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MINING CONCESSION 5969
PROJECT "EL PESCADO"



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10 EMERGENCY PLAN

PRESENTATION

The current Health and Safety at work Regulation of Colombia, in accordance with real needs of each company and current environmental and social conditions, determines the obligation and advisability of preparing properly to face successfully possible emergency situations that may occur in organizations.

The response to this need must be materialized in a "plan for prevention, response and recovery in emergencies" understood as the result of actions, strategies and technical resources to prevent, control and recover from those events that may have a negative impact on people, goods, business and environment.

The priority of this plan is to safeguard the lives of people working in the company's facilities at the time of an emergency. However, the proper and adequate implementation of these prevention measures, as well as an efficient control of risky situation, shall allow protecting goods, buildings, equipment and stock of the company.

This document is a guide action, whose design is aligned with policies and strategy objectives of the company, as well as with the national legislation on aspects related to health and safety at work and technical international standards for Integral Risk Management.

JUSTIFICATION

The accelerated development of concepts in prevention, health, safety and the slow process of change towards a preventive culture within the production activities of companies, require that the design of programs for prevention and emergency preparedness as well as the formation of health and safety brigades, involving new concepts tending to make this process more and more complete and in line with the historical situation of our society.

The Emergency Plan is intended to minimize the consequences and severity of possible catastrophic events that may arise, implementing promotion and prevention actions to reduce the costs associated with accidents.

10.1 OBJECTIVE

10.1.1 General objective

To provide TOUCHSTONE COLOMBIA staff members with tools and appropriate guidelines that allow them to respond effectively to adverse events, accidents and emergencies.

10.1.2 Specific objective

To identify threats and evaluate risks present in TOUCHSTONE COLOMBIA facilities that potentially may cause an emergency.

To establish the basis to determine a risk analysis and vulnerability presented by the project.

To develop an emergency response scheme.

To establish duties and responsibilities of the members of emergency committee.

GENERAL COMPANY INFORMATION

Company name	TOUCHSTONE COLOMBIA.
NIT	900298295
Operation area address	El Pescado village
Administrative area address	Street 6 a # 22-75 Unit 104, Ciudadela Marymount, neighborhood El Tesoro-Medellín, Colombia
Telephone number	3126405644
Municipality	Segovia
Department	Antioquia
Business activity	Exploration, exploitation and development of mining projects.

The Project, developed by TOUCHSTONE COLOMBIA, located in Antioquia Department, Colombia, specifically in El Pescado village; that is, 36 km from the Segovia municipality (Antioquia), 22km from Medellin city, capital city, towards northeast.

The Segovia municipality borders the municipalities of Zaragoza and El Bagre in north, Bolivar Department in east, the Remedios municipality in south, and the municipalities of Amalfi and Anorí in west.

WORKING DAY

TOUCHSTONE COLOMBIA Schedule is:

Administrative area-Medellín: Monday to Friday from 7:00 am to 5:00 pm / Saturday from 9:00 am to 12:00 m

Project administrative area: Monday from 1:00 pm to 6:00 pm

Tuesday to Thursday from 6:00 am to 6:00 pm

Friday from 6:00 am to 1:00 pm

Operation area:

Monday from 1:00 pm to 6:00 pm

Tuesday to Thursday from 6:00 am to 6:00 pm

Friday from 6:00 am to 1:00 pm

Permanence 7X7 days

Permanence 6X3 days

Contractor: Monday - Sunday, from 6:00 am to 6:00 pm

Permanence 7X7 days

Visitors: Monday- Friday, from 7:00 am to 5:00 pm

FACILITIES DESCRIPTION

Given the characteristics of the Project, the following infrastructure has been defined: See Illustration 10-1 and 10-2.

FID	Description
1	Helicopter
2	Dumps
3	Dumps
4	Dumps
5	Metal-mechanical workshop
6	Car workshop
7	Processing Facility
8	Power Plant
9	Camp
10	Camp
11	Camp
12	Camp
13	Camp
14	Camp
15	Mini soccer field
16	Warehouse
17	Parking
18	Workroom
19	Wood storage
20	Organic layer storage
21	Ammunition depot
22	Nursery
23	Heavy machinery shop
24	Carpentry

Illustration 10-1. Infrastructure description - Mining Concession 5969.
 Source: INGEX, 2016.

The infrastructure for personnel accommodation shall be built with concrete material, cement foundation, the Standards for Seismic in force and with roof, supplying drinking water and lighting.

Currently there is:

- Substation Power 13200 Kilowatts and 110 watts.
- ACPM storage tanks.

Within the category of special installations, is the following characterization, see Table 10-1.

Table 10-1. Special installations present within the mining project.

TYPE OF INSTALLATION	YES/NO	OBSERVATIONS
VENTILATION SYSTEM	NO	
EXTRACTION SYSTEM	NO	
POWER SUBSTATION	YES	
DRECT INFLUENCE AREA OF THE PROJECT -EMERGENCY POWER SYSTEM	YES	
WATER TANKS	YES	
FUEL TANKS	NO	
COMPRESSORS	NO	

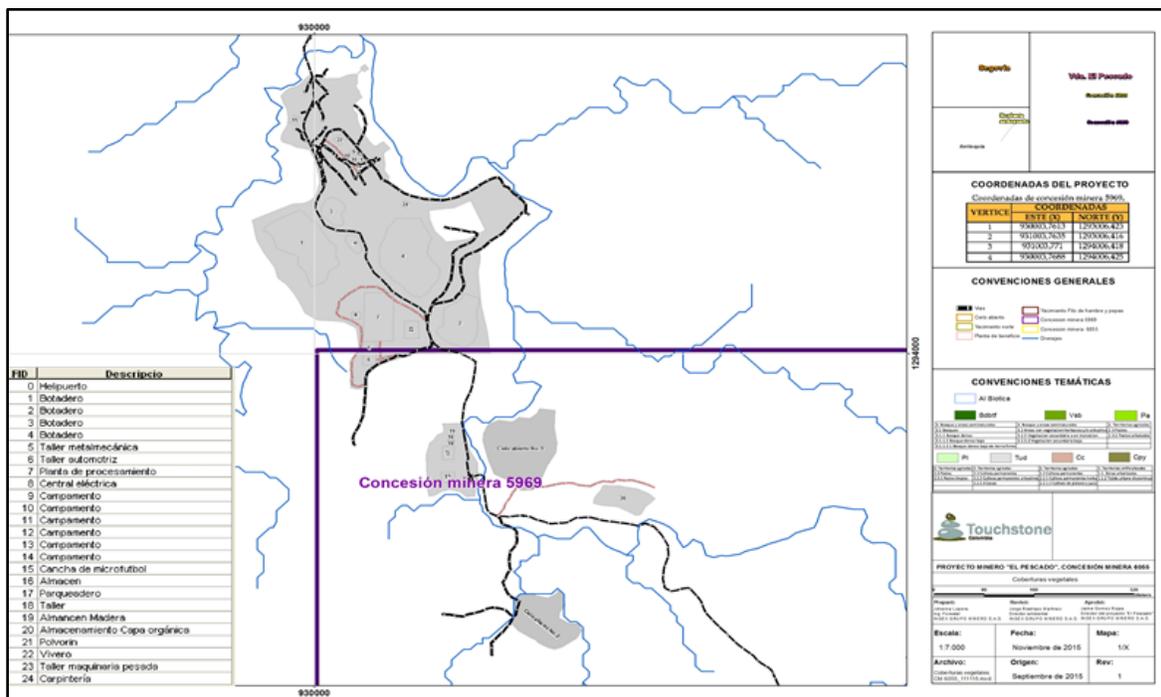


Illustration 10-2. Infrastructure Map Mining Concession 5969.

10.2 RISK ANALYSIS

To analyze risk of the several variables involved in the mining Project, Risk Rhombus methodology shall be used and is described as follow:

10.2.1 Use risk rhombus

Risk is the possibility of exceeding a specific value of economic, social or environmental consequences in a place and during a specific exposure time. It is obtained by relating threat or probability of occurrence of a phenomenon with the specific intensity and vulnerability of elements exposed.

This relation may be interpreted by a use risk rhombus, which has four quadrants, one of them represents threat for which the risk level is going to be determined and the other three represent vulnerability in the elements under risk that are:

- People
- Resources
- Systems and process

10.3 HAZARD

They are classified and identified according to the following categories:

- Natural: Hazard caused by natural phenomenon.
- Technological: Hazard caused by industrial activity, technology, machinery and buildings created by human.
- Social: Hazard caused by behaviors and conflicts between people

HISTORICAL BACKGROUND

There is a historical background of the hazards materialized in the company throughout its existence, as follows, See Table 10-2

Table 10-2. Historical background of hazards in Mining Concession 5969

Date dd/mm/yyyy	Emergency	Causes	Type			Effects	Controls implemented
			Natural	Technological	Social		
01/11/2015	Earthquake	Collation of tectonic plates and release of energy during a sudden reorganization of materials of the earth's crust to overcome the state of mechanical equilibrium.	x			Telluric movement, sudden and transient shaking of the earth's crust that may cause possible structural failures by its magnitude.	Programs for prevention and emergency preparedness, definition of evacuation routes and meetings point, definition of evacuation procedures.

