35	117.05	205.70
Bkg 2	1.72	1.17	3.64	6.88	2.65	9.44	32.90	10.51	24.82	153.56	51.42	64.48	180.28	60.39	68.38	189.53	71.48	76.70

Table 3. *Exposure plate result*

Sample Id	TSA plate (#CFU)	RBA plates (#CFU)	Sample Id	TSA plates (CFU)	RBA plates (#CFU)
109	TNTC	TNTC	64	TNTC	TNTC
34	TNTC	271	88	TNTC	TNTC
100	TNTC	TNTC	14	TNTC	TNTC
85	TNTC	TNTC	47	TNTC	TNTC
124	TNTC	TNTC	125	TNTC	TNTC
114	TNTC	TNTC	37	TNTC	TNTC
127	TNTC	TNTC	132	90	TNTC
29	TNTC	TNTC	68	TNTC	TNTC
102	TNTC	TNTC	17	TNTC	TNTC
43	TNTC	TNTC	6	TNTC	TNTC
105	TNTC	TNTC	75	TNTC	TNTC
26	TNTC	TNTC	38	TNTC	TNTC
16	96	TNTC	61	TNTC	81
52	TNTC	TNTC	1	TNTC	TNTC
90	TNTC	TNTC	Bkg 1	60	171
12	TNTC	TNTC	Bkg 2	TNTC	TNTC

Table 4. *Sterile carpet test result*

Sample	First Testing	Second Testing	Health effect
Back rug 1B	*Blastomyces dermatidis*	No growth	Cutaneous infections
Back rug 1E	*Fonsecaea pedrosoi*	No growth	Chromoblastomycosis
Foam pit mat	*Microsporum ferrugineum*	No growth	Tinea capitis
Bar	*Epidermophyton floccosum*	No growth	Infect skin and nail
Bar mat	*Aspergillus avenaceus* *Scopulariopsis asperula* *Penicillium citrinum*	No growth	Aspergillosis, cutaneous infections, corneal infections
Yellow cheese	*Aspergillus avenaceus* *Polypaecilum insolitum* *Penicillium citrinum*	No growth	Aspergillosis, corneal infections
Beam A	*Paecilomyces viridis*	No growth	Endocarditis
Pommel horse A	*Phialophora richardsiae*	No growth	Keratitis, cutaneous infections
Pail for legs	*Trichophyton verrucosum*	No growth	Infect scalp, nails, skin
Mat (baby gym)	*Aspergillus avenaceus*	No growth	Aspergillosis
Pommel horse B	*Aspergillus avenaceus* *Cladosporium cladosporoide* *Phialophora richardsiae*	No growth	Aspergillosis, pulmonary infections, cutaneous infections
Mat (pommel horse area)	*Microsporum cookei* *Aspergillus avenaceus* *Phialophora reptans*	No growth	Hair, cutaneous and pulmonary infections
Entrance floor	*Aspergillus hollandicus* *Scopulariopsis asperula* *Scytalidium infestans*	No growth	Pulmonary infections, Keratitis and cutaneous infections
Wooden cubicle	*Histoplasma capsulatum* *Cladosporium cladosporoide* *Phialophora verrucosa*	No growth	Pulmonary infections, hair, nail and cutaneous infections
Front rug 1A	*Candida albicans*	No growth	Infect skin, mucosal tract
Front rug 1B	*Candida albicans*	No growth	Infect skin, mucosal tract
Front rug 1C	*Microsporum audouinii*	No growth	Epidemic ringworm

Table 5. *Most common pathogenic bacteria found with the Enviroswabs*

Microorganisms	**Gram stain**	**Human health effect**
Micrococcus lylae	Gram-positive	Meningitis, Endocarditis
Sphingomonas paucimobilis	Gram-negative	Bacterial infection of the bloodstream
Brevibacillus choshinensis	Gram-positive	Keratitis, urinary tract infections
Sthaphylococcus epidermidis	Gram-positive	Endocarditis
Kocurria kristinae	Gram-positive	Bacterial infection of the bloodstream

Table 6. *Most common pathogenic fungi found in air sampling*

Microorganisms	**Human health effect**
Aspergillus niger	Aspergillosis, human carcinogenicity
Penicillium chrysogenum	Potential hazard for human
Aspergillus avenaceus	Opportunistic invaders that cause Aspergillosis
Aspergillus clavatus	Opportunistic invaders that cause Aspergillosis
Acremonium curvulum	Corneal infection, and nail infection
Curvularia clavata	Chronic allergic sinusitis with cerebral involvement

Table 7. *Most common pathogenic bacteria found in air sampling*

Microorganisms	**Gram stain**	**Human health effect**
Sthaphylococcus haemolyticus	Gram-positive	Conjunctivitis, infection in urinary tract
Sthaphylococcus saprophyticus	Gram-positive	Acute urinary tract infections
Pantoea spp.	Gram-negative	Opportunistic pathogen
Klebsiella pneumoniae	Gram-negative	Respiratory tract infections
Bacillus megaterium	Gram-positive	Involved in opportunistic infections
Sthaphylococcus epidermidis	Gram-positive	Opportunistic pathogen

FIGURES

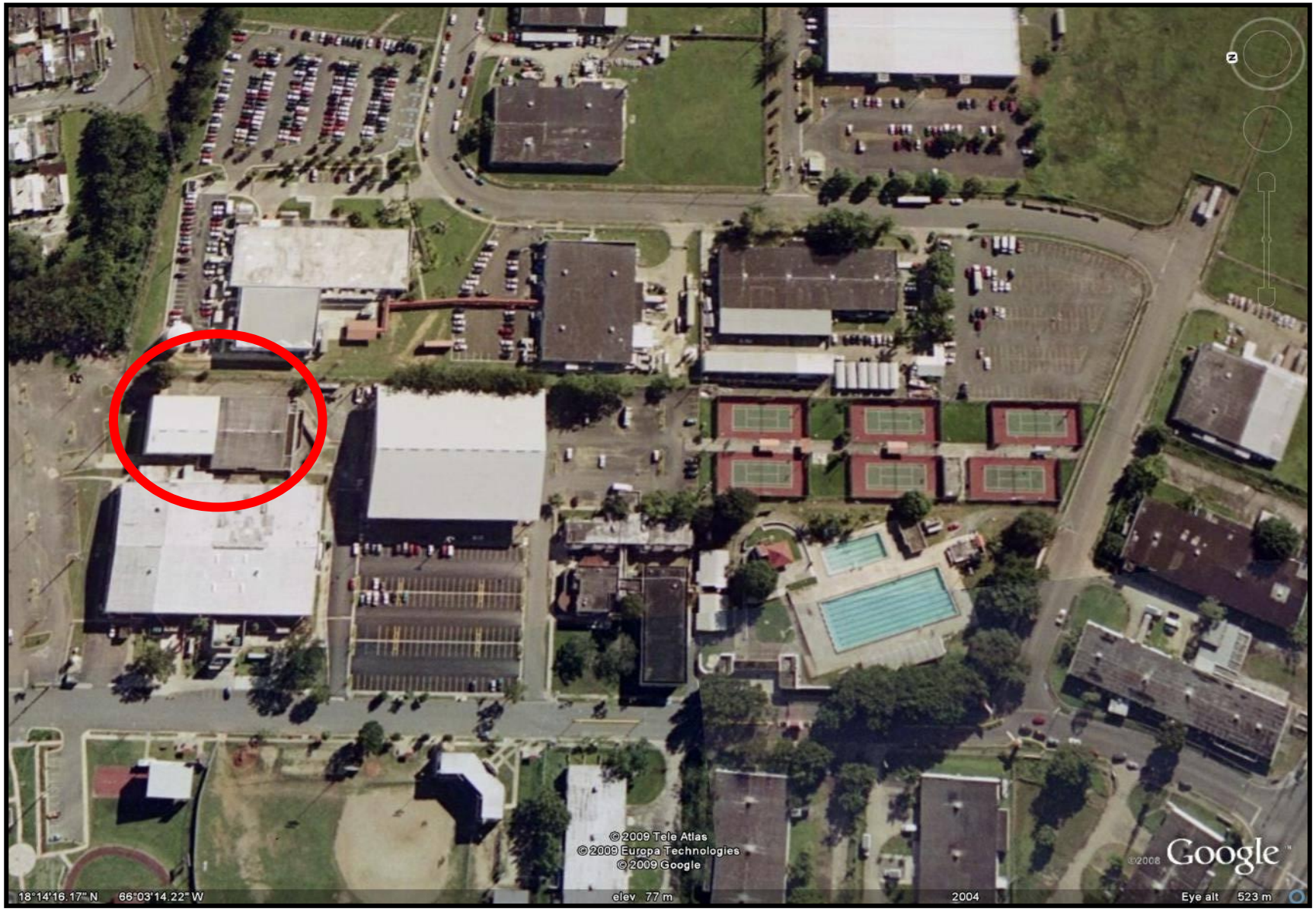


Figure 1. Aerial photo of Caguas Gymnast Club.

Figure 2. Training and sampling area of Caguas Gymnastic Club.

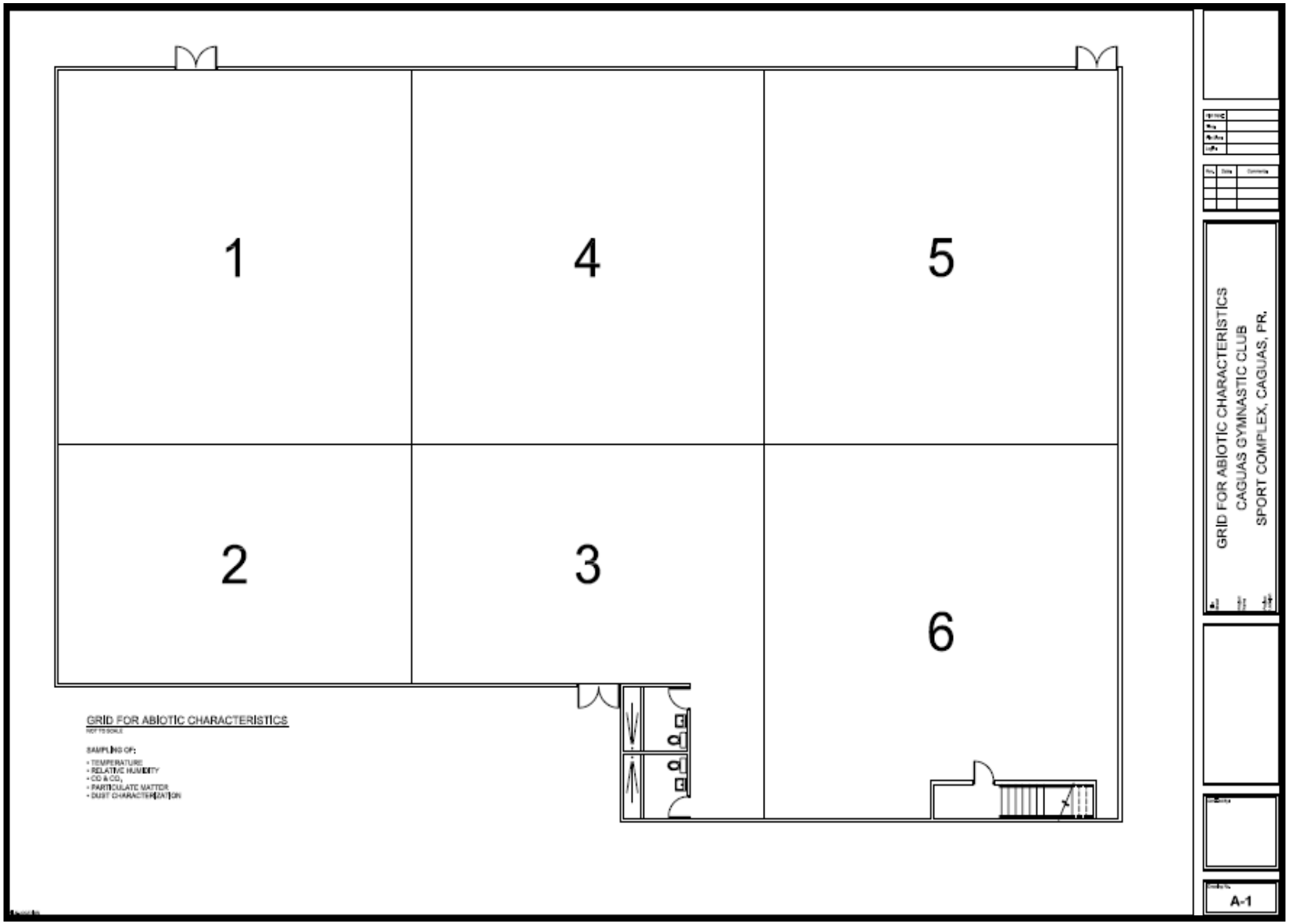


Figure 3. Grid for the air sampling monitory.

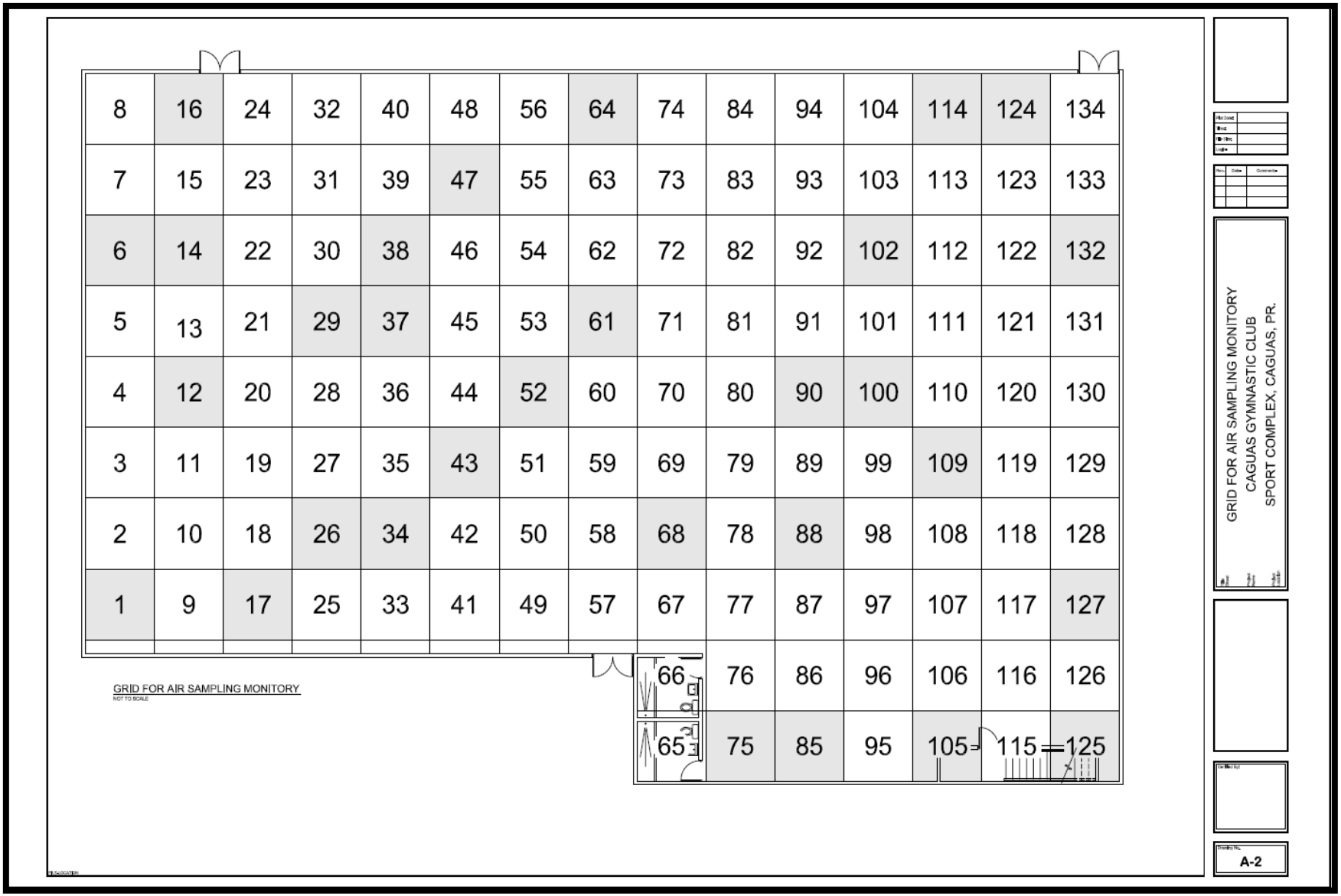


Figure 4. Grid for the physical-chemical sampling monitory.

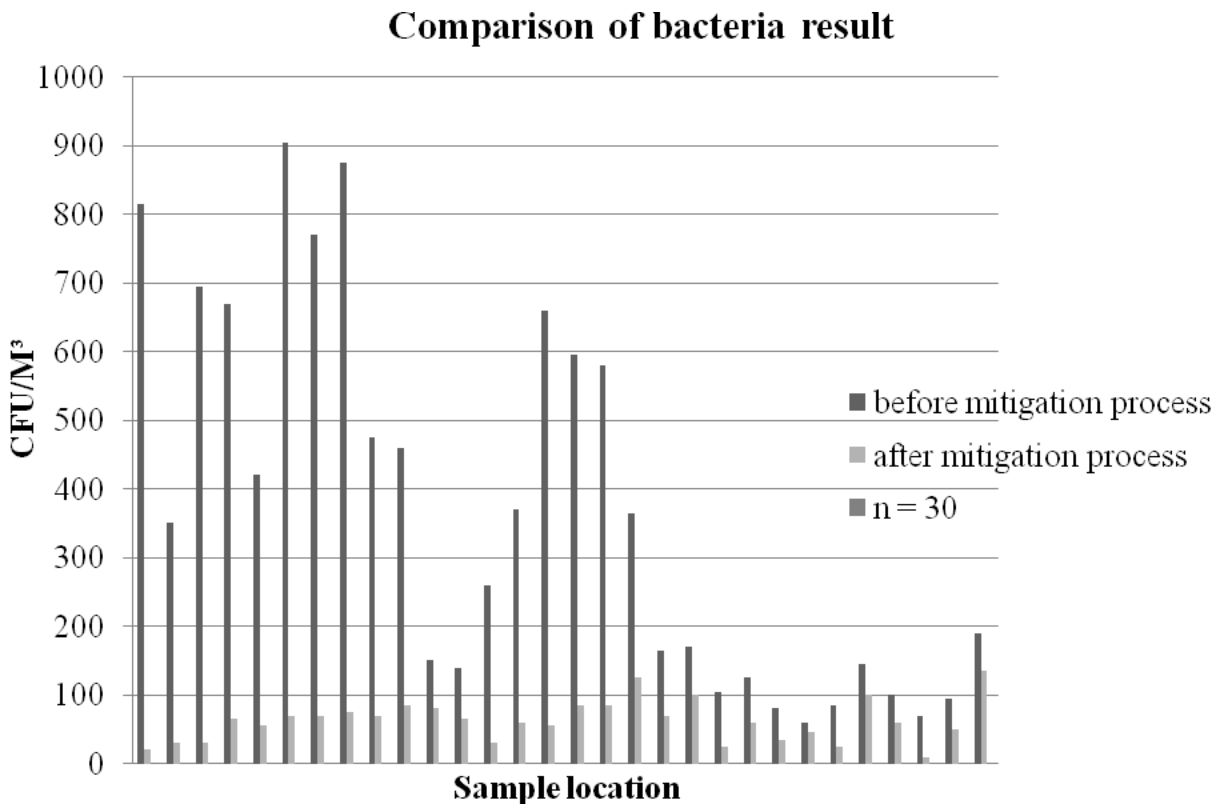


Figure 5. Bacteria air sampling result before and after mitigation process.

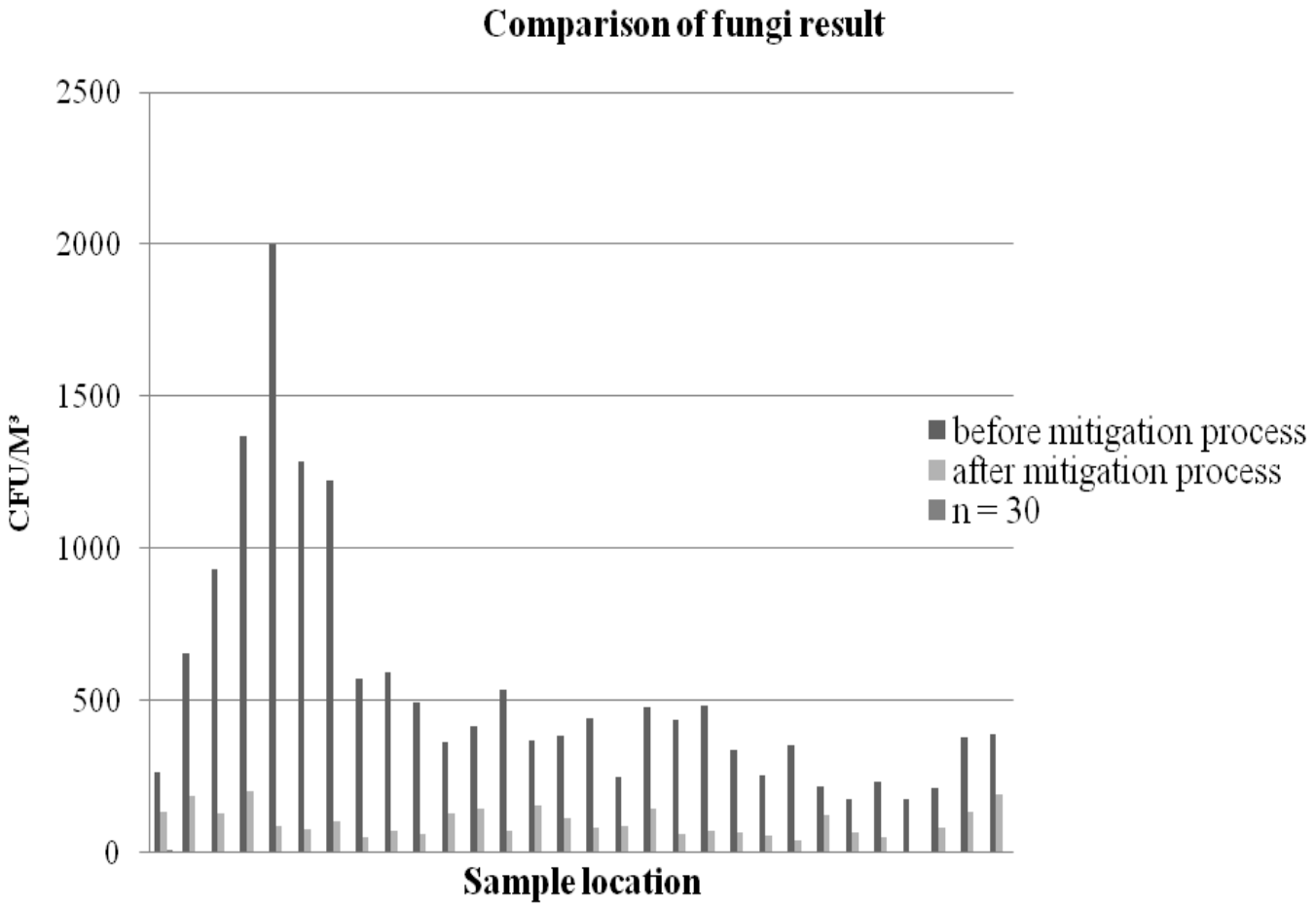


Figure 6. Yeast and mold air sampling result before and after mitigation process.

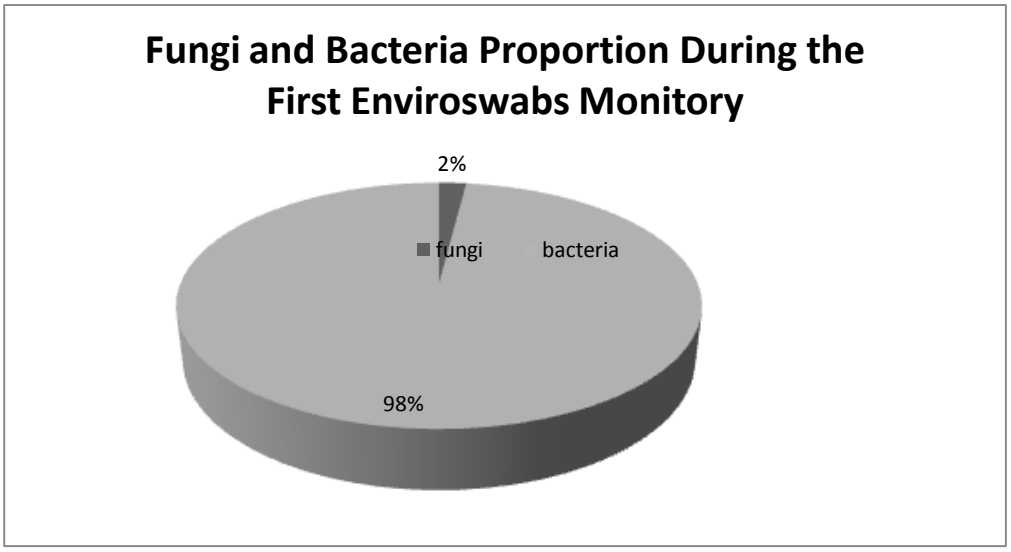


Figure 7. Proportion of fungi and bacteria after the first Enviroswabs monitory.

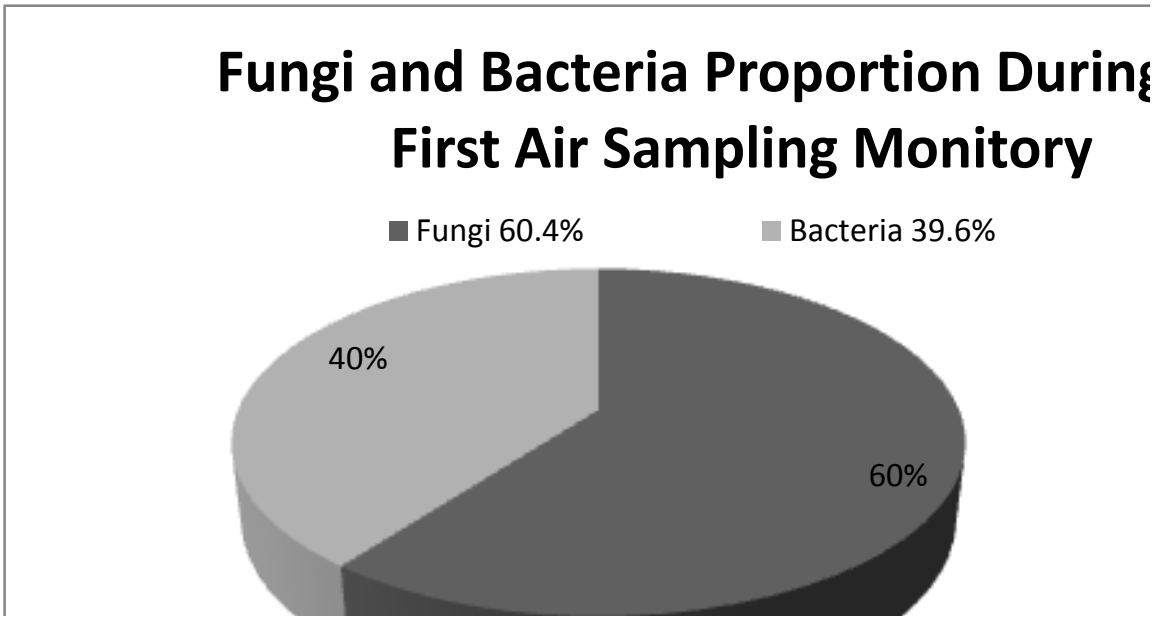
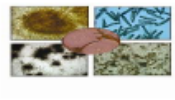


Figure 8. Proportion of fungi and bacteria after the first air sampling.

APPENDIX

Appendix 1. Particle Dust Characterization Analytical Result First Monitory



RAMS Environmental Laboratory Inc.

EMPAT #169743

Particle Dust Characterization

Client: Waleska Diaz Muñoz, Urb. Villa Victoria Calle 11 P-8,Caguas,PR 00725
Client Project ID: Investigación de Tesis
REL Report No.: REL09219PCA

Date Sampled: June 9, 2009
Date Received: June 12, 2009
Date Analyzed: June 24, 2009

Lab Sample ID / Client sample ID / Location	Air vol. (m3)	Stucture ID	Counts of Structures	Counts/m3	Percentage
REL09219PCA -01	0.075	**Carbonaceous Materials**	92	4,784	NA
443343		**Dust** [c f]	>800	>41,600	NA
# 1		**Fibers**			
		Natural	9	468	NA
		Wood	1	52	NA
		Fungal Matter			
		Alternaria	1	52	NA
		ascospores	8	416	NA
		Cladosporium	26	1,352	NA
		Curvularia	3	156	NA
		Myxomycetes/Periconia/Rusts/Smuts	1	52	NA
		Nigrospora	1	52	NA
		Penicillium/Aspergillus*	57	2,964	NA
		Human Hair	3	156	NA
		Insect Parts	2	104	NA
		Plant Cells Matter	1	52	NA
		Skin Cells	494	25,688	NA
		TOTAL	**>1,499**	**>77,948**	**NA**
REL09219PCA -02	0.075	**Carbonaceous Materials**	51	2,652	NA
443336		**Dust** [c f]	>800	>41,600	NA
# 2		**Fibers**			
		Natural	13	676	NA
		Wood	2	104	NA
		Fungal Matter			
		Alternaria	3	156	NA
		ascospores	5	260	NA
		Cladosporium	19	988	NA
		Curvularia	8	416	NA
		Ganoderma	2	104	NA
		Myxomycetes/Periconia/Rusts/Smuts	8	416	NA
		Nigrospora	2	104	NA
		Human Hair	3	156	NA
		Insect Parts	5	260	NA
		Skin Cells	290	15,080	NA
		TOTAL	**>1,211**	**>62,972**	**NA**
REL09219PCA -03	0.075	**Carbonaceous Materials**	103	5,356	NA
443351		**Dust** [c f]	>800	>41,600	NA
# 3		**Fibers**			
		Natural	3	156	NA
		Synthetic	2	104	NA
		Wood	3	156	NA
		Fungal Matter			
		ascospores	4	208	NA
		Gliomastix	2	104	NA
		Myxomycetes/Periconia/Rusts/Smuts	15	780	NA
		Nigrospora	2	104	NA
		Penicillium/Aspergillus*	11	572	NA
		Human Hair	9	468	NA
		Pollen	1	52	NA
		Skin Cells	145	7,540	NA
		TOTAL	**>1,100**	**>57,200**	**NA**

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Detection Limit: one fungal spore which is the lowest possible count to be detected.
Concentration percentage is rounded to two significant figures
25% of trace counted

* Samples overloaded with particles (skin flakes, dust, manmade vitreous fibers, synthetic fibers, or any unidentifiable matter). Probability that fungal structures may be misidentified or overlooked.
[b] Counts of structures based on >50 in at least one traverse (passes) section.
[c] Counts of structures based on >100 counts in the entire traceable area observed.
[d] Clumps of conidia with a distinctive green pigment typical of Trichoderma.
* The spores of Penicillium/Aspergillus (and others such as Acremonium, Paecilomyces) are very similar, small and round, colorless or slightly pigmented and therefore cannot be differentiated due to these similarities.
[f] The dust observed was composed of minute solid colorless particles.

Approved by: _____
Ruth Otero
Laboratory Director

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Appendix 2. Particle Dust Characterization Analytical Result Second Monitory

RAMS Environmental Laboratory Inc.

EMPAT #169743

Particle Dust Characterization

Client: Waleska Diaz Muñoz, Urb. Villa Victoria Calle 11 P-8,Caguas,PR 00725
Client Project ID: Investigación de Tesis
REL Report No.: REL09400PCA

Date Sampled: October 6, 2009
Date Received: October 13, 2009
Date Analyzed: January 11, 2010

Lab Sample ID / Client sample ID / Location	Air vol. (m3)	Stucture ID	Counts of Structures	Counts/m3	Percentage
REL09400PCA -01	0.075	**Carbonaceous Materials**	24	1,248	3%
443314		**Dust** [c, f]	>800	>41,600	93%
# 1		**Fungal Matter**			
		ascospores	4	208	<1%
		basidiospores	2	104	<1%
		Curvularia	2	104	<1%
		Ganoderma	4	208	<1%
		Skin Cells	16	832	2%
		Starch	12	624	1%
		TOTAL	**>864**	**>44,928**	**100%**
REL09400PCA -02	0.075	**Carbonaceous Materials**	16	832	2%
443333		**Dust** [c, f]	>800	>41,600	97%
# 2		**Fungal Matter**			
		Curvularia	1	52	<1%
		Drechslera/Bipolaris/Helminthosporium	1	52	<1%
		Skin Cells	8	416	1%
		TOTAL	**>826**	**>42,952**	**100%**
REL09400PCA -03	0.075	**Carbonaceous Materials**	24	1,248	3%
443312		**Dust** [c, f]	>800	>41,600	93%
# 3		**Fungal Matter**			
		Drechslera/Bipolaris/Helminthosporium	1	52	1%
		Skin Cells	32	1,664	4%
		TOTAL	**>857**	**>44,564**	**100%**
REL09400PCA -04	0.075	**Carbonaceous Materials**	16	832	2%
443325		**Dust** [c, f]	>800	>41,600	92%
# 4		**Fungal Matter**			
		Curvularia	1	52	<1%
		Drechslera/Bipolaris/Helminthosporium	1	52	<1%
		Fusarium	1	52	<1%
		Penicillium/Aspergillus [e]	22	1,144	3%
		Skin Cells	24	1,248	3%
		TOTAL	**>865**	**>44,980**	**100%**
REL09400PCA -05	0.075	**Carbonaceous Materials**	24	1,248	3%
443311		**Dust** [c, f]	>800	>41,600	97%
# 5		**Fungal Matter**			
		ascospores	2	104	<1%
		Pollen	1	52	<1%
		TOTAL	**>827**	**>43,004**	**100%**
REL09400PCA -06	0.075	**Carbonaceous Materials**	40	2,080	5%
443323		**Dust** [c, f]	>800	>41,600	91%
# 6		**Fungal Matter**			
		Cladosporium	26	1,352	3%
		Insect Parts	1	52	<1%
		Skin Cells	16	832	2%
		TOTAL	**>883**	**>45,916**	**100%**

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Lab Sample ID Client sample ID Location	Air vol. (m3)	Stucture ID	Counts of Structures	Counts/m3	Percentage
REL09400PCA -07	0.075	**Carbonaceous Materials**	16	832	2%
443320		**Dust** [c, f]	>800	>41,600	98%
Bg 001		**Fungal Matter**			
		ascospores	2	104	<1%
		Curvularia	1	52	<1%
		Nigrospora	1	52	<1%
		TOTAL	**>820**	**>42,640**	**100%**
REL09400PCA -08	0.075	**Carbonaceous Materials**	24	1,248	3%
443348		**Dust** [c, f]	>800	>41,600	93%
Bg 002		**Starch**	40	2,080	5%
		TOTAL	**>864**	**>44,928**	**100%**

Detection Limit: one fungal spore which is the lowest possible count to be detected.
Concentration percentage is rounded to two significant figures
25% of trace counted

[a] Samples overloaded with particles (skin flakes, dust, manmade vitreous fibers, synthetic fibers, or any unidentifiable matter). Probability that fungal structures may be misidentified or overlooked.

[b] Counts of structures based on >50 in at least one traverse (passes) section.

[c] Counts of structures based on >100 counts in the entire traceable area observed.

[d] Clumps of conidia with a distinctive green pigment typical of Trichoderma.

[e] The spores of Penicillium/Aspergillus (and others such as Acremonium, Paecilomyces) are very similar, small and round, colorless or slightly pigmented and therefore cannot be differentiated due to these similarities.

[f] The dust observed was composed of minute solid colorless particles.

[g] The dust observed was composed of builders sand, brick dust and road dust like particles.

Approved by: _____
Ruth Otero
Laboratory Director

425 SW 17th Avenue, Miami, FL 33135 - Tel: (305) 541-9959 / Fax: (305) 541-9965 - www.ramslab.com

Appendix 3. Sterile Carpet Analytical Report (#10554)

CLENDO INDUSTRIAL LABORATORY
PO BOX 6670 BAYAMON PR 00960
TEL 787-620-8800
FAX 787-999-7149
Email: clendoind@prtc.net

FDA No. 30033383013

CLENDO CONTROL NO. 10554

CUSTOMER SAMPLE ANALYSIS REPORT

A. CUSTOMER NAME	WALESKA DIAZ
B. CLIENT NUMBER	0590
C. ADDRESS	Urb. Villa Victoria Caguas P.R. 00725
D. TELEPHONE	787-429-6644
E. FAX	N/A
F. CONTACT PERSON	WALESKA DIAZ
G. DATE AND TIME OF SAMPLE RECEIPT	07-29-09 / 16:30
H. DATE / TIME OF SAMPLING	N/A / N/A
I. QUANTITY AND TYPE OF SAMPLES	7
J. SAMPLE CONDITION	SDA PLATES
K. SAMPLES COLLECTOR NAME	CLIENT
L. DATE/TIME ANALYSIS BEGINS:	07-29-09 / 16:50

M. RESULTS

PROCEDURE PERFORMED AS PER:
SOP No.300-027 ISOLATION AND IDENTIFICATION OF YEASTS AND MOLDS

REFERENCES:
ATLAS OF CLINICAL FUNGI 2ND EDITION 2000
INTRODUCTION TO FOOD-AND AIRBORNE FUNGI SIXTH EDITION 2000
DAVISE H. LARONE, MEDICALLY IMPORTANT FUNGI-A GUIDE TO IDENTIFICATION 3RD EDITION-1995

SAMPLE	IDENTIFICATION
10554-1 "Alfombra Posterior"	Fonsecaea pedrosoi
10554-2 "Alfombra Caballo con Alzones"	Phialophora reptans
10554-3 "Caballo con Alzones"	Phialophora richardsiae
10554-4 "Matress de Fosa"	Microsporum ferrugineum
10554-5 "Alfombra Frontal"	Microsporum audouinii
10554-6 "Cubiculos de Madera"	Phialophora verrucosa
10554-7 "Piso Entrada"	Candida krusei

N. COMMENTARIES

Refer to attached Yeasts/Molds Identification Forms!

Performed by: Glorimar Velazco-Lab Analyst		DATE	09/21/09
Approved by: Lizzette M. Rivera, BSMT - Laboratory Director (Lic.2015)		DATE	09/21/09

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No.300-027
IM CONTROL NO. 346

IDENTIFICATION OF MOLDS

ISOLATE NO. : 10554-1 | CUSTOMER: WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	Color: DARK OLIVE NEARLY BLACK APPEARANCE: VELVETY, FLAT WITH A CONVEX CONE-SHAPED PROTUSION IN THE CENTER ; SLIGHTLY IMBIBED IN THE MEDIUM.	
BOTTOM	COLOR: BLACK APPEARANCE: FELT-LIKE	

MICROSCOPIC EXAMINATION

SLIDE CULTURE CHAMBER

DESCRIPTION

HYPHAE ARE SEPTATED, BRANCHED AND BROWN. CONIDIA ARE DARK. CONIDIA FORMATION IN THIS SPECIES IS CLADOSPORIUM TYPE: CONIDIOPHORES ARE ERECT AND GIVE RISE TO LARGE PRIMARY SHIELD-SHAPED CONIDIA THAT IN TURN PRODUCE SHORT, BRANCHING CHAINS OF OVAL CONIDIA HAVING SMALL DARK HILA (SCARS OF ATTACHMENT) THAT READY BREAK LOOSE FROM CONIDIOPHORES WHEN THEY ARE MOUNTED IN A DROP OF FLUID FOR MICROSCOPIC EXAMINATION.

IDENTIFICATION: FONSECAEA PEDROSOI

IT IS A COMMON CONTAMINANT ISOLATED FROM SOIL, WOOD, ROTTEN PALM TREES, TRIBUNES, AIR AND TIMBER. IT IS THE MOST COMMON WORLDWIDE CAUSE OF CHROMOBLASTOMYCOSIS : WARTY NODULES, TUMOR-LIKE MASSES, CAULIFLOWER-LIKE LESSIONS IN SUBCUTANEOUS TISSUE OF THE LOWER EXTREMETES; BUT ARE SOMETIMES IN OTHER EXPOSD AREAS SUCH AS THE HANDS, HEAD REGION OR TRUNK. ON VERY RARE OCCASION THE ORGANISM HAS BEEN KNOWN TO CAUSE INTERNAL INFECTIONS.

PERFORMED BY: GLORIMAR VELAZCO | DATE: 09-08-09

REVIEWED BY: LIZZETTE M. RIVERA | DATE: 09-08-09

Revision Date: 03-03-04

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No.300-027
IM CONTROL NO. 347

IDENTIFICATION OF MOLDS

ISOLATE NO. : 10554-2 CUSTOMER: WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	Color: OLIVE BLACK APPEARANCE: FLAT WITH ROUGH CENTER	
BOTTOM	COLOR: BLACK APPEARANCE: FELT-LIKE	

MICROSCOPIC EXAMINATION

SLIDE CULTURE CHAMBER

DESCRIPTION

TURULOSE HYPHAE PRESENT AT COLONY CENTRE. HYPHAE 1.5-2.2 µM WIDE. OLIVACEOUS PHIALIDIC COLLARETTES MOSTLY SESSILE ON UNDIFFERENTIATED CELLS, SOMETIMES ON TERMINAL CELLS; RARELY LATERAL PHIALIDES PRESENT. COLLARETTES CONSPICUOUS, SLIGHTLY DARKER THAN THE REST OF THE PHIALIDE, NARROW FUNNEL-SHAPED TO ALMOST CYLINDRICAL, UP TO 2.5 µM LONG. CONIDIA SUBHYALINE, OBOVOIDAL, ABOUT 3.0 x 1.8 µM, FINALLY INFLATING AND BECOMING MELANIZED.

IDENTIFICATION: PHIALOPHORA REPTANS

PHIALOPHORA SPECIES ARE AMONG THE CAUSES OF CHROMOBLASTOMYCOSIS AND PHAEOHYPHOMYCOSES. PHIALOPHORA VERRUCOSA IS THE PRINCIPAL CAUSATIVE AGENT OF CHROMOBLASTOMYCOSIS IN TROPICAL AND SUBTROPICAL AREAS, PARTICULARLY AT JAPAN AND SOUTH AMERICA. THE CLINICAL FORMS OF PHAEOHYPHOMYCOSIS MAY BE DIVERSE, INCLUDING CUTANEOUS INFECTIONS, SUBCUTANEOUS CYSTS, KERATITIS, ENDOCARDITIS, ARTHRITIS, OSTEOMYELITIS, CEREBRAL INFECTION, FATAL HEMORRHAGE, AND DISSEMINATED INFECTION. PHIALOPHORA EUROPAEA HAS BEEN ISOLATED FROM CUTANEOUS AND NAIL INFECTIONS IN NORTH-WESTERN EUROPE.