Source: INGEX, 2016

HAZARD RATING

To classify Hazard, a color and ranking to the lower quadrant of the use risk rhombus and use the following parameters. See Table 10-3:

Table 10-3 Assessment of hazards according to the risk rhombus methodology

Rating	Color	Meaning
Possible	Green	Hazards that have not occurred in a certain place, but there is information of their occurrence in other place with similar conditions.
Probable	Yellow	Hazards materialized in a specific place without affecting radically elements under risk, additionally their occurrence is not excluded again, and this will be taken as antecedent.
Imminent	Red	Hazards that may or may have not materialized in a certain place. If they have materialized, their effects on elements under risk were critical; if they have not materialized, they will be considered if there is information that makes them clearly detected and monitored, providing their critical activity information.

VULNERABILITY ASSESMENT

It is ranked according to the elements under risk and are defined as follows:

- People: employees and visitors of the company, their organization is analyzed for emergency prevention and control, as well as training and complete provision of elements for security and personal protection in accordance with hazard
- Resources: are analyzed from two fields: construction (buildings, civil works) and materials which include equipment. For each of these fields instrumentation, physical protection and control systems are assessed.
- Systems and processes: Processes refer to the development of productive activities of the elements under risk involved and systems as organized set of rules and procedures. In this field, the company's capacity to supply interrupted services with alternative systems and preparation to re-establish processes (supplies, insurance)

For each element exposed, some items are defined ranked according to the following parameters:

- 0,0: If according to the situation, the company is considered good on this point.
- 0,5: If the aspect to be evaluated is in process or partially found.
- 1,0: If it is not developed or do not have the aspect evaluated.

The arithmetic average of numerical rating of such items constitutes the final vulnerability value for each element and it is translated in colors, see Table 10-4:

Table 10-4. Rating in vulnerability analysis Mining Concession 5969

Rating	Vulnerability	Color
0,0 – 1,0	low	Green
1,1 – 2,0	Medium	Yellow
2,1 – 3,0	High	Red

Source: INGEX, 2016

CONSOLIDATED RISK

The following is each risk present in the mining concession 5969, they are ranked according to their probability of occurrence, vulnerability, among others

HAZARDS IDENTIFICATION

Types of hazards are ranked relating their origin and source, and, according to the risk rhombus methodology, a qualitative assessment, see Table 10-5:

Table 10-5. Table of Hazards identification - Mining Concession 5969

		HAZARD IDENTIFICATION			POSSIBLE	◆	
					LIKELY	◆	
TYPE		ORIGIN			SOURCE OF HAZARD	IMMINENT	◆
		EXTERNAL	INTERNAL	N/A		RANKING	COLOR
NATURAL							
1	Seismic Motion	X			Location in seismic microzonation map	LIKELY	◆
2	Thunderstorm (lightning)	X			Weather conditions of the region	POSSIBLE	◆
3	Wildfire	X			Weather conditions of the region and man-made conditions	LIKELY	◆
4	Flood	X			Weather conditions of the region, thunderstorms, heavy rains	POSSIBLE	◆
TECHNOLOGICAL							
5	Fires	X	X		Fire, short circuit in electrical grid, machinery and equipment, computers and other office equipment, appliances. Storage of liquids and flammable material (gasoline, ACPM, greases, packing material, stationery, equipment	POSSIBLE	◆
6	Explosion	X	X		Inappropriate storage of flammable liquid storage	POSSIBLE	◆
7	Absence of electrical flow	X	X		Repair or damage of external and internal electrical grid	LIKELY	◆
8	Chemical spills and dumping		X		Inappropriate handling of flammable liquids and other chemicals, such as detergents and disinfectants	LIKELY	◆
9	Aircraft accident	X			Air traffic	POSSIBLE	◆
SOCIAL							
10	Terrorism	X			Illegal armed groups	LIKELY	◆
11	Assault-theft	X			Crime	POSSIBLE	◆

Source: INGEX, 2016.

EXPOSURE TIME OF HAZARD

To determine the number of exposures by the different types of hazard and their exposure, the TOUCHSTONE COLOMBIA Company, performs the following tabulation relating a projection of the personnel required by the project, see Table 10-6.

Table 10-6. Table of personnel list required by the project with its exposure time to different hazards – Mining Concession 5969

SCENARIO						EXPOSURE TIME	HAZARD	
	TOUCHSTONE	TEMPORAL	VISITORS	INHABITANTS OF THE AREA	TOTAL		CLASSIFICATION	DESCRIPTION
Direct Influence Area of the project	120	5	5	15	145	24 H	NATURAL	Thunderstorms
	120	5	5	15	145	24 H	NATURAL	Seismic motion
	120	5	5	15	145	24 H	NATURAL	Wildfire
	120	5	5	15	145	24 H	NATURAL	Flood
	120	5	5	15	145	24 H	TECHNOLOGICAL	Fires
	120	5	5	15	145	24 H	TECHNOLOGICAL	Explosions
	120	5	5	15	145	24 H	TECHNOLOGICAL	Absence of electrical flow
	120	5	5	15	145	24 H	TECHNOLOGICAL	Chemical spills and dumping
	120	5	5	15	145	24 H	TECHNOLOGICAL	Aircraft accident
	120	5	5	15	145	24 H	SOCIAL	Terrorism
120	5	5	15	145	24 H	SOCIAL	Assault and theft	

Source: INGEX, 2016

POSSIBLE CONSEQUENCES OF THE HAZARD

Considering that the consequence of magnification of the hazard is not only at the level of health conditions but also the environment, the TOUCHSTONE COLOMBIA company, choose some of possible consequences that may be generated in case some hazards are materialized, see Table 10-7.

Table 10-7. Table of environmental consequences and conditions in case hazards materialize - Mining Concession 5969.

ESCENARIO						EXPOSURE TIME	HAZARD		ENVIRONMENTAL CONSEQUENCES					HEALTH CONSEQUENCES
	TOUCHSTONE	TEMPORARY	VISITORS	INHABITANTS OF THE	TOTAL		CLASIFICACION	DESCRIPCION	WATER	AIR	FLORA	LAND	COMUNITES	
Direct Influence Area of the project	120	5	5	15	145	24 H	NATURAL	Thunderstorms	Flow increase				fires, electric shocks	Burns, multiple injuries, heart attacks, death
	120	5	5	15	145	24 H	NATURAL	Seismic motion				Mass movement	Destruction of infrastructure	Fractures, Traumatic Brain injury, Death
	120	5	5	15	145	24 H	NATURAL	Landslide				Mass movement	Destruction of infrastructure	
	120	5	5	15	145	24 H	NATURAL	Wildfire			Flora destruction		Destruction of infrastructure	Burns, suffocation, poisoning and death
	120	5	5	15	145	24 H	NATURAL	Flood	Flow increase				Destruction of infrastructure	Drowning, Trauma, fractures and Death
	120	5	5	15	145	24 H	TECHNOLOGICAL	Fires		Air quality contamination	Flora destruction		Destruction of infrastructure	Burns, suffocation, poisoning and death
	120	5	5	15	145	24 H	TECHNOLOGICAL	Explosions					Destruction of infrastructure	Burns, blows, bruises, fractures, traumas and death
	120	5	5	15	145	24 H	TECHNOLOGICAL	Absence of electrical flow					deficiency in productive activities in the area	Blows, sprains
	120	5	5	15	145	24 H	TECHNOLOGICAL	Chemical spills and dumping	Water quality alteration		Flora Alteration	Soil quality alteration	intoxication with substances to communities	Intoxication, Death
	120	5	5	15	145	24 H	TECHNOLOGICAL	Aircraft accident					Destruction of infrastructure	Burns, blows, bruises, fractures, traumas and death
120	5	5	15	145	24 H	SOCIAL	Terrorism					Destruction of infrastructure	Blows, bruises, fractures, traumas and death	

	120	5	5	15	145	24 H	SOCIAL	Assault and theft					Destruction of infrastructure	Blows, bruises, fractures, traumas and death
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Source: INGEX, 2016

VULNERABILITY ANALYSIS

After identifying each hazard with its respective source, the vulnerability classification or analysis is performed, relating each of the associated variables in groups of:

- Natural Hazard (Seismic motions, Thunderstorms (lightning), wildfires, flood).
- Technological (Fire, Explosion, Absence of electrical fluid, Spill of Chemicals and discharges, Air accident).
- Social (Terrorism, Robberies).

The consolidated assessment of the vulnerability of each of the hazard assessed below is made, considering the "VULNERABILITY RATING" chapter 5, in addition calculation parameters of each of the hazards and their vulnerability may be found in the attached documents.

10.3.1 Vulnerability natural hazard seismic motion

The following is the consolidated vulnerability, associated with seismic motions where its interaction with people, resources and systems. Table 10 8.

To know the assessment criteria, it is recommended to see Appendix 10.1 Seismic motions-vulnerability analysis.

Table 10-8. Consolidated Seismic motions vulnerability

CONSOLIDATED VULNERABILITY – SEISMIC MOTION	
	CONSOLIDATED
PEOPLE	
Organization	0,5
Training	0,8
Equipment	0,5
TOTAL PEOPLE	1,8
INTERPRETATION	◆
RESOURCES	
Material	0,2
Building	0,3
Equipment	0,8
TOTAL RESOURCES	1,3
INTERPRETATION	◆
SYSTEMS AND PROCESSES	
Public services	0,4
Alternative systems	0,5
Recovery	0,7
TOTAL SYSTEMS AND PROCESSES	1,6
INTERPRETATION	◆

Ranking	Rating
LOW	0,0-1,0
MEDIUM	1,0-2,0
HIGH	2,0-3,0

By assessing the consolidated vulnerability associated with Seismic motions, rating is Medium in all the variables analyzed (people, resources, systems and processes).

In addition, a characterization is made depending on the operation area of the project, regionally and locally. In conclusion, the seismic hazard of the regional area, rating is Medium and in local characterization, is low seismic hazard.

The analysis and processing of this information is shown below:

10.3.2 Earthquake

10.3.3 Regional seismic hazard

Colombia is located in the northwest corner of South America, in an area of very high tectonic complexity due to the high activity of Nazca plates, South America and the Caribbean (See Illustration 10-3), which is evidenced by occurrence of destructive earthquake, tsunami (tidal wave) and the recent activity of its volcanoes.



Illustration 10-3. Tectonic Plates
Source: Geological surroundings Isthmus of Panama

Colombian population is concentrated or exposed in cities located in areas of greatest hazard or risk. Moreover, anthropic action in recent years has increased the potential for natural disaster or hazard.

In Colombia, several events have been presented, such as the destruction of Cúcuta in 1875, earthquakes and a Tumaco tsunami in 1906 (See Table 10 9).

Table 10-9. Historical earthquakes in Colombia

DATE	LOCATION	MAGNITUDE	DEPTH (Km)	DEAD PEOPLE
31-01-1906	Near Tumaco	8.9		400
9-02-1967	Huila	6.3	60	98
29-07-1967	Santander	6	160	5
23-11-1979	Quindío, Risaralda y Caldas	6.4	80	55
12-12-1979	Near Tumaco	7.8	40	500
31-03-1983	Popayán	5.5	12	300
18-10-1992	Murindó (Choco)	7.2	15	30
6-06-1994	Páez	6.4	<20	120
19-01-1995	Tuaramena	6.5	15	10
8-02-1995	Calima	6.4	90	5
25-01-1999	Armenia and surrounding areas	6.4	16	100

Source: Seismic Hazard Study of Colombia, 1996.

Because of the influence by tectonic plates in Colombia, there is a series of geological faults (See illustration 10 4) in the earth's crust causing areas with different seismic hazards, where the reaction of earth's crust to an earthquake, presents higher or lower intensity. These are called seismic hazard areas and are ranking as high, medium and low area (See illustration 10 5).

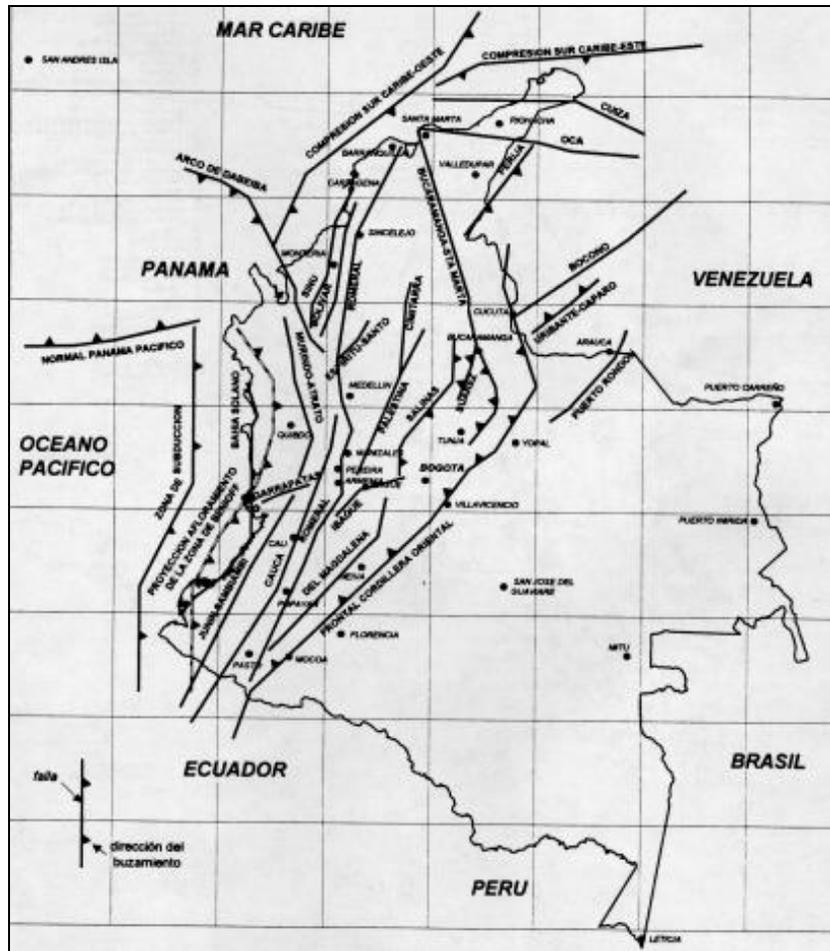


Illustration 10-4. Colombia faults
Source: Martínez, A, 2012.

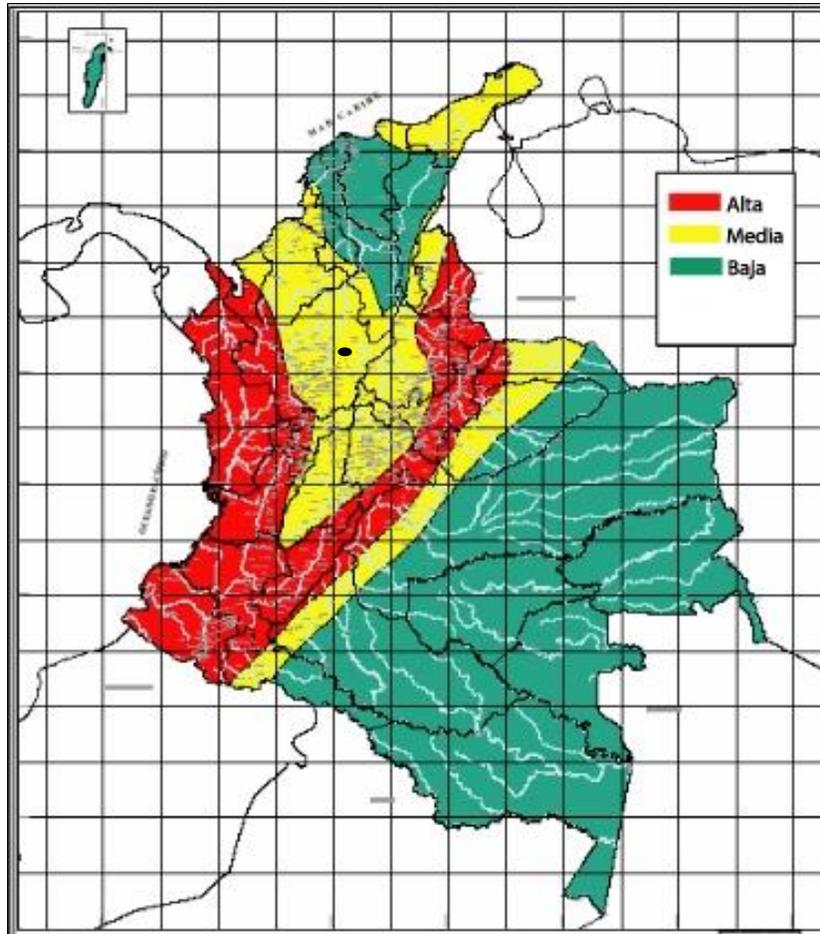


Illustration 10-5. Seismic hazard of Colombia
Source: INGEOMINAS, 1997.

The low seismic hazard occurs towards the area of the Amazonas department and part of the Atlantic coast (55% of the Colombian territory), the medium the center of the country (22% of the Colombian territory) and the high the entire Pacific coast (23% of the territory Colombian) (INGEOMINAS, 1997).

In the study area, this type of hazard is controlled by the Otú-Perico fault system. Once the hazard map prepared by the Colombian Institute of Geology and Mining - INGEOMINAS was reviewed, it was observed that the study area is categorized in an intermediate degree, ranking 9,20-18 PGA. Land movement is calculated in maximum horizontal acceleration in the rock (PGA).

10.3.4 Local aseismic hazard

With the bibliographic information collected from INGEOMINAS (1997) the digitalization was made, indicating that the project area has medium seismic hazard (See Illustration 10 6).