PERFORMED BY: GLORIMAR VELAZCO DATE: 09-08-09

REVIEWED BY: LIZZETTE M. RIVERA DATE: 09-08-09

Revision Date: 03-03-04

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No. 300-027
IM CONTROL NO. 348

IDENTIFICATION OF MOLDS

ISOLATE NO. : 10554-3 | CUSTOMER: WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	Color: GRAYISH-BROWN APPEARANCE: POWDERY	
BOTTOM	COLOR: GREY-BROWN APPEARANCE: FELT-LIKE	

MICROSCOPIC EXAMINATION

SLIDE CULTURE CHAMBER

DESCRIPTION

TWO CONIDIAL TYPES ARE PRODUCED: HYALINE CONIDIA WHICH ARE ALLANTOID OR CYLINDRICAL ARE FORMED ON INCONSPICUOUS, BUTT-SHAPED LATERAL OUTGROWTHS FROM THIN-WALLED HYPHAE, HAVING MINUTE COLLARETES; BROWN THICK WALLED CONIDIA WHICH ARE SUBSPHERICAL ARE FORMED ON DARK BROWN, SLENDER, TAPERING PHIALIDES WITH FLARING COLLARETTES. INTERMEDIATE TYPES ARE OFTEN PRESENT.

IDENTIFICATION: PHIALOPHORA REPTANS

THE SPECIES IS AN UNCOMMON CAUSE OF SUBCUTANEOUS PHAEOHYPHOMYCOTIC CYSTS AFTER TRAUMATIC IMPLANTATION, MOSTLY IN PATIENTS DEBILITATED, DIABETES MELLITUS. IN SEVERLY IMMUNOCOMPROMISED PATIENTS RECIDIVES AFTER SURGERY ARE FREQUENT OBSERVED. THE FUNGUS NATURALLY OCCURS AS A SOFT-ROT FUNGUS ON WOOD.

PERFORMED BY: GLORIMAR VELAZCO — DATE: 09-08-09

REVIEWED BY: LIZZETTE M. RIVERA — DATE: 09-08-09

Revision Date: 03-03-04

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No.300-027
IM CONTROL NO. 349

IDENTIFICATION OF MOLDS

ISOLATE NO.: 10554-4	CUSTOMER: WALESKA DIAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	COLOR: YELLOW APPEARANCE: SMOOTH	
BOTTOM	COLOR: BROWNISH APPEARANCE: WAXY	

MICROSCOPIC EXAMINATION
SLIDE CULTURE CHAMBER

DESCRIPTION	
SEPTATED HYPHAE WITH MACRO-AS WELL AS MICROCONIDIA PRESENT, SOLITARY OR IN SMALL CLUSTERS AT THE END OF OR ALONGSIDE UNDIFFERENTIATED HYPHAE. MACROCONIDIA HAVE WALLS THAT ARE RELATIVELY THIN AND USUALLY SMOOTH BUT SOMETIMES SLIGHTLY ROUGH AT THE TIP; OFTEN DISTINCTIVELY CURVED WITH A TAPERING BASE.	

IDENTIFICATION: MICROSPORUM FERRUGINEUM

WORLD-WIDE DISTRIBUTION; GEOPHILIC DERMATOPHYTES, OCCURRING ON FEATHERS; MAINLY ISOLATED FROM ARID, ALKALINE SOILS. ARE FILAMENTOUS FUNGI THAT ARE ABLE TO DIGEST AND OBTAIN NUTRIENTS FROM KERATIN (A RELATIVELY INSOLUBLE PROTEIN; THE PRIMARY COMPONENT OF SKIN, HAIR, AND NAILS). WHEN THE ORGANISM GROWS ON THE HOST, LIVING TISSUE IS NOT USUALLY INVADED; THE ORGANISM SIMPLY COLONIZES THE KERATINIZED OUTERMOST LAYER OF THE SKIN.

PERFORMED BY:	GLORIMAR VELAZCO	DATE:	09-08-09
REVIEWED BY:	LIZZETTE M. RIVERA	DATE:	09-08-09

CLENDO
Industrial Laboratories Inc.

CR-073	
SOP No. 300-027	
IM. CONTROL NO. 350	

IDENTIFICATION OF MOLDS

ISOLATE NO.: 10554-5	CUSTOMER: WALESKA DIAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	COLOR: GRAYISH APPEARANCE: SILKY	
BOTTOM	COLOR: LIGHT SALMON APPEARANCE: WAXY	

MICROSCOPIC EXAMINATION

SLIDE CULTURE CHAMBER

DESCRIPTION	
SEPTATED HYPHAE WITH TERMINAL CHLAMYDOCONIDIA THAT ARE OFTEN POINTED ON THE END. PECTINATE HYPHAE ARE COMMONLY SEEN. THIS SPECIES IS USUALLY ALMOST DEVOID OF CONIDIA BUT SOMETIMES FORMS POORLY SHAPED, ABORTIVE MACROCONIDIA OR OCCASIONALLY MICROCONIDIA HTAT ARE IDENTICAL TO THOSE OCCURING IN OTHER SPECIES OF MICROSPORUM	

IDENTIFICATION: MICROSPORUM FERRUGINEUM

WORLD-WIDE DISTRIBUTION; GEOPHILIC DERMATOPHYTES, OCCURRING ON FEATHERS; MAINLY ISOLATED FROM ARID, ALKALINE SOILS. ARE FILAMENTOUS FUNGI THAT ARE ABLE TO DIGEST AND OBTAIN NUTRIENTS FROM KERATIN (A RELATIVELY INSOLUBLE PROTEIN; THE PRIMARY COMPONENT OF SKIN, HAIR, AND NAILS). WHEN THE ORGANISM GROWS ON THE HOST, LIVING TISSUE IS NOT USUALLY INVADED; THE ORGANISM SIMPLY COLONIZES THE KERATINIZED OUTERMOST LAYER OF THE SKIN.

PERFORMED BY:	GLORIMAR VELAZCO	DATE:	09-08-09
REVIEWED BY:	LIZZETTE M. RIVERA	DATE:	09-08-09

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No. 300-027
IM CONTROL NO. 351

IDENTIFICATION OF MOLDS

ISOLATE NO. : 10554-6 | CUSTOMER: WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	Color: DARK GREENISH-BROWN APPEARANCE: GRANULAR	
BOTTOM	COLOR: BLACK APPEARANCE: FELT-LIKE	

MICROSCOPIC EXAMINATION

SLIDE CULTURE CHAMBER

DESCRIPTION	
HYPHAE ARE BROWN, BRANCHED, AND SEPTATE. PHIALIDES ARE VASE SHAPED WITH A FLARED CUPLIKE COLLERATTE. ROUND TO OVAL CONIDIA ACCUMULATE AT THE APEX OF THE PHIALIDE GIVING THE APPEARANCE OF A VASE OF FLOWERS. IN TISSUE, THE ORGANISM APPEARS AS DARK, ROUND, SEPTATE CELLS.	

IDENTIFICATION: PHIALOPHORA REPTANS

CAUSES CHROMOBLASTOMYCOSIS, OF WHICH IT IS THE SECOND MOST COMMON ETIOLOGIC AGENT WORLDWIDE (THE MOST COMMON IN NORTH AMERICA). IT IS ALSO AN ETIOLOGIC AGENT OF PHAEOHYPHOMYCOSES AND, ON RARE OCCASION, MYCETOMA.

PERFORMED BY: GLORIMAR VELAZCO DATE: 09-08-09

REVIEWED BY: LIZZETTE M. RIVERA DATE: 09-08-09

Revision Date: 03-03-04

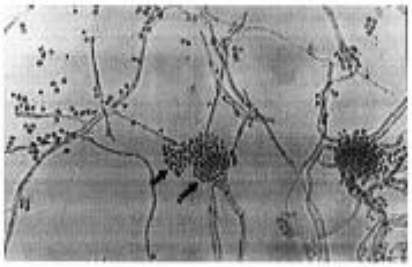
CLENDO
Industrial Laboratories Inc.

CR-074	
SOP No. 300-027	
IM CONTROL 352	

IDENTIFICATION OF YEASTS

ISOLATE ID:	10554-7	CUSTOMER:	WALESKA DIAZ

MICROSCOPIC EXAMINATION

SAMPLE COLONY DESCRIPTION	MICROSCOPIC APPEARANCE
COLOR: CREAM	
APPEARANCE: FLAT, DRY	

IDENTIFICATION

IDENTIFICATION OF THE SAMPLE

BUDDING CELLS ELLIPSOIDAL TO CYLINDRICL, EITH FLT, WELL-CIRCUMSCRIBED SCARS. PSEUDOMYCELIUM OFTEN PRESENT, ROBUST; CELLS LIBERATED AND ARRANGED PARALELL TO THE MAIN AXIS.

IDENTIFICATION:	CANDIDA KRUSEI

AN EMERGING OPPORTUNISTIC PATHOGEN: HAS FREQUENTLY BEEN FOUND TO COLONIZE GASTROINTESTINAL, RESPIRATORY, AND URINARY TRACTS OF PATIENTS UNDERGOING EPISODES OF THERAPY-INDUCED GRANULOCYTOPENIA, A COMMON CONTAMINANT. KNOWN TO CAUSE INFECTIONS IN PARTICULARLY SUSCEPTIBLE INDIVIDUALS.

PERFORMED BY:	GLORIMAR VELAZCO	DATE:	09-22-09
REVIEWED BY:	LIZZETTE M. RIVERA	DATE:	09-22-09

Revision Date: 05/08

Appendix 4. Enviroswabs Analytical Report

(# 10558, #10559)

CLENDO INDUSTRIAL LABORATORY
PO BOX 579 BAYAMON PR 00960
TEL 787-620-8800
FAX 787-999-7149
Email: clendoind@prtc.net

FDA No. 30033383013

CLENDO CONTROL NO. 10558

CUSTOMER SAMPLE ANALYSIS REPORT

A. CUSTOMER NAME	WALESKA DIAZ
B. CLIENT NUMBER	0590
C. ADDRESS	URB. VILLA VICTORIA CAGUAS P.R. 00725
D. TELEPHONE	787-429-6644
E. FAX	N/A
F. CONTACT PERSON	WALESKA DIAZ
G. DATE /TIME OF SAMPLE RECEIPT	06-15-09 / 11:55
H. DATE / TIME OF SAMPLING	06-15-09 / 11:30
I. QUANTITY OF SAMPLES	24
J. DESCRIPTION OF SAMPLES	ENVIROSWABS
K. SAMPLES COLLECTOR NAME	SAMUEL SERRANO
L. DATE/TIME ANALYSIS BEGINS:	06-15-09 / 13:00
M. RESULTS	

PROCEDURE PERFORMED AS PER:

SOP NO.100-023 PROCEDURE FOR ENVIRONMENTAL AIR SAMPLING USING SAS SUPER 100 SURFACE AIR SYSTEM

REFERENCES:

"MANUAL OF ENVIRONMENTAL MICROBIOLOGY" 2nd EDITION 2002

ENVIROSWABS SAMPLING

SAMPLE	BACTERIA (2ND DAY COUNT)	YEAST/MOLD (7TH DAY COUNT)	IDENTIFICATION
10558-1 MENS BATHROOM	TNTC COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10558-2 GIRLS BATHROOM	TNTC COLONIES/50cm^2	0 COLONIES/50cm^2	89% Brevibacillus choshinensis
10558-3 RIGHT SIDE HALLWAY	2000 COLONIES/50cm^2	30 COLONIES/50cm^2	91% Staphylococcus epidermidis Aspergillus avenaceus
10558-4 LEFT SIDE HALLWAY	TNTC COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10558-5 WOODEN CUBICLE RIGHT	TNTC COLONIES/50cm^2	0 COLONIES/50cm^2	98% Staphylococcus xylosus 86% Kocurria kristinae
10558-6 WOODEN CUBICLE LEFT	2300 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10558-7 FRONT FLOOR (A) RIGHT	TNTC COLONIES/50cm^2	250 COLONIES/50cm^2	Streptomyces somaliensis

CLENDO INDUSTRIAL LABORATORY
PO BOX 579 BAYAMON PR 00960
TEL 787-620-8800
FAX 787-999-7149
Email: clendoind@prtc.net

FDA No. 30033383013

CLENDO CONTROL NO.
10558

CUSTOMER SAMPLE ANALYSIS REPORT

10558-8 FRONT FLOOR (B) LEFT	2240 COLONIES/50cm^2	215 COLONIES/50cm^2	97% Sphingomonas paucimobilis
10558-9 FRONT RUG (A)	2370 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10558-10 FRONT RUG (B)	110 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10558-11 FRONT RUG (C)	2560 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10558-12 FRONT RUG (D)	150 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10558-13 BACK RUG (A)	140 COLONIES/50cm^2	10 COLONIES/50cm^2	N/A
10558-14 BACK RUG (B)	2650 COLONIES/50cm^2	30 COLONIES/50cm^2	98% Sphingomonas paucimobilis
10558-15 BACK RUG (C)	500 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10558-16 BACK RUG (D)	208 COLONIES/50cm^2	0 COLONIES/50cm^2	86% Staphylococcus equorum
10558-17 FLOOR MATS (A)	2410 COLONIES/50cm^2	90 COLONIES/50cm^2	85% Bacillus mycoides
10558-18 FLOOR MATS (B)	40 COLONIES/50cm^2	25 COLONIES/50cm^2	89% Bacillus fusiformis Aspergillus orizae Aspergillus avenaceus
10558-19 FLOOR MATS (C)	1780 COLONIES/50cm^2	15 COLONIES/50cm^2	89% Sphingomonas paucimobilis 95% Micrococcus lylae
10558-20 FLOOR MATS (D)	40 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10558-21 FOAM PIT (A)	100 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A

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TEL 787-620-8900
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Email: clendoind@prtc.net

FDA No. 30033383013

CLENDO CONTROL NO. 10558

CUSTOMER SAMPLE ANALYSIS REPORT

10558-22 FOAM PIT (B)	200 COLONIES/50cm^2	0 COLONIES/50cm^2	94% Staphylococcus xylosus
10558-23 RINGS A (BABY GYM)	40 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10558-24 RING B	30 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A

N. COMMENTS

PRINCIPLE OF THE SURFACE AIR SYSTEM (SAS) SUPER 100: AIR IS ASPIRATED FOR VARIABLE TIME (IN THIS STUDY=1,000L FOR CLEAN ROOMS/4MINUTES) THROUGH A COVER WHICH HAVE BEEN MACHINED WITH A SERIES OF SMALL HOLES OF A SPECIAL DESIGN. THE RESULTING LAMINAR AIR FLOW IS DEIRECTED ONTO THE AGAR SURFACE OF A "CONTACT PLATE" CONTAINING MEDIUM CONSISTENT WITH THE MICROBIOLOGICAL EXAMINATION TO BE PERFORMED. WHEN THE PRESET SAMPLING CYCLE IS COMPLETED, THE PLATE IS REMOVED AND INCUBATED. THE ORGANISMS ARE THEN VISIBLE TO THE NAKED EYE AND CAN BE COUNTED FOR AN ASSESSMENT OF THE LEVEL OF CONTAMINATION.

50 CFU / M^3 OR 1.42 CFU / FT^3 OF YEASTS / MOLDS OR MORE IN THE ENVIRONMENT IS CONSIDERED A SIGNIFICATIVE RISK FACTOR FOR RESPIRATORY PROBLEMS OR COMPLICATIONS, EYES AND SKIN IRRITATIONS.

PERFORMED BY: GLORIMAR VELAZCO - LABORATORY ANALYST		DATE	06-22-09
REVIEWED BY: LIZZETTE M. RIVERA, B.S.M.T. - LABORATORY DIRECTOR (LIC # 2015)		DATE	06-22-09

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Sep 8, 2009 11:27 GMT-04:00
Printed by: grelazco
Report Version: 3 of 3

Isolate Group: 10558-2-1
Last Updated: Jul 15, 2009 13:28 GMT-04:00 By: jayala

Bionumber: 1703101004014020
Selected Organism: Brevibacillus choshinensis

Comments:	

Identification Information	Card:	BCL	Lot Number:	239124110	Expires:	May 8, 2010 12:00 GMT-04:00
	Completed:	Jul 3, 2009 03:19 GMT-04:00	Status:	Final	Analysis Time:	14.25 hours
Selected Organism	89% Probability		Brevibacillus choshinensis			
	Bionumber:	1703101004014020			Confidence:	Low discrimination
SRF Organism						

Analysis Organisms and Tests to Separate:

Alicyclobacillus acidoterrestris	VP(90),GELATIN(90),50C(90),NaCl 5%(90),
Brevibacillus choshinensis	VP(10),GELATIN(10),50C(10),NaCl 5%(10),
Low Discrimination Organism	

Analysis Messages:

Contraindicating Typical Biopattern(s)

Alicyclobacillus acidoterrestris	BGLU(12),AGLU(1),dGLU(70),BXYL(12),OLD(70),PyrA(70),
Brevibacillus choshinensis	BGLU(24),AGLU(12),BXYL(12),dRIB(8),AspA(76),PyrA(88),GlyA(76),

Biochemical Details

1	BXYL	+	3	LysA	-	4	AspA	-	5	LeuA	+	7	PheA	+	8	ProA	+
9	BGAL	-	10	PyrA	-	11	AGAL	-	12	AlaA	+	13	TyrA	+	14	BNAG	-
15	APPA	+	18	CDEX	-	19	dGAL	-	21	GLYG	-	22	INO	-	24	MdG	-
25	ELLM	+	26	MdX	-	27	AMAN	-	29	MTE	-	30	GlyA	-	31	dMAN	-
32	dMNE	-	34	dMLZ	-	36	NAG	-	37	PLE	-	39	IRHA	-	41	BGLU	+
43	bMAN	-	44	PHC	-	45	PVATE	-	46	AGLU	+	47	dTAG	-	48	dTRE	-
50	INU	-	53	dGLU	-	54	dRIB	+	56	PSCNa	-	58	NaCl 6.5%	(-)	59	KAN	-
60	OLD	-	61	ESC	+	62	TTZ	-	63	POLYB_R	-						

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Sep 8, 2009 11:27 GMT-04:00
Printed by: gvelazco
Report Version: 3 of 3

Isolate Group: 10568-2-1
Last Updated: Jul 15, 2009 13:28 GMT-04:00 By: jayala

Bionumber: 1703101004014020
Selected Organism: Brevibacillus choshinensis

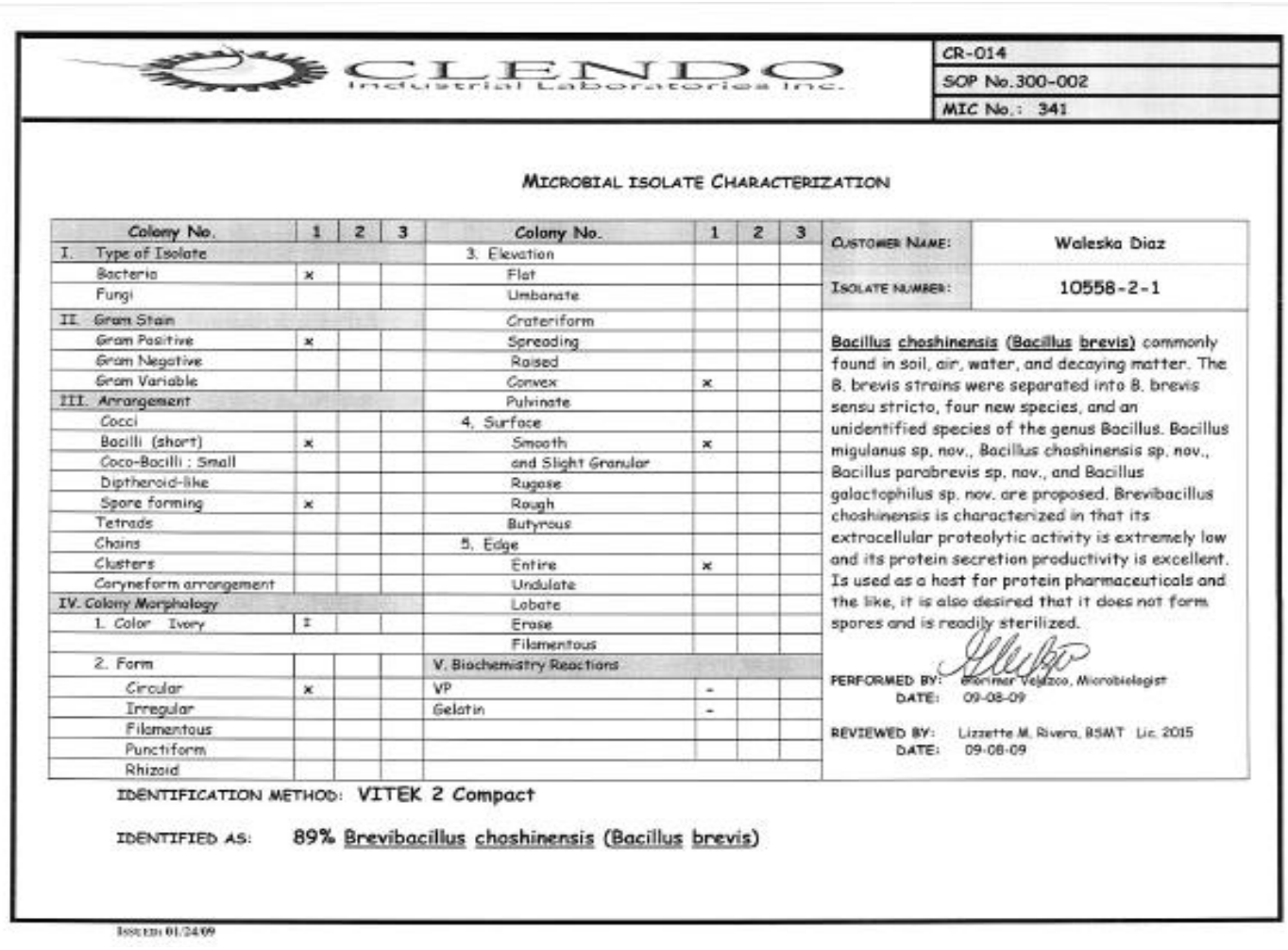
Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Sep 8, 2009 11:27 GMT-04:00	

09-08-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

Page 2 of 2



CLENDO Industrial Laboratories Inc.

CR-014
SOP No.300-002
MIC No.: 341

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive	x		
Gram Negative			
Gram Variable			
III. Arrangement			
Cocci			
Bacilli (short)	x		
Coco-Bacilli : Small			
Diptheroid-like			
Spore forming	x		
Tetrads			
Chains			
Clusters			
Coryneform arrangement			
IV. Colony Morphology			
1. Color Ivory	I		
2. Form			
Circular	x		
Irregular			
Filamentous			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Umbonate			
Crateriform			
Spreading			
Raised			
Convex	x		
Pulvinate			
4. Surface			
Smooth	x		
and Slight Granular			
Rugose			
Rough			
Butyrous			
5. Edge			
Entire	x		
Undulate			
Lobate			
Erose			
Filamentous			
V. Biochemistry Reactions			
VP	-		
Gelatin	-		

CUSTOMER NAME: Waleska Diaz

ISOLATE NUMBER: 10558-2-1

Bacillus choshinensis (Bacillus brevis) commonly found in soil, air, water, and decaying matter. The B. brevis strains were separated into B. brevis sensu stricto, four new species, and an unidentified species of the genus Bacillus. Bacillus migulanus sp. nov., Bacillus choshinensis sp. nov., Bacillus parabrevis sp. nov., and Bacillus galactophilus sp. nov. are proposed. Brevibacillus choshinensis is characterized in that its extracellular proteolytic activity is extremely low and its protein secretion productivity is excellent. Is used as a host for protein pharmaceuticals and the like, it is also desired that it does not form spores and is readily sterilized.

PERFORMED BY: Carmen Velazco, Microbiologist
DATE: 09-08-09

REVIEWED BY: Lizzette M. Rivera, BSMT Lic. 2015
DATE: 09-08-09

IDENTIFICATION METHOD: VITEK 2 Compact

IDENTIFIED AS: 89% Brevibacillus choshinensis (Bacillus brevis)

Issued 01/24/09

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Jun 23, 2009 09:34 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10658-3-1

Bionumber: 000400032221011
Selected Organism: Staphylococcus epidermidis

Comments:	n/a 06-23-09

Identification Information	Card:	GP	Lot Number:	242135240	Expires:	Aug 27, 2010 12:00 GMT-04:00
	Completed:	Jun 19, 2009 22:47 GMT-04:00	Status:	Final	Analysis Time:	7.75 hours
Selected Organism	91% Probability		Staphylococcus epidermidis			
	Bionumber:	000400032221011			Confidence:	Good identification

SRF Organism

Analysis Organisms and Tests to Separate: n/a 06-23-09

Analysis Messages:

Contraindicating Typical Biopattern(s)

Staphylococcus epidermidis: O129R(99),ADH1(91),BACI(84),

Biochemical Details

2	AMY	-	4	PIPLC	-	5	dXYL	-	8	ADH1	-	9	BGAL	-	11	AGLU	-
13	APPA	-	14	CDEX	-	15	AspA	-	16	BGAR	-	17	AMAN	-	19	PHOS	(+)
20	LeuA	-	23	ProA	-	24	BGURr	-	25	AGAL	-	26	PyrA	-	27	BGUR	-
28	AlaA	-	29	TyrA	-	30	dSOR	-	31	URE	+	32	POLYB	+	37	dGAL	-
38	dRIB	-	39	ILATk	+	42	LAC	-	44	NAG	-	45	dMAL	+	46	BACI	-
47	NOVO	-	50	NC6.5	+	52	dMAN	-	53	dMNE	+	54	MBdG	-	56	PUL	-
57	dRAF	-	58	O129R	-	59	SAL	-	60	SAC	+	62	dTRE	-	63	ADH2s	-
64	OPTO	+															

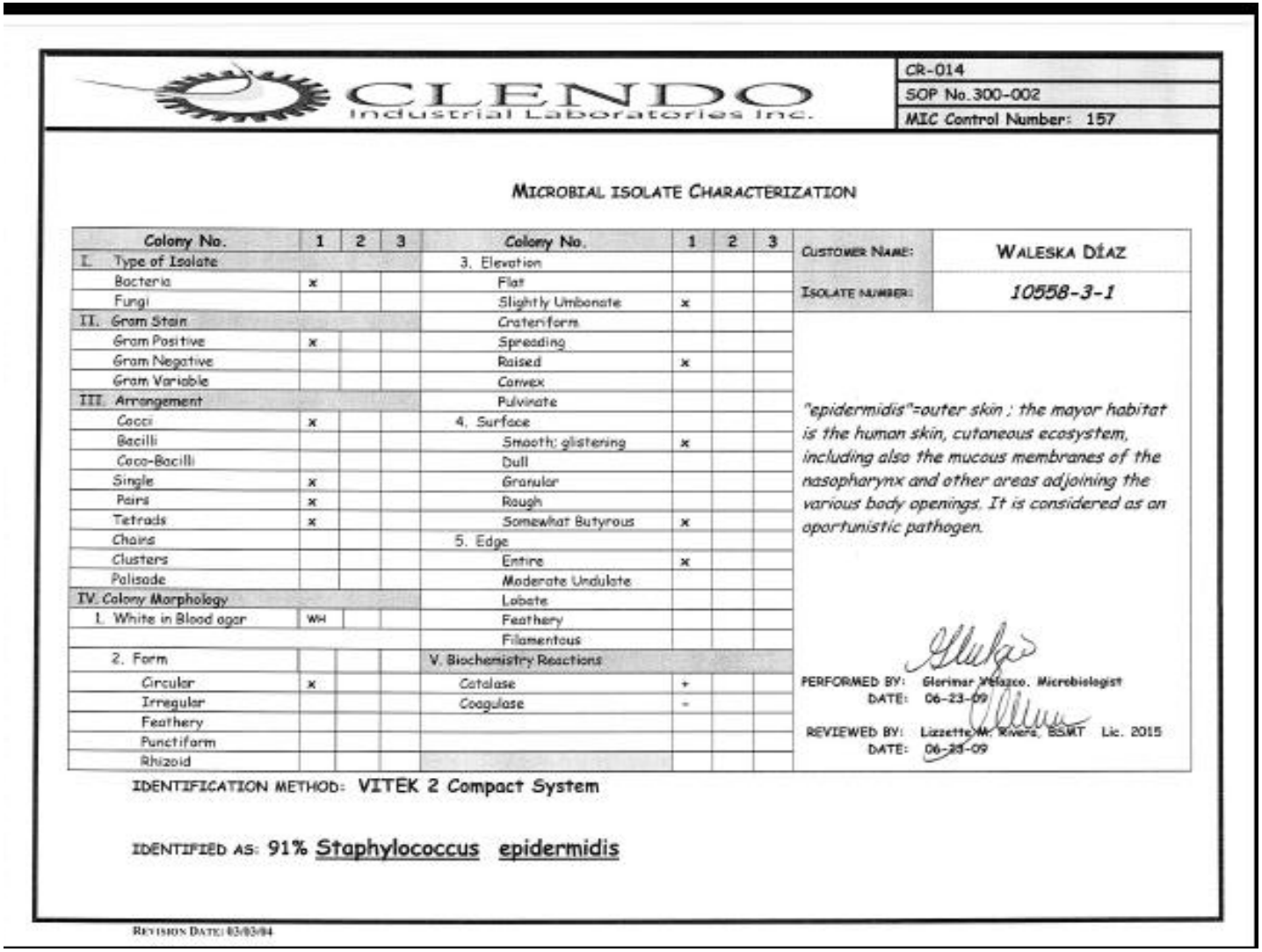
Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 23, 2009 09:34 GMT-04:00	

06-23-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

Page 1 of 1



CLENDO
Industrial Laboratories Inc.

CR-014
SOP No. 300-002
MIC Control Number: 157

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive	x		
Gram Negative			
Gram Variable			
III. Arrangement			
Cocci	x		
Bacilli			
Coco-Bacilli			
Single	x		
Pairs	x		
Tetrads	x		
Chains			
Clusters			
Palisade			
IV. Colony Morphology			
1. White in Blood agar	WH		
2. Form			
Circular	x		
Irregular			
Feathery			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Slightly Umbonate	x		
Crateriform			
Spreading			
Raised	x		
Convex			
Pulvinate			
4. Surface			
Smooth; glistening	x		
Dull			
Granular			
Rough			
Somewhat Butyrous	x		
5. Edge			
Entire	x		
Moderate Undulate			
Lobate			
Feathery			
Filamentous			
V. Biochemistry Reactions			
Catalase	+		
Coagulase	-		

CUSTOMER NAME: WALESKA DÍAZ

ISOLATE NUMBER: *10558-3-1*

"epidermidis"=outer skin ; the mayor habitat is the human skin, cutaneous ecosystem, including also the mucous membranes of the nasopharynx and other areas adjoining the various body openings. It is considered as an opportunistic pathogen.

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 06-23-09

REVIEWED BY: Lizzette M. Rivera, BSMT Lic. 2015
DATE: 06-23-09

IDENTIFICATION METHOD: VITEK 2 Compact System

IDENTIFIED AS: 91% Staphylococcus epidermidis

REVISION DATE: 03/03/04

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No. 300-027
IM CONTROL NO. 202

IDENTIFICATION OF MOLDS

ISOLATE NO:	10558-3-2	CUSTOMER:	WALESKA DIAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	COLOR: YELLOWISH GREEN WITH PINK EDGE APPEARANCE: COTTONY	
BOTTOM	COLOR: CREAMY BROWN APPEARANCE: WAXY	

MICROSCOPIC EXAMINATION
SLIDE CULTURE CHAMBER

DESCRIPTION	
LONG CONIDIOPHORES BORNE FROM SURFACE HYPHAE, STIPES WITH UNCOLOURED, SMOOTH WALLS; OVOID VESICLES, BEARING CROWED METULAE AND PHIALIDES ON ITS ENTIRE SURFACE: CONIDIA ELLIPSOIDAL IN CHAINS.	

IDENTIFICATION:	ASPERGILLUS AVENACEUS

SPECIES OF ASPERGILLUS ARE OPPORTUNISTSTIC INVADERS THAT CAUSE GROUP OF DISESES KNOWN AS ASPERGILLOSIS. ARE WIDESPREAD IN THE ENVIRONMENT AND ARE COMMONLY FOUND S CONTAMINANTS.

PERFORMED BY:	LCDA. GLORIMAR VELAZCO	DATE:	06-29-09
REVISED BY:	LCDA. LIZZETTE M. RIVERA	DATE:	06-29-09

Revision Date: 05/08

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 08365
System #:

Laboratory Report

Printed Jun 23, 2009 09:34 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10555-5-1

Bionumber: 430446417373231
Selected Organism: Staphylococcus xylosus

Comments:	n/a Ylulqo 06-23-09

Identification Information	Card:	GP	Lot Number: 242135240	Expires:	Aug 27, 2010 12:00 GMT-04:00
	Completed:	Jun 19, 2009 21:02 GMT-04:00	Status: Final	Analysis Time:	6.00 hours
Selected Organism	98% Probability		Staphylococcus xylosus		
	Bionumber: 430446417373231			Confidence:	Excellent identification

SRF Organism

Analysis Organisms and Tests to Separate: n/a Ylulqo 06-23-09

Analysis Messages:

Contraindicating Typical Biopattern(s)
Staphylococcus xylosus dSOR(19),

Biochemical Details

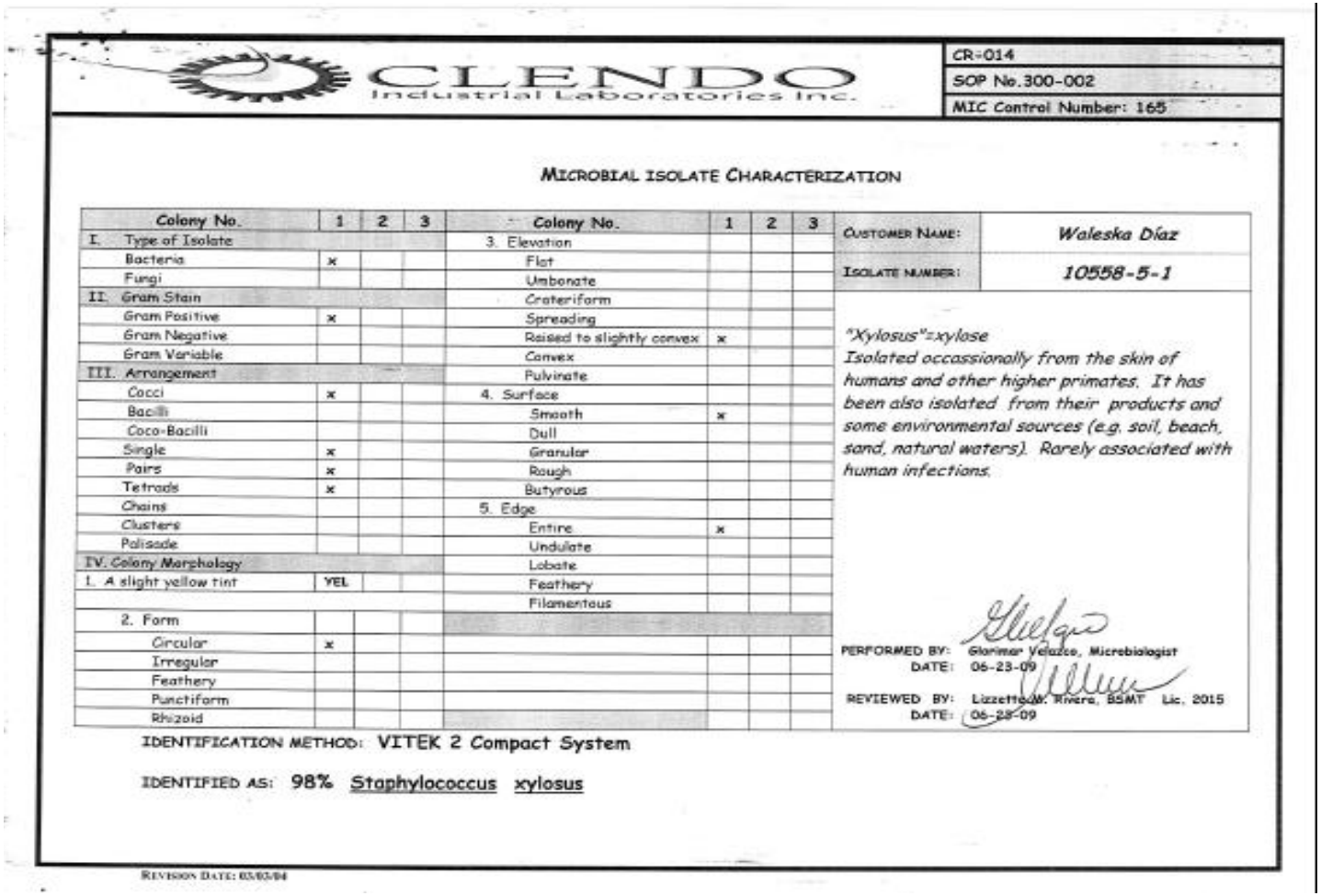
2	AMY	-	4	PIPLC	-	5	dXYL	+	8	ADH1	+	9	BGAL	+	11	AGLU	-
13	APPA	-	14	CDEX	-	15	AspA	-	16	BGAR	-	17	AMAN	-	19	PHOS	+
20	LeuA	-	23	ProA	-	24	BGURr	+	25	AGAL	-	26	PyrA	+	27	BGUR	+
28	AlaA	-	29	TyrA	-	30	dSOR	+	31	URE	+	32	POLYB	-	37	dGAL	-
38	dRIB	+	39	ILATk	+	42	LAC	+	44	NAG	+	45	dMAL	+	46	BACI	-
47	NOVO	+	50	NC6.5	+	52	dMAN	+	53	dMNE	+	54	MBdG	+	56	PUL	-
57	dRAF	-	58	O129R	+	59	SAL	-	60	SAC	+	62	dTRE	+	63	ADH2s	-
64	OPTO	+															

Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 23, 2009 09:34 GMT-04:00	

Ylulqo 06-23-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:



CLENDO
Industrial Laboratories Inc.

CR-014
SOP No.300-002
MIC Control Number: 165

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive	x		
Gram Negative			
Gram Variable			
III. Arrangement			
Cocci	x		
Bacilli			
Coco-Bacilli			
Single	x		
Pairs	x		
Tetrads	x		
Chains			
Clusters			
Palisade			
IV. Colony Morphology			
1. A slight yellow tint	YEL		
2. Form			
Circular	x		
Irregular			
Feathery			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Umbonate			
Crateriform			
Spreading			
Raised to slightly convex	x		
Convex			
Pulvinate			
4. Surface			
Smooth	x		
Dull			
Granular			
Rough			
Butyrous			
5. Edge			
Entire	x		
Undulate			
Lobate			
Feathery			
Filamentous			

CUSTOMER NAME:	*Waleska Díaz*
ISOLATE NUMBER:	*10558-5-1*

"Xylosus"=xylose
Isolated occassionally from the skin of humans and other higher primates. It has been also isolated from their products and some environmental sources (e.g. soil, beach, sand, natural waters). Rarely associated with human infections.

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 06-23-09
REVIEWED BY: Lizzette M. Rivera, BSMT Lic. 2015
DATE: 06-23-09

IDENTIFICATION METHOD: VITEK 2 Compact System

IDENTIFIED AS: 98% Staphylococcus xylosus

REVISION DATE: 03/03/04

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Jun 23, 2009 09:35 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10568-5-2

Bionumber: 040000201001231
Selected Organism: Kocuria kristinae

Comments:	n/a Glvelazco 06-23-09

Identification Information	Card: GP		Lot Number: 242135240	Expires:	Aug 27, 2010 12:00 GMT-04:00
	Completed: Jun 19, 2009 22:02 GMT-04:00		Status: Final	Analysis Time:	7.00 hours
Selected Organism	98% Probability		Kocuria kristinae		
	Bionumber: 040000201001231			Confidence:	Acceptable identification
SRF Organism					
Analysis Organisms and Tests to Separate:	n/a Glvelazco 06-23-09				
Analysis Messages:					
Contraindicating Typical Biopattern(s)					
Kocuria kristinae	O129R(7),dRIB(15),LeuA(79),ProA(93),AlaA(99),				

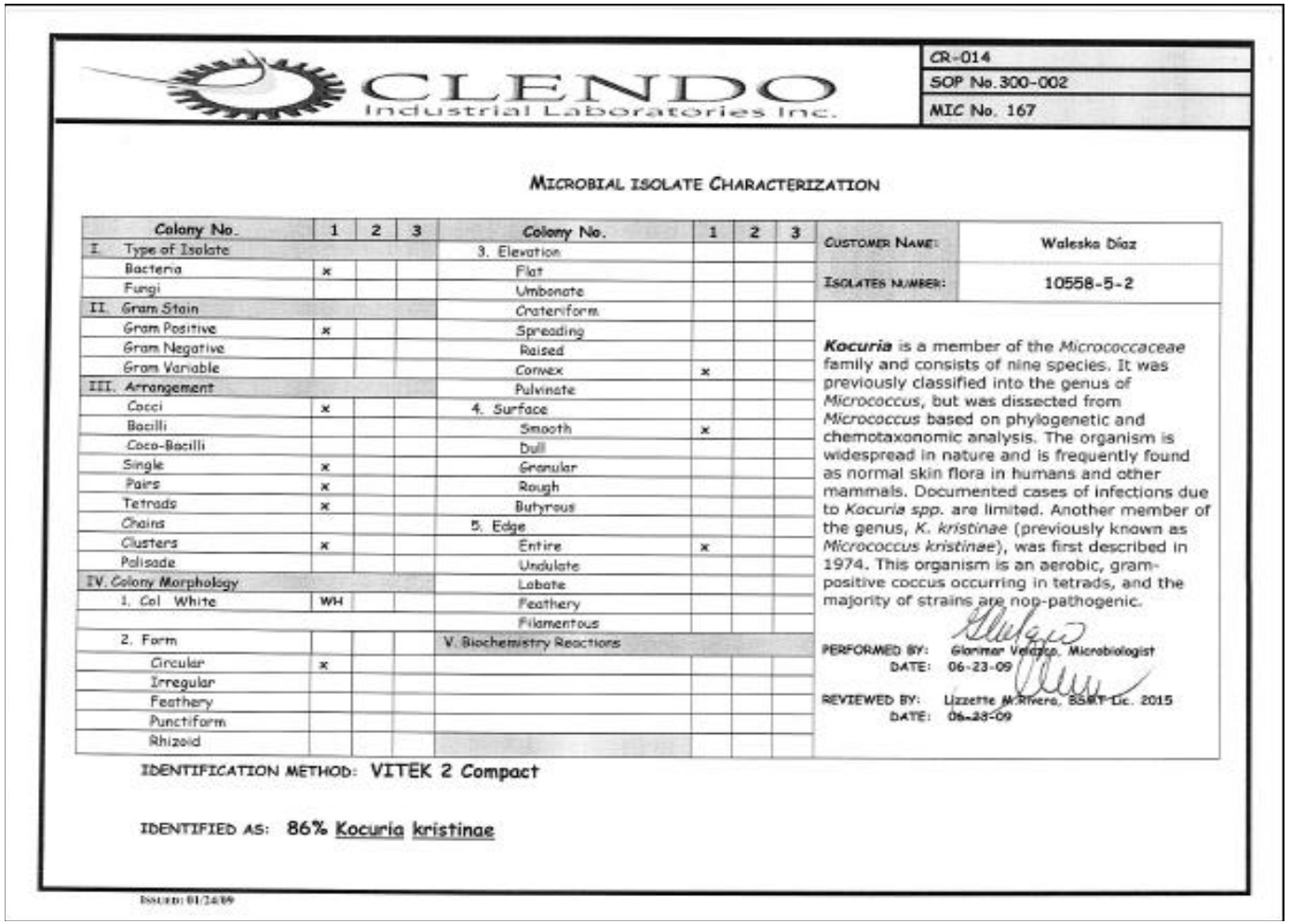
Biochemical Details																	
2	AMY	-	4	PIPLC	-	5	dXYL	-	8	ADH1	-	9	BGAL	-	11	AGLU	+
13	APPA	-	14	CDEX	-	15	AspA	-	16	BGAR	-	17	AMAN	-	19	PHOS	-
20	LeuA	-	23	ProA	-	24	BGURr	-	25	AGAL	-	26	PyrA	-	27	BGUR	-
28	AlaA	-	29	TyrA	+	30	dSOR	-	31	URE	-	32	POLYB	-	37	dGAL	-
38	dRIB	+	39	ILATk	-	42	LAC	-	44	NAG	-	45	dMAL	-	46	BACI	-
47	NOVO	-	50	NC8.5	-	52	dMAN	-	53	dMNE	+	54	MBdG	-	56	PUL	-
57	dRAF	-	58	O129R	+	59	SAL	-	60	SAC	+	62	dTRE	+	63	ADH2s	-
64	OPTO	+															

Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 23, 2009 09:35 GMT-04:00	

Glvelazco 06-23-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:



CLENDO
Industrial Laboratories Inc.