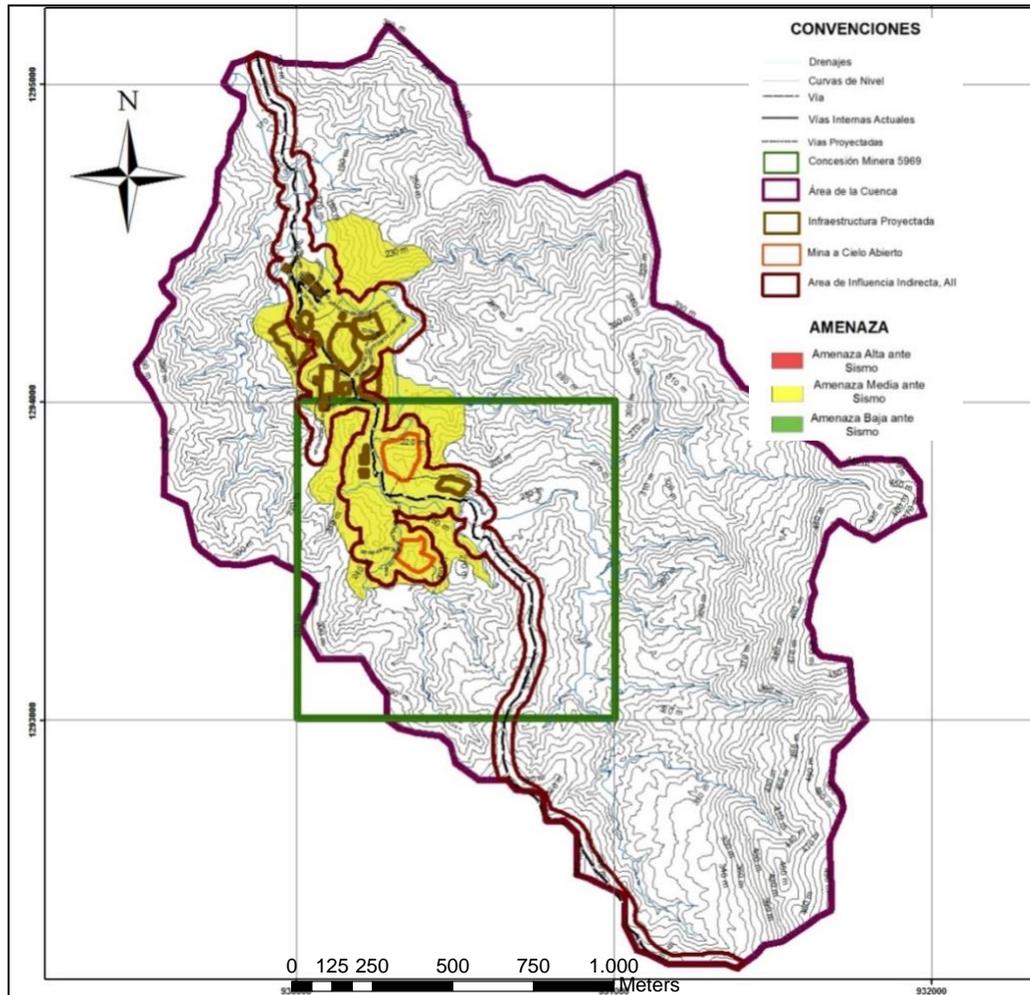


Illustration 10-6. Local Seismic Hazard of the study area.
Source: Taken and modified from INGEOMINAS, 1997.

10.3.5 Seismic vulnerability

Vulnerability may be defined by five (5) levels or classes: Very low, low, medium, high and very high; equivalent to percentages of elements that may present damage or destruction (loss) over a total. These percentages are based on the characteristics of the area, type of phenomenon, density and frequency of human occupation, density of buildings, among others.

According to the methodology of seismic microzonation of the municipalities of Barbosa, Giraldo, Copacabana, Sabaneta, La Estrella, Caldas and Envigado (2006), to assess the vulnerability, an inventory of buildings classified according to the following variables is required: Use of structural system, age of construction, and land inclination.

The study areas defined to perform analysis on the inventories of buildings, presented in Table 10 10 and illustration 10 7

Table 10-10. Area defined for vulnerability assessment

ZONE	STRUCTURAL TYPE
Zone1	Predominantly buildings from 1 to 2 level
Zone2	Green areas
Zone3	Sports and / or recreational areas / open spaces
Zone4	Industrial (Warehouse)

Source: Microzonation, 2006.

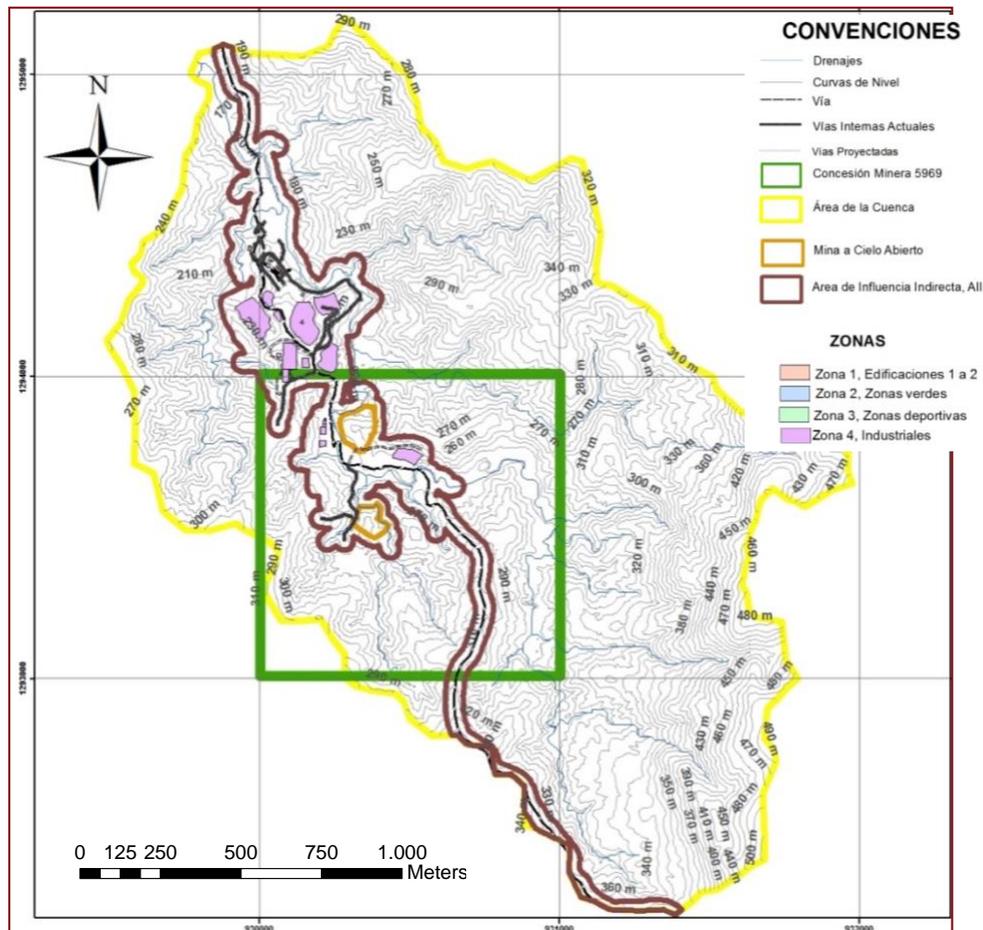


Illustration 10-7 Inventory of the project constructions of the project
Source: INGEX, 2016.

The percentage distribution of types of structures and uses of buildings for calculation of vulnerability due to earthquakes are presented in Illustration 10-8 and illustration 10-9.

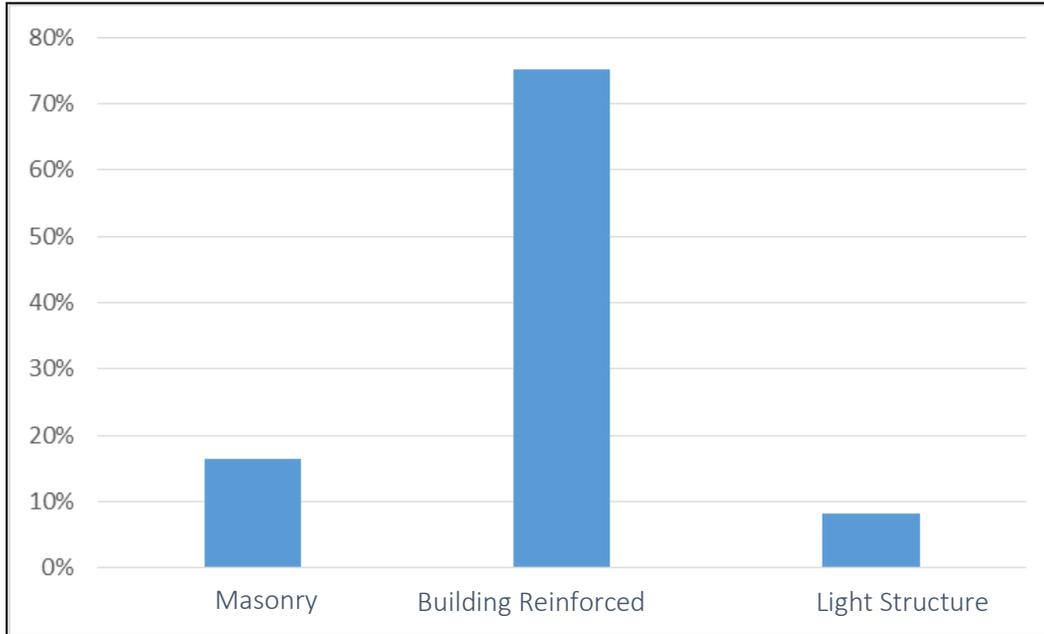


Illustration 10-8 Distribution of the structural typology of the project
Source: INGEX, 2016.

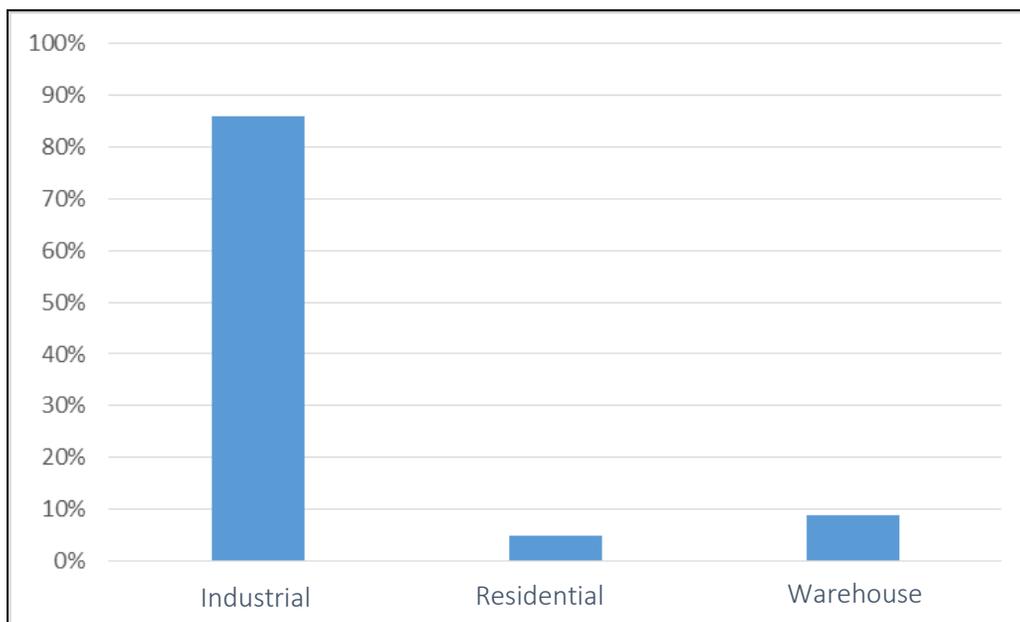


Illustration 10-9 Distribution of use of buildings of the project
Source: INGEX, 2016.

Seismic vulnerability calculated is equivalent to the weighted sum, according to its degree of importance (See Table 10-11 and Table 10-12).

Table 10-11. Factors that generate instability

FACTORS THAT GENERATE INSTABILITY	FACTOR WEIGHT
Structural classification	0,55
Use of the structure	0,30
Age of building	0,10
Land inclination	0,05
	1,0

Source: INGEX, 2016.

Table 10-12. Factors and maximum ranges

FACTORS	TYPE	RANGE	P (RANGE X%)	GREATER	
Structural classification	Masonry	40	22	22	100
	Building Reinforced	33	18,15		
	Light structure	27	14,85		
Use of the structure	Residential	20	0,3	12	100
	Industrial	40	12		
	Warehouse	40	12		
Age of building	1-2 years	100	10	10	100
Land inclination	0 – 15%	10	0,49	2,15	100
	15% - 30%	22	1,1		
	30% - 50%	25	1,25		
	50% - 100%	43	2,15		
	>100%	0	0		
				46,15	

Source: INGEX, 2016.

With the sum of the most relevant weights divided among the five levels, the intervals of levels or classes of seismic vulnerability are obtained (See Table 10-13).

With a value of 9.23 and according to ranges of level classes, vulnerability of the study area is very low as can be seen in the Illustration 10-10 because even though there is infrastructure near the project, this is for mostly industrial use and structurally buildings are reinforced. (See Table 10 13).

Table 10-13. Seismic vulnerability classes

VULNERABILITY	RATING	DESCRIPTION
Very Low	0 – 9	Areas within the study area with very low probability to occur and damage population and property of the area due to earthquakes. These zones are characterized by having low to moderate slopes.
Low	10 – 18	Areas in the study area characterized by low probability for disaster related to earthquakes to occur and affect population. These areas are conditioned to future construction of civil works in the field.
Medium	19 - 27	Zones of the study area characterized by medium probability for disasters related to possible earthquakes to occur.
High	28 - 36	Sectors of the study area where there is a high probability to be affected for possible earthquakes to occur.
Very high	More than 36	It does not appear in the study area

Source: INGEX, 2016.

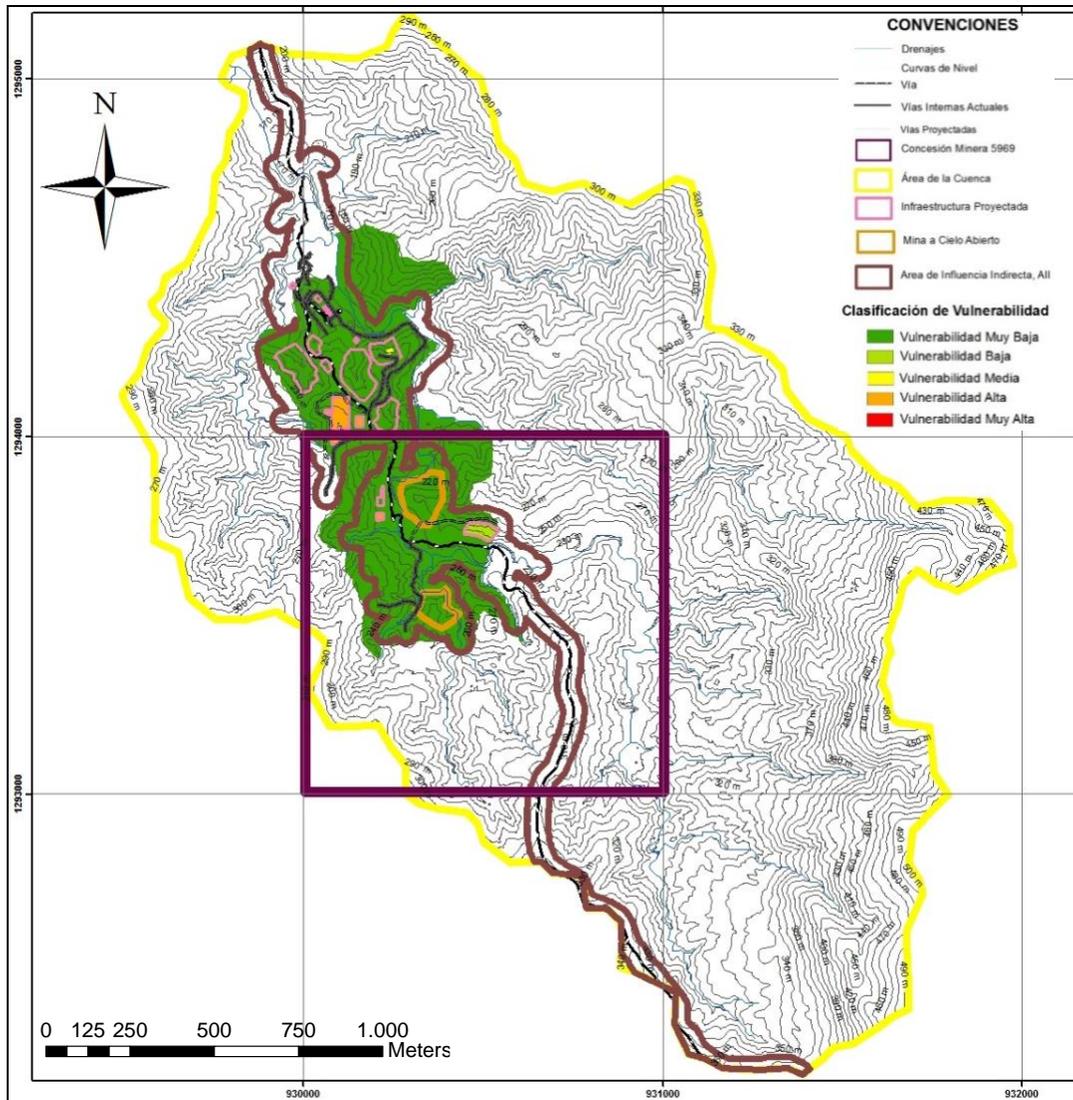


Illustration 10-10. Seismic vulnerability of the study area

Source: INGEX, 2016.

10.3.6 Earthquake risk

For the analysis of earthquake risk, the evaluation is performed through the relative and qualitative assessment. Therefore, loss scenarios were estimated by earthquake that indicates the geographic distribution and the level of losses by zones.

The above from the weighted sum of risk values, according to the degree of importance (See Table -10-14 and Table-10-16).

Table -10-14. Factors that generate instability by earthquake

Table 10-15. Factors that generate instability by earthquake

FACTORS	FACTOR WEIGHT
Hazard by earthquake	0,6
Vulnerability by earthquake	0,4
	1

Source: INGEX, 2016.

Table-10-16. Factors and maximum ranges

Table 10-17. Factors and maximum ranges

FACTORS	TYPE	RANGE	WEIGHT (RANGE X%)	GREATER	
Hazard by earthquake	High	70	42	42	100
	Medium	25	15		
	Low	5	3		
Vulnerability by earthquake	Very high	55	22	22	100
	High	25	10		
	Medium	15	6		
	Low	3	1,2		
	Very low	2	0,8		
				64	

Source: INGEX, 2016.

With the sum of the most relevant weights divided among the five levels, the intervals of levels or classes of seismic vulnerability are obtained (See Table 10-18, Illustration 10-11).