CR-014
SOP No.300-002
MIC No. 167

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive	x		
Gram Negative			
Gram Variable			
III. Arrangement			
Cocci	x		
Bacilli			
Coco-Bacilli			
Single	x		
Pairs	x		
Tetrads	x		
Chains			
Clusters	x		
Palisade			
IV. Colony Morphology			
1. Col White	WH		
2. Form			
Circular	x		
Irregular			
Feathery			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Umbonate			
Crateriform			
Spreading			
Raised			
Convex	x		
Pulvinate			
4. Surface			
Smooth	x		
Dull			
Granular			
Rough			
Butyrous			
5. Edge			
Entire	x		
Undulate			
Lobate			
Feathery			
Filamentous			
V. Biochemistry Reactions			

CUSTOMER NAME:	Waleska Díaz
ISOLATES NUMBER:	10558-5-2

Kocuria is a member of the *Micrococcaceae* family and consists of nine species. It was previously classified into the genus of *Micrococcus*, but was dissected from *Micrococcus* based on phylogenetic and chemotaxonomic analysis. The organism is widespread in nature and is frequently found as normal skin flora in humans and other mammals. Documented cases of infections due to *Kocuria spp.* are limited. Another member of the genus, *K. kristinae* (previously known as *Micrococcus kristinae*), was first described in 1974. This organism is an aerobic, gram-positive coccus occurring in tetrads, and the majority of strains are non-pathogenic.

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 06-23-09

REVIEWED BY: Lizzette M. Rivera, BSMT-Lic. 2015
DATE: 06-23-09

IDENTIFICATION METHOD: VITEK 2 Compact

IDENTIFIED AS: 86% Kocuria kristinae

ISSUED: 01/24/09

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No. 300-027
IM CONTROL NO. 204

IDENTIFICATION OF MOLDS

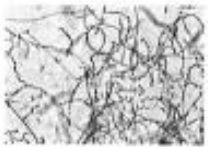
ISOLATE NO: 10558-7-1	CUSTOMER: WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	Color: White; surface Hard and developed a fine aerial mycelium Appearance: Wooly	
BOTTOM	COLOR: Cream APPEARANCE: WAXY	

MICROSCOPIC EXAMINATION

SLIDE CULTURE CHAMBER

DESCRIPTION	
LONG, THIN HYPHAE AND ABUNDANTLY BRANCHING WITH FILAMENTS WHICH MAY BE STRAIGHT, WAVY, OR SPIRALED. SHORT CHAINS OF SMALL OBLONG CONIDIA ARE PRODUCED AT DISTINCT POINTS ON SOME OF THE FILAMENTS.	

IDENTIFICATION: STREPTOMYCES SOMALIENSIS

Filamentous bacteria that resemble fungi in that they form filaments that are well developed and branched (commonly referred to as hyphae).
Some species are considered nonpathogenic contaminants. Other species can cause mycetomas and occasionally other types of infections. CULTURE PRODUCES A CHARACTERISTIC ODOR OF FRESHLY TILLED SOIL.

PERFORMED BY:	GLORIMAR VELAZCO	DATE:	07-03-09
REVIEWED BY:	LCDA. Lizzette M. RIVERA	DATE:	07-03-09

Revision Date: 03/19-03

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 08365
System #:

Laboratory Report

Printed Jun 23, 2009 09:35 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10558-8-1

Biomumber: 5000000100200001
Selected Organism: Sphingomonas paucimobilis

Comments:	n/a Gluvp 06-23-09

Identification Information	Card:	GN	Lot Number:	241112040	Expires:	Jan 7, 2010 12:00 GMT-04:00
	Completed:	Jun 19, 2009 21:03 GMT-04:00	Status:	Final	Analysis Time:	6.00 hours
Selected Organism	97% Probability		Sphingomonas paucimobilis			
	Biomumber:	5000000100200001			Confidence:	Excellent identification

SRF Organism	
Analysis Organisms and Tests to Separate:	n/a Gluvp 06-23-09
Analysis Messages:	
Contraindicating Typical Biopattern(s)	
Sphingomonas paucimobilis PyrA(24),	

Biochemical Details																		
2	APPA	+	3	ADO	-	4	PyrA	+	5	IARL	-	7	dCEL	-	9	BGAL	-
10	H2S	-	11	BNAG	-	12	AGLTp	-	13	dGLU	-	14	GGT	-	15	OFF	-
17	BGLU	-	18	dMAL	-	19	dMAN	-	20	dMNE	-	21	BXYL	-	22	BAlap	-
23	ProA	-	26	LIP	-	27	PLE	-	29	TyrA	+	31	URE	-	32	dSOR	-
33	SAC	-	34	dTAG	-	35	dTRE	-	36	CIT	-	37	MNT	-	39	5KG	-
40	ILATk	-	41	AGLU	+	42	SUCT	-	43	NAGA	-	44	AGAL	-	46	PHOS	-
48	GlyA	-	47	COC	-	48	LDC	-	53	IHISa	-	56	CMT	-	57	BGUR	-
58	O129R	-	59	GGAA	-	61	IMLTa	-	62	ELLM	+	64	ILATa	-			

Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Gluvp Velazco (gvelazco)	Jun 23, 2009 09:35 GMT-04:00	
		06-23-09	

VITEK 2 Systems Version: 05.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

CLENDO
Industrial Laboratories Inc.

CR-014
SOP No.300-002
MIC Control Number: 152

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive			
Gram Negative	x		
Gram Variable			
III. Arrangement			
Cocci			
Bacilli	x		
Cocco-Baccilli			
Single	x		
Pairs	x		
Tetrads			
Chains			
Clusters			
Palisade			
IV. Colony Morphology			
1. Color Bright Yellow	BY		
2. Form			
Circular	x		
Irregular			
Filamentous			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Spreading			
Crateriform			
Effuse			
Raised			
Convex	x		
Pulvinate			
4. Surface			
Smooth	x		
Rugose			
Concentric			
Contoured			
Radiately			
5. Edge			
Entire	x		
Undulate			
Lobate			
Serrated			
Filamentous			
V. Biochemistry Reactions			
Catalase	+		
Oxidase	-		
No Growth in MAC			

CUSTOMER NAME:	Waleska Diaz
ISOLATE NUMBER:	10558-8-1

"PAUCIMOBILIS"= INTENDED TO MEAN A FEW CELLS MOTILE. PRODUCES A YELLOW PIGMENT (CAROTENOID; NOSTAXANTHIN); NOT FLUORESCENT. EXISTS IN ENVIRONMENTAL NICHES, SUCH AS WATER. NOT PART OF HUMAN FLORA. MODE OF TRANSMISSION UNCERTAIN, PROBABLY INVOLVES PATIENT EXPOSURE TO CONTAMINATED MEDICAL DEVICES OR SOLUTIONS.
ORIGINALLY NAMED PSEUDOMONAS PAUCIMOBILIS

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 06-23-09

REVIEWED BY: Lizzette M. Rivera, BSMT Lic.2015
DATE: 06-23-09

IDENTIFICATION METHOD: VITEK 2 System

IDENTIFIED AS: 97% Sphingomonas paucimobilis

REVISION DATE: 03/03/04

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Jun 23, 2009 09:33 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10558-14-1

Bionumber: 0000000100220001
Selected Organism: Sphingomonas paucimobilis

Comments:	

Identification Information	Card:	GN	Lot Number: 241112040	Expires:	Jan 7, 2010 12:00 GMT-04:00
	Completed:	Jun 19, 2009 20:03 GMT-04:00	Status: Final	Analysis Time:	5.00 hours
Selected Organism	98% Probability		Sphingomonas paucimobilis		
	Bionumber:	0000000100220001		Confidence:	Excellent identification
SRF Organism					
Analysis Organisms and Tests to Separate					
Analysis Messages:					
Contraindicating Typical Biopattern(s)					

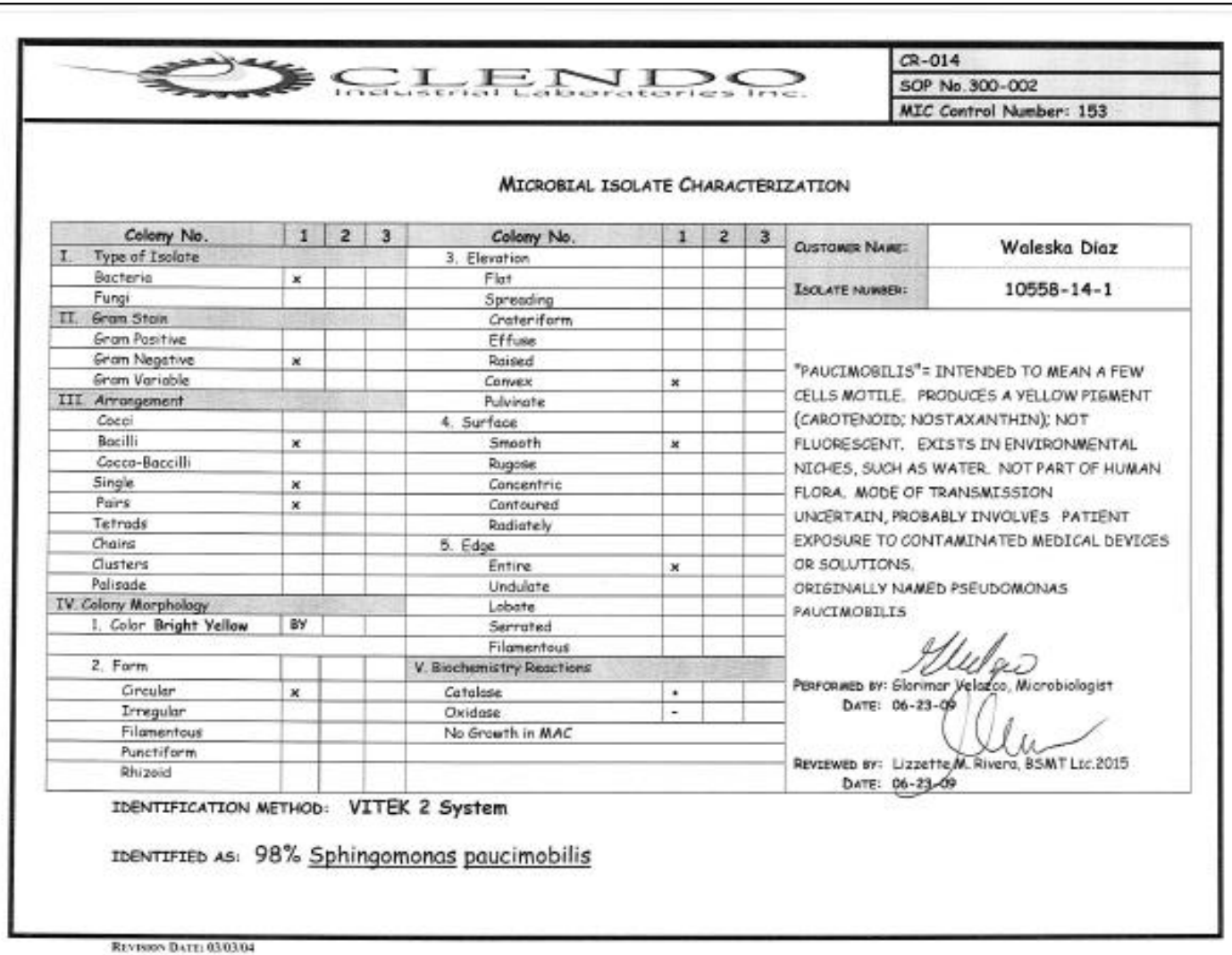
Biochemical Details																	
2	APPA	-	3	ADO	-	4	PyrA	-	5	IARL	-	7	dCEL	-	9	BGAL	-
10	H2S	-	11	BNAG	-	12	AGLTp	-	13	dGLU	-	14	GGT	-	15	OFF	-
17	BGLU	-	18	dMAL	-	19	dMAN	-	20	dMNE	-	21	BXYL	-	22	BAlap	-
23	ProA	-	26	LIP	-	27	PLE	-	29	TyrA	+	31	URE	-	32	dSOR	-
33	SAC	-	34	dTAG	-	35	dTRE	-	36	CIT	-	37	MNT	-	39	5KG	-
40	ILATk	-	41	AGLU	+	42	SUCT	-	43	NAGA	-	44	AGAL	+	45	PHOS	-
46	GlyA	-	47	ODC	-	48	LDC	-	53	IHISa	-	56	CMT	-	57	BGUR	-
58	O129R	-	59	GGAA	-	61	IMLTa	-	62	ELLM	+	64	ILATa	-			

Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 23, 2009 09:33 GMT-04:00	

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

Page 1 of 1



CLENDO
Industrial Laboratories Inc.

CR-014
SOP No. 300-002
MIC Control Number: 153

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive			
Gram Negative	x		
Gram Variable			
III. Arrangement			
Cocci			
Bacilli	x		
Cocco-Baccilli			
Single	x		
Pairs	x		
Tetrads			
Chains			
Clusters			
Palisade			
IV. Colony Morphology			
1. Color Bright Yellow	BY		
2. Form			
Circular	x		
Irregular			
Filamentous			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Spreading			
Crateriform			
Effuse			
Raised			
Convex	x		
Pulvinate			
4. Surface			
Smooth	x		
Rugose			
Concentric			
Contoured			
Radiately			
5. Edge			
Entire	x		
Undulate			
Lobate			
Serrated			
Filamentous			
V. Biochemistry Reactions			
Catalase	+		
Oxidase	-		
No Growth in MAC			

CUSTOMER NAME:	Waleska Diaz
ISOLATE NUMBER:	10558-14-1

"PAUCIMOBILIS"= INTENDED TO MEAN A FEW CELLS MOTILE. PRODUCES A YELLOW PIGMENT (CAROTENOID; NOSTAXANTHIN); NOT FLUORESCENT. EXISTS IN ENVIRONMENTAL NICHES, SUCH AS WATER. NOT PART OF HUMAN FLORA. MODE OF TRANSMISSION UNCERTAIN, PROBABLY INVOLVES PATIENT EXPOSURE TO CONTAMINATED MEDICAL DEVICES OR SOLUTIONS.
ORIGINALLY NAMED PSEUDOMONAS PAUCIMOBILIS

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 06-23-09

REVIEWED BY: Lizzette M. Rivera, BSMT Llc.2015
DATE: 06-23-09

IDENTIFICATION METHOD: VITEK 2 System

IDENTIFIED AS: 98% Sphingomonas paucimobilis

REVISION DATE: 03/03/04

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 05365
System #:

Laboratory Report

Printed Jul 3, 2009 09:16 GMT-04:00
Printed by: gvelazco
Report Version: 3 of 3

Isolate Group: 10558-16-1
Last Updated: Jul 3, 2009 09:16 GMT-04:00 By: gvelazco

Bionumber: 400446005071631
Selected Organism: Staphylococcus equorum

Comments:	

Identification Information	Card:	GP	Lot Number:	242135240	Expires:	Aug 27, 2010 12:00 GMT-04:00
	Completed:	Jun 19, 2009 23:03 GMT-04:00	Status:	Final	Analysis Time:	8.00 hours
Selected Organism	86% Probability Bionumber: 400446005071631		Staphylococcus equorum		Confidence:	Low discrimination
SRF Organism						

Analysis Organisms and Tests to Separate:

Aerococcus viridans	Pyro.Ary.(99),
Staphylococcus equorum	Pyro.Ary.(1),
Low Discrimination Organism	

Analysis Messages:

Contraindicating Typical Biopattern(s)

Aerococcus viridans	PHOS(1),dXYL(1),dGAL(87),dMAL(87),
Staphylococcus equorum	PHOS(1),BGAL(94),URE(99),

Biochemical Details

2	AMY	-	4	PIPLC	-	5	dXYL	+	8	ADH1	-	9	BGAL	-	11	AGLU	-
13	APPA	-	14	CDEX	-	15	AspA	-	16	BGAR	-	17	AMAN	-	19	PHOS	+
20	LeuA	-	23	ProA	-	24	BGURr	+	25	AGAL	-	26	PyrA	+	27	BGUR	+
28	AlaA	-	29	TyrA	-	30	dSOR	-	31	URE	-	32	POLYB	-	37	dGAL	-
38	dRIB	+	39	ILATk	-	42	LAC	+	44	NAG	-	45	dMAL	-	46	BACI	-
47	NOVO	+	50	NC6.5	+	52	dMAN	+	53	dMNE	+	54	MBdG	-	56	PUL	-
57	dRAF	-	58	O129R	+	59	SAL	+	60	SAC	+	62	dTRE	+	63	ADH2s	-
64	OPTO	+															

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 08365
System #:

Laboratory Report

Printed Jul 3, 2009 09:16 GMT-04:00
Printed by: gvelazco
Report Version: 3 of 3

Isolate Group: 10658-16-1
Last Updated: Jul 3, 2009 09:16 GMT-04:00 By: gvelazco

Biomumber: 400446005071631
Selected Organism: Staphylococcus equorum

Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jul 3, 2009 09:16 GMT-04:00	

07-03-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

CLENDO
Industrial Laboratories Inc.

CR-014
SOP No.300-002
MIC Control Number: 168

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive	x		
Gram Negative			
Gram Variable			
III. Arrangement			
Cocci	x		
Bacilli			
Coco-Bacilli			
Single	x		
Pairs	x		
Tetrads	x		
Chains			
Clusters	x		
Palisade			
IV. Colony Morphology			
1. Col Yellow	YEL		
2. Form			
Circular	x		
Irregular			
Feathery			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Umbonate			
Crateriform			
Spreading			
Raised			
Convex	x		
Pulvinate			
4. Surface			
Smooth	x		
Dull			
Granular			
Rough			
Butyrous	x		
5. Edge			
Entire	x		
Undulate			
Lobate			
Feathery			
Filamentous			
V. Biochemistry Reactions			

CUSTOMER NAME:	Waleska Díaz
ISOLATES NUMBER:	10558-16-1

"STAPHY"=bunch of grapes.

S. equorum is often isolated from naturally fermented sausages and from the environment of processing units

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 07-03-09

REVIEWED BY: Lizzette M. Rivera, BSMT Lic. 2015
DATE: 07-03-09

IDENTIFICATION METHOD: VITEK 2 Compact System

IDENTIFIED AS: 86 % STAPHYLOCOCCUS EQUORUM

REVISION DATE: 03/03/04

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 05365
System #:

Laboratory Report

Printed Jul 3, 2009 09:16 GMT-04:00
Printed by: gvelazco
Report Version: 3 of 3

Isolate Group: 10558-17-1
Last Updated: Jul 3, 2009 09:15 GMT-04:00 By: gvelazco

Bionumber: 0024110340446631
Selected Organism: Bacillus mycoides

Comments:	n/a Velazco 07-03-09

Identification Information	Card:	BCL	Lot Number: 239124110	Expires:	May 8, 2010 12:00 GMT-04:00
	Completed:	Jun 20, 2009 05:18 GMT-04:00	Status: Final	Analysis Time:	14.25 hours
Selected Organism	95% Probability		Bacillus mycoides		
	Bionumber:	0024110340446631		Confidence:	Acceptable identification

SRF Organism	

Analysis Organisms and Tests to Separate:

Bacillus cereus/thuringiensis/mycoides	
Bacillus cereus	RHIZOIDcol(1),TOX.CRYST.(0),MOB(90),
Bacillus mycoides	RHIZOIDcol(99),TOX.CRYST.(0),MOB(10),
Bacillus thuringiensis	RHIZOIDcol(1),TOX.CRYST.(100),MOB(90),

Analysis Messages:

Contraindicating Typical Biopattern(s)

Bacillus cereus/thuringiensis/mycoides	AGLU(81),ELLM(88),OLD(8),PheA(98),TyrA(88),APPA(24),GlyA(2),

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Jul 3, 2009 09:16 GMT-04:00
Printed by: gvelazco
Report Version: 3 of 3

Isolate Group: 10558-17-1
Last Updated: Jul 3, 2009 09:15 GMT-04:00 By: gvelazco

Bionumber: 0024110340446631
Selected Organism: Bacillus mycoides

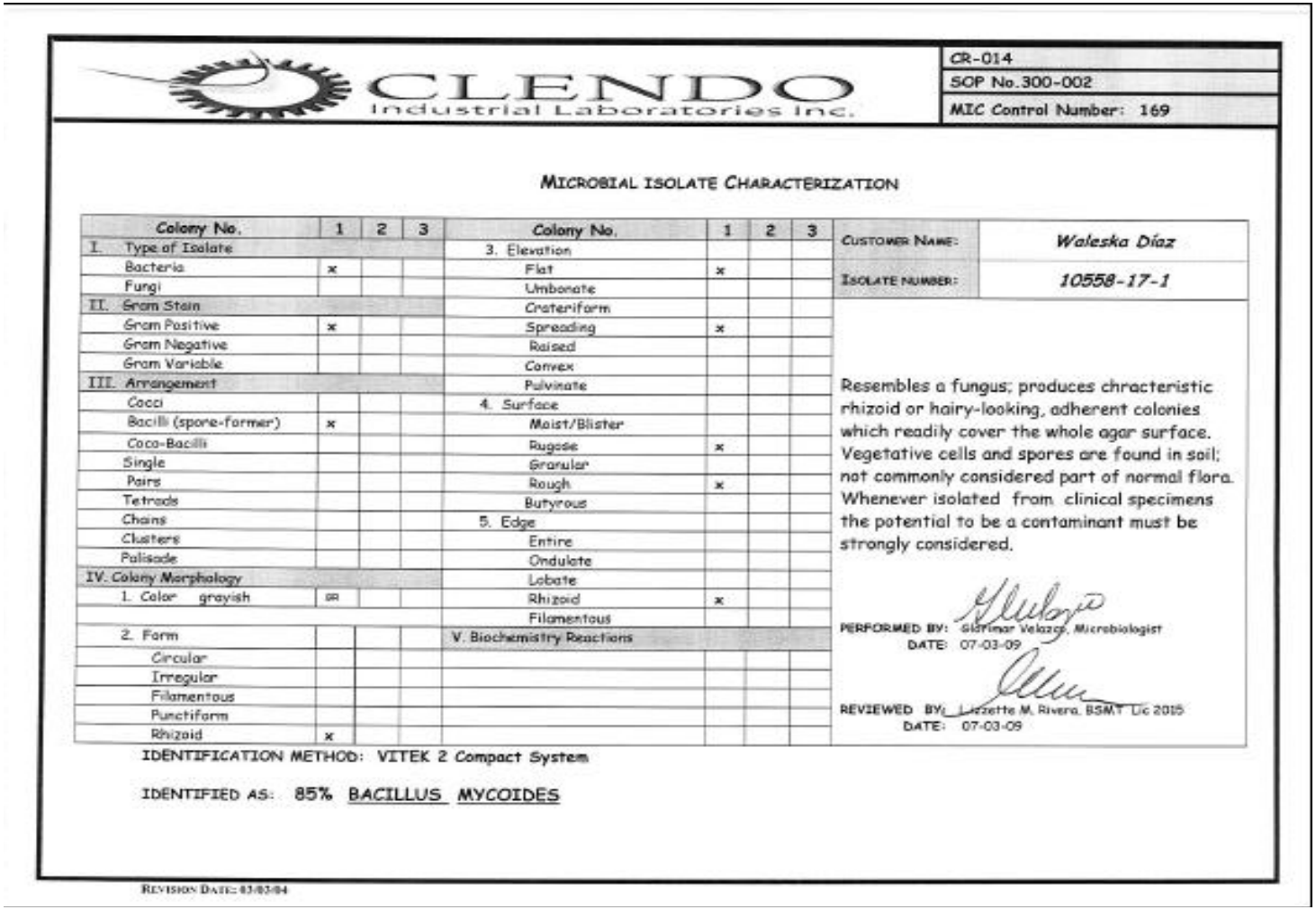
Biochemical Details																	
1	BXYL	-	3	LysA	-	4	AspA	-	5	LeuA	(-)	7	PheA	-	8	ProA	-
9	BGAL	-	10	PyrA	+	11	AGAL	-	12	AlaA	(-)	13	TyrA	-	14	BNAG	+
15	APPA	+	18	CDEX	-	19	dGAL	-	21	GLYG	+	22	INO	-	24	MdG	-
25	ELLM	-	26	MdX	-	27	AMAN	-	29	MTE	+	30	GlyA	+	31	dMAN	-
32	dMNE	-	34	dMLZ	-	36	NAG	+	37	PLE	-	39	IRHA	-	41	BGLU	(-)
43	BMAN	-	44	PHC	-	45	PVATE	+	46	AGLU	-	47	dTAG	-	48	dTRE	+
50	INU	-	53	dGLU	+	54	dRIB	+	56	PSCNa	-	58	NaCl 6.5%	+	59	KAN	+
60	OLD	+	61	ESC	+	62	TTZ	-	63	POLYB_R	+						

Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jul 3, 2009 09:15 GMT-04:00	

07-03-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:



CLENDO
Industrial Laboratories Inc.

CR-014
SOP No. 300-002
MIC Control Number: 169

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive	x		
Gram Negative			
Gram Variable			
III. Arrangement			
Cocci			
Bacilli (spore-former)	x		
Coco-Bacilli			
Single			
Pairs			
Tetrads			
Chains			
Clusters			
Palisade			
IV. Colony Morphology			
1. Color grayish	BR		
2. Form			
Circular			
Irregular			
Filamentous			
Punctiform			
Rhizoid	x		

Colony No.	1	2	3
3. Elevation			
Flat	x		
Umbonate			
Crateriform			
Spreading	x		
Raised			
Convex			
Pulvinate			
4. Surface			
Moist/Blister			
Rugose	x		
Granular			
Rough	x		
Butyrous			
5. Edge			
Entire			
Undulate			
Lobate			
Rhizoid	x		
Filamentous			
V. Biochemistry Reactions			

CUSTOMER NAME: *Waleska Díaz*

ISOLATE NUMBER: *10558-17-1*

Resembles a fungus; produces chracteristic rhizoid or hairy-looking, adherent colonies which readily cover the whole agar surface. Vegetative cells and spores are found in soil; not commonly considered part of normal flora. Whenever isolated from clinical specimens the potential to be a contaminant must be strongly considered.

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 07-03-09

REVIEWED BY: Lizzette M. Rivera, BSMT Lic 2015
DATE: 07-03-09

IDENTIFICATION METHOD: VITEK 2 Compact System

IDENTIFIED AS: 85% BACILLUS MYCOIDES

REVISION DATE: 03/02/04

CLENDO INDUSTRIAL LABORATORIES

biofMerieux Customer: 08365
System #:

Laboratory Report

Printed Jul 3, 2009 09:14 GMT-04:00
Printed by: gvelazco
Report Version: 3 of 3

Isolate Group: 10558-18-1
Last Updated: Jul 2, 2009 10:14 GMT-04:00 By: jayala

Bionumber: 0302101000000200
Selected Organism: Bacillus fusiformis

Comments:	N/A Aprobado 07-03-09

Identification Information	Card:	BCL	Lot Number:	239124110	Expires:	May 8, 2010 12:00 GMT-04:00
	Completed:	Jul 2, 2009 05:47 GMT-04:00	Status:	Final	Analysis Time:	14.25 hours
Selected Organism	88% Probability		Bacillus fusiformis			
	Bionumber:	0302101000000200			Confidence:	Low discrimination

SRF Organism

Analysis Organisms and Tests to Separate:

Bacillus sphaericus/Bacillus fusiformis	
Bacillus sphaericus	NO3(10),GELATIN(10),CellChains(10),SPORANGEsw(90),
Bacillus fusiformis	NO3(10),GELATIN(90),CellChains(90),SPORANGEsw(90),
Bacillus simplex	NO3(90),GELATIN(50),CellChains(90),SPORANGEsw(10),
Low Discrimination Organism	

Analysis Messages:

Contraindicating Typical Biopattern(s)

Bacillus sphaericus/Bacillus fusiformis	NaCl 6.5%(1),PVATE(78),PyrA(95),AlaA(93),
Bacillus simplex	NaCl 6.5%(1),AlaA(97),APPA(3),

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Jul 3, 2009 08:14 GMT-04:00
Printed by: gvelazco
Report Version: 3 of 3

Isolate Group: 10558-18-1
Last Updated: Jul 2, 2009 10:14 GMT-04:00 By: jayala

Bionumber: 0302101000000200
Selected Organism: Bacillus fusiformis

Biochemical Details																	
1	BXYL	-	3	LysA	-	4	AspA	-	5	LeuA	+	7	PheA	+	8	ProA	-
9	BGAL	-	10	PyrA	-	11	AGAL	-	12	AlaA	-	13	TyrA	+	14	BNAG	-
15	APPA	+	18	CDEX	-	19	dGAL	-	21	GLYG	-	22	INO	-	24	MdG	-
25	ELLM	+	26	MdX	-	27	AMAN	-	29	MTE	-	30	GlyA	-	31	dMAN	-
32	dMNE	-	34	dMLZ	-	36	NAG	-	37	PLE	-	39	IRHA	-	41	BGLU	-
43	BMAN	-	44	PHC	-	45	PVATE	-	46	AGLU	-	47	dTAG	-	48	dTRE	-
50	INU	-	53	dGLU	-	54	dRIB	-	56	PSCNa	-	58	NaCl 6.5%	+	59	KAN	-
60	OLD	-	61	ESC	-	62	TTZ	-	63	POLYB_R	-						

Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jul 3, 2009 09:13 GMT-04:00	

07-03-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

CLENDO
Industrial Laboratories Inc.

CR-014
SOP No.300-002
MIC Control Number: 169

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria (slow-grower)	x		
Fungi			
II. Gram Stain			
Gram Positive	x		
Gram Negative			
Gram Variable			
III. Arrangement			
Cocci			
Bacilli small	x		
Round spore shape	x		
Cells ocurring in chains	x		
Single			
Pairs			
Tetrads			
Clusters			
Palisade			
IV. Colony Morphology			
1. Color pale peach	☆		
2. Form			
Circular	x		
Irregular			
Filamentous			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Umbonate			
Crateriform			
Some spreading			
Raised			
Convex	x		
Pulvinate			
4. Surface			
Moist/Blister			
Sticky	x		
Part-Granular			
Rough			
Butyrous	x		
5. Edge			
Entire	x		
Ondulate			
Lobate			
Erose			
Filamentous			
V. Biochemistry Reactions			
Catalase	+		
Urea	+		

CUSTOMER NAME: *Waleska Diaz*

ISOLATE NUMBER: *10558-18-1*

B. fusiformis vegetative cells and spores are widely distributed in nature. It is differentiated from B. sphaericus by the cells occuring in chains and round spore shape in the Gram Stain lecture and by the positive reaction in degradation of Urea.

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 07-03-09

REVIEWED BY: Lizzette M. Rivera, BSMT Lic. 2015
DATE: 07-03-09

IDENTIFICATION METHOD: VITEK 2 Compact System

IDENTIFIED AS: 89% Bacillus fusiformis

REVISION DATE: 03/03/04

CLENDO
Industrial Laboratories Inc.

CR-073	
SOP No. 300-027	
IM CONTROL NO. 205	

IDENTIFICATION OF MOLDS

CONTROL NO. :	10558-18-2	CUSTOMER:	WALESKA DÉAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	COLOR: GRAYISH BLUE-GREEN WITH WHITE BORDER APPEARANCE: VELVETY TEXTURE	
BOTTOM	COLOR: TANNISH APPEARANCE: SUEDE	

MICROSCOPIC EXAMINATION
SLIDE CULTURE CHAMBER

DESCRIPTION	
THE CONIDIAL HEADS ARE COLUMNAR AND COMPACT. THE CONIDIOPHORES ARE SHORT AND SMOOTH, THEIR UPPER PART GRADUALLY EXPANDS INTO A FLASK SHAPED VESICLE. THE STERIGMATA (PHYALIDES) ARE FORMED AS SINGLE SERIES ONLY (UNISERIATED) AND ARE PRODUCED ON THE UPPER HALF OF THE VESSICLE. THEY APPEAR CROWDED, HAVE AXES ROUGHLY PARALLEL TO THE AXIS OF THE CONIDIOPHORE, AND PRODUCE SPHERICAL CONIDIA IN CHAINS	

IDENTIFICATION:	ASPERGILLUS ORIZAE

Species of Aspergillus are opportunistic invaders that cause group of diseases known as Aspergillosis. Are widespread in the environment and are commonly found s contaminants.

PERFORMED BY:	GLORIMAR VELAZCO	DATE:	06-29-09
REVIEWED BY:	LIZZETTE M. RIVERA	DATE:	06-29-09

Revision Date: 05/08

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No.300-027
IM CONTROL NO. 201

IDENTIFICATION OF MOLDS

ISOLATE NO:	10558-18-3	CUSTOMER:	WALESKA DIAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	**COLOR:** YELLOWISH GREEN WITH PINK EDGE **APPEARANCE:** COTTONY	
BOTTOM	**COLOR :** CREAMY BROWN **APPEARANCE:** WAXY	

MICROSCOPIC EXAMINATION
SLIDE CULTURE CHAMBER

DESCRIPTION	
LONG CONIDIOPHORES BORNE FROM SURFACE HYPHAE, STIPES WITH UNCOLOURED, SMOOTH WALLS; OVOID VESICLES, BEARING CROWED METULAE AND PHIALIDES ON ITS ENTIRE SURFACE; CONIDIA ELLIPSOIDAL IN CHAINS.	

IDENTIFICATION:	ASPERGILLUS AVENACEUS

SPECIES OF ASPERGILLUS ARE OPPORTUNISTSTIC INVADERS THAT CAUSE GROUP OF DISESES KNOWN AS ASPERGILLOSIS. ARE WIDESPREAD IN THE ENVIRONMENT AND ARE COMMONLY FOUND S CONTAMINANTS.

PERFORMED BY:	LCDA. GLORIMAR VELAZCO	DATE:	06-29-09
REVISED BY:	LCDA. LIZZETTE M. RIVERA	DATE:	06-29-09

Revision Date: 05/08

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06385
System #:

Laboratory Report

Printed Jun 23, 2009 09:34 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10658-19-1

Bionumber: 5000100100000400
Selected Organism: Sphingomonas paucimobilis

Comments:	

Identification Information	Card:	GN	Lot Number:	241112040	Expires:	Jan 7, 2010 12:00 GMT-04:00
	Completed:	Jun 19, 2009 23:01 GMT-04:00	Status:	Final	Analysis Time:	8.00 hours
Selected Organism	88% Probability		Sphingomonas paucimobilis			
	Bionumber:	5000100100000400			Confidence:	Good identification
SRF Organism						
Analysis Organisms and Tests to Separate:						
Analysis Messages:						
Contraindicating Typical Biopattern(s)						
Sphingomonas paucimobilis	dGLU(76),BGUR(1),dCEL(76),dMAL(76),PyrA(24),					

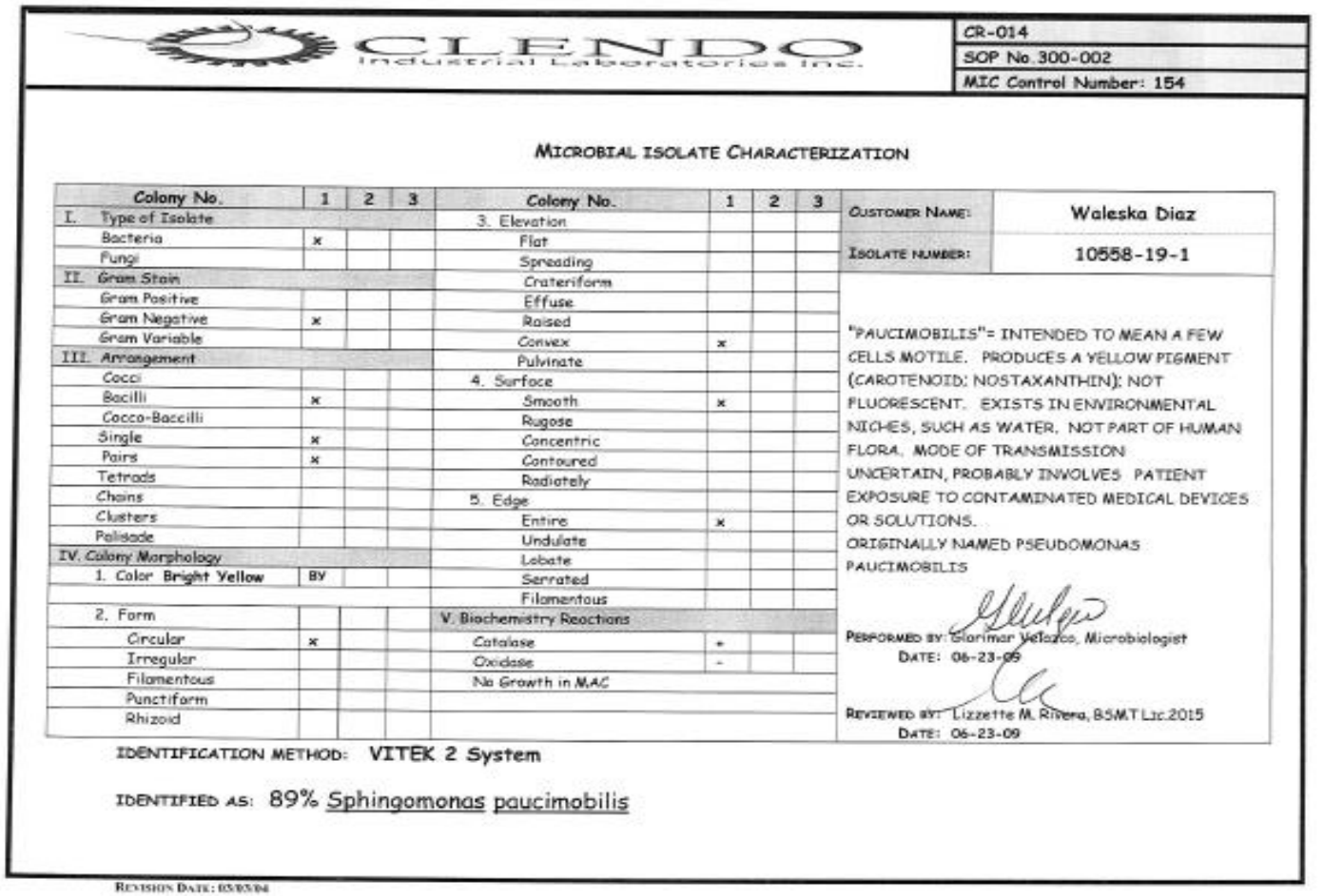
Biochemical Details

2	APPA	+	3	ADO	-	4	PyrA	+	5	IARL	-	7	dCEL	-	9	BGAL	-
10	H2S	-	11	BNAG	-	12	AGLTp	-	13	dGLU	-	14	GGT	-	15	OFF	-
17	BGLU	+	18	dMAL	-	19	dMAN	-	20	dMNE	-	21	BXYL	-	22	BAlap	-
23	ProA	-	26	LIP	-	27	PLE	-	29	TyrA	+	31	URE	-	32	dSOR	-
33	SAC	-	34	dTAG	-	35	dTRE	-	36	CIT	-	37	MNT	-	39	5KG	-
40	ILATk	-	41	AGLU	(-)	42	SUCT	-	43	NAGA	-	44	AGAL	-	45	PHOS	-
46	GlyA	-	47	ODC	-	48	LDC	-	53	HISa	-	56	CMT	-	57	BGUR	+
58	O129R	-	59	GGAA	-	61	IMLTa	-	62	ELLM	-	64	ILATa	-			

Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 23, 2009 09:34 GMT-04:00	

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:



CLENDO Industrial Laboratories Inc.