Table 10-18. Seismic vulnerability classes

RISK	VALUE	DESCRIPTION
Very low	0 – 13	Areas within the study area with very low probability to occur and damage population and property of the area due to earthquake, which indicates that is the most prevalent range in the area.
Low	14 – 26	Zones in the study area characterized by low probability for disaster related to earthquakes to occur and affect future civil works in the field.
Medium	27 - 39	Zones of the study area characterized by medium probability for disasters related to possible earthquakes to occur.
High	49 - 52	Sectors of the area where there is a high probability to be affected for possible earthquakes to occur. In the study area there were no areas with this type of risk.
Very high	Mayor a 52	Areas within the study area of the project with a very high probability for earthquake to occur. In the study area there were no areas with this type of risk.

Source: INGEX, 2016.

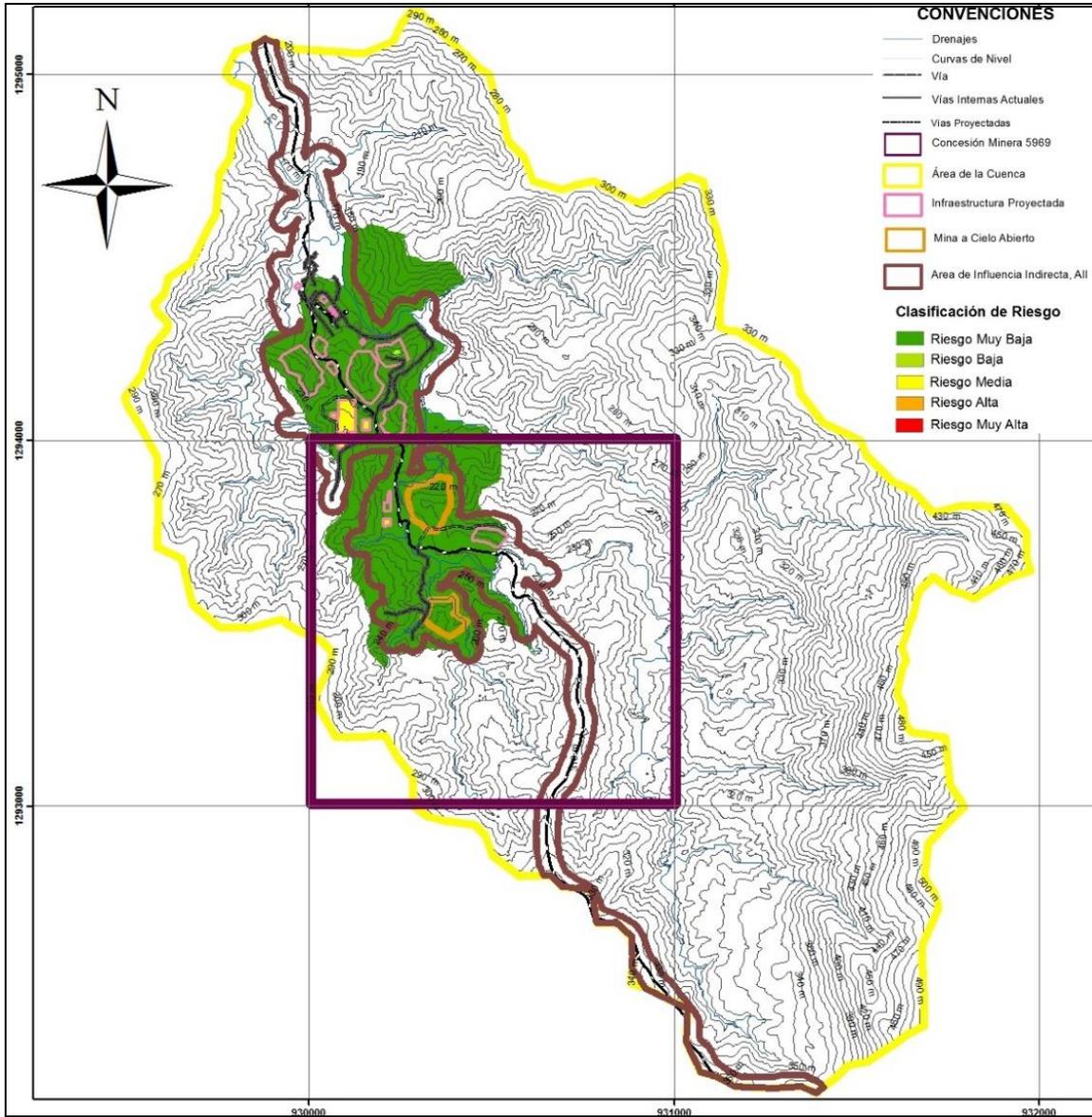


Illustration 10-11. Seismic Risk.
Source: INGEX, 2016.

10.3.6.1 Vulnerability to natural hazard – Thunderstorms

Vulnerability analysis associated with thunderstorms is performed below, relating its interaction with people, resources and systems, see Table 10 19. To know the evaluation criteria, it is recommended to see Appendix 10.2 Thunderstorms-vulnerability analysis.

Table 10-19 Consolidated vulnerability associated with thunderstorms

CONSOLIDATED VULNERABILITY – THUNDERSTORMS	
	CONSOLIDATED
PEOPLE	
Organization	0,5
Training	0,8
Equipment	0,8
TOTAL PEOPLE	2,0
INTERPRETATION	
RESOURCES	
Material	0,3
Building	0,5
Equipment	0,8
TOTAL RESOURCES	1,6
INTERPRETATION	
SYSTEMS AND PROCESSES	
Public services	0,5
Alternative systems	0,5
Recovery	0,9
TOTAL SYSTEMS AND PROCESSES	1,9
INTERPRETATION	

Ranking	Rating
LOW	0,0-1,0
MEDIUM	1,0-2,0
HIGH	2,0-3,0

By assessing the consolidated vulnerability with thunderstorms, rating is medium for variable analyzed resources, systems and process, and rating is high for people, which indicates that within occupational health and safety management system we must strengthen education and training activities in this field.

10.3.6.2 Vulnerability to natural hazard – wildfire.

Vulnerability analysis with wildfire is performed below, where its interaction with people, resources and systems, see Table 10-20.

To know assessment criteria, it is recommended to see Appendix 10.3 Wildfire- vulnerability analysis

Table 10-20. Consolidated vulnerability associated with wildfire

CONSOLIDATED VULNERABILITY – WILDFIRE	
	CONSOLIDATED
PEOPLE	
Organization	0,6
Training	0,9
Equipment	1,0
TOTAL PEOPLE	2,5
INTERPRETATION	♦
RESOURCES	
Material	0,3
Building	0,3
Equipment	0,8
TOTAL RESOURCES	1,4
INTERPRETATION	♦
SYSTEMS AND PROCESSES	
Public services	0,6
Alternative systems	0,6
Recovery	0,8
TOTAL SYSTEMS AND PROCESSES	2,0
INTERPRETATION	♦

LOW	0,0-1,0
MEDIUM	1,0-2,0
HIGH	2,0-3,0

By assessing the consolidated vulnerability with wildfire, rating is medium for variable analyzed as resources, and is high for systems, processes and people, which indicates that within occupational health and safety management system we must strengthen education and training and include intervention processes in this area.

10.3.6.3 Vulnerability to natural hazard - Flood

Vulnerability analysis with flood is performed below, where its interaction with people, resources and systems, see

Table 10-21.

To know assessment criteria, it is recommended to see Appendix 10.4 Flood- vulnerability analysis

Table 10-21 Consolidated vulnerability associated with flood

CONSOLIDATED VULNERABILITY – FLOOD	
	CONSOLIDATED
PEOPLE	
Organization	0,4
Training	0,9
Equipment	1,0
TOTAL PEOPLE	2,3
INTERPRETATION	◆
RESOURCES	
Material	0,0
Building	0,5
Equipment	0,6
TOTAL RESOURCES	1,1
INTERPRETATION	◆
SYSTEMS AND PROCESSES	
Public services	0,8
Alternative systems	0,3
Recovery	0,9
TOTAL SYSTEMS AND PROCESSES	2,0
INTERPRETATION	◆

LOW	0,0-1,0
MEDIUM	1,0-2,0
HIGH	2,0-3,0

By assessing the consolidated vulnerability with flood, rating is high for variable analyzed as processes and people, and medium for resources, which indicates that within occupational health and safety management system we must strengthen education and training and include intervention processes in this area.

In addition, a characterization of susceptibility of the area to occur flood is made. The hazard map is determined by the likelihood that water flows have to flood the areas of importance within the direct

influence area of the project. For this, flood spots of the main flows with a return period of 100 years were estimated or which is equal with a probability of occurrence of 0.01.

This was carried out from the results of hydraulic modeling for the 100-year flow, from which flood spots of the main flows were obtained. The following illustration shows their flood spots maps. See Illustration 10-12, Illustration 10-13, Illustration 10-14.