CR-014
SOP No. 300-002
MIC Control Number: 154

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive			
Gram Negative	x		
Gram Variable			
III. Arrangement			
Cocci			
Bacilli	x		
Cocco-Baccilli			
Single	x		
Pairs	x		
Tetrads			
Chains			
Clusters			
Palisade			
IV. Colony Morphology			
1. Color Bright Yellow	BY		
2. Form			
Circular	x		
Irregular			
Filamentous			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Spreading			
Crateriform			
Effuse			
Raised			
Convex	x		
Pulvinate			
4. Surface			
Smooth	x		
Rugose			
Concentric			
Contoured			
Radiately			
5. Edge			
Entire	x		
Undulate			
Lobate			
Serrated			
Filamentous			
V. Biochemistry Reactions			
Catalase	+		
Oxidase	-		
No Growth in MAC			

CUSTOMER NAME:	Waleska Diaz
ISOLATE NUMBER:	10558-19-1

"PAUCIMOBILIS"= INTENDED TO MEAN A FEW CELLS MOTILE. PRODUCES A YELLOW PIGMENT (CAROTENOID; NOSTAXANTHIN); NOT FLUORESCENT. EXISTS IN ENVIRONMENTAL NICHES, SUCH AS WATER, NOT PART OF HUMAN FLORA. MODE OF TRANSMISSION UNCERTAIN, PROBABLY INVOLVES PATIENT EXPOSURE TO CONTAMINATED MEDICAL DEVICES OR SOLUTIONS.
ORIGINALLY NAMED PSEUDOMONAS PAUCIMOBILIS

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 06-23-09

REVIEWED BY: Lizzette M. Rivera, BSMT Lic.2015
DATE: 06-23-09

IDENTIFICATION METHOD: VITEK 2 System

IDENTIFIED AS: 89% Sphingomonas paucimobilis

REVISION DATE: 05/03/04

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Jun 30, 2009 15:10 GMT-04:00
Printed by: gvelazco
Report Version: 3 of 3

Isolate Group: 10558-19-2
Last Updated: Jun 30, 2009 15:10 GMT-04:00 By: gvelazco

Bionumber: 061032300000000
Selected Organism: Micrococcus lylae

Comments:	N/A Yllw/grn 06-30-09

Identification Information	Card:	GP	Lot Number:	242135240	Expires:	Aug 27, 2010 12:00 GMT-04:00
	Completed:	Jun 25, 2009 23:35 GMT-04:00	Status:	Final	Analysis Time:	6.00 hours
Selected Organism	95% Probability		Micrococcus lylae			
	Bionumber:	061032300000000			Confidence:	Very good identification
SRF Organism						

Analysis Organisms and Tests to Separate:

Micrococcus luteus / lylae
Micrococcus luteus YELLOW(95),
Micrococcus lylae YELLOW(1),

Analysis Messages:

Contraindicating Typical Biopattern(s)

Micrococcus luteus / lylae BGAL(1),

Biochemical Details

2	AMY	-	4	PIPLC	-	5	dXYL	-	8	ADH1	-	9	BGAL	+	11	AGLU	+
13	APPA	+	14	CDEX	-	15	AspA	-	16	BGAR	-	17	AMAN	-	19	PHOS	-
20	LeuA	+	23	ProA	+	24	BGURr	-	25	AGAL	-	26	PyrA	+	27	BGUR	-
28	AlaA	+	29	TyrA	+	30	dSOR	-	31	URE	-	32	POLYB	-	37	dGAL	-
38	dRIB	-	39	ILATk	-	42	LAC	-	44	NAG	-	45	dMAL	-	46	BACI	-
47	NOVO	-	50	NC6.5	-	52	dMAN	-	53	dMNE	-	54	MBdG	-	56	PUL	-
57	dRAF	-	58	O129R	-	59	SAL	-	60	SAC	-	62	dTRE	-	63	ADH2s	-
64	OPTO	-															

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Jun 30, 2009 15:10 GMT-04:00
Printed by: gvelazco
Report Version: 3 of 3

Isolate Group: 10668-19-2
Last Updated: Jun 30, 2009 15:10 GMT-04:00 By: gvelazco

Bionumber: 061032300000000
Selected Organism: Micrococcus lylae

Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 30, 2009 15:10 GMT-04:00	

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

CLENDO
Industrial Laboratories Inc.

CR-014	
SOP No.300-002	
MIC No. 170	

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive	x		
Gram Negative			
Gram Variable			
III. Arrangement			
Cocci	x		
Bacilli			
Coco-Bacilli			
Single	x		
Pairs	x		
Tetrads	x		
Chains			
Clusters	x		
Palisade			
IV. Colony Morphology			
1. Col Cream in BA	C		
2. Form			
Circular	x		
Irregular			
Feathery			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Umbonate			
Crateriform			
Spreading			
Raised			
Convex	x		
Pulvinate			
4. Surface			
Smooth	x		
Dull			
Granular			
Rough			
Butyrous			
5. Edge			
Entire	x		
Undulate			
Lobate			
Feathery			
Filamentous			
V. Biochemistry Reactions			

CUSTOMER NAME:	Waleska Díaz
ISOLATES NUMBER:	10558-19-2

Micrococcus lylae is found in soil, dust, water and air, and as part of the normal flora of the mammalian and birds skin. The bacterium also colonizes the human mouth, mucosae, oropharynx and upper respiratory tract.
This organism considered saprophyte, have a fairly low pathogenic potential however a variety of infection including meningitis, central nervous system shunt, endocarditis, and septic arthritis have ocurred in immunocompromised hosts.

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 06-30-09

REVIEWED BY: Lizzette M. Rivera, BSMT Lic. 2015
DATE: 06-30-09

IDENTIFICATION METHOD: VITEK 2 Compact System

IDENTIFIED AS: 95% Micrococcus lylae

Issued: 01/24/09

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Jun 23, 2009 09:34 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10658-22-1

Bionumber: 430046405373231
Selected Organism: Staphylococcus xylosus

Comments:	n/a Glvelazco 06-2305

Identification Information	Card:	GP	Lot Number:	242135240	Expires:	Aug 27, 2010 12:00 GMT-04:00
	Completed:	Jun 19, 2009 21:03 GMT-04:00	Status:	Final	Analysis Time:	6.00 hours
Selected Organism	94% Probability		Staphylococcus xylosus			
	Bionumber:	430046405373231			Confidence:	Very good identification

SRF Organism	n/a Glvelazco 06-2305
Analysis Organisms and Tests to Separate:	
Analysis Messages:	
Contraindicating Typical Biopattern(s)	
Staphylococcus xylosus	dSOR(19),URE(97),

Biochemical Details

2	AMY	-	4	PIPLC	-	5	dXYL	+	8	ADH1	+	9	BGAL	+	11	AGLU	-
13	APPA	-	14	CDEX	-	15	AspA	-	16	BGAR	-	17	AMAN	-	19	PHOS	-
20	LeuA	-	23	ProA	-	24	BGURr	+	25	AGAL	-	26	PyrA	+	27	BGUR	+
28	AlaA	-	29	TyrA	-	30	dSOR	+	31	URE	-	32	POLYB	-	37	dGAL	-
38	dRIB	+	39	ILATk	-	42	LAC	+	44	NAG	+	45	dMAL	+	46	BACI	-
47	NOVO	+	50	NC6.5	+	52	dMAN	+	53	dMNE	+	54	MBdG	+	56	PUL	-
57	dRAF	-	58	O129R	+	59	SAL	-	60	SAC	+	62	dTRE	+	63	ADH2s	-
64	OPTO	+															

Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 23, 2009 09:34 GMT-04:00	

Glvelazco 06-2305

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

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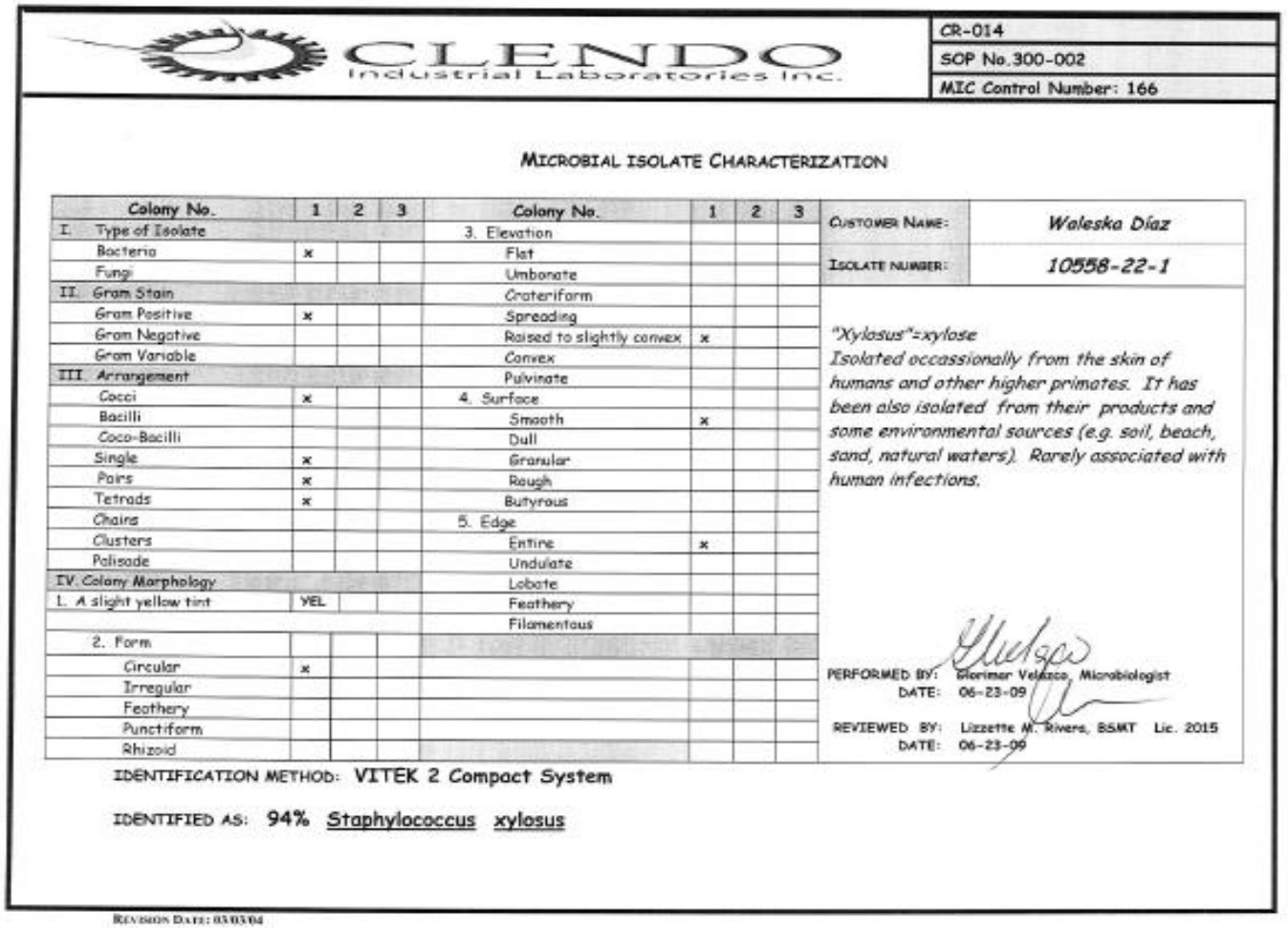


CLENDO
Industrial Laboratories Inc.

CR-014
SOP No.300-002
MIC Control Number: 166

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive	x		
Gram Negative			
Gram Variable			
III. Arrangement			
Cocci	x		
Bacilli			
Coco-Bacilli			
Single	x		
Pairs	x		
Tetrads	x		
Chains			
Clusters			
Palisade			
IV. Colony Morphology			
1. A slight yellow tint	YEL		
2. Form			
Circular	x		
Irregular			
Feathery			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Umbonate			
Crateriform			
Spreading			
Raised to slightly convex	x		
Convex			
Pulvinate			
4. Surface			
Smooth	x		
Dull			
Granular			
Rough			
Butyrous			
5. Edge			
Entire	x		
Undulate			
Lobate			
Feathery			
Filamentous			

CUSTOMER NAME: *Waleska Díaz*

ISOLATE NUMBER: *10558-22-1*

"Xylosus"=xylose
Isolated occassionally from the skin of humans and other higher primates. It has been also isolated from their products and some environmental sources (e.g. soil, beach, sand, natural waters). Rarely associated with human infections.

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 06-23-09

REVIEWED BY: Lizzette M. Rivera, BSMT Lic. 2015
DATE: 06-23-09

IDENTIFICATION METHOD: **VITEK 2 Compact System**

IDENTIFIED AS: **94% Staphylococcus xylosus**

REVISION DATE: 03/03/04

CLENDO INDUSTRIAL LABORATORY
PO BOX 579 BAYAMON PR 00960
TEL 787-620-8909
FAX 787-999-7149
Email: clendoind@ptc.net

FDA No. 30033383013

CLENDO CONTROL NO. 10559

CUSTOMER SAMPLE ANALYSIS REPORT

A. CUSTOMER NAME	WALESKA DIAZ
B. CLIENT NUMBER	0590
C. ADDRESS	URB. VILLA VICTORIA CAGUAS P.R. 00725
D. TELEPHONE	787-429-6644
E. FAX	N/A
F. CONTACT PERSON	WALESKA DIAZ
G. DATE /TIME OF SAMPLE RECEIPT	06-15-09 / 11:55
H. DATE / TIME OF SAMPLING	06-15-09 / 11:30
I. QUANTITY OF SAMPLES	12
J. DESCRIPTION OF SAMPLES	ENVIROSWABS
K. SAMPLES COLLECTOR NAME	SAMUEL SERRANO
L. DATE/TIME ANALYSIS BEGINS:	06-15-09 / 13:00
M. RESULTS	

PROCEDURE PERFORMED AS PER:

SOP NO.100-023 PROCEDURE FOR ENVIRONMENTAL AIR SAMPLING USING SAS SUPER 100 SURFACE AIR SYSTEM

REFERENCES:

"MANUAL OF ENVIRONMENTAL MICROBIOLOGY" 2nd EDITION 2002

ENVIROSWABS SAMPLING

SAMPLE	BACTERIA (2ND DAY COUNT)	YEAST/MOLD (7TH DAY COUNT)	IDENTIFICATION
10559-1 BEAM A (BABY GYM)	435 COLONIES/50cm^2	10 COLONIES/50cm^2	97% Sphingomonas paucimobilis Non Sporulating Fungi
10559-2 BEAM B	585 COLONIES/50cm^2	10 COLONIES/50cm^2	Curvularia geniculata
10559-3 BAR A (BABY GYM)	220 COLONIES/50cm^2	10 COLONIES/50cm^2	Penicillium chrysogenum
10559-4 BAR B	20 COLONIES/50cm^2	0 COLONIES/50cm^2	92% Brevibacillus choshinensis
10559-5 POMMEL HORSE A	375 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10559-6 POMMEL HORSE B	2070 COLONIES/50cm^2	15 COLONIES/50cm^2	Penicillium verruculosum
10559-7 VAULT A	115 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A

CLENDO INDUSTRIAL LABORATORY
PO BOX 579 BAYAMON PR 00960
TEL 787-620-6800
FAX 787-999-7149
Email clendoind@prtc.net

FDA No. 30033383013

CLENDO CONTROL NO. 10559

CUSTOMER SAMPLE ANALYSIS REPORT

10559-8 VAULT B	100 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10559-9 FOUNTAIN	TNTC COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10559-10 BG (CONFERENCE ROOM)	30 COLONIES/50cm^2	15 COLONIES/50cm^2	Acremonium alabamense Penicillium chrysogenum Tricophyton soudanense
10559-11 BG (ROSA OFFICE)	250 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10559-12 NEGATIVE CONTROL	0 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A

N. COMMENTS

PRINCIPLE OF THE SURFACE AIR SYSTEM (SAS) SUPER 100: AIR IS ASPIRATED FOR VARIABLE TIME (IN THIS STUDY=1,000L FOR CLEAN ROOMS/4MINUTES) THROUGH A COVER WHICH HAVE BEEN MACHINED WITH A SERIES OF SMALL HOLES OF A SPECIAL DESIGN. THE RESULTING LAMINAR AIR FLOW IS DEIRECTED ONTO THE AGAR SURFACE OF A "CONTACT PLATE" CONTAINING MEDIUM CONSISTENT WITH THE MICROBIOLOGICAL EXAMINATION TO BE PERFORMED. WHEN THE PRESET SAMPLING CYCLE IS COMPLETED, THE PLATE IS REMOVED AND INCUBATED. THE ORGANISMS ARE THEN VISIBLE TO THE NAKED EYE AND CAN BE COUNTED FOR AN ASSESSMENT OF THE LEVEL OF CONTAMINATION.

50 CFU / M^3 OR 1.42 CFU / FT^3 OF YEASTS / MOLDS OR MORE IN THE ENVIRONMENT IS CONSIDERED A SIGNIFICATIVE RISK FACTOR FOR RESPIRATORY PROBLEMS OR COMPLICATIONS, EYES AND SKIN IRRITATIONS.

PERFORMED BY: GLORIMAR VELAZCO - LABORATORY ANALYST		DATE	09-08-09
REVIEWED BY: LIZZETTE M. RIVERA, B.S.M.T. - LABORATORY DIRECTOR (LIC # 2015)		DATE	09-08-09

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06355
System #:

Laboratory Report

Printed Jun 23, 2009 09:35 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10559-1-1

Bionumber: 5000021100240001
Selected Organism: Sphingomonas paucimobilis

Comments:	N/a 06-23-09

Identification Information	Card:	GN	Lot Number:	241112040	Expires:	Jan 7, 2010 12:00 GMT-04:00
	Completed:	Jun 19, 2009 20:04 GMT-04:00	Status:	Final	Analysis Time:	5.00 hours
Selected Organism	97% Probability		Sphingomonas paucimobilis			
	Bionumber:	5000021100240001			Confidence:	Excellent identification

SRF Organism

Analysis Organisms and Tests to Separate: N/a 06-23-09

Analysis Messages:

Contraindicating Typical Biopattern(s)

Sphingomonas paucimobilis PyrA(24).

Biochemical Details

2	APPA	+	3	ADO	-	4	PyrA	+	5	IARL	-	7	dCEL	-	9	BGAL	-
10	H2S	-	11	BNAG	-	12	AGLTp	-	13	dGLU	-	14	GGT	-	15	OFF	-
17	BGLU	-	18	dMAL	-	19	dMAN	-	20	dMNE	-	21	BXYL	+	22	BAlap	-
23	ProA	+	26	LIP	-	27	PLE	-	29	TyrA	+	31	URE	-	32	dSOR	-
33	SAC	-	34	dTAG	-	35	dTRE	-	36	CIT	-	37	MNT	-	39	5KG	-
40	ILATk	-	41	AGLU	+	42	SUCT	-	43	NAGA	-	44	AGAL	-	45	PHOS	+
46	GlyA	-	47	ODC	-	48	LDC	-	53	IHISa	-	56	CMT	-	57	BGUR	-
58	O129R	-	59	GGAA	-	61	IMLTa	-	62	ELLM	+	64	ILATa	-			

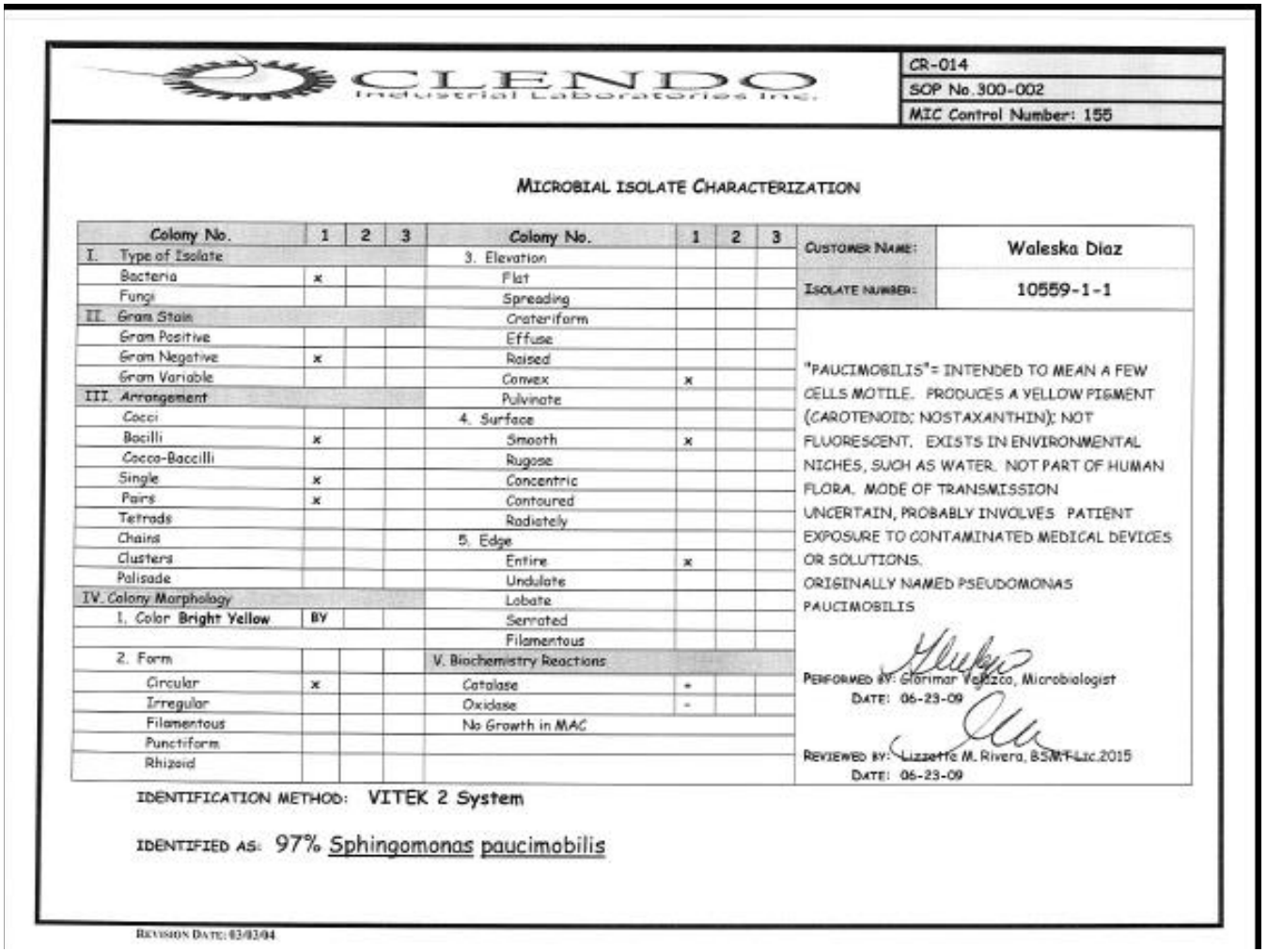
Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 23, 2009 09:35 GMT-04:00	

06-23-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

Page 1 of 1



CLENDO Industrial Laboratories Inc.

CR-014
SOP No. 300-002
MIC Control Number: 155

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive			
Gram Negative	x		
Gram Variable			
III. Arrangement			
Cocci			
Bacilli	x		
Cocco-Baccilli			
Single	x		
Pairs	x		
Tetrads			
Chains			
Clusters			
Palisade			
IV. Colony Morphology			
1. Color **Bright Yellow**	BY		
2. Form			
Circular	x		
Irregular			
Filamentous			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Spreading			
Crateriform			
Effuse			
Raised			
Convex	x		
Pulvinate			
4. Surface			
Smooth	x		
Rugose			
Concentric			
Contoured			
Radiately			
5. Edge			
Entire	x		
Undulate			
Lobate			
Serrated			
Filamentous			
V. Biochemistry Reactions			
Catalase	+		
Oxidase	-		
No Growth in MAC			

CUSTOMER NAME: Waleska Diaz

ISOLATE NUMBER: 10559-1-1

"PAUCIMOBILIS"= INTENDED TO MEAN A FEW CELLS MOTILE. PRODUCES A YELLOW PIGMENT (CAROTENOID: NOSTAXANTHIN); NOT FLUORESCENT. EXISTS IN ENVIRONMENTAL NICHES, SUCH AS WATER. NOT PART OF HUMAN FLORA. MODE OF TRANSMISSION UNCERTAIN, PROBABLY INVOLVES PATIENT EXPOSURE TO CONTAMINATED MEDICAL DEVICES OR SOLUTIONS.
ORIGINALLY NAMED PSEUDOMONAS PAUCIMOBILIS

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 06-23-09

REVIEWED BY: Lizzette M. Rivera, BSMT-Lic.2015
DATE: 06-23-09

IDENTIFICATION METHOD: VITEK 2 System

IDENTIFIED AS: 97% Sphingomonas paucimobilis

REVISION DATE: 03/03/04

CLENDO
Industrial Laboratories Inc.

CR-073	
SOP No.300-027	
IM CONTROL NO. 330	

IDENTIFICATION OF MOLDS

CONTROL No. : 10559-1-2	CUSTOMER: WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	**COLOR:** WHITE **APPEARANCE:** COTTONY	
BOTTOM	**COLOR:** CREAMY **DIAMETER:** 2 CM **APPEARANCE:** WAXY	

MICROSCOPIC EXAMINATION

SLIDE CULTURE CHAMBER

DESCRIPTION	
ONLY HYPHAE WAS OBSERVED!	

IDENTIFICATION: "NON-SPORULATING FUNGI"

.

PERFORMED BY: GLORIMAR VELAZCO DATE: 09-08-09

REVIEWED BY: LIZZETTE M. RIVERA DATE: 09-08-09

Issued: 06/05/09

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No. 300-027
IM CONTROL NO. 206

IDENTIFICATION OF MOLDS

ISOLATE NO. 10559-2-1	CUSTOMER: WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	COLOR: charcoal gray APPEARANCE: WOOLY	
BOTTOM	Color: black Appearance: waxy	

MICROSCOPIC EXAMINATION
SLIDE CULTURE CHAMBER

DESCRIPTION	
CONIDIOPHORES SIMPLE, RARELY BRANCHED. CONIDIA BORNE FROM PORES IN GENICULATE HYPHAE, ELLIPSOIDAL, WITH 3 SEPTA, ALMOST STRAIGHT ALONG ONE SIDE BUT WITH ECCENTRIC SWELLING OF THE PENULTIMATE CELL CHARACTERISTIC OF THE GENUS, WITH WALLS SMOOTH, PALE TO MID BROWN, AND WITH ALL CELLS IN EACH CONIDIUM OF A SIMILAR COLOUR.	

IDENTIFICATION: CURVULARIA GENICULATA

TELEMORPHS: COCHLIOBOLUS, PSEUDOCOCHLIOBOLUS (ASCOMYCOTA, EUASCOMYCETES, PLEOSPORALES: PLEOSPORACEAE). NUMEROUS SPECIES ARE KNOWN, MOSTLY OCCURRING ON DEAD PLANT MATERIAL. THEY ARE PARTICULARLY COMMON AS SAPROBES OR WEAK PATHOGENS ON GRASSES. SOME UBIQUITOUS SPECIES ARE OCASIONALLY FOUND IN CATTLE, RARELY IN HUMANS, IN BOTH CASES CAUSING CHRONIC, NON-SPECIFIC, ALLERGIC SINUSITIS, SOMETIMES WITH CEREBRAL INVOLVEMENT. IN ADDITION, TRAUMATIC INFECTIONS ARE NOTED. SPORES TYPICALLY OCCUR IN DAILY AIR SAMPLES DURING DRY WEATHER. ABLE TO GERMINATE AT 25°C AT WATER ACTIVITY REQUIREMENTS OF 0.89. NO RELIABLE OF MYCOTOXINS PRODUCTION ARE KNOWN.

PERFORMED BY:	GLORIMAR VELAZCO	DATE:	06-29-09
REVIEWED BY:	LCDA. LIZZETTE M. RIVERA	DATE:	06-29-09

Revision Date: 03-03-04

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No. 300-027
IM CONTROL NO. 199

IDENTIFICATION OF MOLDS

ISOLATE NO. 10559-3-1

CUSTOMER: WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	**COLOR:** VELUTINOUS TO FLUCCOSE, EXUDING YELLOW PIGMENT IN TO THE MEDIUM **APPEARANCE:** VELVETY	
BOTTOM	**COLOR:** YELLOW **APPEARANCE:** WAXY	

MICROSCOPIC EXAMINATION

SLIDE CULTURE CHAMBER

DESCRIPTION	
CONIDIOPHORE STIPES SMOOTH-WALLED, 200-300µM LONG; PENICILLI USUALLY TERVERTICILLATE. METULAE8-12 µM LONG. PHIALIDES FLASK-SHAPED, 7-10 µM LONG. CONIDEA SMOOTH-WALLED, ELLIPSOIDAL, 2.5-4.0 µM LONG, BLUE OR BLUISH GREEN.	

IDENTIFICATION: PENICILLIUM CHYSOGENUM

IT IS A DRY-SPORE FUNGE, THAT BECOMES AERBORNE BY PASSIVE FORCE, SUCH AS AIR MOVEMENTS OR RAIN DROPS. MOST PENICILLIUM SPECIES ARE CONSIDERED TO BE UNBIQUITOUS, OPORTUNISTIC SAPROPHYTES, COMMONLY CONSIDERED AS CONTAMINANTS. THEY ARE SO WIDESPREAD AND ABUNDANT IN FOODS AND FEEDS THAT THEY MUST BE CONSIDERED TO BE A POTENTIAL HAZARD TO BOTH HUMAN AND ANIMAL HEALTH BECAUSE MANY SPECIES MAKE SEVERAL COMPOUNDS KNOWN TO BE TOXIC. THEY HAVE BEEN FOUND IN IN A VARIETY OF DISEASES IN WHICH ITS ETIOLOGIC SIGNIFICANCE IS UNCERTAIN.

PERFORMED BY:	GLORIMAR VELAZCO	DATE:	07-03-09
REVIEWED BY:	LCDA. LIZZETTE M. RIVERA	DATE:	07-03-09

Revision Date: 03/03/04

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 08365
System #:

Laboratory Report

Printed Jun 23, 2009 09:35 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10559-4-1

Bionumber: 5727101004010080
Selected Organism: Brevibacillus choshinensis

Comments:	n/a Glupo 06-2305

Identification Information	Card:	BCL	Lot Number:	239124110	Expires:	May 8, 2010 12:00 GMT-04:00
	Completed:	Jun 20, 2009 05:19 GMT-04:00	Status:	Final	Analysis Time:	14.25 hours
Selected Organism	92% Probability		Brevibacillus choshinensis			
	Bionumber:	5727101004010080			Confidence:	Good identification
SRF Organism	n/a Glupo 06-2305					
Analysis Organisms and Tests to Separate:						
Analysis Messages:						
Contraindicating Typical Biopattern(s)						
Brevibacillus choshinensis	TTZ(12),BGLU(24),AGLU(12),BXYL(12),GlyA(76),					

Biochemical Details

1	BXYL	+	3	LysA	-	4	AspA	+	5	LeuA	+	7	PheA	+	8	ProA	+
9	BGAL	-	10	PyrA	+	11	AGAL	-	12	AlaA	+	13	TyrA	+	14	BNAG	+
15	APPA	+	18	CDEX	-	19	dGAL	-	21	GLYG	-	22	INO	-	24	MdG	-
25	ELLM	+	26	MdX	-	27	AMAN	-	29	MTE	-	30	GlyA	-	31	dMAN	-
32	dMNE	-	34	dMLZ	-	36	NAG	-	37	PLE	-	39	IRHA	-	41	BGLU	+
43	BMAN	-	44	PHC	-	45	PVATE	-	46	AGLU	+	47	dTAG	-	48	dTRE	-
50	INU	-	53	dGLU	-	54	dRIB	-	56	PSCNa	-	58	NaCl 6.5%	-	59	KAN	-
60	OLD	-	61	ESC	+	62	TTZ	+	63	POLYB_R	-						

Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 23, 2009 09:35 GMT-04:00	

Glupo 06-23-05

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

Page 1 of 1

CLENDO
Industrial Laboratories Inc.

CR-014
SOP No.300-002
MIC Control Number: 371

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive	x		
Gram Negative			
Gram Variable			
III. Arrangement			
Cocci			
Bacilli (short)	x		
Coco-Bacilli ; Small			
Diptheroid-like	x		
Spore forming	x		
Tetrads			
Chains			
Clusters			
Coryneform arrangement			
IV. Colony Morphology			
1. Color Yellowish ivory	Y?		
2. Form			
Circular	x		
Irregular			
Filamentous			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Umbonate			
Crateriform			
Spreading			
Raised			
Convex	x		
Pulvinate			
4. Surface			
Smooth; Shiny	x		
and Slight Granular	x		
Rugose			
Rough			
Butyrous			
5. Edge			
Entire	x		
Undulate			
Lobate			
Erose			
Filamentous			

CUSTOMER NAME:	Waleska Díaz
ISOLATE NUMBER:	10559-4-1

Its name means short bacilli.
Has been isolated chiefly from soil and foods.
Whenever isolated from clinical specimens, the potential for the isolate to be a contaminant must be strongly considered.

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 06-23-09

REVIEWED BY: Lizzette M. Rivera, BSMT Lic.2015
DATE: 06-23-09

IDENTIFICATION METHOD: **VITEK 2 Compact System**

IDENTIFIED AS: **92% Brevibacillus choshinensis**

REVISION DATE: 03/03/04

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No.300-027
IM CONTROL NO. 206

IDENTIFICATION OF MOLDS

ISOLATE NO.: 10559-6-1 | CUSTOMER: WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	COLOR: TURQUOISE BLUE WITH WHITE MARGIN APPEARANCE: VELVELTY	
BOTTOM	COLOR: YELLOW DIAMETER: 2 CM APPEARANCE: WAXY	

MICROSCOPIC EXAMINATION

SLIDE CULTURE CHAMBER

DESCRIPTION

CONIDIOPHORES BORNE FROM AERIAL HYPHAE, STIPES WITH THIN SMOOTH WALLS, CHARACTERISTICALLY BEARING A TERMINAL TETRAD OF DIVERGENT METULAE. PHIALIDES AMPULLIFORM, WITH SHORT COLLULA; CONIDIA SPHERICAL, SPINOSE, BORNE IN SHORT, POORLY DEFINE COLUMNS.

IDENTIFICATION: PENICILLIUM VERUCULOSUM

IT IS A SOIL FUNGUS, PRESENT ONLY AS A CONTAMINANT. PRODUCES DRY SPORES THAT BECOMES AIRBORNE BY PASSIVE FORCE, SUCH AS AIR MOVEMENTS OR RAIN DROPS . MOST PENICILLIUM SPECIES ARE CONSIDERED TO BE UNBIQUITOUS, OPORTUNISTIC SAPROPHYTES, COMMONLY CONSIDERED AS CONTAMINANTS. THEY ARE SO WIDESPREAD AND ABUNDANT IN FOODS AND FEEDS THAT THEY MUST BE CONSIDERED TO BE A POTENTIAL HAZARD TO BOTH HUMAN AND ANIMAL HEALTH BECAUSE MANY SPECIES MAKE SEVERAL COMPOUNDS KNOWN TO BE TOXIC. THEY HAVE BEEN FOUND IN IN A VARIETY OF DISEASES IN WHICH ITS ETIOLOGIC SIGNIFICANCE IS UNCERTAIN..

PERFORMED BY: GLORIMAR VELAZCO	DATE: 06-29-09
REVIEWED BY: LIZZETTE RIVERA	DATE: 06-29-09

Revision Date: 03/03/04

CLENDO
Industrial Laboratories Inc.

CR-073	
SOP No.300-027	
IM CONTROL NO. 335	

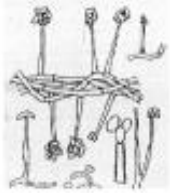
IDENTIFICATION OF MOLDS

ISOLATE NO.:	10559-10-1	CUSTOMER:	WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	COLOR: BEIGE APPEARANCE: FLUCCOSE	
BOTTOM	COLOR: PALE APPEARANCE: WAXY	

MICROSCOPIC EXAMINATION
SLIDE CULTURE CHAMBER

DESCRIPTION	
COLONIES GROWING RAPIDLY, WHITE AT FIRST, BECOMING PALE OCHRACEOUS, FLUCCOSE TO POWDERY. CONIDIOPHORES SIMPLE, CYLINDRICAL, LATERAL. PHIALIDES SUBULATE, HYALINE, SMOOTH-WALLED, WITH A DISTINCT, THICKENED COLLATERRATE AT THE APEX. CONIDIA IN SLIMY HEADS, OBOVOIDAL, CLAVATE TO PYRIFORM, TRUCATE AT THE BASE, HYALINE, SMOOTH WALLED.	

IDENTIFICATION: ACREMONIUM ALABAMENSE

IT IS A COMMON INDOOR CONTAMINANT THAT PRODUCE SPORES IN A SLIMY MASS (ALTHOUGH SOME SPECIES PRODUCE DRY SPORES). BECAUSE SLIMY SPORES DO NOT BECOME AIRBORNE EASILY, THEIR DETECTION INDOORS SHOULD BE CONSIDERED SIGNIFICANT. ETIOLOGIC AGENT OF MYCETOMAS, CORNEAL INFECTIONS, AND NAIL INFECTIONS. INVASIVE DISEASE AT VARIOUS BODY SITES HAS BEEN REPORTED ON RARE OCCASION. NOT KNOWN TO PRODUCE MYCOTOXINS.

PERFORMED BY:	G. VELAZCO	DATE:	09-08-09
REVIEWED BY:	LIZZETTE M. RIVERA	DATE:	09-08-09

Revision Date: 05/08

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No.300-027
IM CONTROL NO. 331

IDENTIFICATION OF MOLDS

ISOLATE NO. 10559-10-2	CUSTOMER: WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	**COLOR:** VELUTINOUS TO FLUCCOSE, EXUDING YELLOW PIGMENT IN TO THE MEDIUM **APPEARANCE:** VELVETY	
BOTTOM	**COLOR:** YELLOW **APPEARANCE:** WAXY	

MICROSCOPIC EXAMINATION
SLIDE CULTURE CHAMBER

DESCRIPTION	
CONIDIOPHORE STIPES SMOOTH-WALLED, 200-300µM LONG; PENICILLI USUALLY TERVERTICILLATE. METULAE8-12 µM LONG. PHIALIDES FLASK-SHAPED, 7-10 µM LONG. CONIDIA SMOOTH-WALLED, ELLIPSOIDAL, 2.5-4.0 µM LONG, BLUE OR BLUISH GREEN.	

IDENTIFICATION: PENICILLIUM CHYSOGENUM

IT IS A DRY-SPORE FUNGI, THAT BECOMES AIRBORNE BY PASSIVE FORCE, SUCH AS AIR MOVEMENTS OR RAIN DROPS. MOST PENICILLIUM SPECIES ARE CONSIDERED TO BE UNBIQUETOUS, OPORTUNISTIC SAPROPHYTES, COMMONLY CONSIDERED AS CONTAMINANTS. THEY ARE SO WIDESPREAD AND ABUNDANT IN FOODS AND FEEDS THAT THEY MUST BE CONSIDERED TO BE A POTENTIAL HAZARD TO BOTH HUMAN AND ANIMAL HEALTH BECAUSE MANY SPECIES MAKE SEVERAL COMPOUNDS KNOWN TO BE TOXIC. THEY HAVE BEEN FOUND IN IN A VARIETY OF DISEASES IN WHICH ITS ETIOLOGIC SIGNIFICANCE IS UNCERTAIN.

PERFORMED BY:	GLORIMAR VELAZCO	DATE:	09-08-09
REVIEWED BY:	LCDA. LIZZETTE M. RIVERA	DATE:	09-08-09

Revision Date: 03/03/04

CLENDO Industrial Laboratory, Inc.

CR-073	
SOP No. 300-027	
IM CONTROL NO.	332

IDENTIFICATION OF MOLDS

ISOLATE NO.: 10559-10-3	CUSTOMER: WALESKA DÍAZ

MACROSCOPIC EXAMINATION

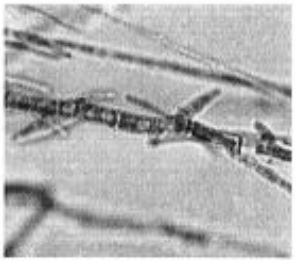
SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	COLOR: Apricot orange APPEARANCE: Slow-growing fluffy /velvety	
BOTTOM	COLOR: Yellow - brown APPEARANCE: waxy	

MICROSCOPIC EXAMINATION

SLIDE CULTURE CHAMBER

DESCRIPTION

COLONIES ARE SLOW-GROWING WITH A FLAT TO FOLDED, SUEDE-LIKE SURFACE. OFTEN THERE IS A BROAD FRINGE OF SUBMERGED GROWTH. SURFACE MYCELIUM AND REVERSE PIGMENT ARE CHARACTERISTICALLY A DEEP APRICOT-ORANGE IN COLOUR. MICROSCOPICALLY, THE HYPHAE OFTEN SHOW REFLEXIVE OR RIGHT-ANGLE BRANCHING. PYRIFORM MICROCONIDIA MAY OCCASIONALLY BE PRESENT AND NUMEROUS CHLAMYDOCONIDIA ARE OFTEN FOUND IN OLDER CULTURES.



IDENTIFICATION: *TRICHOPHYTON SOUDANENSE*

TRICHOPHYTON SOUDANENSE IS AN ANTHROPOPHILIC FUNGUS WHICH IS A FREQUENT CAUSE OF TINEA CAPITIS IN AFRICA. INVADED HAIRS SHOW AN ENDOTHRIX INFECTION BUT DO NOT FLUORESCE UNDER WOOD'S ULTRA-VIOLET LIGHT. DISTRIBUTION IS MAINLY IN AFRICA WITH OCCASIONAL ISOLATES FROM EUROPE, BRAZIL AND U.S.A.

PERFORMED BY: G. VELAZCO	DATE: 09-08-09
REVIEWED BY: L. M. RIVERA	DATE: 09-08-09

Appendix 5. Air Sampling Analytical Report

(#10330, #10332)

CLENDO INDUSTRIAL LABORATORY
PO BOX 570 BAYAMON PR 00960
TEL 787-620-8888
FAX 787-999-7100
Email: clendoind@prtc.net

FDA No. 30033383013

CLENDO CONTROL NO. 10330

CUSTOMER SAMPLE ANALYSIS REPORT

A. CUSTOMER NAME	WALESKA DIAZ
B. CLIENT NUMBER	0590
C. ADDRESS	URB. VILLA VICTORIA CAGUAS P.R. 00725
D. TELEPHONE	787-429-6644
E. FAX	N/A
F. CONTACT PERSON	WALESKA DIAZ
G. DATE /TIME OF SAMPLE RECEIPT	06-15-09 / 17:20
H. DATE / TIME OF SAMPLING	06-15-09 / 11:30
I. QUANTITY OF SAMPLES	24
J. DESCRIPTION OF SAMPLES	SAS-PLATES
K. SAMPLES COLLECTOR NAME	SAMUEL SERRANO
L. DATE/TIME ANALYSIS BEGINS:	06-15-09 / 18:00
M. RESULTS	

PROCEDURE PERFORMED AS PER:

SOP NO.100-023 PROCEDURE FOR ENVIRONMENTAL AIR SAMPLING USING SAS SUPER 100 SURFACE AIR SYSTEM

REFERENCES:

"MANUAL OF ENVIRONMENTAL MICROBIOLOGY" 2ND EDITION 2002

SAS YEAST/MOLD AIR SAMPLING RESULTS (4TH DAY COUNT)

SAMPLE	TOTAL COUNT (Pr=Corrected Count)	CFU/m³	CFU/ft³	IDENTIFICATION
10330-1 109	53 CFU	265 CFU/M³	7.50 CFU/FT³	Curvularia brachyspora
10330-2 34	131 CFU	655 CFU/M³	18.55 CFU/FT³	Curvularia clavata
10330-3 100	186 CFU	930 CFU/M³	26.34 CFU/FT³	N/A
10330-4 85	274 CFU	1370 CFU/M³	38.80 CFU/FT³	N/A
10330-5 124	TNTC CFU	TNTC CFU/M³	TNTC CFU/FT³	N/A
10330-6 114	257 CFU	1285 CFU/M³	36.39 CFU/FT³	Penicillium chrysogenum
10330-7 127	244 CFU	1220 CFU/M³	34.55 CFU/FT³	N/A

CLENDO INDUSTRIAL LABORATORY
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FAX 787-999-7149
Email: clendoind@prtc.net

FDA No. 30033383013

CLENDO CONTROL No. 10330

CUSTOMER SAMPLE ANALYSIS REPORT

10330-8 **29**	114 CFU	570 CFU/M^3	16.14 CFU/FT^3	N/A
10330-9 **102**	118 CFU	590 CFU/M^3	16.71 CFU/FT^3	N/A
10330-10 **43**	98 CFU	490 CFU/M^3	13.88 CFU/FT^3	N/A
10330-11 **105**	72 CFU	360 CFU/M^3	10.19 CFU/FT^3	Aspergillus niger
10330-12 **26**	83 CFU	415 CFU/M^3	11.75 CFU/FT^3	N/A
10330-13 **16**	107 CFU	535 CFU/M^3	15.15 CFU/FT^3	N/A
10330-14 **52**	73 CFU	365 CFU/M^3	10.34 CFU/FT^3	N/A
10330-15 **90**	77 CFU	385 CFU/M^3	10.90 CFU/FT^3	Aspergillus clavatus Aspergillus clavatus Curvularia senegalensis Cladosporium cladosporoide
10330-16 **12**	88 CFU	440 CFU/M^3	12.46 CFU/FT^3	N/A
10330-17 **64**	49 CFU	245 CFU/M^3	6.94 CFU/FT^3	N/A
10330-18 **88**	95 CFU	475 CFU/M^3	13.45 CFU/FT^3	Aspergillus avenaceus
10330-19 **14**	87 CFU	435 CFU/M^3	12.32 CFU/FT^3	N/A
10330-20 **47**	96 CFU	480 CFU/M^3	13.59 CFU/FT^3	Penicillium citrinum
10330-21 **125**	67 CFU	335 CFU/M^3	9.49 CFU/FT^3	N/A

CLENDO INDUSTRIAL LABORATORY
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FDA No. 30033383013

CLENDO CONTROL No. 10330

CUSTOMER SAMPLE ANALYSIS REPORT

10330-22 37	50 CFU	250 CFU/M^3	7.08 CFU/FT^3	Phoma glomerata
10330-23 132	70 CFU	350 CFU/M^3	9.91 CFU/FT^3	N/A
10330-24 68	43 CFU	215 CFU/M^3	6.09 CFU/FT^3	Penicillium chrysogenum

SAS BACTERIA AIR SAMPLING RESULTS

SAMPLE	TOTAL COUNT (Pr=Corrected Count)	CFU/m^3	CFU/ft^3	IDENTIFICATION
10330-1 109	163 CFU	815 CFU/M^3	23.08 CFU/FT^3	N/A
10330-2 34	70 CFU	350 CFU/M^3	9.91 CFU/FT^3	N/A
10330-3 100	139 CFU	695 CFU/M^3	19.68 CFU/FT^3	99% Pantoea spp.
10330-4 85	134 CFU	670 CFU/M^3	18.97 CFU/FT^3	N/A
10330-5 124	84 CFU	420 CFU/M^3	11.89 CFU/FT^3	N/A
10330-6 114	181 CFU	905 CFU/M^3	25.62 CFU/FT^3	N/A
10330-7 127	154 CFU	770 CFU/M^3	21.81 CFU/FT^3	98% Pantoea spp.
10330-8 29	175 CFU	875 CFU/M^3	24.78 CFU/FT^3	N/A
10330-9 102	95 CFU	475 CFU/M^3	13.45 CFU/FT^3	95 % Chryseobacterium indologenes
10330-10 43	92 CFU	460 CFU/M^3	13.03 CFU/FT^3	N/A

CLENDO INDUSTRIAL LABORATORY
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Email: clendolnd@prtc.net

FDA No. 30033383013

CLENDO CONTROL NO. 10330

CUSTOMER SAMPLE ANALYSIS REPORT

10330-11 **105**	30 CFU	150 CFU/M^3	4.25 CFU/FT^3	N/A
10330-12 **26**	28 CFU	140 CFU/M^3	3.96 CFU/FT^3	N/A
10330-13 **16**	52 CFU	260 CFU/M^3	7.36 CFU/FT^3	N/A
10330-14 **52**	74 CFU	370 CFU/M^3	10.48 CFU/FT^3	**89% Pseudomona oryzihabitans** **92 % Klebsiella pneumoniae ssp ozaenae**
10330-15 **90**	132 CFU	660 CFU/M^3	18.69 CFU/FT^3	N/A
10330-16 **12**	119 CFU	595 CFU/M^3	16.85 CFU/FT^3	N/A
10330-17 **64**	116 CFU	580 CFU/M^3	16.42 CFU/FT^3	**99 % Staphylococcus hominis**
10330-18 **88**	73 CFU	365 CFU/M^3	10.34 CFU/FT^3	N/A
10330-19 **14**	33 CFU	165 CFU/M^3	4.67 CFU/FT^3	N/A
10330-20 **47**	34 CFU	170 CFU/M^3	4.81 CFU/FT^3	N/A
10330-21 **125**	21 CFU	105 CFU/M^3	2.97 CFU/FT^3	N/A
10330-22 **37**	25 CFU	125 CFU/M^3	3.54 CFU/FT^3	**96% Sphingomonas paucimobilis**
10330-23 **132**	16 CFU	80 CFU/M^3	2.26 CFU/FT^3	**95% Bacillus megaterium**
10330-24 **68**	12 CFU	60 CFU/M^3	1.70 CFU/FT^3	**99% Serratia odorifera**
N. COMMENTS				

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FDA No. 30033383013

CLENDO CONTROL NO. 10330

CUSTOMER SAMPLE ANALYSIS REPORT

PRINCIPLE OF THE SURFACE AIR SYSTEM (SAS) SUPER 100: AIR IS ASPIRATED FOR VARIABLE TIME (IN THIS STUDY=1,000L FOR CLEAN ROOMS/4MINUTES) THROUGH A COVER WHICH HAVE BEEN MACHINED WITH A SERIES OF SMALL HOLES OF A SPECIAL DESIGN. THE RESULTING LAMINAR AIR FLOW IS DEIRECTED ONTO THE AGAR SURFACE OF A "CONTACT PLATE" CONTAINING MEDIUM CONSISTENT WITH THE MICROBIOLOGICAL EXAMINATION TO BE PERFORMED. WHEN THE PRESET SAMPLING CYCLE IS COMPLETED, THE PLATE IS REMOVED AND INCUBATED. THE ORGANISMS ARE THEN VISIBLE TO THE NAKED EYE AND CAN BE COUNTED FOR AN ASSESSMENT OF THE LEVEL OF CONTAMINATION.

50 CFU / M^3 OR 1.42 CFU / FT^3 OF YEASTS / MOLDS OR MORE IN THE ENVIRONMENT IS CONSIDERED A SIGNIFICATIVE RISK FACTOR FOR RESPIRATORY PROBLEMS OR COMPLICATIONS, EYES AND SKIN IRRITATIONS.

TNTC = TO NOUMEROUS TO COUNT

PERFORMED BY: GLORIMAR VELAZCO - LABORATORY ANALYST		DATE	09-08-09
REVIEWED BY: LIZZETTE M. RIVERA, B.S.M.T. - LABORATORY DIRECTOR (LIC #2015)		DATE	09-08-09

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No. 300-027
IM CONTROL NO. 194

IDENTIFICATION OF MOLDS

ISOLATE NO. 10330-1-1 | CUSTOMER: WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	COLOR: Grayhish brown APPEARANCE: Velvety	
Bottom	COLOR: Brownish Black APPEARANCE: waxy	

MICROSCOPIC EXAMINATION

SLIDE CULTURE CHAMBER

DESCRIPTION	
CONIDIOPHORES SIMPLE, RARELY BRANCHED. CONIDIA BORNE FROM PORES IN GENICULATE HYPHAE, ELLIPSOIDAL, WITH 3 SEPTA, ALMOST STRAIGHT ALONG ONE SIDE BUT WITH ECCENTRIC SWELLING OF THE PENULTIMATE CELL CHARACTERISTIC OF THE GENUS, WITH WALLS SMOOTH, PALE TO MED BROWN, AND WITH ALL CELLS IN EACH CONIDIUM OF A SIMILAR COLOUR.	

IDENTIFICATION: CURVULARIA BRACHYSPORA

TELEMORPHS: COCHLIOBOLUS, PSEUDOCOCHLIOBOLUS (ASCOMYCOTA, EUASCOMYCETES, PLEOSPORALES: PLEOSPORACEAE). NUMEROUS SPECIES ARE KNOWN, MOSTLY OCCURRING ON DEAD PLANT MATERIAL. THEY ARE PARTICULARLY COMMON AS SAPROBES OR WEAK PATHOGENS ON GRASSES. SOME UBIQUITOUS SPECIES ARE OCASIONALLY FOUND IN CATTLE, RARELY IN HUMANS, IN BOTH CASES CAUSING CHRONIC, NON-SPECIFIC, ALLERGIC SINUSITIS, SOMETIMES WITH CEREBRAL INVOLVEMENT. IN ADDITION, TRAUMATIC INFECTIONS ARE NOTED. SPORES TYPICALLY OCCUR IN DAILY AIR SAMPLES DURING DRY WEATHER. ABLE TO GERMINATE AT 25°C AT WATER ACTIVITY REQUIREMENTS OF 0.89. NO RELIABLE OF MYCOTOXINS PRODUCTION ARE KNOWN.

PERFORMED BY:	LCDA. GLORIMAR VELAZCO	DATE:	06-27-09
REVIEWED BY:	LCDA. LIZZETTE M. RIVERA	DATE:	06-27-09

Revision Date: 03-03-04

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No.300-027
IM CONTROL NO. 193

IDENTIFICATION OF MOLDS

ISOLATE NO. : 10330-2-1 | CUSTOMER: WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	COLOR: GRAYISH BROWN APPEARANCE: WOOLLY	
BOTTOM	COLOR: DARK BROWN APPEARANCE: WAXY	

MICROSCOPIC EXAMINATION
SLIDE CULTURE CHAMBER

DESCRIPTION	
CONIDIOPHORES STRAIGHT OR FLEXUOSE, SOMETIMES GENICULATE, BROWN, SMOOTH-WALLED, UP TO 150 µM LONG 2.0-6.5 µM WIDE. CONIDIA BROWN, SMOOTH-WALLED, STRAIGHT OR OCCASIONALLY SLIGHT CURVED, USUALLY CLAVATE, 3 SEPTATE, BLACKISH-BROWN, BASAL CELL FLATE.	

IDENTIFICATION: CURVULARIA CLAVATA

TELEMORPHS: COCHLIOBOLUS, PSEUDOCOCHLIOBOLUS (ASCOMYCOTA, EUASCOMYCETES, PLEOSPORALES: PLEOSPORACEAE). NUMEROUS SPECIES ARE KNOWN, MOSTLY OCCURRING ON DEAD PLANT MATERIAL. THEY ARE PARTICULARLY COMMON AS SAPROBES OR WEAK PATHOGENS ON GRASSES. SOME UBIQUITOUS SPECIES ARE OCASIONALLY FOUND IN CATTLE, RARELY IN HUMANS, IN BOTH CASES CAUSING CHRONIC, NON-SPECIFIC, ALLERGIC SINUSITES, SOMETIMES WITH CEREBRAL INVOLVEMENT. IN ADDITION, TRAUMATIC INFECTIONS ARE NOTED. SPORES TYPICALLY OCCUR IN DAILY AIR SAMPLES DURING DRY WEATHER. ABLE TO GERMINATE AT 25°C AT WATER ACTIVITY REQUIREMENTS OF 0.89. NO RELIABLE OF MYCOTOXINS PRODUCTION ARE KNOWN.

PERFORMED BY:	GLORIMAR VELAZCO	DATE:	06-27-09
REVIEWED BY:	LIZZETTE M. RIVERA	DATE:	06-27-09

Revision Date: 03-03-04

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No.300-027
IM CONTROL NO. 192

IDENTIFICATION OF MOLDS

ISOLATE NO. 10330-6-1

CUSTOMER: WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	**COLOR:** VELUTINOUS TO FLUCCOSE, EXUDING YELLOW PIGMENT IN TO THE MEDIUM **APPEARANCE:** VELVETY	
BOTTOM	**COLOR:** YELLOW **APPEARANCE:** WAXY	

MICROSCOPIC EXAMINATION

SLIDE CULTURE CHAMBER

DESCRIPTION	
CONIDIOPHORE STIPES SMOOTH-WALLED, 200-300μM LONG; PENICELLI USUALLY TERVERTICILLATE. METULAE8-12 μM LONG. PHIALIDES FLASK-SHAPED, 7-10 μM LONG. CONIDIA SMOOTH-WALLED, ELLIPSOIDAL, 2.5-4.0 μM LONG, BLUE OR BLUISH GREEN.	

IDENTIFICATION: PENICILLIUM CHYSOGENUM

IT IS A DRY-SPORE FUNGI, THAT BECOMES AERBORNE BY PASSIVE FORCE, SUCH AS AIR MOVEMENTS OR RAIN DROPS. MOST PENICILLIUM SPECIES ARE CONSIDERED TO BE UNBIQUITOUS, OPORTUNISTIC SAPROPHYTES, COMMONLY CONSIDERED AS CONTAMINANTS. THEY ARE SO WIDESPREAD AND ABUNDANT IN FOODS AND FEEDS THAT THEY MUST BE CONSIDERED TO BE A POTENTIAL HAZARD TO BOTH HUMAN AND ANIMAL HEALTH BECAUSE MANY SPECIES MAKE SEVERAL COMPOUNDS KNOWN TO BE TOXIC. THEY HAVE BEEN FOUND IN IN A VARIETY OF DISEASES IN WHICH ITS ETIOLOGIC SIGNIFICANCE IS UNCERTAIN.

PERFORMED BY:	GLORIMAR VELAZCO	DATE:	06-27-09
REVIEWED BY:	LCDA. LIZZETTE M. RIVERA	DATE:	06-27-09

Revision Date: 03/03/04

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No. 300-027
IM CONTROL NO. 195

IDENTIFICATION OF MOLDS

ISOLATE NO.:	10330-11-1	CUSTOMER:	WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	COLOR: BLACK APPEARANCE: GRANULAR	
BOTTOM	COLOR: BROWNISH BLACK APPEARANCE: WAXY	

MICROSCOPIC EXAMINATION
SLIDE CULTURE CHAMBER

DESCRIPTION

SEPTATE HYPHAE, LARGE AND BLACK CONIDIAL HEADS THAT APPEAR GLOBOSE AT FIRST, THEN EITHER RADIATE OR SPLITTING TO FORM DIVERGENT SPORE COLUMNS. THE CONIDIOPHORES ARE VARIABLE IN SIZE WITH THICK, SMOOTH WALLS; THEY ARE EITHER HYALINE OR BROWNISH NEAR THE VESICLE. THE VESICLE IS TYPICALLY GLOBOSE AND PRODUCES BROWNISH STERIGMATA (PHIALIDES) ON ITS ENTIRE SURFACE THAT DEVELOP IN DOUBLE SERIES: THE PRIMARY IS OCCASIONALLY SEPTATE AND LARGEST THAN THE SECONDARY PHIALIDE THAT PRODUCE BLACK, ECHINULATE, GLOBOSE CONIDIA.

IDENTIFICATION: ASPERGILLUS NIGER

SYNONYM: STERIGMATOCYSTIS NIGRA

ARE WIDESPREAD IN THE ENVIRONMENT AND ARE COMMONLY FOUND AS CONTAMINANTS. IT IS THE SECOND MOST COMMON CAUSE OF ASPERGILLOSIS. SOIL, BIRD AND BAT DROPPINGS, WATER-DAMAGED MATERIALS, OR ORGANIC-RICH SUBSTRATES IN BUILDINGS MAY BE A RESERVOIR FOR THESE FUNGI. IT IS USUALLY REGARDED AS A BENIGN FUNGUS, AND HAS BEEN WIDELY USED IN FOOD PROCESSING. IT IS CATEGORISED AS "GENERALLY REGARDED AS SAFE" BY THE U.S. GOVERNMENT. HOWEVER RECENTLY TWO OF 19 *A. NIGER* ISOLATES WERE REPORTED TO PRODUCE OCHRATOXIN A. THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER CLASSIFIES AFLATOXIN, A TOXIN DISCOVERED IN 1961 IN *A. NIGER* AS HAVING "SUFFICIENT EVIDENCE" FOR HUMAN AND ANIMAL CARCINOGENICITY. IT MAY ALSO BE INVOLVED IN OCCUPATIONAL RESPIRATORY CANCERS AMONG FOOD AND GRAIN WORKERS. GERMINATION REPORTED AT 0.77α_w AT 35°C.

PERFORMED BY:	GLORIMAR VELAZCO	DATE:	06-27-09
REVISED BY:	Lizzette Rivera	DATE:	06-27-09

Revision Date: 05/08

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No.300-027
IM CONTROL NO. 188

IDENTIFICATION OF MOLDS

ISOLATE NO.	10330-15-1	CUSTOMER:	WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	COLOR: BLUISH GREEN APPEARANCE: FLAKE, AND DENSE; VELVETY	
BOTTOM	COLOR: PALE YELLOW APPEARANCE: WAXY	

MICROSCOPIC EXAMINATION

SLIDE CULTURE CHAMBER

DESCRIPTION	
CONIDIAL HEADS RADIATE, LATER SPLITTING INTO SEVERAL COLUMNS. CONIDIOPHORE STIPES ARISING FROM SUBMERGED HYPHAE, SMOOTH-WALLED BUT SLIGHTLY ROUGHENED BELOW THE VESICLE. CONIDIOGENOUS CELLS UNISERIATE, BORNE ON THE UPPERMOST PART OF THE VESICLE ONLY.	

IDENTIFICATION:	ASPERGILLUS CLAVATUS

Species of Aspergillus are opportuniststic invaders that cause group of diseases known as Aspergillosis. Are widespread in the environment and are commonly found s contaminants.

PERFORMED BY:	GLORIMAR VELAZCO	DATE:	06-28-09
REVISED BY:	Lizzette Rivera	DATE:	06-28-09

Revision Date: 05/08

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No.300-027
IM CONTROL NO. 190

IDENTIFICATION OF MOLDS

ISOLATE NO.	10330-15-2	CUSTOMER:	WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	COLOR: BLUISH GREEN APPEARANCE: PLANE, AND DENSE, VELVETY	
BOTTOM	COLOR: PALE YELLOW APPEARANCE: WAXY	

MICROSCOPIC EXAMINATION
SLIDE CULTURE CHAMBER

DESCRIPTION	
CONIDIAL HEADS RADIATE, LATER SPLITTING INTO SEVERAL COLUMNS. CONIDIOPHORE STIPES ARISING FROM SUBMERGED HYPHAE, SMOOTH-WALLED BUT SLIGHTLY ROUGHENED BELOW THE VESICLE. CONIDIOGENOUS CELLS UNISERIATE, BORNE ON THE UPPERMOST PART OF THE VESICLE ONLY.	

IDENTIFICATION:	ASPERGILLUS CLAVATUS

Species of Aspergillus are opportuniststic invaders that cause group of diseases known as Aspergillosis. Are widespread in the environment and are commonly found s contaminants.

PERFORMED BY:	GLORIMAR VELAZCO	DATE:	06-28-09
REVISED BY:	Lizzette Rivera	DATE:	06-28-09

Revision Date: 05/08

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No.300-027
IM CONTROL NO. 189

IDENTIFICATION OF MOLDS

ISOLATE NO. 10330-15-3 | CUSTOMER: WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	COLOR: SHADES OF GRAY APPEARANCE: VELVETY	
BOTTOM	COLOR: BROWNISH BLACK APPEARANCE: WAXY	

MICROSCOPIC EXAMINATION
SLIDE CULTURE CHAMBER

DESCRIPTION	
CONIDIOPHORES SIMPLE, OR RARELY BRANCHED, STRAIGHT OR FLEXUOSE, BROWNISH, SMOOTH-WALLED, UP TO 150 µM LONG, 3-7 µM WIDE. CONIDIA SMOOTH-WALLED, DARK BROWN, TERMINAL CELLS PALER, USUALLY CURVED, MOSTLY 4 SEPTATE.	

IDENTIFICATION: CURVULARIA SENEGALENSIS

TELEOMORPHS: COCHLIOBOLUS, PSEUDOCOCHLIOBOLUS (ASCOMYCOTA, EUASCOMYCETES, PLEOSPORALES: PLEOSPORACEAE). NUMEROUS SPECIES ARE KNOWN, MOSTLY OCCURRING ON DEAD PLANT MATERIAL. THEY ARE PARTICULARLY COMMON AS SAPROBES OR WEAK PATHOGENS ON GRASSES. SOME UBIQUITOUS SPECIES ARE OCASIONALLY FOUND IN CATTLE, RARELY IN HUMANS, IN BOTH CASES CAUSING CHRONIC, NON-SPECIFIC, ALLERGIC SINUSITIS, SOMETIMES WITH CEREBRAL INVOLVEMENT. IN ADDITION, TRAUMATIC INFECTIONS ARE NOTED. SPORES TYPICALLY OCCUR IN DAILY AIR SAMPLES DURING DRY WEATHER. ABLE TO GERMINATE AT 25°C AT WATER ACTIVITY REQUIREMENTS OF 0.89. NO RELIABLE OF MYCOTOXINS PRODUCTION ARE KNOWN.

PERFORMED BY:	LCDA. GLORIMAR VELAZCO	DATE:	06-29-09
REVIEWED BY:	LCDA. LIZZETTE M. RIVERA	DATE:	06-29-09

Revision Date: 03-03-04

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No. 300-027
IM CONTROL NO. 199

IDENTIFICATION OF MOLDS

CONTROL NO. : 10330-15-4 | CUSTOMER: WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	Color: OLIVACEOUS GREEN APPEARANCE: VELVETY	
BOTTOM	COLOR: BLACK APPEARANCE: WAXY	

MICROSCOPIC EXAMINATION
SLIDE CULTURE CHAMBER

DESCRIPTION

CONIDIOPHORES ARE DENDRITIC (TREE-LIKE), CLOSELY PACKED, WITH STIPES BEARING BRANCHING STRUCTURES OF ACROPETALLY PRODUCED CELLS, ALL FUNCTIONING AS CONIDIA AT MATURITY, AND SEPARATING IN LIQUID MOUNT; CONIDIA HEAVY WALLED, PALE OLIVE BROWN, LARGER ONES NON OR SINGLY SEPTATE, SMOOTH WALLED; SMALLER ONES NONSEPTATE, ELLIPSOIDAL TO SPECULATE, WITH WALLS SMOOTH TO FINELY ROUGHNED.

IDENTIFICATION: CLADOSPORIUM CLADOSPOROIDES

IT IS A COMMONLY FOUND IN OUTDOOR AIR AND INDOORS. INCREASED CONCENTRATION OF ITS SPORES HAVE BEEN ASSOCIATED WITH HIGH TEMPERATURE AND LOW RELATIVE HUMIDITY. ITS SPORES BECOME AIRBORNE BY PASSIVE FORCE, SUCH AS AIR MOVEMENT OR RAIN DROPS. GROWTH HAVE BEEN REPORTED DOWN TO 0.86a_w AT 25°C AND DOWN TO 5°C. IT IS RELATIVELY RESISTANT TO MICROWAVE HEATING. THE MAXIMUM GROWTH TEMPERATURE IS NEAR 32°C. ARE CONSIDERED SECONDARY COLONIZERS ON A WIDE VARIETY OF BUILDING MATERIALS, FURNISHING, CEILING TILES, INSULATION, PAINTED SURFACES, WALLPAPER, HOUSE DUST, AND A VERY WIDE VARIETY OF FOODS, INCLUDING WHEAT AND FLOUR. CAUSES SPOILAGE IN REFRIGERATED VACUUM-PACKED FOODS SUCH AS CHEESE AND MEAT. THIS SPECIES IS NOT KNOWN TO PRODUCE MYCOTOXINS.

PERFORMED BY:	GLORIMAR VELAZCO	DATE:	06-29-09
REVISED BY:	LIZZETTE M. RIVERA	DATE:	06-29-09

Revision Date: 03-03-04

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No. 300-027
IM CONTROL NO. 201

IDENTIFICATION OF MOLDS

ISOLATE NO:	10330-18-1	CUSTOMER:	WALESKA DIAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	COLOR: YELLOWISH GREEN WITH PINK EDGE APPEARANCE: COTTONY	
BOTTOM	COLOR: CREAMY BROWN APPEARANCE: WAXY	

MICROSCOPIC EXAMINATION
SLIDE CULTURE CHAMBER

DESCRIPTION	
LONG CONIDIOPHORES BORNE FROM SURFACE HYPHAE, STIPES WITH UNCOLOURED, SMOOTH WALLS; OVOID VESICLES, BEARING CROWED METULAE AND PHIALIDES ON ITS ENTIRE SURFACE; CONIDIA ELLIPSOIDAL IN CHAINS.	

IDENTIFICATION:	ASPERGILLUS AVENACEUS

SPECIES OF ASPERGILLUS ARE OPPORTUNISTSTIC INVADERS THAT CAUSE GROUP OF DISEASES KNOWN AS ASPERGILLOSIS. ARE WIDESPREAD IN THE ENVIRONMENT AND ARE COMMONLY FOUND S CONTAMINANTS.

PERFORMED BY:	LCDA. GLORIMAR VELAZCO	DATE:	06-29-09
REVISED BY:	LCDA. LIZZETTE M. RIVERA	DATE:	06-29-09

Revision Date: 05/08

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No. 300-027
IM CONTROL NO. 200

IDENTIFICATION OF MOLDS

ISOLATE NO.: 10330-20-1 | CUSTOMER: WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
TOP	COLOR: White greyish orange with exudade green center Appearance: COTTONY	
BOTTOM	COLOR: YELLOW APPEARANCE: WAXY	

MICROSCOPIC EXAMINATION
SLIDE CULTURE CHAMBER

DESCRIPTION	
SEPTATE HYPHAE WITH BRANCHED CONIDIOPHORES THAT HAVE SECONDARY BRANCHES KNOWN AS METULAE. ON THE METULAE, ARRANGED IN WHORLS, ARE FLASK-SHAPED PHIALIDES THAT BEAR UNBRANCHED CHAINS OF SMOOTH, ROUND CONIDIA. THE ENTIRE STRUCTURE FORMS THE CHARACTERISTIC "PENICILLUS" OR "BRUSH" APPEARANCE. BIVERTICILLATED.	

IDENTIFICATION: **PENICILLIUM CITRINUM**

IT IS A DRY-SPORE FUNGI, THAT BECOMES AIRBORNE BY PASSIVE FORCE, SUCH AS AIR MOVEMENTS OR RAIN DROPS. MOST PENICILLIUM SPECIES ARE CONSIDERED TO BE UNBIQUETOUS, OPORTUNISTIC SAPROPHYTES, COMMONLY CONSIDERED AS CONTAMINANTS. THEY ARE SO WIDESPREAD AND ABUNDANT IN FOODS AND FEEDS THAT THEY MUST BE CONSIDERED TO BE A POTENTIAL HAZARD TO BOTH HUMAN AND ANIMAL HEALTH BECAUSE MANY SPECIES MAKE SEVERAL COMPOUNDS KNOWN TO BE TOXIC. THEY HAVE BEEN FOUND IN IN A VARIETY OF DISEASES IN WHICH ITS ETIOLOGIC SIGNIFICANCE IS UNCERTAIN.

PERFORMED BY:	GLORIMAR VELAZCO	DATE:	06-29-09
REVIEWED BY:	LIZZETTE M. RIVERA	DATE:	06-29-09

Revision Date: 03/03/04

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No.300-027
IM CONTROL NO. 196

IDENTIFICATION OF MOLDS

ISOLATE NO. 10330-22-1 | CUSTOMER: WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	COLOR: MAUVE APPEARANCE: WOOLY	
BOTTOM	COLOR: REDDISH-BROWN DIAMETER: 3 CM APPEARANCE: WAXY	

MICROSCOPIC EXAMINATION
SLIDE CULTURE CHAMBER

DESCRIPTION

AERIAL MYCELIUM WITH ABUNDANT PYCNIDEA (FLASKSHAPED TO GLOBOSE FRUITBODY, USUALLY WITH ONE APICAL OPENING (=OSTIOLE) CONTAINING CONIDIOGENOUS CELLS), BLACK COLOR DUE TO DICTYOCHLAMYDOSPORE (A NONDECIDUOUS MULTICELLED CHLAMYDOSPORE) PRODUCTION. PYCNIDEA SUPERFICIAL ON OR IMMERSED IN AGAR, USUALLY WITH ONE OSTIOLE, MORE OR LESS GLOBOSE. CONIDIA ONE-CELLED, MOSTLY OVOID TO ELLIPSOIDAL, SLIGHTLY CURVED OR STRAIGHT, HYALINE TO LIGHT-OLIVACEOUS, WITH TWO OR MORE GUTTULES. DICTYOCHLAMYDOSPORES IN BRANCHED OR UNBRANCHED CHAINS.

IDENTIFICATION: PHOMA GLOMERATA

WORLD-WIDE DISTRIBUTION; ISOLATED FROM A WIDE VARIETY OF PLANTS AND PLANT MATERIAL, FROM SOIL, BUTTER, RICE GRAIN, CE MENT, LITTER, PAINT, PAPER AND WOOL. THE FUNGUS CAN BE PATHOGENIC TO HUMANS AND ATTACK DEFFERENT KINDS OF FRUIT, E.G. AS THE CAUSE OF TOMATO-ROT.

PERFORMED BY: GLORIMAR VELAZCO — DATE: 07-03-09

REVIEWED BY: LIZZETTE M. RIVERA — DATE: 07-03-09

Revision Date: 03/03/04

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No.300-027
I.M. CONTROL NO. 191

IDENTIFICATION OF MOLDS

ISOLATE NO. 10330-24-1	CUSTOMER: WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	**COLOR:** VELUTINOUS TO FLUCCOSE, EXUDING YELLOW PIGMENT IN TO THE MEDIUM **APPEARANCE:** VELVETY	
BOTTOM	**COLOR:** YELLOW **APPEARANCE:** WAXY	

MICROSCOPIC EXAMINATION
SLIDE CULTURE CHAMBER

DESCRIPTION	
CONIDIOPHORE STIPES SMOOTH-WALLED, 200-300µM LONG; PENICILLI USUALLY TERVERTICILLATE. METULAE8-12 µM LONG. PHIALIDES FLASK-SHAPED, 7-10 µM LONG. CONIDIA SMOOTH-WALLED, ELLIPSOIDAL, 2.5-4.0 µM LONG, BLUE OR BLUISH GREEN.	

IDENTIFICATION: PENICILLIUM CHYSOGENUM

IT IS A DRY-SPORE PUNGI, THAT BECOMES AIRBORNE BY PASSIVE FORCE, SUCH AS AIR MOVEMENTS OR RAIN DROPS. MOST PENICILLIUM SPECIES ARE CONSIDERED TO BE UNBIQUITOUS, OPORTUNISTIC SAPROPHYTES, COMMONLY CONSIDERED AS CONTAMINANTS. THEY ARE SO WIDESPREAD AND ABUNDANT IN FOODS AND FEEDS THAT THEY MUST BE CONSIDERED TO BE A POTENTIAL HAZARD TO BOTH HUMAN AND ANIMAL HEALTH BECAUSE MANY SPECIES MAKE SEVERAL COMPOUNDS KNOWN TO BE TOXIC. THEY HAVE BEEN FOUND IN IN A VARIETY OF DISEASES IN WHICH ETS ETIOLOGIC SIGNIFICANCE IS UNCERTAIN.

PERFORMED BY:	GLORIMAR VELAZCO	DATE:	06-27-09
REVIEWED BY:	LCDA. LIZZETTE M. RIVERA	DATE:	06-27-09

Revision Date: 03/03/04

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Jun 25, 2009 15:38 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10330-3-1

Bionumber: 4401510051500010
Selected Organism: Pantoea spp

Comments:	n/a GVelazco 06-25-09

Identification Information	Card:	GN	Lot Number:	241112040	Expires:	Jan 7, 2010 12:00 GMT-04:00
	Completed:	Jun 24, 2009 18:54 GMT-04:00	Status:	Final	Analysis Time:	6.00 hours
Selected Organism	99% Probability		Pantoea spp			
	Bionumber:	4401510051500010			Confidence:	Excellent identification

SRF Organism

Analysis Organisms and Tests to Separate: n/a GVelazco 06-25-09

Analysis Messages:

Contraindicating Typical Biopattern(s)

Biochemical Details

2	APPA	-	3	ADO	-	4	PyrA	+	5	IARL	-	7	dCEL	-	9	BGAL	+
10	H2S	-	11	BNAG	-	12	AGLTp	-	13	dGLU	+	14	GGT	-	15	OFF	-
17	BGLU	+	18	dMAL	-	19	dMAN	+	20	dMNE	+	21	BXYL	-	22	BAlap	-
23	ProA	-	26	LIP	-	27	PLE	-	29	TyrA	-	31	URE	-	32	dSOR	-
33	SAC	+	34	dTAG	-	35	dTRE	+	36	CIT	+	37	MNT	-	39	5KG	-
40	ILATk	+	41	AGLU	-	42	SUCT	+	43	NAGA	-	44	AGAL	-	45	PHOS	-
46	GlyA	-	47	ODC	-	48	LDC	-	53	HISa	-	56	CMT	-	57	BGUR	-
58	O129R	+	59	GGAA	-	61	IMLTa	-	62	ELLM	-	64	ILATa	-			

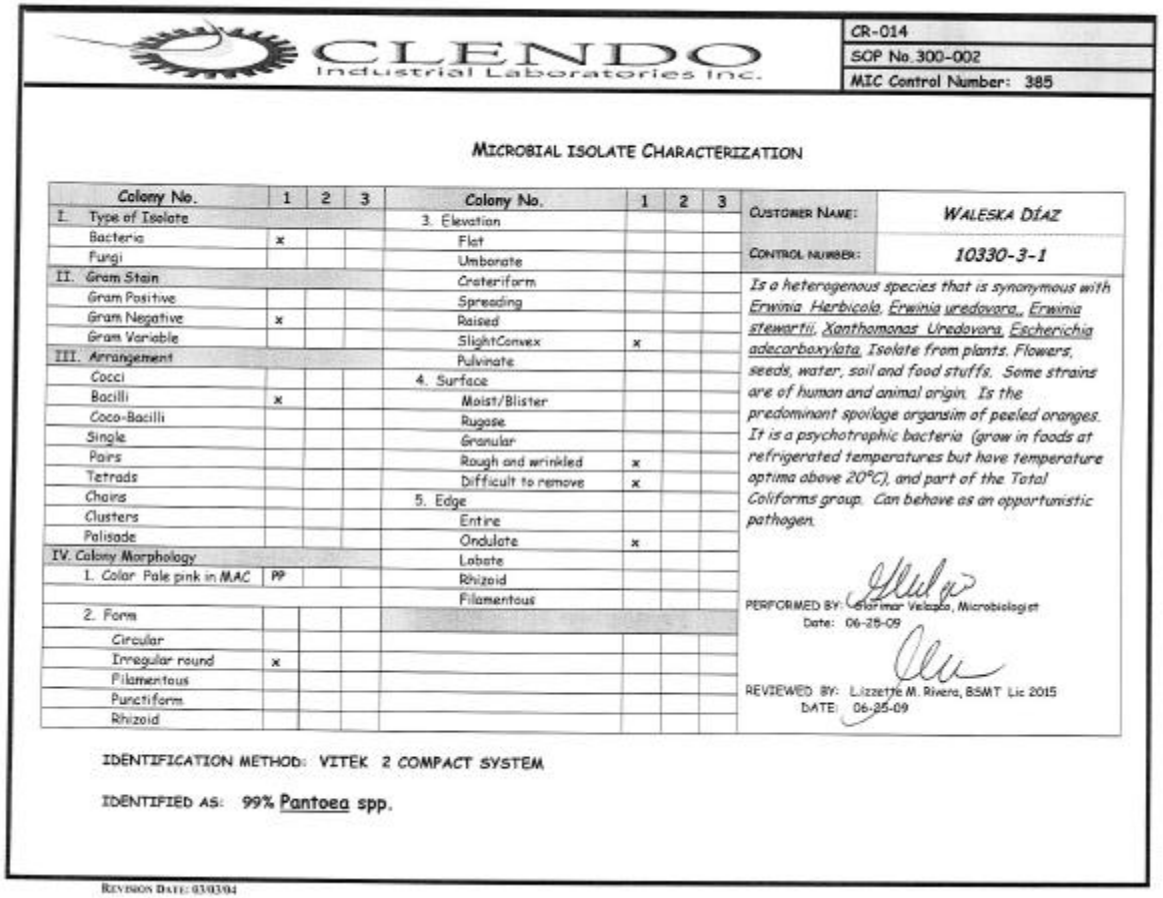
Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 25, 2009 15:38 GMT-04:00	

GVelazco 06-25-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

Page 1 of 1



CLENDO
Industrial Laboratories Inc.

CR-014
SOP No. 300-002
MIC Control Number: 385

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive			
Gram Negative	x		
Gram Variable			
III. Arrangement			
Cocci			
Bacilli	x		
Coco-Bacilli			
Single			
Pairs			
Tetrads			
Chains			
Clusters			
Palisade			
IV. Colony Morphology			
1. Color Pale pink in MAC	PP		
2. Form			
Circular			
Irregular round	x		
Filamentous			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Umbonate			
Crateriform			
Spreading			
Raised			
SlightConvex	x		
Pulvinate			
4. Surface			
Moist/Blister			
Rugose			
Granular			
Rough and wrinkled	x		
Difficult to remove	x		
5. Edge			
Entire			
Undulate	x		
Lobate			
Rhizoid			
Filamentous			

CUSTOMER NAME: WALESKA DÍAZ

CONTROL NUMBER: 10330-3-1

Is a heterogenous species that is synonymous with Erwinia Herbicola, Erwinia uredovora., Erwinia stewartii, Xanthomonas Uredovora, Escherichia adecarboxylata. Isolate from plants. Flowers, seeds, water, soil and food stuffs. Some strains are of human and animal origin. Is the predominant spoilage organsim of peeled oranges. It is a psychotrophic bacteria (grow in foods at refrigerated temperatures but have temperature optima above 20°C), and part of the Total Coliforms group. Can behave as an opportunistic pathogen.

PERFORMED BY: Glorimar Velazco, Microbiologist
Date: 06-25-09

REVIEWED BY: Lizzette M. Rivera, BSMT Lic 2015
DATE: 06-25-09

IDENTIFICATION METHOD: VITEK 2 COMPACT SYSTEM

IDENTIFIED AS: 99% Pantoea spp.

REVISION DATE: 03/03/04

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Jun 25, 2009 15:38 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10330-7-1

Bionumber: 4607410151540210
Selected Organism: Pantoea spp

Comments:	

Identification Information	Card:	GN	Lot Number:	241112040	Expires:	Jan 7, 2010 12:00 GMT-04:00
	Completed:	Jun 24, 2009 18:54 GMT-04:00	Status:	Final	Analysis Time:	6.00 hours
Selected Organism	96% Probability Bionumber: 4607410151540210		Pantoea spp		Confidence:	Excellent identification
SRF Organism						
Analysis Organisms and Tests to Separate:						
Analysis Messages:						
Contraindicating Typical Biopattern(s)						

Biochemical Details

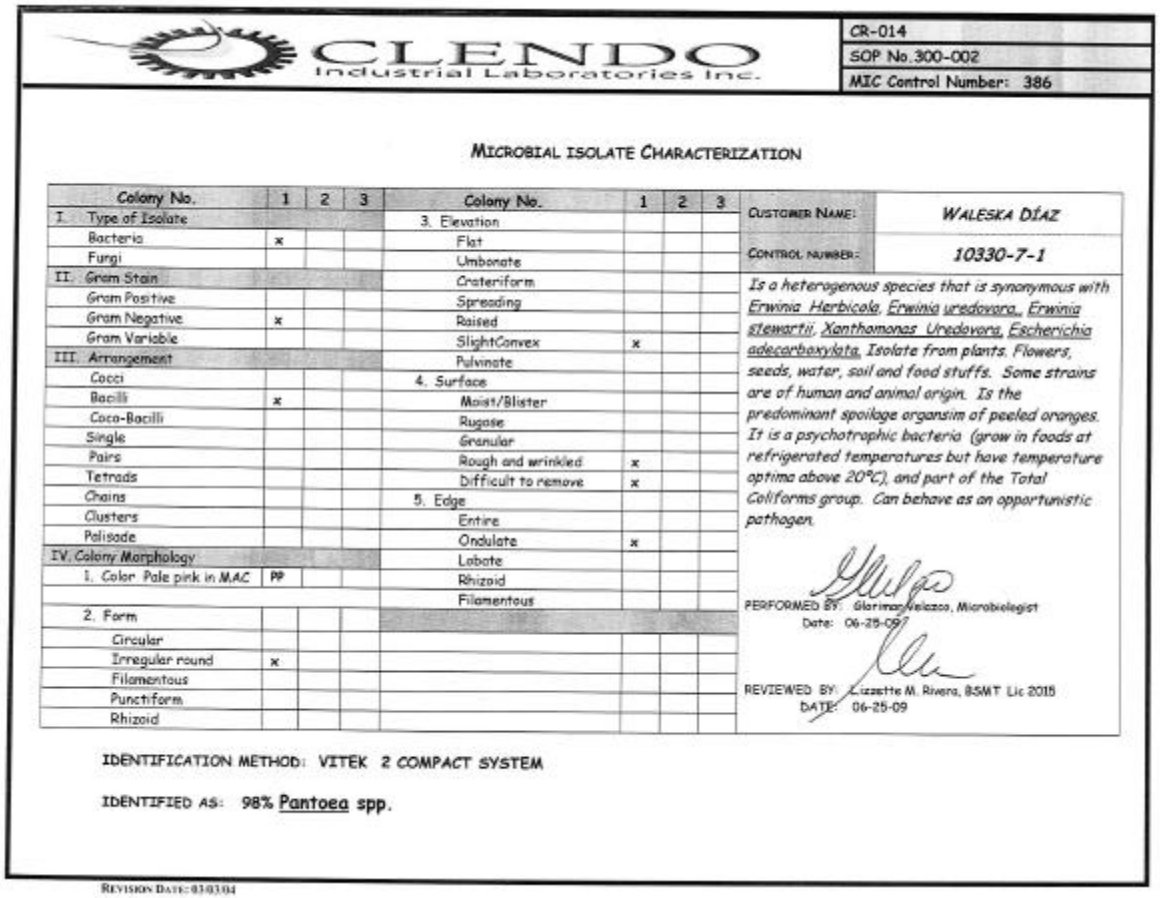
2	APPA	-	3	ADO	-	4	PyrA	+	5	lARL	-	7	dCEL	+	9	BGAL	+
10	H2S	-	11	BNAG	-	12	AGLTp	-	13	dGLU	+	14	GGT	+	15	OFF	+
17	BGLU	-	18	dMAL	-	19	dMAN	+	20	dMNE	+	21	BXYL	-	22	BAlap	-
23	ProA	-	26	LIP	-	27	PLE	-	29	TyrA	+	31	URE	-	32	dSOR	-
33	SAC	+	34	dTAG	-	35	dTRE	+	36	CIT	+	37	MNT	-	39	5KG	-
40	ILATk	+	41	AGLU	-	42	SUCT	+	43	NAGA	-	44	AGAL	-	45	PHOS	+
46	GlyA	-	47	ODC	-	48	LDC	-	53	IHISa	-	56	CMT	+	57	BGUR	-
58	O129R	+	59	GGAA	-	61	IMLTa	-	62	ELLM	-	64	ILATa	-			

Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 25, 2009 15:38 GMT-04:00	

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

Page 1 of 1



CLENDO
Industrial Laboratories Inc.