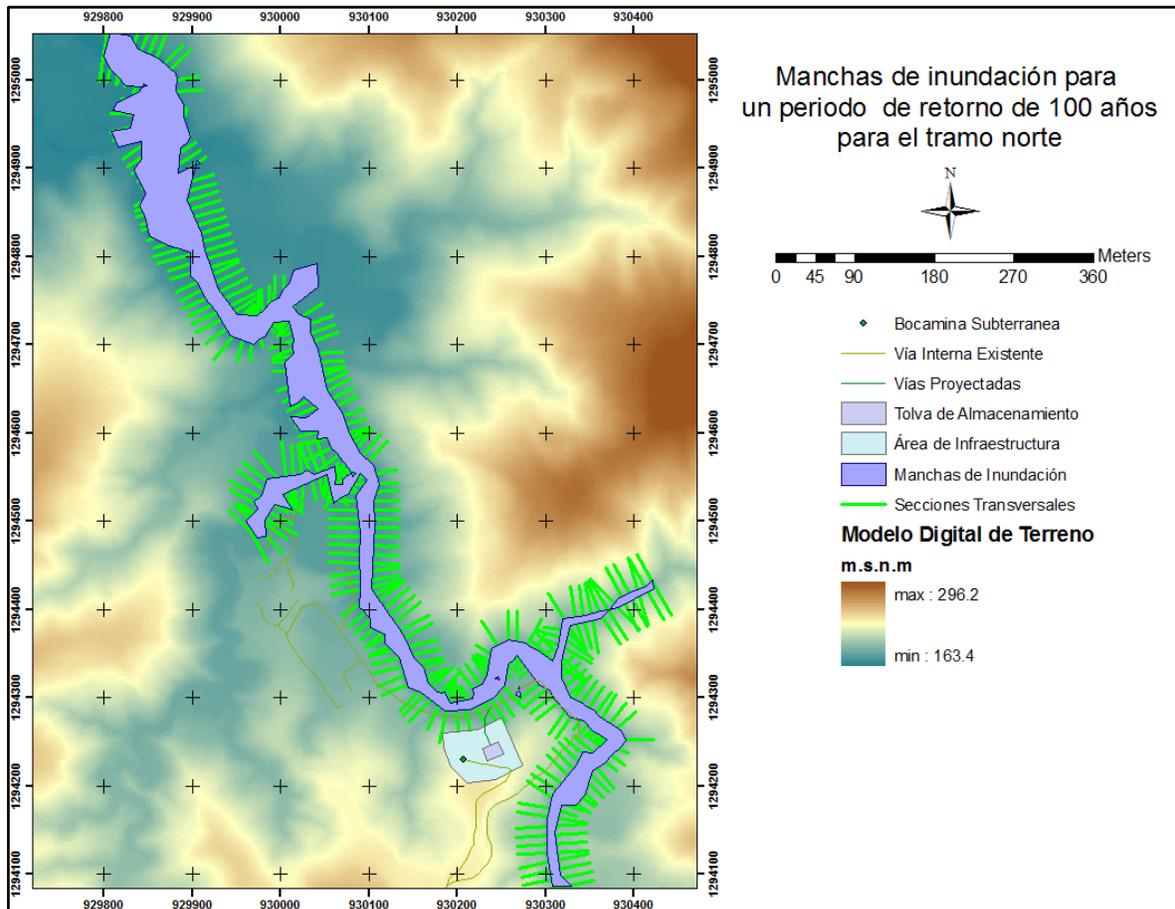


Illustration 10-12. Flood spot map of the northern part of the project TOUCHSTONE COLOMBIA.

Source: INGEX, 2015

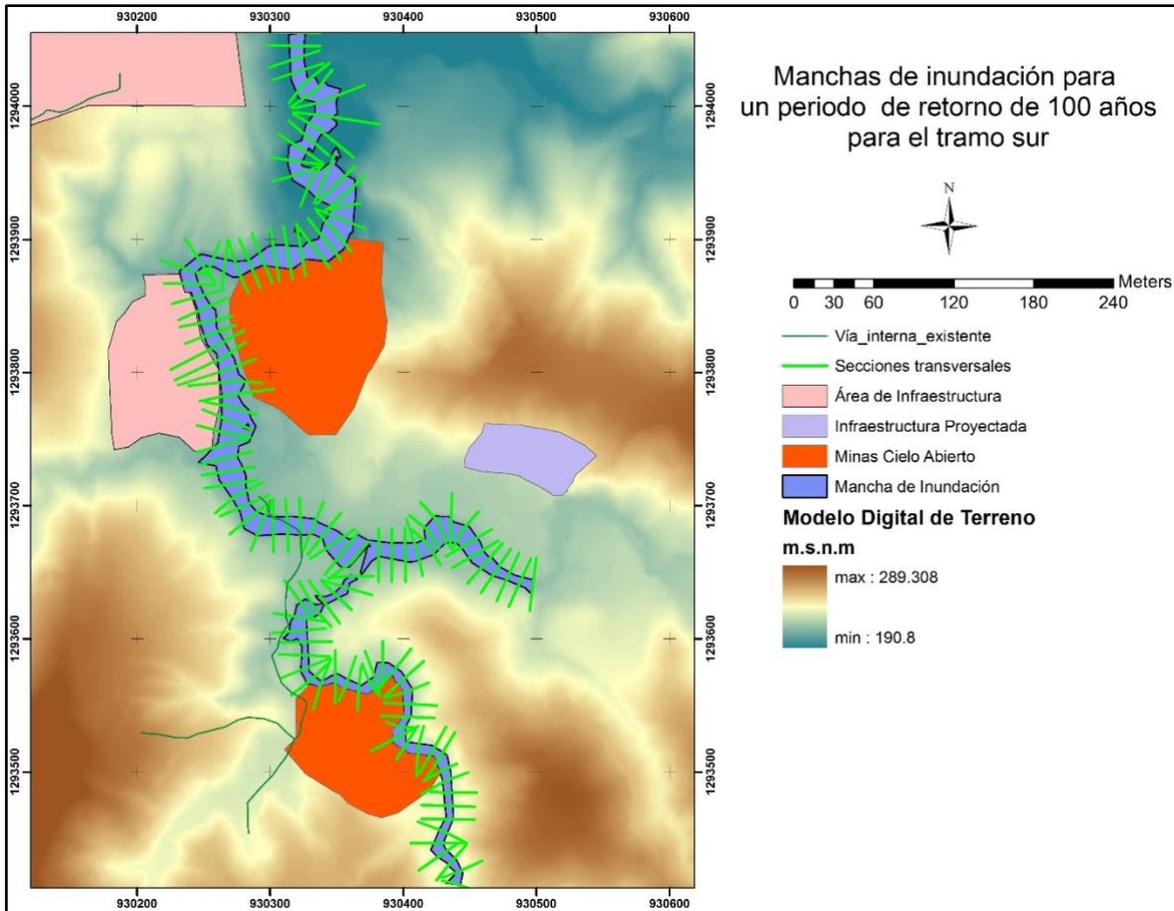


Illustration 10-13. Flood spot map of the southern part of the project TOUCHSTONE COLOMBIA.

Source: INGEX, 2015

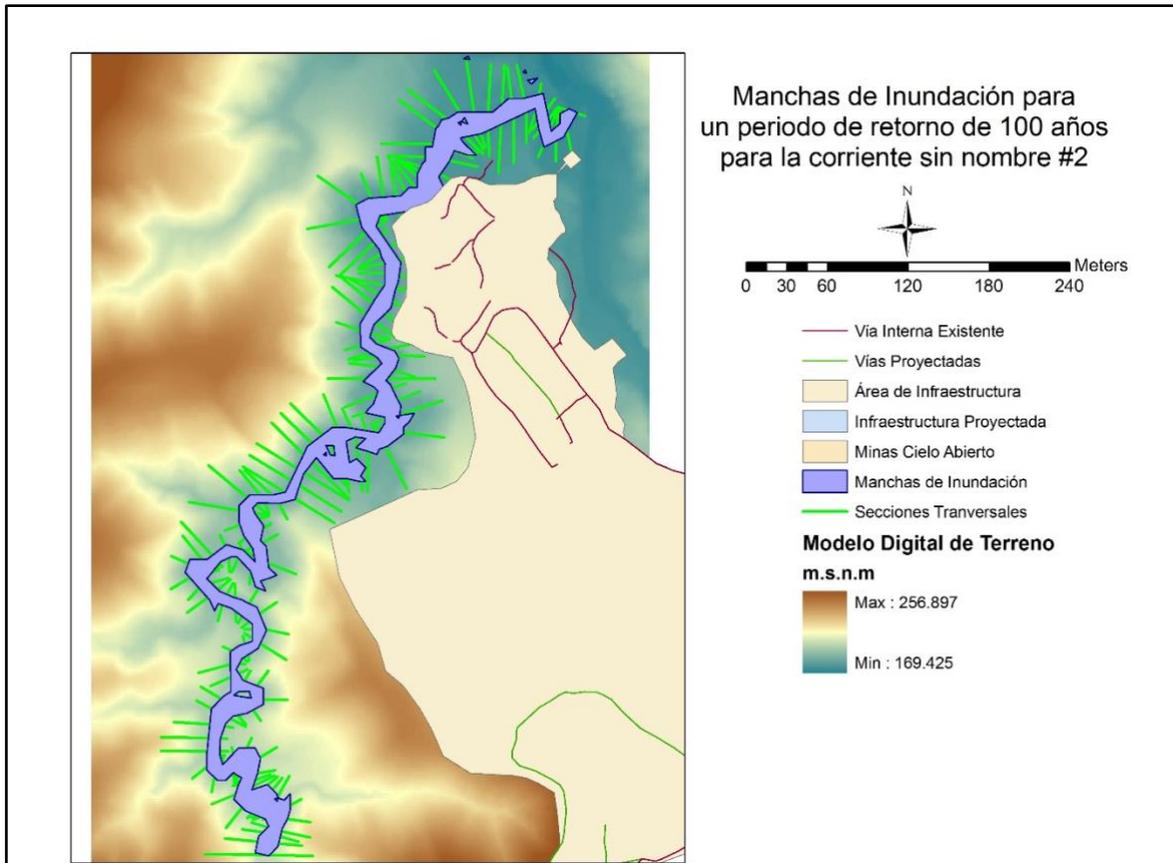


Illustration 10-14. Flood spot map of the no-name flow #2 of the project TOUCHSTONE COLOMBIA.
Source: INGEX, 2015.