CR-014
SOP No.300-002
MIC Control Number: 386

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive			
Gram Negative	x		
Gram Variable			
III. Arrangement			
Cocci			
Bacilli	x		
Coco-Bacilli			
Single			
Pairs			
Tetrads			
Chains			
Clusters			
Palisade			
IV. Colony Morphology			
1. Color Pale pink in MAC	PP		
2. Form			
Circular			
Irregular round	x		
Filamentous			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Umbonate			
Crateriform			
Spreading			
Raised			
SlightConvex	x		
Pulvinate			
4. Surface			
Moist/Blister			
Rugose			
Granular			
Rough and wrinkled	x		
Difficult to remove	x		
5. Edge			
Entire			
Undulate	x		
Lobate			
Rhizoid			
Filamentous			

CUSTOMER NAME: *WALESKA DÍAZ*

CONTROL NUMBER: *10330-7-1*

Is a heterogenous species that is synonymous with Erwinia Herbicola, Erwinia uredovora., Erwinia stewartii, Xanthomonas Uredovora, Escherichia adecarboxylata, Isolate from plants. Flowers, seeds, water, soil and food stuffs. Some strains are of human and animal origin. Is the predominant spoilage organsim of peeled oranges. It is a psychotrophic bacteria (grow in foods at refrigerated temperatures but have temperature optima above 20°C), and part of the Total Coliforms group. Can behave as an opportunistic pathogen.

PERFORMED BY: Gloriman Velazco, Microbiologist
Date: 06-25-09

REVIEWED BY: Lizzette M. Rivera, BSMT Lic 2015
DATE: 06-25-09

IDENTIFICATION METHOD: VITEK 2 COMPACT SYSTEM

IDENTIFIED AS: 98% Pantoea spp.

REVISION DATE: 03/03/04

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Jun 25, 2009 15:38 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10330-22-1

Bionumber: 5400001100200000
Selected Organism: Sphingomonas paucimobilis

Comments:	n/a 06-25-09

Identification Information	Card:	GN	Lot Number:	241112040	Expires:	Jan 7, 2010 12:00 GMT-04:00
	Completed:	Jun 24, 2009 18:10 GMT-04:00	Status:	Final	Analysis Time:	5.25 hours
Selected Organism	98% Probability		Sphingomonas paucimobilis			
	Bionumber:	5400001100200000			Confidence:	Excellent identification

SRF Organism

Analysis Organisms and Tests to Separate: n/a 06-25-09

Analysis Messages:

Contraindicating Typical Biopattern(s)

Sphingomonas paucimobilis PyrA(24),

Biochemical Details

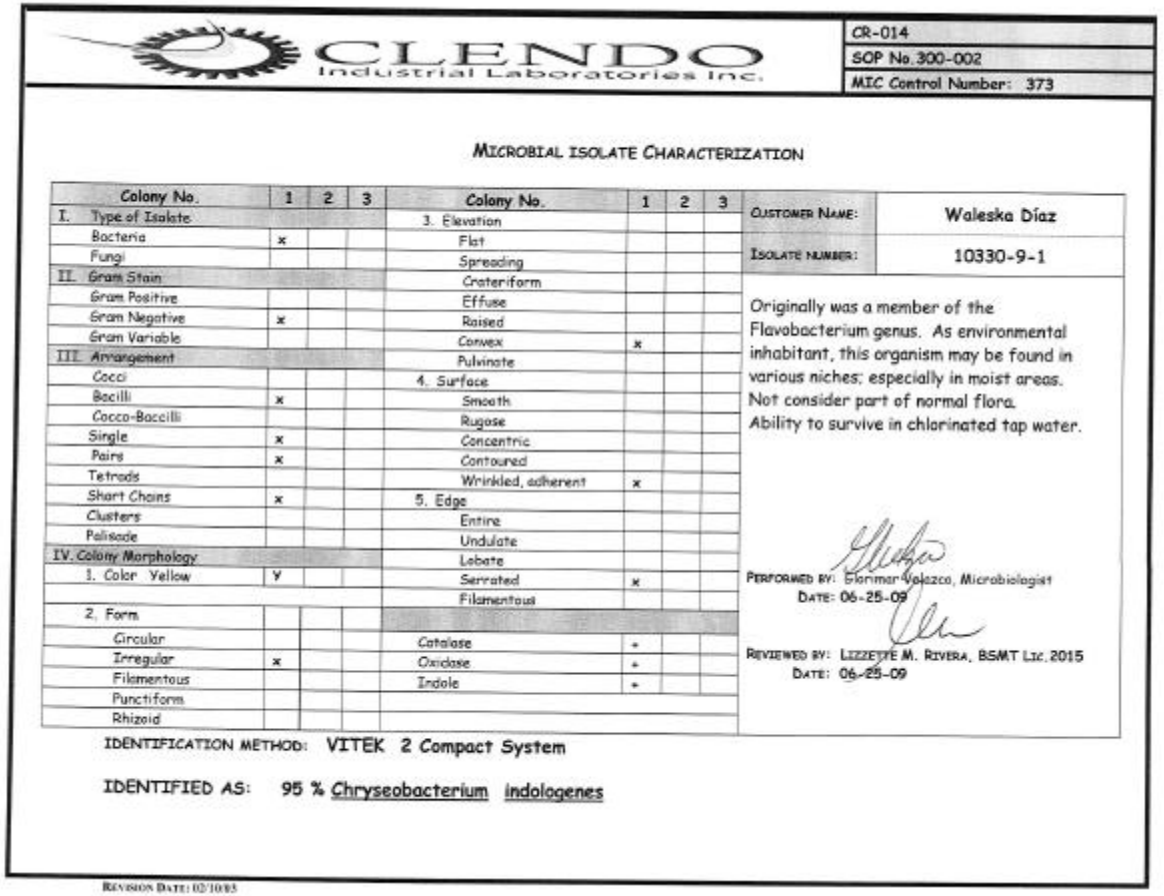
2	APPA	+	3	ADO	-	4	PyrA	+	5	IARL	-	7	dCEL	-	9	BGAL	+
10	H2S	-	11	BNAG	-	12	AGLTp	-	13	dGLU	-	14	GGT	-	15	OFF	-
17	BGLU	-	18	dMAL	-	19	dMAN	-	20	dMNE	-	21	BXYL	-	22	BAlap	-
23	ProA	+	26	LIP	-	27	PLE	-	29	TyrA	+	31	URE	-	32	dSOR	-
33	SAC	-	34	dTAG	-	35	dTRE	-	36	CIT	-	37	MNT	-	39	5KG	-
40	ILATk	-	41	AGLU	+	42	SUCT	-	43	NAGA	-	44	AGAL	-	45	PHOS	-
46	GlyA	-	47	ODC	-	48	LDC	-	53	IHISa	-	56	CMT	-	57	BGUR	-
58	O129R	-	59	GGAA	-	61	IMLTa	-	62	ELLM	-	64	ILATa	-			

Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 25, 2009 15:38 GMT-04:00	

06-25-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:



CLENDO
Industrial Laboratories Inc.

CR-014
SOP No.300-002
MIC Control Number: 373

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive			
Gram Negative	x		
Gram Variable			
III. Arrangement			
Cocci			
Bacilli	x		
Cocco-Baccilli			
Single	x		
Pairs	x		
Tetrads			
Short Chains	x		
Clusters			
Palisade			
IV. Colony Morphology			
1. Color Yellow	Y		
2. Form			
Circular			
Irregular	x		
Filamentous			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Spreading			
Crateriform			
Effuse			
Raised			
Convex	x		
Pulvinate			
4. Surface			
Smooth			
Rugose			
Concentric			
Contoured			
Wrinkled, adherent	x		
5. Edge			
Entire			
Undulate			
Lobate			
Serrated	x		
Filamentous			
Catalase	+		
Oxidase	+		
Indole	+		

CUSTOMER NAME: Waleska Díaz

ISOLATE NUMBER: 10330-9-1

Originally was a member of the Flavobacterium genus. As environmental inhabitant, this organism may be found in various niches; especially in moist areas. Not consider part of normal flora. Ability to survive in chlorinated tap water.

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 06-25-09

REVIEWED BY: LIZZETTE M. RIVERA, BSMT Lic.2015
DATE: 06-25-09

IDENTIFICATION METHOD: VITEK 2 Compact System

IDENTIFIED AS: 95 % Chryseobacterium indologenes

REVISION DATE: 02/10/03

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Sep 8, 2009 11:27 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10330-14-1

Bionumber: 0001411353701250
Selected Organism: Pseudomonas oryzihabitans

Comments:	

Identification Information	Card:	GN	Lot Number:	241112040	Expires:	Jan 7, 2010 12:00 GMT-04:00
	Completed:	Jul 3, 2009 20:56 GMT-04:00	Status:	Final	Analysis Time:	7.00 hours
Selected Organism	89% Probability		Pseudomonas oryzihabitans			
	Bionumber:	0001411353701250			Confidence:	Good identification
SRF Organism						
Analysis Organisms and Tests to Separate:						
Analysis Messages:						
Contraindicating Typical Biopattern(s)						
Pseudomonas oryzihabitans	URE(9),SAC(1),PyrA(99),					

Biochemical Details

2	APPA	-	3	ADO	-	4	PyrA	-	5	IARL	-	7	dCEL	-	9	BGAL	-
10	H2S	-	11	BNAG	-	12	AGLTp	-	13	dGLU	+	14	GGT	-	15	OFF	-
17	BGLU	-	18	dMAL	-	19	dMAN	+	20	dMNE	+	21	BXYL	-	22	BAlap	-
23	ProA	+	26	LIP	-	27	PLE	-	29	TyrA	+	31	URE	+	32	dSOR	-
33	SAC	+	34	dTAG	-	35	dTRE	+	36	CIT	+	37	MNT	+	39	5KG	-
40	ILATk	+	41	AGLU	(+)	42	SUCT	+	43	NAGA	-	44	AGAL	-	45	PHOS	-
46	GlyA	+	47	ODC	-	48	LDC	-	53	IHISa	-	56	CMT	+	57	BGUR	-
58	O129R	+	59	GGAA	-	61	IMLTa	+	62	ELLM	-	64	ILATa	-			

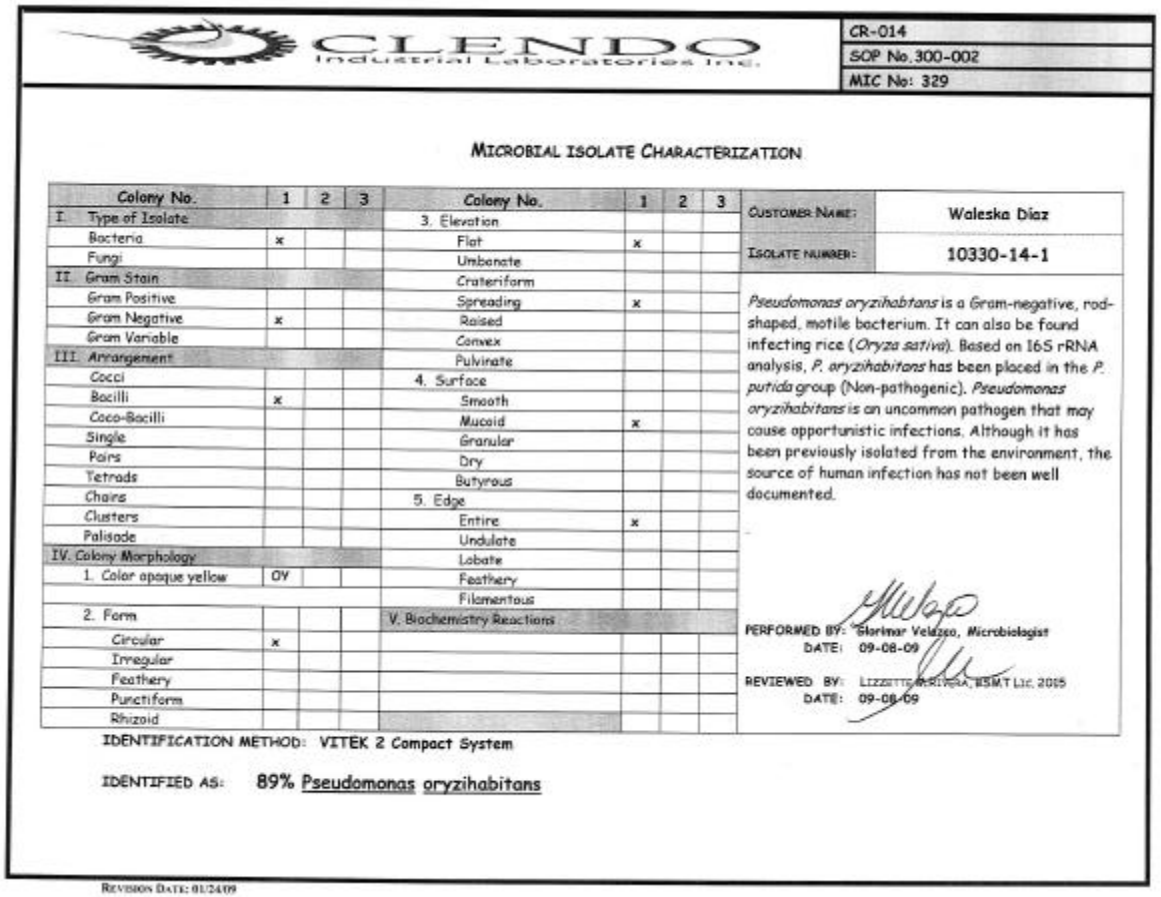
Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Sep 8, 2009 11:27 GMT-04:00	

09-08-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

Page 1 of 1



CLENDO Industrial Laboratories Inc.

CR-014
SOP No. 300-002
MIC No: 329

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive			
Gram Negative	x		
Gram Variable			
III. Arrangement			
Cocci			
Bacilli	x		
Coco-Bacilli			
Single			
Pairs			
Tetrads			
Chains			
Clusters			
Palisade			
IV. Colony Morphology			
1. Color opaque yellow	OY		
2. Form			
Circular	x		
Irregular			
Feathery			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat	x		
Umbonate			
Crateriform			
Spreading	x		
Raised			
Convex			
Pulvinate			
4. Surface			
Smooth			
Mucoid	x		
Granular			
Dry			
Butyrous			
5. Edge			
Entire	x		
Undulate			
Lobate			
Feathery			
Filamentous			
V. Biochemistry Reactions			

CUSTOMER NAME:	Waleska Díaz
ISOLATE NUMBER:	10330-14-1

Pseudomonas oryzihabitans is a Gram-negative, rod-shaped, motile bacterium. It can also be found infecting rice (*Oryza sativa*). Based on 16S rRNA analysis, *P. oryzihabitans* has been placed in the *P. putida* group (Non-pathogenic). *Pseudomonas oryzihabitans* is an uncommon pathogen that may cause opportunistic infections. Although it has been previously isolated from the environment, the source of human infection has not been well documented.

PERFORMED BY: Glorimar Velázco, Microbiologist
DATE: 09-08-09

REVIEWED BY: LIZZETTE RIVERA, BSMT Lic. 2005
DATE: 09-08-09

IDENTIFICATION METHOD: VITEK 2 Compact System

IDENTIFIED AS: 89% Pseudomonas oryzihabitans

REVISION DATE: 01/24/09

CLENCO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Jun 25, 2009 15:37 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10330-14-2

Bionumber: 4201734750241000
Selected Organism: Klebsiella pneumoniae ssp ozaenae

Comments:	n/a 06-25-09

Identification Information	Card:	GN	Lot Number:	241112040	Expires:	Jan 7, 2010 12:00 GMT-04:00
	Completed:	Jun 24, 2009 17:55 GMT-04:00	Status:	Final	Analysis Time:	5.00 hours
Selected Organism	92% Probability		Klebsiella pneumoniae ssp ozaenae			
	Bionumber:	4201734750241000			Confidence:	Good identification

SRF Organism

Analysis Organisms and Tests to Separate:

n/a 06-25-09

Analysis Messages:

Contraindicating Typical Biopattern(s)

Klebsiella pneumoniae ssp ozaenae: AGAL(99),

Biochemical Details

2	APPA	-	3	ADO	-	4	PyrA	+	5	IARL	-	7	dCEL	+	9	BGAL	-
10	H2S	-	11	BNAG	-	12	AGLTp	-	13	dGLU	+	14	GGT	-	15	OFF	-
17	BGLU	+	18	dMAL	+	19	dMAN	+	20	dMNE	+	21	BXYL	+	22	BAlap	-
23	ProA	-	26	LIP	-	27	PLE	+	29	TyrA	+	31	URE	+	32	dSOR	+
33	SAC	+	34	dTAG	-	35	dTRE	+	36	CIT	-	37	MNT	-	39	5KG	-
40	ILATk	-	41	AGLU	+	42	SUCT	-	43	NAGA	-	44	AGAL	-	45	PHOS	+
46	GlyA	+	47	ODC	-	48	LDC	-	53	IHISa	-	56	CMT	-	57	BGUR	-
58	O129R	-	59	GGAA	-	61	IMLTa	-	62	ELLM	-	64	ILATa	-			

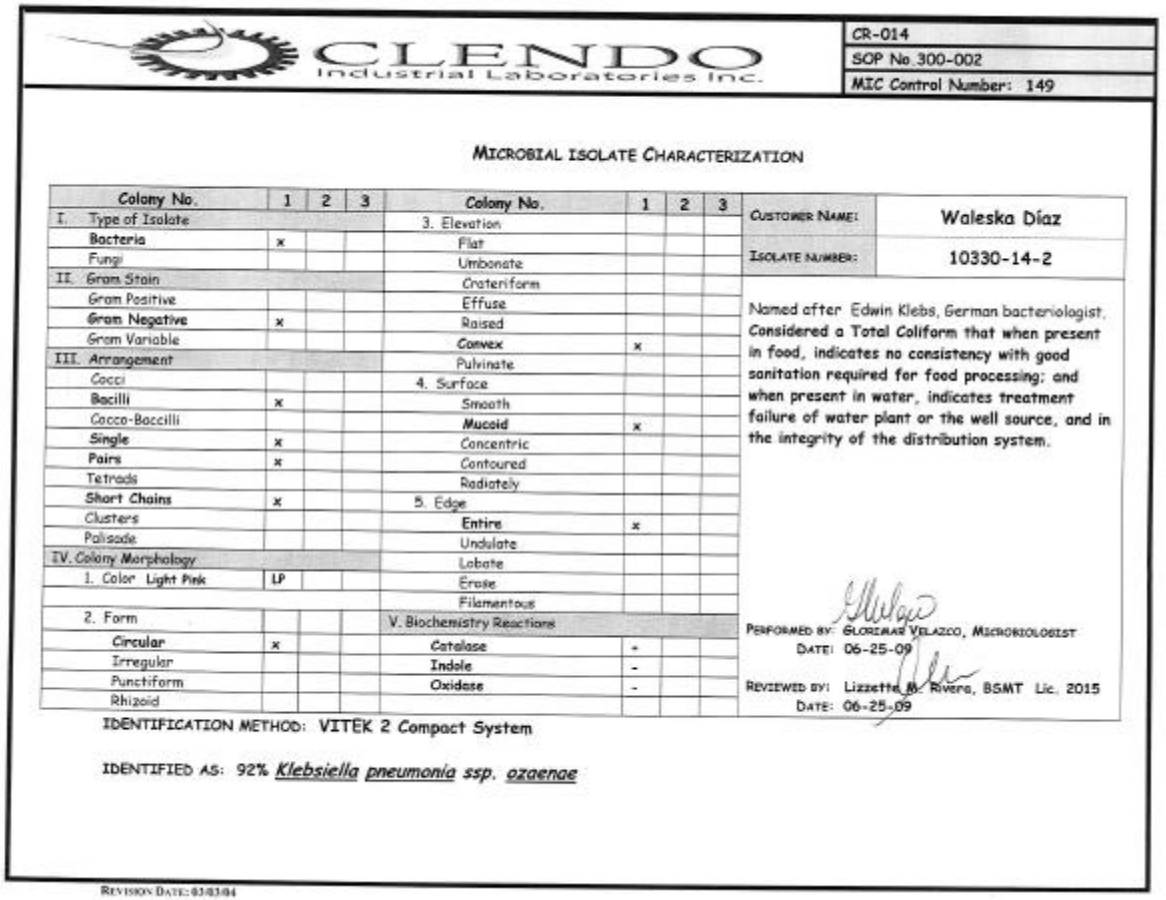
Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 25, 2009 15:37 GMT-04:00	

06-25-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

Page 1 of 1



CLENDO
Industrial Laboratories Inc.

CR-014
SOP No.300-002
MIC Control Number: 149

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive			
Gram Negative	x		
Gram Variable			
III. Arrangement			
Cocci			
Bacilli	x		
Cocco-Baccilli			
Single	x		
Pairs	x		
Tetrads			
Short Chains	x		
Clusters			
Palisade			
IV. Colony Morphology			
1. Color Light Pink	LP		
2. Form			
Circular	x		
Irregular			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Umbonate			
Crateriform			
Effuse			
Raised			
Convex	x		
Pulvinate			
4. Surface			
Smooth			
Mucoid	x		
Concentric			
Contoured			
Radiately			
5. Edge			
Entire	x		
Undulate			
Lobate			
Erose			
Filamentous			
V. Biochemistry Reactions			
Catalase	+		
Indole	-		
Oxidase	-		

CUSTOMER NAME:	Waleska Díaz
ISOLATE NUMBER:	10330-14-2

Named after Edwin Klebs, German bacteriologist. Considered a Total Coliform that when present in food, indicates no consistency with good sanitation required for food processing; and when present in water, indicates treatment failure of water plant or the well source, and in the integrity of the distribution system.

PERFORMED BY: GLORIMAR VELAZCO, MICROBIOLOGIST
DATE: 06-25-09

REVIEWED BY: Lizzette M. Rivera, BSMT Lic. 2015
DATE: 06-25-09

IDENTIFICATION METHOD: VITEK 2 Compact System

IDENTIFIED AS: 92% *Klebsiella pneumonia ssp. ozaenae*

REVISION DATE: 03/03/04

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Jun 25, 2009 15:37 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10330-17-1

Bionumber: 040000012220231
Selected Organism: Staphylococcus hominis

Comments:	n/a 06-25-09

Identification Information	Card:	GP	Lot Number:	242135240	Expires:	Aug 27, 2010 12:00 GMT-04:00
	Completed:	Jun 24, 2009 18:55 GMT-04:00	Status:	Final	Analysis Time:	6.00 hours
Selected Organism	99% Probability		Staphylococcus hominis			
	Bionumber:	040000012220231			Confidence:	Excellent identification

SRF Organism

Analysis Organisms and Tests to Separate:

Staphylococcus hominis
Staphylococcus hominis ssp hominis NOVO_R(1),
Staphylococcus hominis ssp novobiosepticus NOVO_R(99),

Analysis Messages:

n/a 06-25-09

Contraindicating Typical Biopattern(s)

Biochemical Details																		
2	AMY	-	4	PIPLC	-	5	dXYL	-	8	ADH1	-	9	BGAL	-	11	AGLU	(+)
13	APPA	-	14	CDEX	-	15	AspA	-	16	BGAR	-	17	AMAN	-	19	PHOS	-
20	LeuA	-	23	ProA	-	24	BGURr	-	25	AGAL	-	26	PyrA	-	27	BGUR	-
28	AlaA	-	29	TyrA	-	30	dSOR	-	31	URE	+	32	POLYB	-	37	dGAL	-
38	dRIB	-	39	ILATk	+	42	LAC	-	44	NAG	-	45	dMAL	+	46	BACI	-
47	NOVO	-	50	NC6.5	+	52	dMAN	-	53	dMNE	(-)	54	MBdG	-	56	PUL	-
57	dRAF	-	58	O129R	+	59	SAL	-	60	SAC	+	62	dTRE	+	63	ADH2s	-
64	OPTO	+															

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Jun 25, 2009 15:37 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10330-17-1

Bionumber: 040000122202231
Selected Organism: Staphylococcus hominis

Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 25, 2009 15:37 GMT-04:00	

Ok-2509

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

Page 2 of 2

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Jun 25, 2009 15:38 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10330-22-1

Bionumber: 5400001100200000
Selected Organism: Sphingomonas paucimobilis

Comments:	n/a 06-25-09

Identification Information	Card: GN		Lot Number: 241112040	Expires:	Jan 7, 2010 12:00 GMT-04:00
	Completed: Jun 24, 2009 18:10 GMT-04:00		Status: Final	Analysis Time:	5.25 hours
Selected Organism	98% Probability	Sphingomonas paucimobilis			
	Bionumber: 5400001100200000			Confidence:	Excellent identification

SRF Organism

Analysis Organisms and Tests to Separate: n/a 06-25-09

Analysis Messages:

Contraindicating Typical Biopattern(s)

Sphingomonas paucimobilis PyrA(24),

Biochemical Details

2	APPA	+	3	ADO	-	4	PyrA	+	5	IARL	-	7	dCEL	-	9	BGAL	+
10	H2S	-	11	BNAG	-	12	AGLTp	-	13	dGLU	-	14	GGT	-	15	OFF	-
17	BGLU	-	18	dMAL	-	19	dMAN	-	20	dMNE	-	21	BXYL	-	22	BAlap	-
23	ProA	+	26	LIP	-	27	PLE	-	29	TyrA	+	31	URE	-	32	dSOR	-
33	SAC	-	34	dTAG	-	35	dTRE	-	36	CIT	-	37	MNT	-	39	5KG	-
40	ILATk	-	41	AGLU	+	42	SUCT	-	43	NAGA	-	44	AGAL	-	45	PHOS	-
46	GlyA	-	47	ODC	-	48	LDC	-	53	IHISa	-	56	CMT	-	57	BGUR	-
58	O129R	-	59	GGAA	-	61	IMLTa	-	62	ELLM	-	64	ILATa	-			

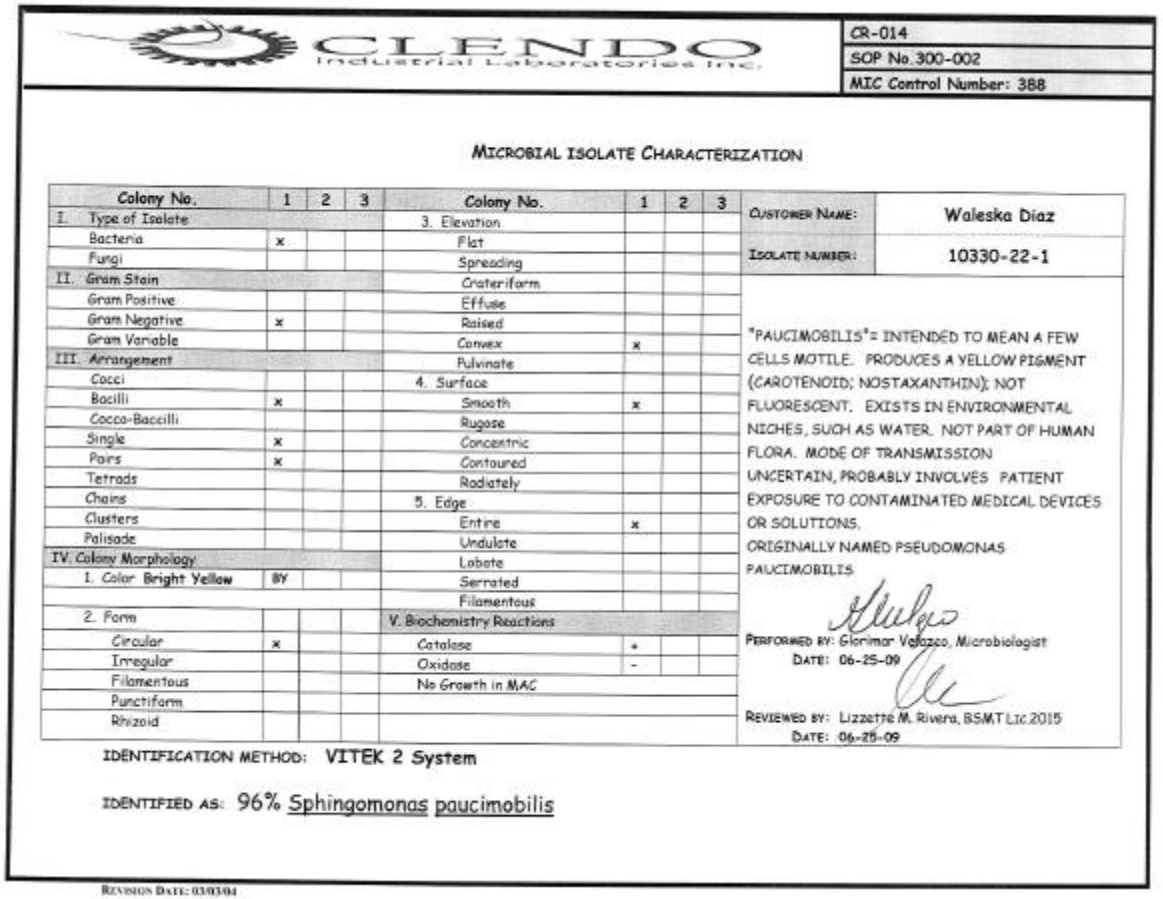
Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 25, 2009 15:38 GMT-04:00	

06-25-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

Page 1 of 1



CLENDO
Industrial Laboratories Inc.

CR-014
SOP No.300-002
MIC Control Number: 388

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive			
Gram Negative	x		
Gram Variable			
III. Arrangement			
Cocci			
Bacilli	x		
Cocco-Baccilli			
Single	x		
Pairs	x		
Tetrads			
Chains			
Clusters			
Palisade			
IV. Colony Morphology			
1. Color Bright Yellow	BY		
2. Form			
Circular	x		
Irregular			
Filamentous			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Spreading			
Crateriform			
Effuse			
Raised			
Convex	x		
Pulvinate			
4. Surface			
Smooth	x		
Rugose			
Concentric			
Contoured			
Radiately			
5. Edge			
Entire	x		
Undulate			
Lobate			
Serrated			
Filamentous			
V. Biochemistry Reactions			
Catalase	+		
Oxidase	-		
No Growth in MAC			

CUSTOMER NAME:	Waleska Diaz
ISOLATE NUMBER:	10330-22-1

"PAUCIMOBILIS"= INTENDED TO MEAN A FEW CELLS MOTILE. PRODUCES A YELLOW PIGMENT (CAROTENOID; NOSTAXANTHIN); NOT FLUORESCENT. EXISTS IN ENVIRONMENTAL NICHES, SUCH AS WATER. NOT PART OF HUMAN FLORA. MODE OF TRANSMISSION UNCERTAIN, PROBABLY INVOLVES PATIENT EXPOSURE TO CONTAMINATED MEDICAL DEVICES OR SOLUTIONS.
ORIGINALLY NAMED PSEUDOMONAS PAUCIMOBILIS

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 06-25-09

REVIEWED BY: Lizzette M. Rivera, BSMT Lic.2015
DATE: 06-25-09

IDENTIFICATION METHOD: VITEK 2 System

IDENTIFIED AS: 96% Sphingomonas paucimobilis

REVISION DATE: 03/03/04

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 05365
System #:

Laboratory Report

Printed Jun 25, 2009 15:38 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10330-23-1

Bionumber: 0373500564456220
Selected Organism: Bacillus megaterium

Comments:	Ala Velazco 06-25-09

Identification Information	Card:	BCL	Lot Number:	239124110	Expires:	May 6, 2010 12:00 GMT-04:00
	Completed:	Jun 25, 2009 03:11 GMT-04:00	Status:	Final	Analysis Time:	14.25 hours
Selected Organism	96% Probability		Bacillus megaterium			
	Bionumber:	0373500564456220			Confidence:	Very good identification
SRF Organism						
Analysis Organisms and Tests to Separate:						
Analysis Messages:						
Contraindicating Typical Biopattern(s)						
Bacillus megaterium	GLYG(94),PLE(70),APPA(29),					

Ala Velazco 06-25-09

Biochemical Details																	
1	BXYL	-	3	LysA	-	4	AspA	-	5	LeuA	+	7	PheA	+	8	ProA	-
9	BGAL	+	10	PyrA	+	11	AGAL	+	12	AlaA	+	13	TyrA	+	14	BNAG	(-)
15	APPA	+	18	CDEX	-	19	dGAL	+	21	GLYG	-	22	INO	-	24	MdG	-
25	ELLM	-	26	MdX	-	27	AMAN	-	29	MTE	+	30	GlyA	-	31	dMAN	+
32	dMNE	-	34	dMLZ	+	36	NAG	(+)	37	PLE	-	39	IRHA	-	41	BGLU	+
43	BMAN	-	44	PHC	-	45	PVATE	+	46	AGLU	+	47	dTAG	-	48	dTRE	+
50	INU	-	53	dGLU	+	54	dRIB	+	56	PSCNa	-	58	NaCl 6.5%	+	59	KAN	-
60	OLD	-	61	ESC	+	62	TTZ	-	63	POLYB_R	-						

Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 25, 2009 15:38 GMT-04:00	

06-25-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

Page 1 of 1

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Jun 30, 2009 15:12 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10330-24-1

Bionumber: 4601720151220001
Selected Organism: Serratia odorifera

Comments:	n/a Gvelazco 06-30-09

Identification Information	Card: GN		Lot Number: 241112040	Expires:	Jan 7, 2010 12:00 GMT-04:00
	Completed: Jun 25, 2009 22:05 GMT-04:00		Status: Final	Analysis Time:	4.50 hours
Selected Organism	99% Probability	Serratia odorifera			
	Bionumber: 4601720151220001			Confidence:	Excellent identification
SRF Organism					
Analysis Organisms and Tests to Separate:					
Analysis Messages:					
Contraindicating Typical Biopattern(s)					

n/a Gvelazco 06-30-09

Biochemical Details

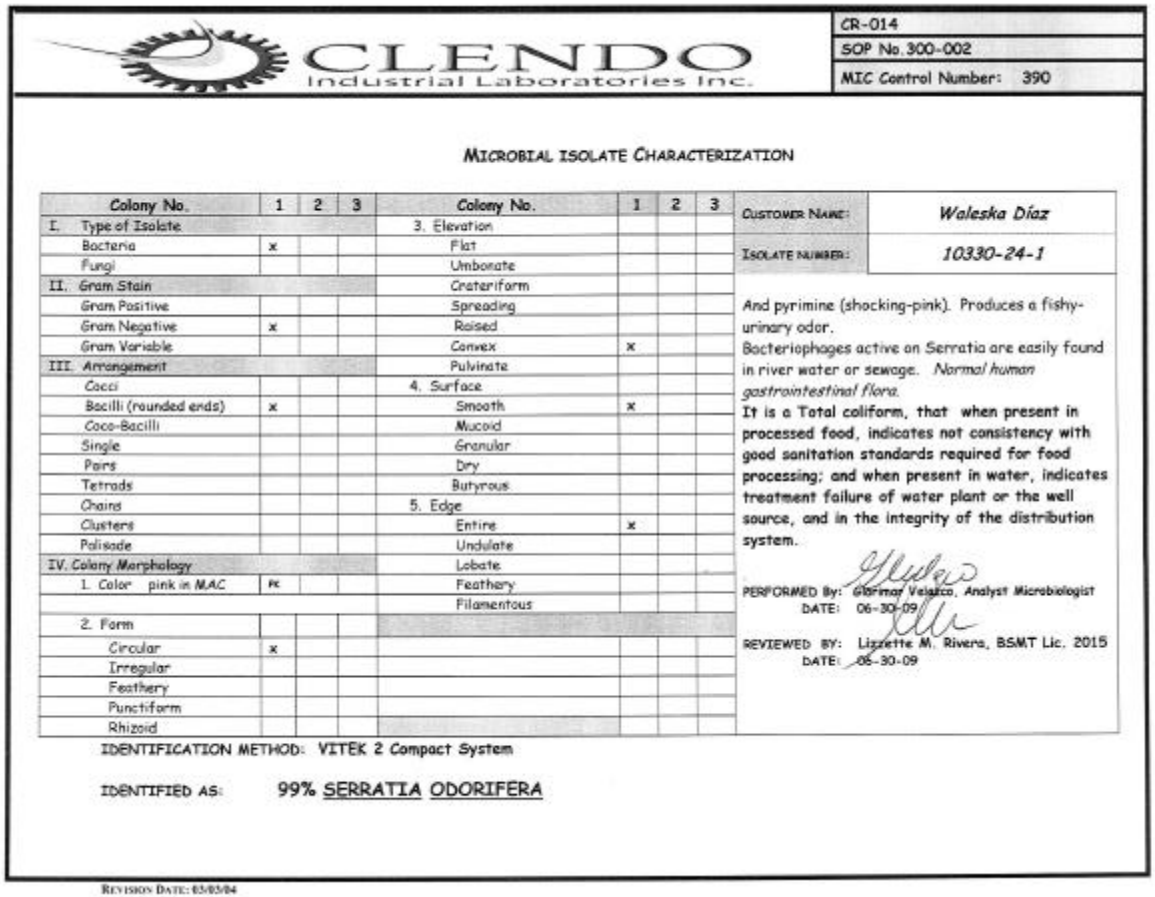
2	APPA	-	3	ADO	-	4	PyrA	+	5	IARL	-	7	dCEL	+	9	BGAL	+
10	H2S	-	11	BNAG	-	12	AGLTp	-	13	dGLU	+	14	GGT	-	15	OFF	-
17	BGLU	+	18	dMAL	+	19	dMAN	+	20	dMNE	-	21	BXYL	+	22	BAlap	-
23	ProA	-	26	LIP	-	27	PLE	-	29	TyrA	+	31	URE	-	32	dSOR	-
33	SAC	+	34	dTAG	-	35	dTRE	+	36	CIT	+	37	MNT	-	39	5KG	-
40	ILATk	-	41	AGLU	+	42	SUCT	-	43	NAGA	-	44	AGAL	+	45	PHOS	-
46	GlyA	-	47	ODC	-	48	LDC	-	53	BHISa	-	56	CMT	-	57	BGUR	-
58	O129R	-	59	GGAA	-	61	IMLTa	-	62	ELLM	+	64	ILATa	-			

Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 30, 2009 15:12 GMT-04:00	

Gvelazco 06-30-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:



CLENDO
Industrial Laboratories Inc.

CR-014
SOP No. 300-002
MIC Control Number: 390

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3	Colony No.	1	2	3
I. Type of Isolate				3. Elevation			
Bacteria	x			Flat			
Fungi				Umbonate			
II. Gram Stain				Crateriform			
Gram Positive				Spreading			
Gram Negative	x			Raised			
Gram Variable				Convex	x		
III. Arrangement				Pulvinate			
Cocci				4. Surface			
Bacilli (rounded ends)	x			Smooth	x		
Coco-Bacilli				Mucoid			
Single				Granular			
Pairs				Dry			
Tetrads				Butyrous			
Chains				5. Edge			
Clusters				Entire	x		
Palisade				Undulate			
IV. Colony Morphology				Lobate			
1. Color pink in MAC	PK			Feathery			
				Filamentous			
2. Form							
Circular	x						
Irregular							
Feathery							
Punctiform							
Rhizoid							

CUSTOMER NAME: *Waleska Díaz*

ISOLATE NUMBER: *10330-24-1*

And pyrimine (shocking-pink). Produces a fishy-urinary odor.
Bacteriophages active on Serratia are easily found in river water or sewage. *Normal human gastraintestinal flora.*
It is a Total coliform, that when present in processed food, indicates not consistency with good sanitation standards required for food processing; and when present in water, indicates treatment failure of water plant or the well source, and in the integrity of the distribution system.

PERFORMED By: Glorimar Velazco, Analyst Microbiologist
DATE: 06-30-09

REVIEWED BY: Lizzette M. Rivera, BSMT Lic. 2015
DATE: 06-30-09

IDENTIFICATION METHOD: VITEK 2 Compact System

IDENTIFIED AS: 99% SERRATIA ODORIFERA

REVISION DATE: 05/05/04

CLENDO INDUSTRIAL LABORATORY
PO BOX 579 BAYAMON PR 00960
TEL 787-620-8800
FAX 787-889-7140
Email : clendoind@prtc.net

FDA No. 30033383013

CLENDO CONTROL NO. 10332

CUSTOMER SAMPLE ANALYSIS REPORT

A. CUSTOMER NAME	WALESKA DIAZ
B. CLIENT NUMBER	0590
C. ADDRESS	URB. VILLA VICTORIA CAGUAS P.R. 00725
D. TELEPHONE	787-429-6644
E. FAX	N/A
F. CONTACT PERSON	WALESKA DIAZ
G. DATE /TIME OF SAMPLE RECEIPT	06-15-09 / 17:20
H. DATE / TIME OF SAMPLING	06-15-09 / 11:30
I. QUANTITY OF SAMPLES	8
J. DESCRIPTION OF SAMPLES	SAS-PLATES
K. SAMPLES COLLECTOR NAME	SAMUEL SERRANO
L. DATE/TIME ANALYSIS BEGINS:	06-15-09 / 18:00
M. RESULTS	

PROCEDURE PERFORMED AS PER:

SOP NO.100-023 PROCEDURE FOR ENVIRONMENTAL AIR SAMPLING USING SAS SUPER 100 SURFACE AIR SYSTEM

REFERENCES:

"MANUAL OF ENVIRONMENTAL MICROBIOLOGY" 2ND EDITION 2002

SAS YEAST/MOLD AIR SAMPLING RESULTS (4TH DAY COUNT)

SAMPLE	TOTAL COUNT (Pr=Corrected Count)	CFU/m^3	CFU/ft^3	IDENTIFICATION
10332-1 17	35 CFU	175 CFU/M^3	4.96 CFU/FT^3	N/A
10332-2 6	46 CFU	230 CFU/M^3	6.51 CFU/FT^3	ACREMONIUM STRICTUM
10332-3 75	35 CFU	175 CFU/M^3	4.96 CFU/FT^3	N/A
10332-4 38	42 CFU	210 CFU/M^3	5.95 CFU/FT^3	ACREMONIUM CURVULUM
10332-5 61	75 CFU	375 CFU/M^3	10.62 CFU/FT^3	N/A
10332-6 1	78 CFU	390 CFU/M^3	11.04 CFU/FT^3	N/A
10332-7 BACKGROUND EXTERIOR	69 CFU	345 CFU/M^3	9.77 CFU/FT^3	N/A

CLENDO INDUSTRIAL LABORATORY
PO BOX 570 BAYAMON PR 00960
TEL 787-620-6800
FAX 787-999-7149
Email: clendoind@prtc.net

FDA No. 30033383013

CLENDO CONTROL NO. 10332

CUSTOMER SAMPLE ANALYSIS REPORT

10332-8 BACKGROUND OFICINA	125 CFU	625 CFU/M^3	17.7 CFU/FT^3	CLADOSPORIUM CLADOSPOROIDES

SAS BACTERIA AIR SAMPLING RESULTS

SAMPLE	TOTAL COUNT (Pr=Corrected Count)	CFU/m^3	CFU/ft^3	IDENTIFICATION
10332-1 17	17 CFU	85 CFU/M^3	2.41 CFU/FT^3	98% Sphingomonas paucimobilis 99% Staphylococcus epidermidis
10332-2 6	29 CFU	145 CFU/M^3	4.11 CFU/FT^3	99% Micrococcus luteus 94% Brevundimonas diminuta/vesicularis 99% Staphylococcus hemolyticus
10332-3 75	20 CFU	100 CFU/M^3	2.83 CFU/FT^3	99% Cryseobacterium indologenes
10332-4 38	14 CFU	70 CFU/M^3	1.98 CFU/FT^3	N/A
10332-5 61	19 CFU	95 CFU/M^3	2.69 CFU/FT^3	N/A
10332-6 1	38 CFU	190 CFU/M^3	5.38 CFU/FT^3	98% Staphylococcus saprophyticus 98% Staphylococcus saprophyticus
10332-7 BACKGROUND EXTERIOR	19 CFU	95 CFU/M^3	2.69 CFU/FT^3	N/A
10332-8 BACKGROUND OFICINA	28 CFU	140 CFU/M^3	3.96 CFU/FT^3	N/A

N. COMMENTS

PRINCIPLE OF THE SURFACE AIR SYSTEM (SAS) SUPER 100: AIR IS ASPIRATED FOR VARIABLE TIME (IN THIS STUDY=1,000L FOR CLEAN ROOMS/4MINUTES) THROUGH A COVER WHICH HAVE BEEN MACHINED WITH A SERIES OF SMALL HOLES OF A SPECIAL DESIGN. THE RESULTING LAMINAR AIR FLOW IS DEIRECTED ONTO THE AGAR SURFACE OF A "CONTACT PLATE" CONTAINING MEDIUM CONSISTENT WITH THE MICROBIOLOGICAL EXAMINATION TO BE PERFORMED. WHEN THE PRESET SAMPLING CYCLE IS COMPLETED, THE PLATE IS REMOVED AND INCUBATED. THE ORGANISMS ARE THEN VISIBLE TO THE NAKED EYE AND CAN BE COUNTED FOR AN ASSESSMENT OF THE LEVEL OF CONTAMINATION.

50 CFU / M^3 OR 1.42 CFU / FT^3 OF YEASTS / MOLDS OR MORE IN THE ENVIRONMENT IS CONSIDERED A SIGNIFICATIVE RISK FACTOR FOR RESPIRATORY PROBLEMS OR COMPLICATIONS, EYES AND SKIN IRRITATIONS.

PERFORMED BY: GLORIMAR VELAZCO - LABORATORY ANALYST		DATE	06-22-09
REVIEWED BY: LIZZETTE M. RIVERA, B.S.M.T. - LABORATORY DIRECTOR (LIC # 2015)		DATE	06-22-09

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No.300-027
IM CONTROL NO. 197

IDENTIFICATION OF MOLDS

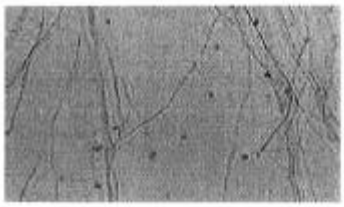
ISOLATE NO. :	10332-2-1	CUSTOMER:	WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	COLOR: ORANSE Appearance: cotteny	
BOTTOM	COLOR: WHITE APPEARANCE: WAXY	

MICROSCOPIC EXAMINATION

SLIDE CULTURE CHAMBER

DESCRIPTION	
EXTREMELY DELICATE, HYPHAE ARE SEPTATED; ERECT, BRANCHED AND UNBRANCHED. PHIALIDES ARISING FROM BUNDLED AERIAL HYPHAE, ERECT, SOMETIMES SLIGHTLY CHROMOPHILIC AT THE BASE, COLLARETTE RARELY VISIBLE. CONIDIA IN SLIMY HEADS, USUALLY CULINDRICAL OR ELLIPSOIDAL AND USUALLY STRAIGHT, HYALINE, SMOOTH-WALLED. CHLAMYDOSPORES ARSENT.	

IDENTIFICATION:	ACREMONIUM (CEPHALOSPORIUM) STRICTUM

IT IS A VERY COMMON AND VARIABLE SPECIES-INDOOR CONTAMINANT THAT PRODUCE SPORES IN A SLIMY MASS. BECAUSE SLIMY SPORES DO NOT BECOME AIRBORNE EASILY, THEIR DETECTION INDOORS SHOULD BE CONSIDERED SIGNIFICANT. SAPROPHYTIC; ISOLATED FROM SOIL, LEAVES, OF VASCULAR PLANTS, FROM OTHER FUNGI, HAY, AND FROM MOIST SURFACES IN INDOOR ENVIRONMENTS.

PERFORMED BY:	GLORIMAR VELAZCO	DATE:	06-29-09
REVIEWED BY:	LIZZETTE M. RIVERA	DATE:	06-29-09

Revision Date: 05/08

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No. 300-027
IM CONTROL NO. 197

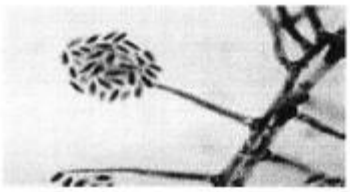
IDENTIFICATION OF MOLDS

ISOLATE NO:	10332-4-1	CUSTOMER:	WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	COLOR: YELLOW TO ORANGE APPEARANCE: COTTONY	
BOTTOM	COLOR: YELLOW APPEARANCE: WAXY	

MICROSCOPIC EXAMINATION
SLIDE CULTURE CHAMBER

DESCRIPTION	
EXTREMELY DELICATE. HYPHAE ARE SEPTATED; ERECT, UNBRANCHED, TAPERING PHIALIDES FORM DIRECTLY ON THE FINE, NARROW HYPHAE. CONIDIA ARE SMALL, ELLIPTIC, HYALINE. THE CONIDIA FORM EASILY DISRUPTED CLUSTERS AT THE TIP OF THE PHIALIDES.	

IDENTIFICATION: ACREMONIUM CURVULUM

IT IS A COMMON INDOOR CONTAMINANT THAT PRODUCE SPORES IN A SLIMY MASS (ALTHOUGH SOME SPECIES PRODUCE DRY SPORES). BECAUSE SLIMY SPORES DO NOT BECOME AIRBORNE EASILY, THEIR DETECTION INDOORS SHOULD BE CONSIDERED SIGNIFICANT. ETIOLOGIC AGENT OF MYCETOMAS, CORNEAL INFECTIONS, AND NAIL INFECTIONS. INVASIVE DISEASE AT VARIOUS BODY SITES HAS BEEN REPORTED ON RARE OCCASION. NOT KNOWN TO PRODUCE MYCOTOXINS.

PERFORMED BY:	Glorimar Velazco	DATE:	06-29-09
REVIEWED BY:	L.M. Rivera	DATE:	06-29-09

Revision Date: 05/08

CLENDO
Industrial Laboratories Inc.

CR-073
SOP No.300-027
IM CONTROL NO. 198

IDENTIFICATION OF MOLDS

CONTROL NO. : 10332-B-1 | CUSTOMER: WALESKA DÍAZ

MACROSCOPIC EXAMINATION

SAMPLE	COLONY DESCRIPTION	MACROSCOPIC APPEARANCE
Top	Color: OLIVACEOUS GREEN APPEARANCE: VELVETY	
BOTTOM	COLOR: BLACK APPEARANCE: WAXY	

MICROSCOPIC EXAMINATION
SLIDE CULTURE CHAMBER

DESCRIPTION	
CONIDIOPHORES ARE DENDRITIC (TREE-LIKE), CLOSELY PACKED, WITH STIPES BEARING BRANCHING STRUCTURES OF ACROPETALLY PRODUCED CELLS, ALL FUNCTIONING AS CONIDIA AT MATURITY, AND SEPARATING IN LIQUID MOUNT; CONIDIA HEAVY WALLED, PALE OLIVE BROWN, LARGER ONES NON OR SINGLY SEPTATE, SMOOTH WALLED; SMALLER ONES NONSEPTATE, ELLIPSOIDAL TO SPICULATE, WITH WALLS SMOOTH TO FINELY ROUGHNED.	

IDENTIFICATION: CLADOSPORIUM CLADOSPOROIDES

IT IS A COMMONLY FOUND IN OUTDOOR AIR AND INDOORS. INCREASED CONCENTRATION OF ITS SPORES HAVE BEEN ASSOCIATED WITH HIGH TEMPERATURE AND LOW RELATIVE HUMIDITY. ITS SPORES BECOME AIRBORNE BY PASSIVE FORCE, SUCH AS AIR MOVEMENT OR RAIN DROPS. GROWTH HAVE BEEN REPORTED DOWN TO a_w 0.86, AT 25°C AND DOWN TO -5°C. IT IS RELATIVELY RESISTANT TO MICROWAVE HEATING. THE MAXIMUM GROWTH TEMPERATURE IS NEAR 32°C. ARE CONSIDERED SECONDARY COLONIZERS IN A WIDE VARIETY OF BUILDING MATERIALS, FURNISHING, CEILING TILES, INSULATION, PAINTED SURFACES, WALLPAPER, HOUSE DUST, AND A VERY WIDE VARIETY OF FOODS, INCLUDING WHEAT AND FLOUR. CAUSES SPOILAGE IN REFRIGERATED VACUM-PACKED FOODS SUCH AS CHEESE AND MEAT. THIS SPECIES IS NOT KNOWN TO PRODUCE MYCOTOXINS.

PERFORMED BY:	GLORIMAR VELAZCO	DATE:	06-29-09
REVISED BY:	LIZZETTE M. RIVERA	DATE:	06-29-09

Revision Date: 03-03-04

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06355
System #:

Laboratory Report

Printed Jun 25, 2009 15:38 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10332-1-1

Bionumber: 5000000100200401
Selected Organism: Sphingomonas paucimobilis

Comments:	N/a Ghulpo 06-25-09

Identification Information	Card:	GN	Lot Number:	241112040	Expires:	Jan 7, 2010 12:00 GMT-04:00
	Completed:	Jun 24, 2009 18:57 GMT-04:00	Status:	Final	Analysis Time:	6.00 hours
Selected Organism	98% Probability		Sphingomonas paucimobilis			
	Bionumber:	5000000100200401			Confidence:	Excellent identification

SRF Organism

Analysis Organisms and Tests to Separate: N/a Ghulpo 06-25-09

Analysis Messages:

Contraindicating Typical Biopattern(s)

Sphingomonas paucimobilis PyrA(24),

Biochemical Details																
2	APPA	+	3	ADO	-	4	PyrA	+	5	IARL	-	7	dCEL	-	9	BGAL	-
10	H2S	-	11	BNAG	-	12	AGLTp	-	13	dGLU	-	14	GGT	-	15	OFF	-
17	BGLU	(-)	18	dMAL	-	19	dMAN	-	20	dMNE	-	21	BXYL	-	22	BAlap	-
23	ProA	-	26	LIP	-	27	PLE	-	29	TyrA	+	31	URE	-	32	dSOR	-
33	SAC	-	34	dTAG	-	35	dTRE	-	36	CIT	-	37	MNT	-	39	5KG	-
40	ILATk	-	41	AGLU	+	42	SUCT	-	43	NAGA	-	44	AGAL	-	45	PHOS	-
46	GlyA	-	47	ODC	-	48	LDC	-	53	IHISa	-	56	CMT	-	57	BGUR	(+)
58	O129R	-	59	GGAA	-	61	IMLTa	-	62	ELLM	+	64	ILATa	-			

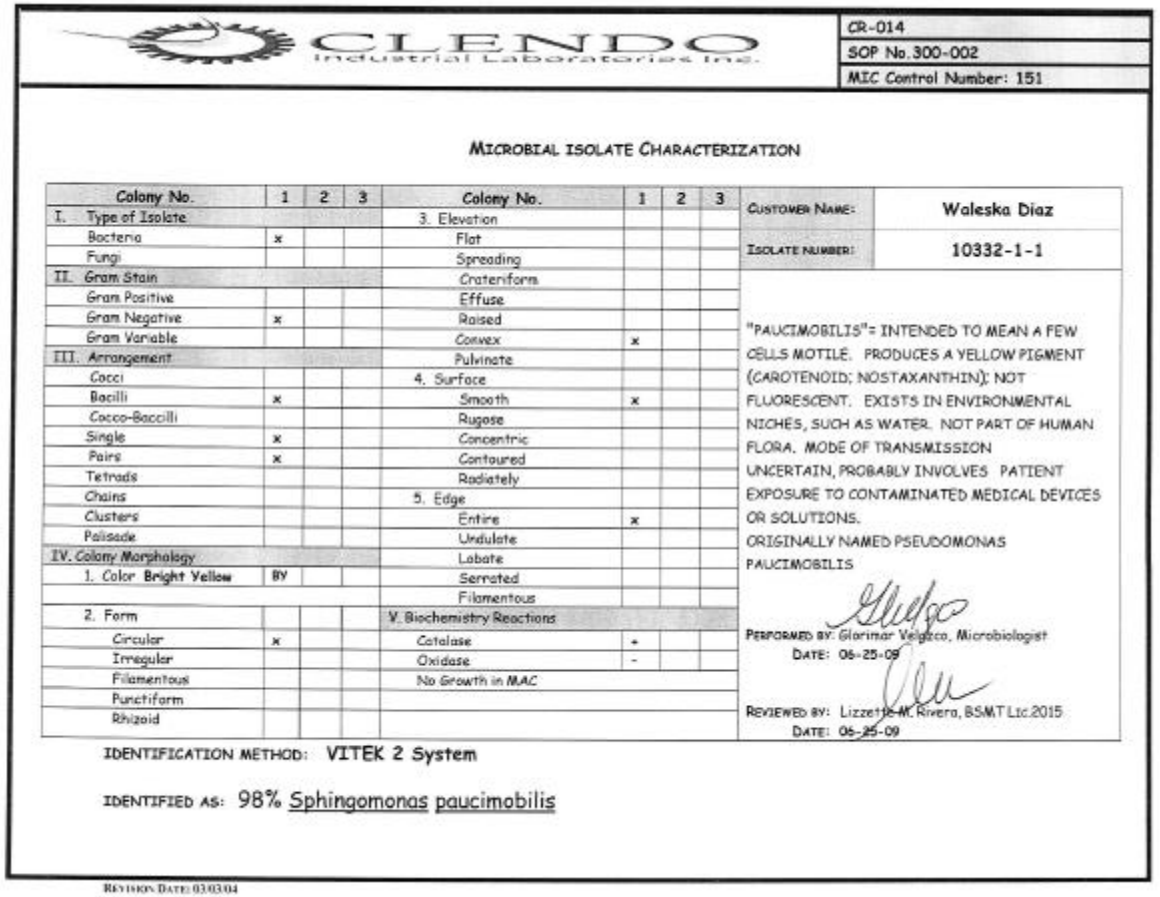
Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 25, 2009 15:38 GMT-04:00	

Ghulpo 06-25-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

Page 1 of 1



CLENDO
Industrial Laboratories Inc.

CR-014
SOP No.300-002
MIC Control Number: 151

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive			
Gram Negative	x		
Gram Variable			
III. Arrangement			
Cocci			
Bacilli	x		
Cocco-Bacilli			
Single	x		
Pairs	x		
Tetrads			
Chains			
Clusters			
Palisade			
IV. Colony Morphology			
1. Color Bright Yellow	BY		
2. Form			
Circular	x		
Irregular			
Filamentous			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Spreading			
Crateriform			
Effuse			
Raised			
Convex	x		
Pulvinate			
4. Surface			
Smooth	x		
Rugose			
Concentric			
Contoured			
Radiately			
5. Edge			
Entire	x		
Undulate			
Lobate			
Serrated			
Filamentous			
V. Biochemistry Reactions			
Catalase	+		
Oxidase	-		
No Growth in MAC			

CUSTOMER NAME:	Waleska Diaz
ISOLATE NUMBER:	10332-1-1

"PAUCIMOBILIS"= INTENDED TO MEAN A FEW CELLS MOTILE. PRODUCES A YELLOW PIGMENT (CAROTENOID; NOSTAXANTHIN); NOT FLUORESCENT. EXISTS IN ENVIRONMENTAL NICHES, SUCH AS WATER. NOT PART OF HUMAN FLORA. MODE OF TRANSMISSION UNCERTAIN, PROBABLY INVOLVES PATIENT EXPOSURE TO CONTAMINATED MEDICAL DEVICES OR SOLUTIONS.
ORIGINALLY NAMED PSEUDOMONAS PAUCIMOBILIS

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 06-25-09

REVIEWED BY: Lizzette M. Rivera, BSMT Lic.2015
DATE: 06-25-09

IDENTIFICATION METHOD: VITEK 2 System

IDENTIFIED AS: 98% Sphingomonas paucimobilis

REVISION DATE: 03/03/04

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Jun 25, 2009 15:38 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10332-1-2

Bionumber: 010400056621211
Selected Organism: Staphylococcus epidermidis

Comments:	N/a Glulyo 06-25-09

Identification Information	Card: GP		Lot Number: 242135240	Expires:	Aug 27, 2010 12:00 GMT-04:00
	Completed: Jun 24, 2009 18:57 GMT-04:00		Status: Final	Analysis Time:	6.00 hours
Selected Organism	99% Probability		Staphylococcus epidermidis		
	Bionumber: 010400056621211			Confidence:	Excellent identification
SRF Organism					
Analysis Organisms and Tests to Separate:	N/a Glulyo 06-25-09				
Analysis Messages:					
Contraindicating Typical Biopattern(s)					

Biochemical Details

2	AMY	-	4	PIPLC	-	5	dXYL	-	8	ADH1	+	9	BGAL	-	11	AGLU	-
13	APPA	-	14	CDEX	-	15	AspA	-	16	BGAR	-	17	AMAN	-	19	PHOS	+
20	LeuA	-	23	ProA	-	24	BGURr	-	25	AGAL	-	26	PyrA	-	27	BGUR	-
28	AlaA	-	29	TyrA	-	30	dSOR	-	31	URE	+	32	POLYB	-	37	dGAL	+
38	dRIB	-	39	ILATk	+	42	LAC	+	44	NAG	-	45	dMAL	+	46	BACI	+
47	NOVO	-	50	NC6.5	+	52	dMAN	-	53	dMNE	(+)	54	MBdG	-	56	PUL	-
57	dRAF	-	58	O129R	+	59	SAL	-	60	SAC	+	62	dTRE	-	63	ADH2s	-
64	OPTO	+															

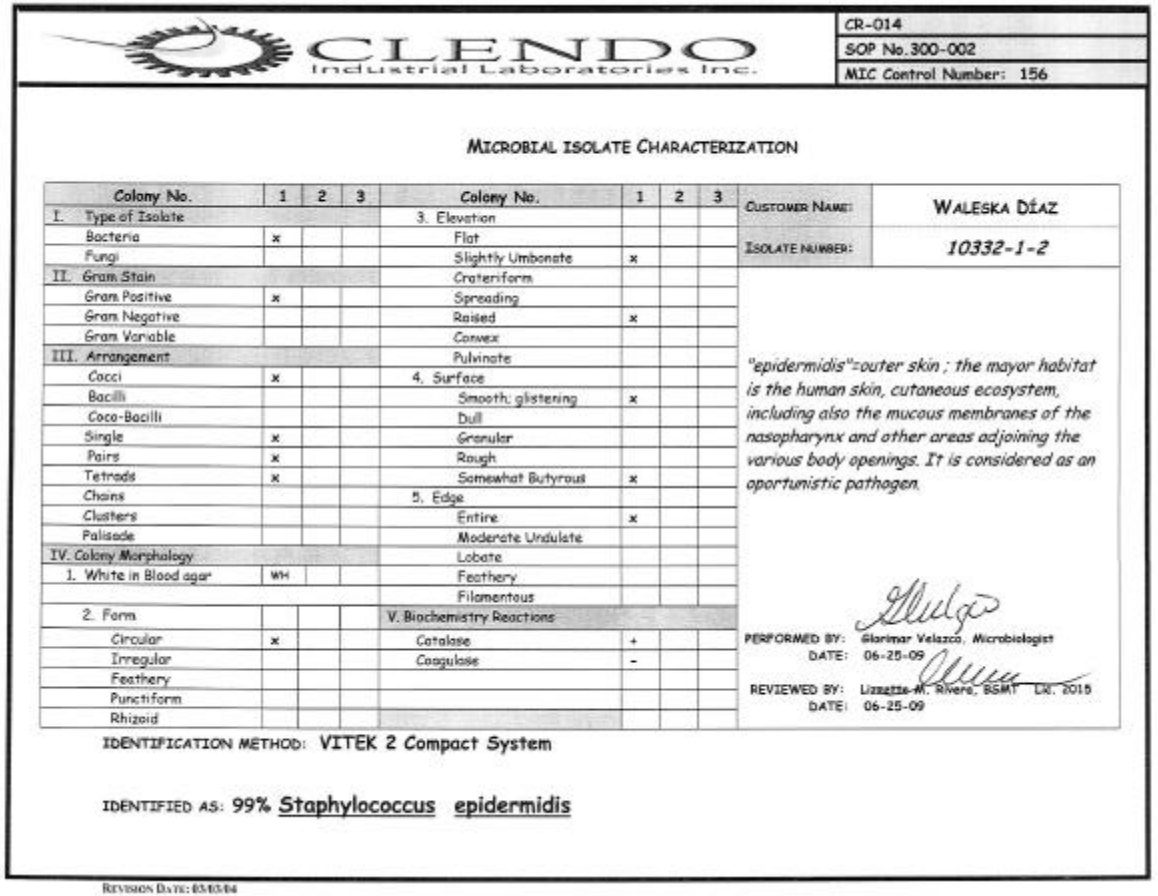
Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 25, 2009 15:38 GMT-04:00	

Glulyo 06-25-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

Page 1 of 1



CLENDO
Industrial Laboratories Inc.

CR-014
SOP No. 300-002
MIC Control Number: 156

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive	x		
Gram Negative			
Gram Variable			
III. Arrangement			
Cocci	x		
Bacilli			
Coco-Bacilli			
Single	x		
Pairs	x		
Tetrads	x		
Chains			
Clusters			
Palisade			
IV. Colony Morphology			
1. White in Blood agar	WH		
2. Form			
Circular	x		
Irregular			
Feathery			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Slightly Umbonate	x		
Crateriform			
Spreading			
Raised	x		
Convex			
Pulvinate			
4. Surface			
Smooth; glistening	x		
Dull			
Granular			
Rough			
Somewhat Butyrous	x		
5. Edge			
Entire	x		
Moderate Undulate			
Lobate			
Feathery			
Filamentous			
V. Biochemistry Reactions			
Catalase	+		
Coagulase	-		

CUSTOMER NAME: WALESKA DÍAZ

ISOLATE NUMBER: *10332-1-2*

"epidermidis"=outer skin ; the mayor habitat is the human skin, cutaneous ecosystem, including also the mucous membranes of the nasopharynx and other areas adjoining the various body openings. It is considered as an oportunistic pathogen.

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 06-25-09

REVIEWED BY: Lizzette M. Rivera, BSMT (ASCP) 2015
DATE: 06-25-09

IDENTIFICATION METHOD: VITEK 2 Compact System

IDENTIFIED AS: 99% **Staphylococcus epidermidis**

REVISION DATE: 03/03/04

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06366
System #:

Laboratory Report

Printed Jun 25, 2009 15:44 GMT-04:00
Printed by: gvelazco
Report Version: 3 of 3

Isolate Group: 10332-2-1
Last Updated: Jun 25, 2009 15:44 GMT-04:00 By: gvelazco

Bionumber: 040032300000000
Selected Organism: Micrococcus luteus

Comments:	N/A [signature] 06-25-09

Identification Information	**Card:** GP		**Lot Number:** 242136240	**Expires:**	Aug 27, 2010 12:00 GMT-04:00
	Completed: Jun 24, 2009 18:56 GMT-04:00		**Status:** Final	**Analysis Time:**	6.00 hours
Selected Organism	99% Probability		**Micrococcus luteus**		
	Bionumber: 040032300000000			**Confidence:**	Excellent identification
SRF Organism					
Analysis Organisms and Tests to Separate:					
Micrococcus luteus / lylae					
Micrococcus luteus	YELLOW(95),				
Micrococcus lylae	YELLOW(1),				
Analysis Messages:	N/A [signature] 06-25-09				
Contraindicating Typical Biopattern(s)					

Biochemical Details

2	AMY	-	4	PIPLC	-	5	dXYL	-	8	ADH1	-	9	BGAL	-	11	AGLU	+
13	APPA	-	14	CDEX	-	15	AspA	-	16	BGAR	-	17	AMAN	-	19	PHOS	-
20	LeuA	+	23	ProA	+	24	BGURr	-	25	AGAL	-	26	PyrA	+	27	BGUR	-
28	AlaA	+	29	TyrA	+	30	dSOR	-	31	URE	-	32	POLYB	-	37	dGAL	-
38	dRIB	-	39	ILATk	-	42	LAC	-	44	NAG	-	45	dMAL	-	46	BACI	-
47	NOVO	-	50	NC6.5	-	52	dMAN	-	53	dMNE	-	54	MBdG	-	56	PUL	-
57	dRAF	-	58	O129R	-	59	SAL	-	60	SAC	-	62	dTRE	-	63	ADH2s	-
64	OPTO	-															

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Jun 25, 2009 15:44 GMT-04:00
Printed by: gvelazco
Report Version: 3 of 3

Isolate Group: 10332-2-1
Last Updated: Jun 25, 2009 15:44 GMT-04:00 By: gvelazco

Bionumber: 040032300000000
Selected Organism: Micrococcus luteus

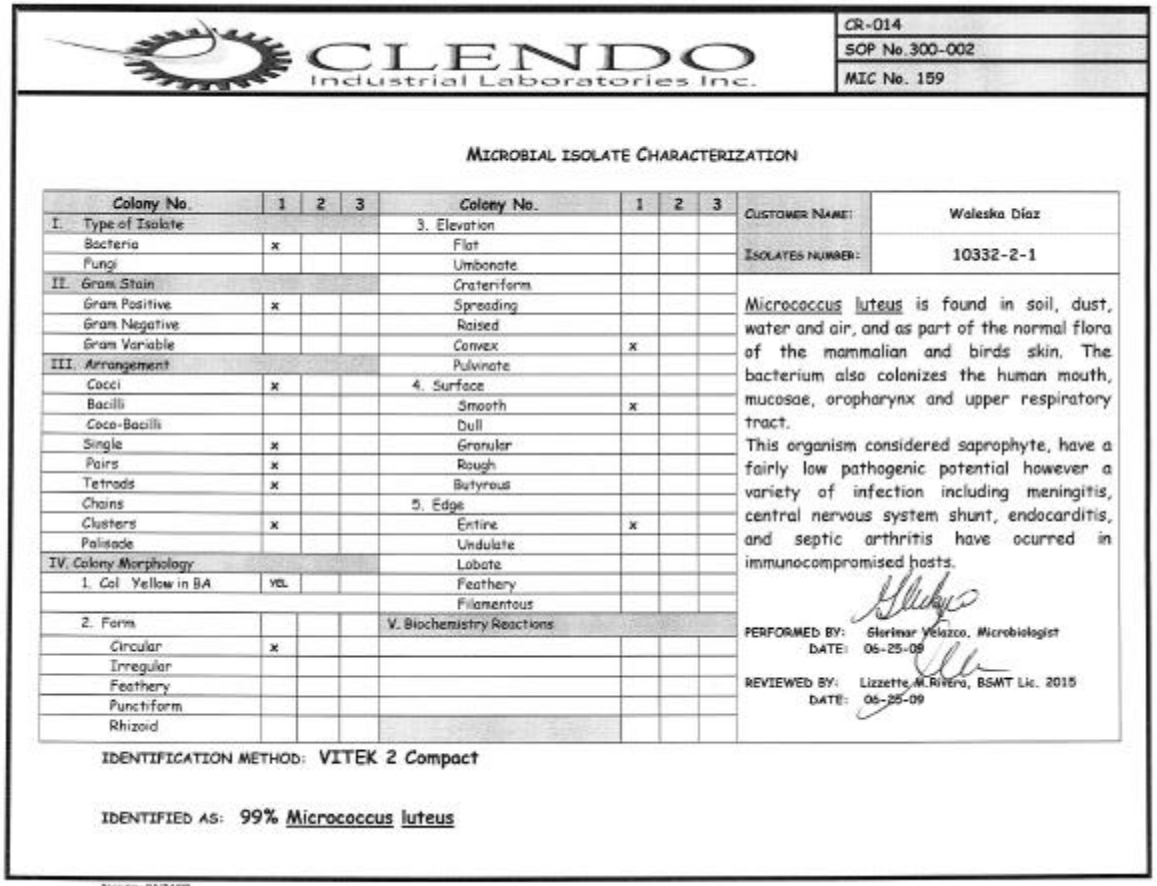
Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 25, 2009 15:44 GMT-04:00	

06-25-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

Page 2 of 2



CLENDO
Industrial Laboratories Inc.

CR-014
SOP No.300-002
MIC No. 159

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive	x		
Gram Negative			
Gram Variable			
III. Arrangement			
Cocci	x		
Bacilli			
Coco-Bacilli			
Single	x		
Pairs	x		
Tetrads	x		
Chains			
Clusters	x		
Palisade			
IV. Colony Morphology			
1. Col Yellow in BA	YEL		
2. Form			
Circular	x		
Irregular			
Feathery			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Umbonate			
Crateriform			
Spreading			
Raised			
Convex	x		
Pulvinate			
4. Surface			
Smooth	x		
Dull			
Granular			
Rough			
Butyreus			
5. Edge			
Entire	x		
Undulate			
Lobate			
Feathery			
Filamentous			
V. Biochemistry Reactions			

CUSTOMER NAME:	Waleska Díaz
ISOLATES NUMBER:	10332-2-1

Micrococcus luteus is found in soil, dust, water and air, and as part of the normal flora of the mammalian and birds skin. The bacterium also colonizes the human mouth, mucosae, oropharynx and upper respiratory tract.

This organism considered saprophyte, have a fairly low pathogenic potential however a variety of infection including meningitis, central nervous system shunt, endocarditis, and septic arthritis have ocurred in immunocompromised hosts.

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 06-25-09

REVIEWED BY: Lizzette M.Rivera, BSMT Lic. 2015
DATE: 06-25-09

IDENTIFICATION METHOD: VITEK 2 Compact

IDENTIFIED AS: 99% Micrococcus luteus

ISSUED: 01/2009

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 08365
System #:

Laboratory Report

Printed Jul 3, 2009 09:55 GMT-04:00
Printed by: gvelazco
Report Version: 3 of 3

Isolate Group: 10332-2-2
Last Updated: Jul 3, 2009 09:18 GMT-04:00 By: gvelazco

Bionumber: 1002103100440020
Selected Organism: Brevundimonas diminuta / vesicularis

Comments:	07-03-09 GVelazco n/a

Identification Information	Card:	GN	Lot Number:	241112040	Expires:	Jan 7, 2010 12:00 GMT-04:00
	Completed:	Jun 24, 2009 20:58 GMT-04:00	Status:	Final	Analysis Time:	8.00 hours
Selected Organism	94% Probability		Brevundimonas diminuta / vesicularis			
	Bionumber:	1002103100440020			Confidence:	Very good identification

SRF Organism

Analysis Organisms and Tests to Separate:

Brevundimonas diminuta / vesicularis	
Brevundimonas diminuta	ESCULIN(1),dMALTOSE(1),
Brevundimonas vesicularis	ESCULIN(99),dMALTOSE(99),

Analysis Messages:

Contraindicating Typical Biopattern(s)

Brevundimonas diminuta / vesicularis	SUCT(4),AGLTp(90),

Biochemical Details

2	APPA	+	3	ADO	-	4	PyrA	-	5	IARL	-	7	dCEL	-	9	BGAL	-
10	H2S	-	11	BNAG	-	12	AGLTp	-	13	dGLU	-	14	GGT	+	15	OFF	-
17	BGLU	+	18	dMAL	-	19	dMAN	-	20	dMNE	-	21	BXYL	-	22	BAlap	-
23	ProA	+	26	LIP	+	27	PLE	-	29	TyrA	+	31	URE	-	32	dSOR	-
33	SAC	-	34	dTAG	-	35	dTRE	-	36	CIT	-	37	MNT	-	39	5KG	-
40	ILATk	-	41	AGLU	-	42	SUCT	+	43	NAGA	-	44	AGAL	-	45	PHOS	+
46	GlyA	-	47	ODC	-	48	LDC	-	53	IHISa	-	56	CMT	-	57	BGUR	-
58	O129R	-	59	GGAA	+	61	IMLTa	-	62	ELLM	-	64	ILATa	-			

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06385
System #:

Laboratory Report

Printed Jul 3, 2009 09:55 GMT-04:00
Printed by: gvelazco
Report Version: 3 of 3

Isolate Group: 10332-2-2
Last Updated: Jul 3, 2009 09:18 GMT-04:00 By: gvelazco

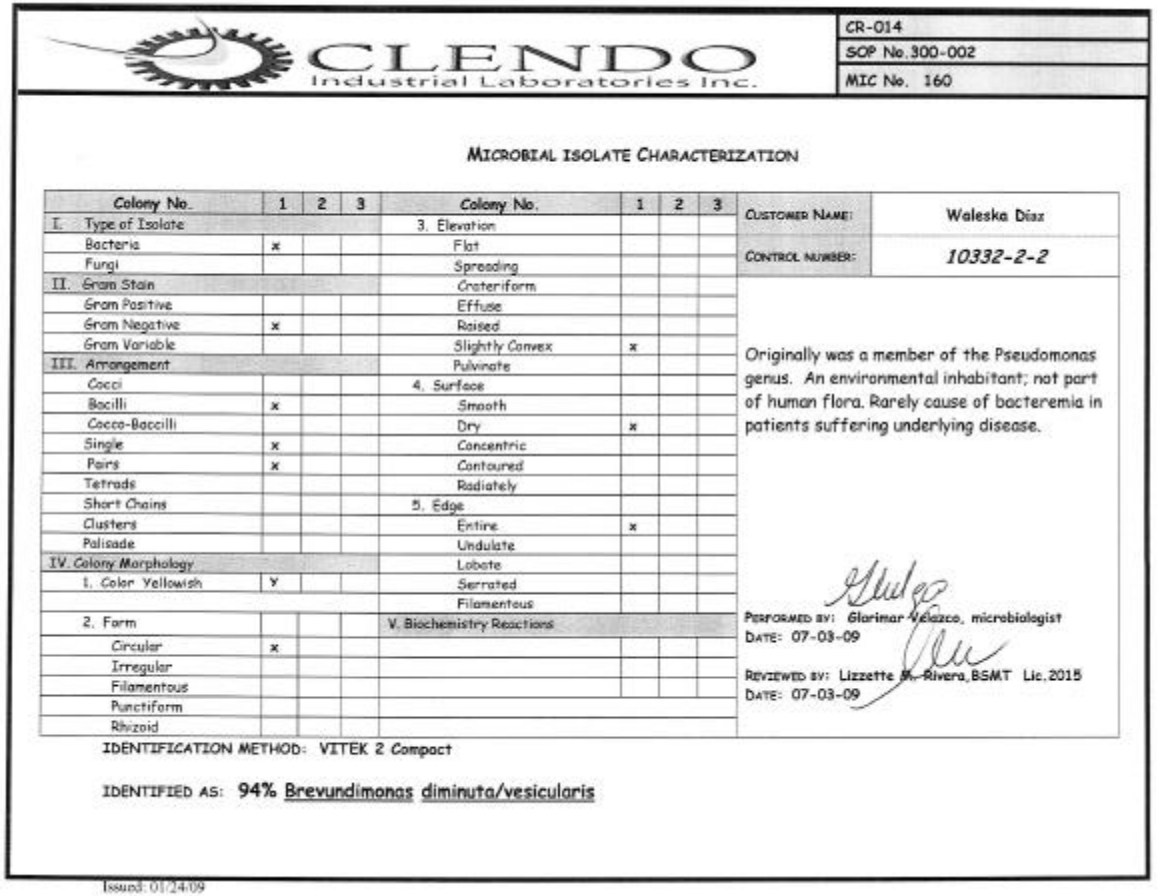
Bionumber: 1002103100440020
Selected Organism: Brevundimonas diminuta / vesicularis

Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jul 3, 2009 09:18 GMT-04:00	

07-03-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:



CLENDO
Industrial Laboratories Inc.

CR-014
SOP No.300-002
MIC No. 160

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive			
Gram Negative	x		
Gram Variable			
III. Arrangement			
Cocci			
Bacilli	x		
Cocco-Bacilli			
Single	x		
Pairs	x		
Tetrads			
Short Chains			
Clusters			
Palisade			
IV. Colony Morphology			
1. Color Yellowish	Y		
2. Form			
Circular	x		
Irregular			
Filamentous			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Spreading			
Crateriform			
Effuse			
Raised			
Slightly Convex	x		
Pulvinate			
4. Surface			
Smooth			
Dry	x		
Concentric			
Contoured			
Radiately			
5. Edge			
Entire	x		
Undulate			
Lobate			
Serrated			
Filamentous			
V. Biochemistry Reactions			

CUSTOMER NAME:	Waleska Diaz
CONTROL NUMBER:	*10332-2-2*

Originally was a member of the Pseudomonas genus. An environmental inhabitant; not part of human flora. Rarely cause of bacteremia in patients suffering underlying disease.

PERFORMED BY: Glorimar Velazco, microbiologist
DATE: 07-03-09

REVIEWED BY: Lizzette M. Rivera, BSMT Lic.2015
DATE: 07-03-09

IDENTIFICATION METHOD: VITEK 2 Compact

IDENTIFIED AS: **94% Brevundimonas diminuta/vesicularis**

Issued: 01/24/09

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Jun 25, 2009 15:39 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10332-2-3

Bionumber: 050002005260231
Selected Organism: Staphylococcus haemolyticus

Comments:	n/a Glvelazco 06-25-09

Identification Information	Card:	GP	Lot Number:	242135240	Expires:	Aug 27, 2010 12:00 GMT-04:00
	Completed:	Jun 24, 2009 17:54 GMT-04:00	Status:	Final	Analysis Time:	5.00 hours
Selected Organism	99% Probability		Staphylococcus haemolyticus			
	Bionumber:	050002005260231			Confidence:	Excellent identification
SRF Organism						
Analysis Organisms and Tests to Separate:	n/a Glvelazco 06-25-09					
Analysis Messages:						
Contraindicating Typical Biopattern(s)						

Biochemical Details

2	AMY	-	4	PIPLC	-	5	dXYL	-	8	ADH1	+	9	BGAL	-	11	AGLU	+
13	APPA	-	14	CDEX	-	15	AspA	-	16	BGAR	-	17	AMAN	-	19	PHOS	-
20	LeuA	-	23	ProA	-	24	BGURr	-	25	AGAL	-	26	PyrA	+	27	BGUR	-
28	AlaA	-	29	TyrA	-	30	dSOR	-	31	URE	-	32	POLYB	-	37	aGAL	-
38	dRIB	+	39	ILATk	-	42	LAC	+	44	NAG	-	45	dMAL	+	46	BACI	-
47	NOVO	-	50	NC6.5	+	52	dMAN	+	53	dMNE	-	54	MBdG	-	56	PUL	-
57	dRAF	-	58	O129R	+	59	SAL	-	60	SAC	+	62	dTRE	+	63	ADH2s	-
64	OPTO	+															

Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 25, 2009 15:39 GMT-04:00	

Glvelazco 06-25-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

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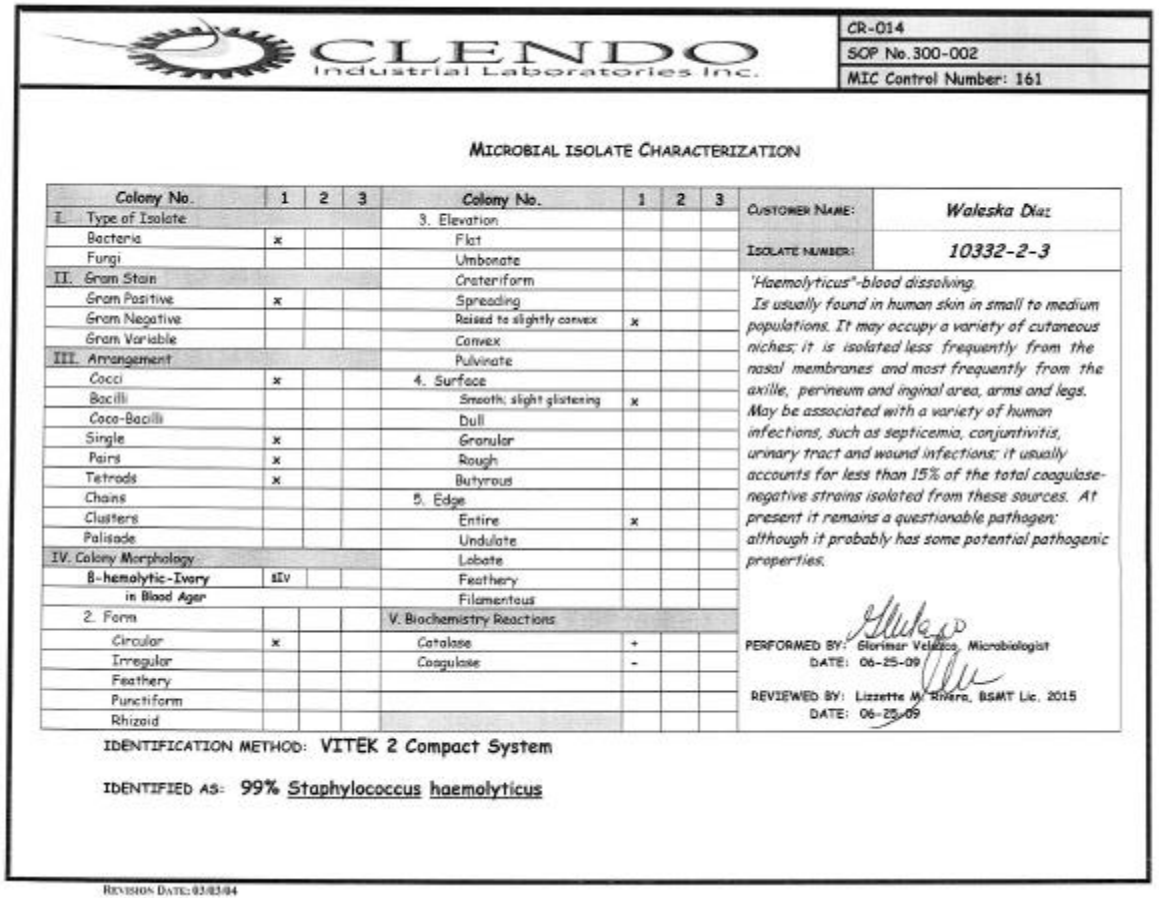


CLENDO
Industrial Laboratories Inc.

CR-014
SOP No.300-002
MIC Control Number: 161

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive	x		
Gram Negative			
Gram Variable			
III. Arrangement			
Cocci	x		
Bacilli			
Coco-Bacilli			
Single	x		
Pairs	x		
Tetrads	x		
Chains			
Clusters			
Palisade			
IV. Colony Morphology			
B-hemolytic-Ivory in Blood Agar	sIv		
2. Form			
Circular	x		
Irregular			
Feathery			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Umbonate			
Crateriform			
Spreading			
Raised to slightly convex	x		
Convex			
Pulvinate			
4. Surface			
Smooth; slight glistening	x		
Dull			
Granular			
Rough			
Butyrous			
5. Edge			
Entire	x		
Undulate			
Lobate			
Feathery			
Filamentous			
V. Biochemistry Reactions			
Catalase	+		
Coagulase	-		

CUSTOMER NAME:	*Waleska Diaz*
ISOLATE NUMBER:	*10332-2-3*

"Haemolyticus"-blood dissolving.
Is usually found in human skin in small to medium populations. It may occupy a variety of cutaneous niches; it is isolated less frequently from the nasal membranes and most frequently from the axille, perineum and inginal area, arms and legs. May be associated with a variety of human infections, such as septicemia, conjuntivitis, urinary tract and wound infections; it usually accounts for less than 15% of the total coagulase-negative strains isolated from these sources. At present it remains a questionable pathogen; although it probably has some potential pathogenic properties.

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 06-25-09

REVIEWED BY: Lizzette M. Rivera, BSMT Lic. 2015
DATE: 06-25-09

IDENTIFICATION METHOD: VITEK 2 Compact System

IDENTIFIED AS: 99% Staphylococcus haemolyticus

REVISION DATE: 03/03/04

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Jun 25, 2009 15:39 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10332-3-1

Bionumber: 1060103100240020
Selected Organism: Chryseobacterium indologenes

Comments:	n/a 06-25-09

Identification Information	Card:	GN	Lot Number:	241112040	Expires:	Jan 7, 2010 12:00 GMT-04:00
	Completed:	Jun 24, 2009 18:56 GMT-04:00	Status:	Final	Analysis Time:	6.00 hours
Selected Organism	99% Probability		Chryseobacterium indologenes			
	Bionumber:	1060103100240020			Confidence:	Excellent identification
SRF Organism						
Analysis Organisms and Tests to Separate:						
Analysis Messages:						
Contraindicating Typical Biopattern(s)						

n/a 06-25-09

Biochemical Details																			
2	APPA	+	3	ADO	-	4	PyrA	-	5	IARL	-	7	dCEL	-	9	BGAL	-
10	H2S	-	11	BNAG	+	12	AGLTp	+	13	dGLU	-	14	GGT	-	15	OFF	-
17	BGLU	+	18	dMAL	-	19	dMAN	-	20	dMNE	-	21	BXYL	-	22	BAlap	-
23	ProA	+	26	LIP	+	27	PLE	-	29	TyrA	+	31	URE	-	32	dSOR	-
33	SAC	-	34	dTAG	-	35	dTRE	-	36	CIT	-	37	MNT	-	39	5KG	-
40	ILATk	-	41	AGLU	+	42	SUCT	-	43	NAGA	-	44	AGAL	-	45	PHOS	+
46	GlyA	-	47	ODC	-	48	LDC	-	53	IHISa	-	56	CMT	-	57	BGUR	-
58	O129R	-	59	GGAA	+	61	IMLTa	-	62	ELLM	-	64	ILATa	-			

Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jun 25, 2009 15:39 GMT-04:00	

06-25-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

CLENDO
Industrial Laboratories Inc.

CR-014
SOP No.300-002
MIC Control Number: 163

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3	Colony No.	1	2	3
I. Type of Isolate				3. Elevation			
Bacteria	x			Flat			
Fungi				Spreading			
II. Gram Stain				Crateriform			
Gram Positive				Effuse			
Gram Negative	x			Raised			
Gram Variable				Convex	x		
III. Arrangement				Pulvinate			
Cocci				4. Surface			
Bacilli	x			Smooth			
Cocco-Bacilli				Rugose			
Single	x			Concentric			
Pairs	x			Contoured			
Tetrads				Wrinkled, adherent	x		
Short Chains	x			5. Edge			
Clusters				Entire			
Palisade				Undulate			
IV. Colony Morphology				Lobate			
1. Color Yellow	Y			Serrated	x		
				Filamentous			
2. Form							
Circular							
Irregular	x						
Filamentous							
Punctiform							
Rhizoid							

CUSTOMER NAME:	Waleska Díaz
ISOLATE NUMBER:	10332-3-1

Originally was a member of the Flavobacterium genus. As environmental inhabitant, this organism may be found in various nitches; specially in moist areas. Not consider part of normal flora. Ability to survive in chlorinated tap water.

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 06-25-09

REVIEWED BY: LIZZETTE M. RIVERA, BSMT LIC.2015
DATE: 06-25-09

IDENTIFICATION METHOD: VITEK 2 Compact System

IDENTIFIED AS: 99% Chryseobacterium indologenes.

REVISION DATE: 02/10/03

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 05365
System #:

Laboratory Report

Printed Jul 3, 2009 09:14 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10332-6 (1)-1

Bionumber: 0700000172702 31
Selected Organism: Staphylococcus saprophyticus

Comments:	N/a Gladys 07-03-09

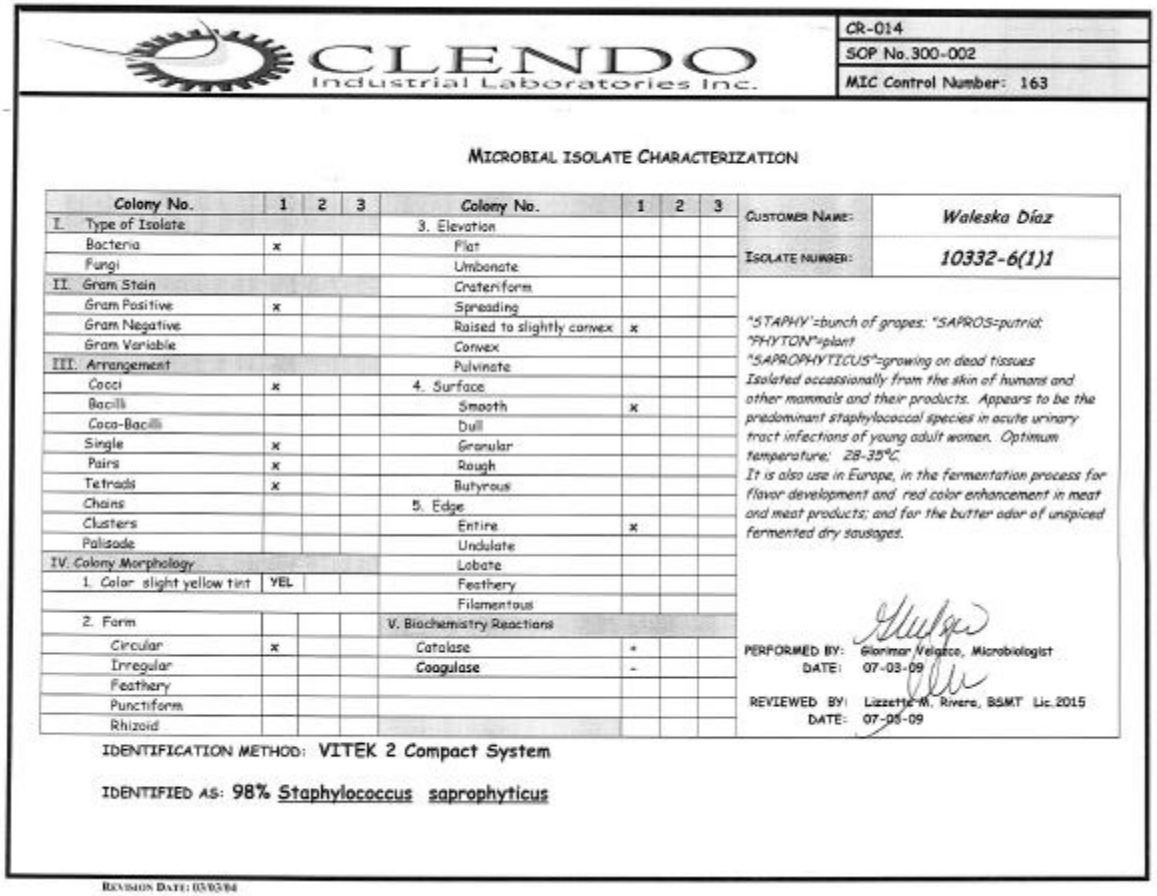
Identification Information	Card: GP		Lot Number: 242135240	Expires:	Aug 27, 2010 12:00 GMT-04:00
	Completed: Jul 1, 2009 20:02 GMT-04:00		Status: Final	Analysis Time:	5.00 hours
Selected Organism	98% Probability	Staphylococcus saprophyticus			
	Bionumber: 0700000172702 31			Confidence:	Excellent identification
SRF Organism	N/a Gladys 07-03-09				
Analysis Organisms and Tests to Separate:					
Analysis Messages:					
Contraindicating Typical Biopattern(s)					
Staphylococcus saprophyticus	AGLU(22),				

Biochemical Details																		
2	AMY	-	4	PIPLC	-	5	dXYL	-	8	ADH1	+	9	BGAL	+	11	AGLU	+
13	APPA	-	14	CDEX	-	15	AspA	-	16	BGAR	-	17	AMAN	-	19	PHOS	-
20	LeuA	-	23	ProA	-	24	BGURr	-	25	AGAL	-	26	PyrA	-	27	BGUR	-
28	AlaA	-	29	TyrA	-	30	dSOR	-	31	URE	+	32	POLYB	-	37	αGAL	-
38	dRIB	+	39	ILATk	+	42	LAC	+	44	NAG	-	45	dMAL	+	46	BACI	-
47	NOVO	+	50	NC8.5	+	52	dMAN	+	53	dMNE	-	54	MBdG	-	56	PUL	-
57	dRAF	-	58	O129R	+	59	SAL	-	60	SAC	+	62	dTRE	+	63	ADH2s	-
64	OPTO	+																

Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Gloximar Velazco (gvelazco)	Jul 3, 2009 09:13 GMT-04:00	
	Gladys 07-03-09		

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:



CLENDO
Industrial Laboratories Inc.

CR-014
SOP No. 300-002
MIC Control Number: 163

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive	x		
Gram Negative			
Gram Variable			
III. Arrangement			
Cocci	x		
Bacilli			
Coco-Bacilli			
Single	x		
Pairs	x		
Tetrads	x		
Chains			
Clusters			
Palisade			
IV. Colony Morphology			
1. Color slight yellow tint	YEL		
2. Form			
Circular	x		
Irregular			
Feathery			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Umbonate			
Crateriform			
Spreading			
Raised to slightly convex	x		
Convex			
Pulvinate			
4. Surface			
Smooth	x		
Dull			
Granular			
Rough			
Butyrous			
5. Edge			
Entire	x		
Undulate			
Lobate			
Feathery			
Filamentous			
V. Biochemistry Reactions			
Catalase	+		
Coagulase	-		

CUSTOMER NAME: *Waleska Díaz*

ISOLATE NUMBER: *10332-6(1)1*

"STAPHY"=bunch of grapes; "SAPROS=putrid;
"PHYTON"=plant
"SAPROPHYTICUS"=growing on dead tissues
Isolated occassionally from the skin of humans and other mammals and their products. Appears to be the predominant staphylococcal species in acute urinary tract infections of young adult women. Optimum temperature: 28-35°C.
It is also use in Europe, in the fermentation process for flavor development and red color enhancement in meat and meat products; and for the butter odor of unspiced fermented dry sausages.

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 07-03-09

REVIEWED BY: Lizzette M. Rivera, BSMT Lic. 2015
DATE: 07-09-09

IDENTIFICATION METHOD: **VITEK 2 Compact System**

IDENTIFIED AS: **98% Staphylococcus saprophyticus**

REVISION DATE: 03/03/04

CLENDO INDUSTRIAL LABORATORIES

bioMerieux Customer: 06365
System #:

Laboratory Report

Printed Jul 3, 2009 09:14 GMT-04:00
Printed by: gvelazco
Report Version: 2 of 2

Isolate Group: 10332-6 (1)-2

Bionumber: 0700000172702 31
Selected Organism: Staphylococcus saprophyticus

Comments:	n/a 07-03-09

Identification Information	Card:	GP	Lot Number:	242135240	Expires:	Aug 27, 2010 12:00 GMT-04:00
	Completed:	Jul 1, 2009 20:02 GMT-04:00	Status:	Final	Analysis Time:	5.00 hours
Selected Organism	98% Probability		Staphylococcus saprophyticus			
	Bionumber:	070000017270231			Confidence:	Excellent identification

SRF Organism: n/a 07-03-09

Analysis Organisms and Tests to Separate:

Analysis Messages:

Contraindicating Typical Biopattern(s)

Staphylococcus saprophyticus	AGLU(22),

Biochemical Details

2	AMY	-	4	PIPLC	-	5	dXYL	-	8	ADH1	+	9	BGAL	+	11	AGLU	+
13	APPA	-	14	CDEX	-	15	AspA	-	16	BGAR	-	17	AMAN	-	19	PHOS	-
20	LeuA	-	23	ProA	-	24	BGURr	-	25	AGAL	-	26	PyrA	-	27	BGUR	-
28	AlaA	-	29	TyrA	-	30	dSOR	-	31	URE	+	32	POLYB	-	37	dGAL	-
38	dRIB	+	39	ILATk	+	42	LAC	+	44	NAG	-	45	dMAL	+	46	BACI	-
47	NOVO	+	50	NC6.5	+	52	dMAN	+	53	dMNE	-	54	MBdG	-	56	PUL	-
57	dRAF	-	58	O129R	+	59	SAL	-	60	SAC	+	62	dTRE	+	63	ADH2s	-
64	OPTO	+															

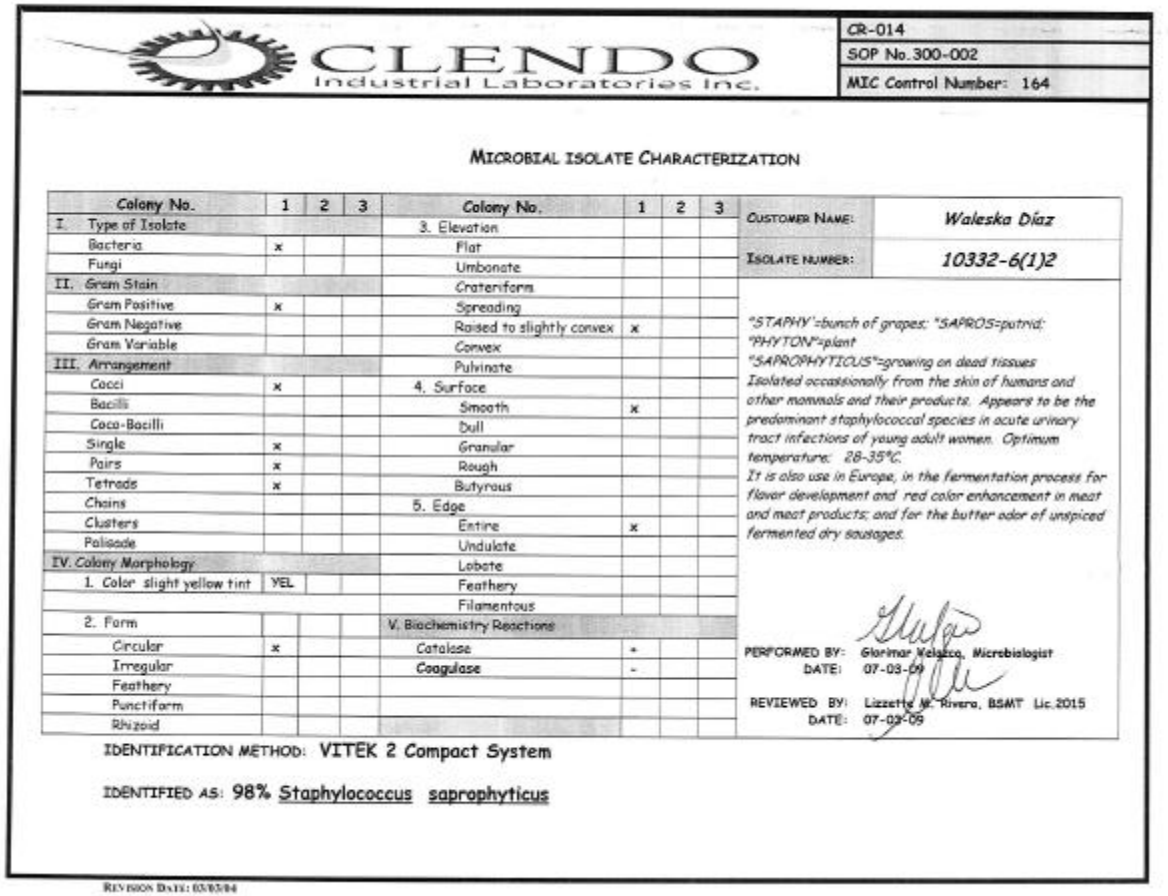
Action	Name (User ID)	Date/Time	Comment
Reviewed by:	Glorimar Velazco (gvelazco)	Jul 3, 2009 09:13 GMT-04:00	

07-03-09

VITEK 2 Systems Version: 03.01
MIC Interpretation Guideline:
AES Parameter Set Name:

Therapeutic Interpretation Guideline:
AES Parameter Last Modified:

Page 1 of 1



CLENDO
Industrial Laboratories Inc.

CR-014
SOP No. 300-002
MIC Control Number: 164

MICROBIAL ISOLATE CHARACTERIZATION

Colony No.	1	2	3
I. Type of Isolate			
Bacteria	x		
Fungi			
II. Gram Stain			
Gram Positive	x		
Gram Negative			
Gram Variable			
III. Arrangement			
Cocci	x		
Bacilli			
Coco-Bacilli			
Single	x		
Pairs	x		
Tetrads	x		
Chains			
Clusters			
Palisade			
IV. Colony Morphology			
1. Color slight yellow tint	YEL		
2. Form			
Circular	x		
Irregular			
Feathery			
Punctiform			
Rhizoid			

Colony No.	1	2	3
3. Elevation			
Flat			
Umbonate			
Crateriform			
Spreading			
Raised to slightly convex	x		
Convex			
Pulvinate			
4. Surface			
Smooth	x		
Dull			
Granular			
Rough			
Butyrous			
5. Edge			
Entire	x		
Undulate			
Lobate			
Feathery			
Filamentous			
V. Biochemistry Reactions			
Catalase	+		
Coagulase	-		

CUSTOMER NAME: *Waleska Díaz*

ISOLATE NUMBER: *10332-6(1)2*

"STAPHY"=bunch of grapes; "SAPROS=putrid; "PHYTON"=plant
"SAPROPHYTICUS"=growing on dead tissues
Isolated occasionally from the skin of humans and other mammals and their products. Appears to be the predominant staphylococcal species in acute urinary tract infections of young adult women. Optimum temperature: 28-35°C.
It is also use in Europe, in the fermentation process for flavor development and red color enhancement in meat and meat products; and for the butter odor of unspiced fermented dry sausages.

PERFORMED BY: Glorimar Velazco, Microbiologist
DATE: 07-03-09

REVIEWED BY: Lizzette M. Rivera, BSMT Lic.2015
DATE: 07-03-09

IDENTIFICATION METHOD: VITEK 2 Compact System

IDENTIFIED AS: 98% Staphylococcus saprophyticus

REVISION DATE: 03/03/04

Appendix 6. Analytical Report after Mitigation Process

(#10846 to #10849)

CLENDO INDUSTRIAL LABORATORY
PO BOX 579 BAYAMON PR 00960
TEL 787-620-8800
FAX 787-999-7148
Email: clendoinc@prtc.net

FDA No. 36033383013

CLENDO CONTROL NO. 10846

CUSTOMER SAMPLE ANALYSIS REPORT

A. CUSTOMER NAME	WALESKA DIAZ
B. CLIENT NUMBER	0590
C. ADDRESS	URB. VILLA VICTORIA CAGUAS P.R. 00725
D. TELEPHONE	787-429-6644
E. FAX	N/A
F. CONTACT PERSON	WALESKA DIAZ
G. DATE /TIME OF SAMPLE RECEIPT	10-06-09 / 10:00
H. DATE / TIME OF SAMPLING	10-06-09 / 15:00
I. QUANTITY OF SAMPLES	24
J. DESCRIPTION OF SAMPLES	ENVIROSWABS
K. SAMPLES COLLECTOR NAME	SAMUEL SERRANO
L. DATE/TIME ANALYSIS BEGINS:	10-06-09 / 15:30
M. RESULTS	

PROCEDURE PERFORMED AS PER:

SOP NO.100-023 PROCEDURE FOR ENVIRONMENTAL AIR SAMPLING USING SAS SUPER 100 SURFACE AIR SYSTEM

REFERENCES:

"MANUAL OF ENVIRONMENTAL MICROBIOLOGY" 2nd EDITION 2002

ENVIROSWABS SAMPLING

SAMPLE	BACTERIA (2nd DAY COUNT)	YEAST/MOLD (7th DAY COUNT)	IDENTIFICATION
10846-1 MENS BATHROOM	4 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10846-2 GIRLS BATHROOM	7 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10846-3 RIGHT SIDE HALLWAY	29 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10846-4 LEFT SIDE HALLWAY	25 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10846-5 WOODEN CUBICLE RIGHT	1 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10846-6 WOODEN CUBICLE LEFT	3 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10846-7 FRONT FLOOR (A) RIGHT	12 COLONIES/50cm^2	1 COLONIES/50cm^2	N/A

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FDA No. 30033383013

CLENDO CONTROL NO. 10846

CUSTOMER SAMPLE ANALYSIS REPORT

10846-8 FRONT FLOOR (B) LEFT	36 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10846-9 FRONT RUG (A)	37 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10846-10 FRONT RUG (B)	183 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10846-11 FRONT RUG (C)	36 COLONIES/50cm^2	1 COLONIES/50cm^2	N/A
10846-12 FRONT RUG (D)	146 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10846-13 BACK RUG (A)	205 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10846-14 BACK RUG (B)	13 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10846-15 BACK RUG (C)	20 COLONIES/50cm^2	1 COLONIES/50cm^2	N/A
10846-16 BACK RUG (D)	11 COLONIES/50cm^2	1 COLONIES/50cm^2	N/A
10846-17 FLOOR MATS (A)	1 COLONIES/50cm^2	1 COLONIES/50cm^2	N/A
10846-18 FLOOR MATS (B)	1 COLONIES/50cm^2	2 COLONIES/50cm^2	N/A
10846-19 FLOOR MATS (C)	189 COLONIES/50cm^2	1 COLONIES/50cm^2	N/A
10846-20 FLOOR MATS (D)	23 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10846-21 FOAM PIT (A)	1 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A

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CLENDO CONTROL NO. 10846

CUSTOMER SAMPLE ANALYSIS REPORT

10846-22 FOAM PIT (B)	0 COLONIES/50cm^2	0 COLONIES/50cm^3	N/A
10846-23 RINGS A (BABY GYM)	4 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10846-24 RING B	4 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A

N. COMMENTS

PRINCIPLE OF THE SURFACE AIR SYSTEM (SAS) SUPER 100: AIR IS ASPIRATED FOR VARIABLE TIME (IN THIS STUDY=1,000L FOR CLEAN ROOMS/4MINUTES) THROUGH A COVER WHICH HAVE BEEN MACHINED WITH A SERIES OF SMALL HOLES OF A SPECIAL DESIGN. THE RESULTING LAMINAR AIR FLOW IS DEIRECTED ONTO THE AGAR SURFACE OF A "CONTACT PLATE" CONTAINING MEDIUM CONSISTENT WITH THE MICROBIOLOGICAL EXAMINATION TO BE PERFORMED. WHEN THE PRESET SAMPLING CYCLE IS COMPLETED, THE PLATE IS REMOVED AND INCUBATED. THE ORGANISMS ARE THEN VISIBLE TO THE NAKED EYE AND CAN BE COUNTED FOR AN ASSESSMENT OF THE LEVEL OF CONTAMINATION.

50 CFU / M^3 OR 1.42 CFU / FT^3 OF YEASTS / MOLDS OR MORE IN THE ENVIRONMENT IS CONSIDERED A SIGNIFICATIVE RISK FACTOR FOR RESPIRATORY PROBLEMS OR COMPLICATIONS, EYES AND SKIN IRRITATIONS.

*All the samples was counting at 1.0ml

PERFORMED BY: GLORIMAR VELAZCO - LABORATORY ANALYST		DATE	10-19-09
REVIEWED BY: LIZZETTE M. RIVERA, B.S.M.T. - LABORATORY DIRECTOR (LIC # 2015)		DATE	10-19-09

CLENDO INDUSTRIAL LABORATORY
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Email: clendoind@ptc.net

FDA No. 30033383013

CLENDO CONTROL NO. 10847

CUSTOMER SAMPLE ANALYSIS REPORT

10847-8 VAULT B	9 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10847-9 FOUNTAIN	0 COLONIES/50cm^2	1 COLONIES/50cm^2	N/A
10847-10 BG (CONFERENCE ROOM)	7 COLONIES/50cm^2	4 COLONIES/50cm^2	N/A
10847-11 BG (ROSA OFFICE)	1 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A
10847-12 NEGATIVE CONTROL	0 COLONIES/50cm^2	0 COLONIES/50cm^2	N/A

N. COMMENTS

PRINCIPLE OF THE SURFACE AIR SYSTEM (SAS) SUPER 100: AIR IS ASPIRATED FOR VARIABLE TIME (IN THIS STUDY=1,000L FOR CLEAN ROOMS/4MINUTES) THROUGH A COVER WHICH HAVE BEEN MACHINED WITH A SERIES OF SMALL HOLES OF A SPECIAL DESIGN. THE RESULTING LAMINAR AIR FLOW IS DEIRECTED ONTO THE AGAR SURFACE OF A "CONTACT PLATE" CONTAINING MEDIUM CONSISTENT WITH THE MICROBIOLOGICAL EXAMINATION TO BE PERFORMED. WHEN THE PRESET SAMPLING CYCLE IS COMPLETED, THE PLATE IS REMOVED AND INCUBATED. THE ORGANISMS ARE THEN VISIBLE TO THE NAKED EYE AND CAN BE COUNTED FOR AN ASSESSMENT OF THE LEVEL OF CONTAMINATION.

50 CFU / M^3 OR 1.42 CFU / FT^3 OF YEASTS / MOLDS OR MORE IN THE ENVIRONMENT IS CONSIDERED A SIGNIFICATIVE RISK FACTOR FOR RESPIRATORY PROBLEMS OR COMPLICATIONS, EYES AND SKIN IRRITATIONS.

* ALL THE SAMPLES WAS COUNTING AT 1.0 ML

PERFORMED BY: GLORIMAR VELAZCO - LABORATORY ANALYST		DATE: 10-19-09
REVIEWED BY: LIZZETTE M. RIVERA, B.S.M.T. - LABORATORY DIRECTOR (LIC # 3018)		DATE: 10-19-09

CLENDO INDUSTRIAL LABORATORY
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TEL 787-620-8803
FAX 787-999-7140
Email: clendoind@prtc.net

FDA No. 30033383013

CLENDO CONTROL NO.
10848

CUSTOMER SAMPLE ANALYSIS REPORT

A. CUSTOMER NAME	WALESKA DIAZ
B. CLIENT NUMBER	0590
C. ADDRESS	URB. VILLA VICTORIA CAGUAS P.R. 00725
D. TELEPHONE	787-429-6644
E. FAX	N/A
F. CONTACT PERSON	WALESKA DIAZ
G. DATE /TIME OF SAMPLE RECEIPT	10-06-09 / 15:00
H. DATE / TIME OF SAMPLING	10-06-09 / 10:00
I. QUANTITY OF SAMPLES	24
J. DESCRIPTION OF SAMPLES	SAS-PLATES
K. SAMPLES COLLECTOR NAME	SAMUEL SERRANO
L. DATE/TIME ANALYSIS BEGINS	10-06-09 / 15:30
M. RESULTS	

PROCEDURE PERFORMED AS PER:

SOP NO.100-023 PROCEDURE FOR ENVIRONMENTAL AIR SAMPLING USING SAS SUPER 100 SURFACE AIR SYSTEM

REFERENCES:

"MANUAL OF ENVIRONMENTAL MICROBIOLOGY" 2nd EDITION 2002

SAS YEAST/MOLD AIR SAMPLING RESULTS (5TH DAY COUNT)

SAMPLE	TOTAL COUNT (Pr=Corrected Count)	CFU/m^3	CFU/ft^3	IDENTIFICATION
10848-1 109	27 CFU	135 CFU/M^3	3.82 CFU/FT^3	N/A
10848-2 34	37 CFU	185 CFU/M^3	5.29 CFU/FT^3	N/A
10848-3 100	25 CFU	125 CFU/M^3	3.54 CFU/FT^3	N/A
10848-4 85	40 CFU	200 CFU/M^3	5.66 CFU/FT^3	N/A
10848-5 124	17 CFU	85 CFU/M^3	2.41 CFU/FT^3	N/A
10848-6 114	15 CFU	75 CFU/M^3	2.12 CFU/FT^3	N/A
10848-7 127	20 CFU	100 CFU/M^3	2.83 CFU/FT^3	N/A

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FDA No. 30033383013

CLENDO CONTROL NO.
10848

CUSTOMER SAMPLE ANALYSIS REPORT

10848-8 **29**	10 CFU	50 CFU/M^3	1.41 CFU/FT^3	N/A
10848-9 **102**	14 CFU	70 CFU/M^3	1.98 CFU/FT^3	N/A
10848-10 **43**	12 CFU	60 CFU/M^3	1.70 CFU/FT^3	N/A
10848-11 **105**	25 CFU	125 CFU/M^3	3.54 CFU/FT^3	N/A
10848-12 **26**	29 CFU	145 CFU/M^3	4.11 CFU/FT^3	N/A
10848-13 **16**	14 CFU	70 CFU/M^3	1.98 CFU/FT^3	N/A
10848-14 **52**	31 CFU	155 CFU/M^3	4.39 CFU/FT^3	N/A
10848-15 **90**	22 CFU	110 CFU/M^3	3.11 CFU/FT^3	N/A
10848-16 **12**	16 CFU	80 CFU/M^3	2.26 CFU/FT^3	N/A
10848-17 **64**	17 CFU	85 CFU/M^3	2.41 CFU/FT^3	N/A
10848-18 **88**	29 CFU	145 CFU/M^3	4.11 CFU/FT^3	N/A
10848-19 **14**	12 CFU	60 CFU/M^3	1.70 CFU/FT^3	N/A
10848-20 **47**	14 CFU	70 CFU/M^3	1.98 CFU/FT^3	N/A
10848-21 **125**	13 CFU	65 CFU/M^3	1.84 CFU/FT^3	N/A

CLENDO INDUSTRIAL LABORATORY
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FDA No. 30033383013

CLENDO CONTROL NO. 10848

CUSTOMER SAMPLE ANALYSIS REPORT

10848-22 37	11 CFU	55 CFU/M^3	1.56 CFU/FT^3	N/A
10848-23 132	8 CFU	40 CFU/M^3	1.13 CFU/FT^3	N/A
10848-24 68	24 CFU	120 CFU/M^3	3.40 CFU/FT^3	N/A
SAS BACTERIA AIR SAMPLING RESULTS				
SAMPLE	TOTAL COUNT (Pre-Corrected Count)	CFU/m^3	CFU/ft^3	IDENTIFICATION
10848-1 109	4 CFU	20 CFU/M^3	0.57 CFU/FT^3	N/A
10848-2 34	6 CFU	30 CFU/M^3	0.85 CFU/FT^3	N/A
10848-3 100	6 CFU	30 CFU/M^3	0.85 CFU/FT^3	N/A
10848-4 85	13 CFU	65 CFU/M^3	1.84 CFU/FT^3	N/A
10848-5 124	11 CFU	55 CFU/M^3	1.56 CFU/FT^3	N/A
10848-6 114	14 CFU	70 CFU/M^3	1.98 CFU/FT^3	N/A
10848-7 127	14 CFU	70 CFU/M^3	1.98 CFU/FT^3	N/A
10848-8 29	15 CFU	75 CFU/M^3	2.12 CFU/FT^3	N/A
10848-9 102	14 CFU	70 CFU/M^3	1.98 CFU/FT^3	N/A
10848-10 43	17 CFU	85 CFU/M^3	2.41 CFU/FT^3	N/A

CLENDO INDUSTRIAL LABORATORY
PO BOX 570 BAYAMON PR 00960
TEL 787-620-6800
FAX 787-869-7149
Email: clendolnd@prtc.net

FDA No. 30033383013

CLENDO CONTROL NO.
10848

CUSTOMER SAMPLE ANALYSIS REPORT

10848-11 **105**	16 CFU	80 CFU/M^3	2.26 CFU/FT^3	**N/A**
10848-12 **26**	13 CFU	65 CFU/M^3	1.84 CFU/FT^3	**N/A**
10848-13 **16**	6 CFU	30 CFU/M^3	0.85 CFU/FT^3	**N/A**
10848-14 **52**	12 CFU	60 CFU/M^3	1.70 CFU/FT^3	**N/A**
10848-15 **90**	11 CFU	55 CFU/M^3	1.56 CFU/FT^3	**N/A**
10848-16 **12**	17 CFU	85 CFU/M^3	2.41 CFU/FT^3	**N/A**
10848-17 **64**	17 CFU	85 CFU/M^3	2.41 CFU/FT^3	**N/A**
10848-18 **88**	25 CFU	125 CFU/M^3	3.54 CFU/FT^3	**N/A**
10848-19 **14**	14 CFU	70 CFU/M^3	1.98 CFU/FT^3	**N/A**
10848-20 **47**	20 CFU	100 CFU/M^3	2.83 CFU/FT^3	**N/A**
10848-21 **125**	5 CFU	25 CFU/M^3	0.71 CFU/FT^3	**N/A**
10848-22 **37**	12 CFU	60 CFU/M^3	1.70 CFU/FT^3	**N/A**
10848-23 **132**	7 CFU	35 CFU/M^3	0.99 CFU/FT^3	**N/A**
10848-24 **68**	9 CFU	45 CFU/M^3	1.27 CFU/FT^3	**N/A**
N. COMMENTS				

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FDA No. 30033383013

CLENDO CONTROL No. 10848

CUSTOMER SAMPLE ANALYSIS REPORT

PRINCIPLE OF THE SURFACE AIR SYSTEM (SAS) SUPER 100: AIR IS ASPIRATED FOR VARIABLE TIME (IN THIS STUDY=1,000L FOR CLEAN ROOMS/4MINUTES) THROUGH A COVER WHICH HAVE BEEN MACHINED WITH A SERIES OF SMALL HOLES OF A SPECIAL DESIGN. THE RESULTING LAMINAR AIR FLOW IS DEIRECTED ONTO THE AGAR SURFACE OF A "CONTACT PLATE" CONTAINING MEDIUM CONSISTENT WITH THE MICROBIOLOGICAL EXAMINATION TO BE PERFORMED. WHEN THE PRESET SAMPLING CYCLE IS COMPLETED, THE PLATE IS REMOVED AND INCUBATED. THE ORGANISMS ARE THEN VISIBLE TO THE NAKED EYE AND CAN BE COUNTED FOR AN ASSESSMENT OF THE LEVEL OF CONTAMINATION.

50 CFU / M^3 OR 1.42 CFU / FT^3 OF YEASTS / MOLDS OR MORE IN THE ENVIRONMENT IS CONSIDERED A SIGNIFICATIVE RISK FACTOR FOR RESPIRATORY PROBLEMS OR COMPLICATIONS, EYES AND SKIN IRRITATIONS.

TNTC = TO NOUMEROUS TO COUNT

PERFORMED BY: GLORIMAR VELAZCO - LABORATORY ANALYST		DATE	10-19-09
REVIEWED BY: LIZZETTE M. RAMOS, B.S.M.T. - LABORATORY DIRECTOR (LIC # 2315)		DATE	10-19-09

CLENDO INDUSTRIAL LABORATORY
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FDA No. 30033383013

CLENDO CONTROL NO. 10849

CUSTOMER SAMPLE ANALYSIS REPORT

A. CUSTOMER NAME	WALESKA DIAZ
B. CLIENT NUMBER	0590
C. ADDRESS	URB. VILLA VICTORIA CAGUAS P.R. 00725
D. TELEPHONE	787-429-6644
E. FAX	N/A
F. CONTACT PERSON	WALESKA DIAZ
G. DATE /TIME OF SAMPLE RECEIPT	10-06-09 / 15:00
H. DATE / TIME OF SAMPLING	10-06-09 / 10:00
I. QUANTITY OF SAMPLES	8
J. DESCRIPTION OF SAMPLES	SAS-PLATES
K. SAMPLES COLLECTOR NAME	SAMUEL SERRANO
L. DATE/TIME ANALYSIS BEGINS:	10-06-09 / 15:30
M. RESULTS	

PROCEDURE PERFORMED AS PER:

SOP NO.100-023 PROCEDURE FOR ENVIRONMENTAL AIR SAMPLING USING SAS SUPER 100 SURFACE AIR SYSTEM

REFERENCES:

"MANUAL OF ENVIRONMENTAL MICROBIOLOGY" 2nd EDITION 2002

SAS YEAST/MOLD AIR SAMPLING RESULTS (5TH DAY COUNT)

SAMPLE	TOTAL COUNT (Pr=Corrected Count)	CFU/m^3	CFU/ft^3	IDENTIFICATION
10849-1 17	13 CFU	65 CFU/M^3	1.84 CFU/FT^3	N/A
10849-2 6	10 CFU	50 CFU/M^3	1.42 CFU/FT^3	N/A
10849-3 75	0 CFU	0 CFU/M^3	0 CFU/FT^3	N/A
10849-4 38	16 CFU	80 CFU/M^3	2.26 CFU/FT^3	N/A
10849-5 61	26 CFU	130 CFU/M^3	3.68 CFU/FT^3	N/A
10849-6 1	38 CFU	190 CFU/M^3	5.38 CFU/FT^3	N/A
10849-7 BACKGROUND EXTERIOR	53 CFU	265 CFU/M^3	7.50 CFU/FT^3	N/A

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CLENDO CONTROL NO. 10849

CUSTOMER SAMPLE ANALYSIS REPORT

10849-8 BACKGROUND OFICINA	17 CFU	85 CFU/M^3	2.41 CFU/FT^3	**N/A**

SAS BACTERIA AIR SAMPLING RESULTS

SAMPLE	TOTAL COUNT (Pr=Corrected Count)	CFU/m^3	CFU/ft^3	IDENTIFICATION
10849-1 17	5 CFU	25 CFU/M^3	0.70 CFU/FT^3	**N/A**
10849-2 6	20 CFU	100 CFU/M^3	2.83 CFU/FT^3	**N/A**
10849-3 75	12 CFU	60 CFU/M^3	1.70 CFU/FT^3	**N/A**
10849-4 38	2 CFU	10 CFU/M^3	0.28 CFU/FT^3	**N/A**
10849-5 61	10 CFU	50 CFU/M^3	1.42 CFU/FT^3	**N/A**
10849-6 1	27 CFU	135 CFU/M^3	3.82 CFU/FT^3	**N/A**
10849-7 BACKGROUND EXTERIOR	49 CFU	245 CFU/M^3	6.94 CFU/FT^3	**N/A**
10849-8 BACKGROUND OFICINA	28 CFU	140 CFU/M^3	3.96 CFU/FT^3	**N/A**

N. COMMENTS

PRINCIPLE OF THE SURFACE AIR SYSTEM (SAS) SUPER 100: AIR IS ASPIRATED FOR VARIABLE TIME (IN THIS STUDY=1,000L FOR CLEAN ROOMS/4MINUTES) THROUGH A COVER WHICH HAVE BEEN MACHINED WITH A SERIES OF SMALL HOLES OF A SPECIAL DESIGN. THE RESULTING LAMINAR AIR FLOW IS DEIRECTED ONTO THE AGAR SURFACE OF A "CONTACT PLATE" CONTAINING MEDIUM CONSISTENT WITH THE MICROBIOLOGICAL EXAMINATION TO BE PERFORMED. WHEN THE PRESET SAMPLING CYCLE IS COMPLETED, THE PLATE IS REMOVED AND INCUBATED. THE ORGANISMS ARE THEN VISIBLE TO THE NAKED EYE AND CAN BE COUNTED FOR AN ASSESSMENT OF THE LEVEL OF CONTAMINATION.

50 CFU / M^3 OR 1.42 CFU / FT^3 OF YEASTS / MOLDS OR MORE IN THE ENVIRONMENT IS CONSIDERED A SIGNIFICATIVE RISK FACTOR FOR RESPIRATORY PROBLEMS OR COMPLICATIONS, EYES AND SKIN IRRITATIONS.

PERFORMED BY: GLORIMAR VELAZCO - LABORATORY ANALYST		DATE 10-19-09
REVIEWED BY: LIZZETTE M. RIVERA, B.S.M.T. - LABORATORY DIRECTOR (LIC # 2015)		DATE 10-19-09

Appendix 7. Cleaning Program for Caguas Gymnastic Club

Programa de limpieza para el área de entrenamiento en el Club Gimnástico Criollo					
Area	Lunes	Martes	Miércoles	Jueves	Viernes
Baños Niños					
Baños Niñas					
Fuente					
Matress Baby Gym					
Barras Paralelas Baby Gym					
Cubo Para Piernas					
Anillas					
Fosa					
Trampolín					
Alfombra Posterior					
Barras Asimétricas					
Barras Paralelas					
Vigas					
Caballo con Arzones					
Alfombra Frontal					
Area de Salto					
Matress					
Envases Blancos					
Piso					
Cubículos de Madera					

*Barrer las áreas de mayor tránsito (piso área frontal, alrededor de la fosa y la alfombra posterior).

*Se utilizará paño húmedo con una solución de Microban para limpiar los equipos de entrenamiento.

*Todo el piso debe ser limpiado en húmedo con una solución de Microban para evitar levantamiento de polvo.

*Entrenadores serán responsables de que finalizado el entrenamiento cada atleta se lleve sus pertenencias.