The slope map was classified into three zones: the first zone all slopes are between 0% and 5%, which reflects very flat areas; the second zone includes the slopes between 5% and 10%, which are cataloged on average slopes and the third zone with slopes greater than 10%, which is defined for areas with high slopes.

Previous definition was made, because flat areas have a much greater threat of being flooded than areas with much higher slopes. The combination of the reclassified map of slopes and flood spots (which by definition has a high hazard, due to the fact the areas that flood rivers first), result in the flood hazard map, see Illustration 10-15.

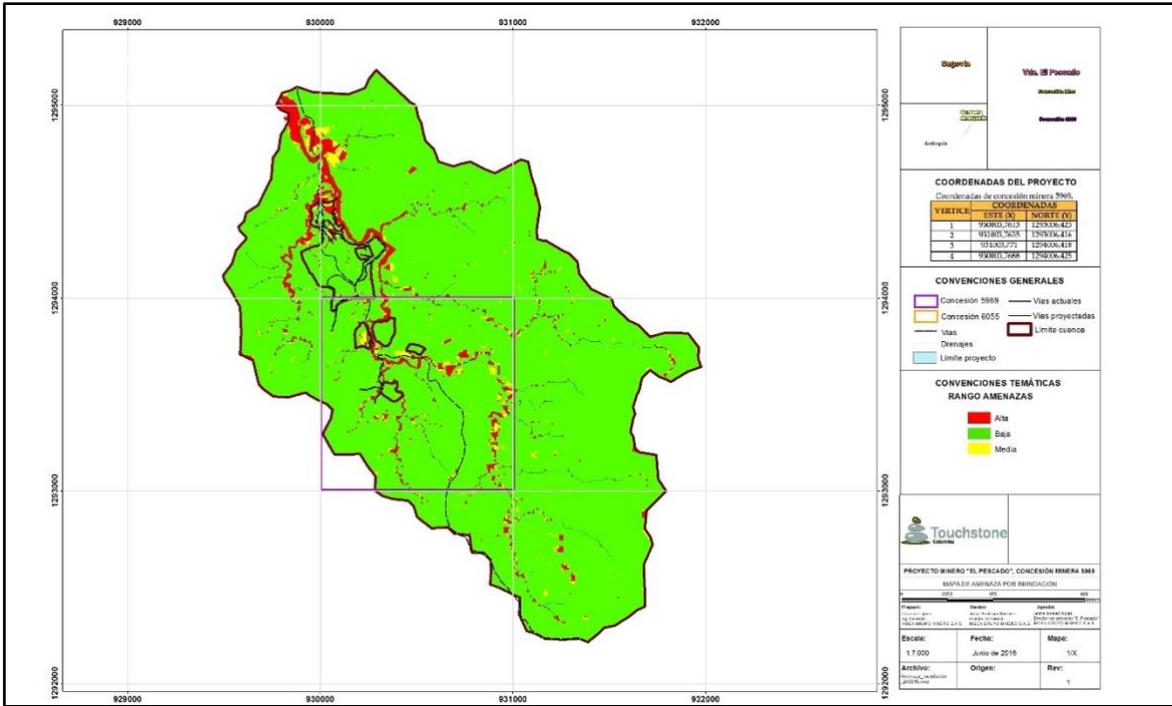


Illustration 10-15. Flood hazard map of the project TOUCHSTONE COLOMBIA.
Source: INGEX, 2015.

Vulnerability

- Low*Low=Low
- Low*Medium=Medium
- Low*High=Medium
- Medium*Medium=Medium
- High*Medium=High
- High*High=High

The following map shows the flood risk map which shows that the areas at greatest risk are the infrastructure areas near the flood plains.

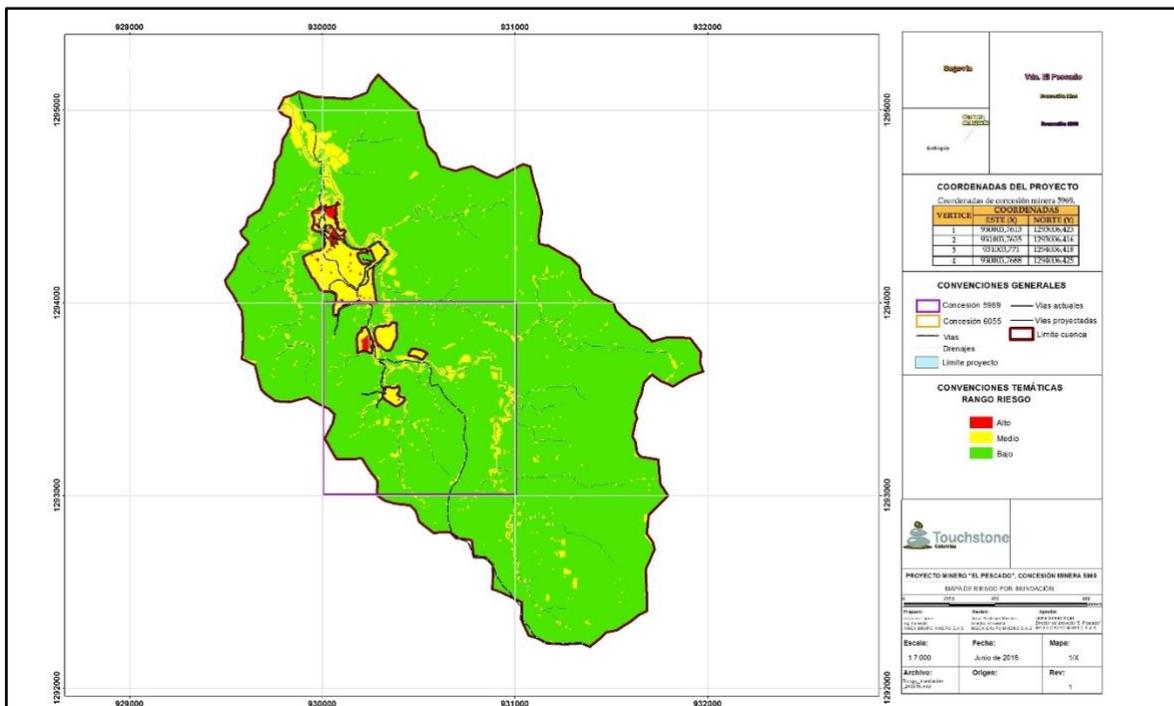


Illustration 10-17. Risk map of the project TOUCHSTONE COLOMBIA
Source: INGEX, 2015

We can consider that the risk corresponds to a probable relative value of losses of all kinds in a specific place vulnerable to a hazard, at the moment of their impact and throughout recovery and reconstruction period after that.

10.3.6.5 Technological hazard vulnerability- wildfire

The following is vulnerability analysis associated with wildfire is carried out, where its interaction with people, resources and systems is related, see Table 10-22. To know the assessment criteria, it is recommended to see Appendix 10.5 Wildfire-vulnerability analysis.

Table 10-22 Consolidated vulnerability associated with wildfire

CONSOLIDATED VULNERABILITY – WILDFIRE	
	CONSOLIDATED
PEOPLE	
Organization	0,4
Training	0,7
Equipment	0,5
TOTAL PEOPLE	1,6
INTERPRETATION	◆
RESOURCES	
Material	0,0
Building	0,2
Equipment	0,6
TOTAL RESOURCES	0,8
INTERPRETATION	◆
SYSTEMS AND PROCESSES	
Public services	0,8
Alternative systems	0,3
Recovery	0,9
TOTAL SYSTEMS AND PROCESSES	1,95
INTERPRETATION	◆

LOW	0,0-1,0
MEDIUM	1,0-2,0
HIGH	2,0-3,0

By assessing the consolidated vulnerability with wildfire, rating is medium for variable analyzed as processes and people, and low for resources, which indicates that within occupational health and safety management system we must strengthen education and training and include intervention processes in this area, mainly in medium rating.

10.3.6.6 Technological hazard vulnerability - Explosion

Vulnerability analysis associated with explosion is performed below, where its interaction with people, resources and systems, see Table 10-23.

To know assessment criteria, it is recommended to see Appendix 10.6 Explosion- vulnerability analysis.

Table 10-23 Consolidated vulnerability associated with explosion

CONSOLIDATED VULNERABILITY – EXPLOSION	
	CONSOLIDATED
PEOPLE	
Organization	0,6
Training	0,9
Equipment	0,5
TOTAL PEOPLE	2,0
INTERPRETATION	♦
RESOURCES	
Material	0,5
Building	0,2
Equipment	0,8
TOTAL RESOURCES	1,3
INTERPRETATION	♦
SYSTEMS AND PROCESSES	
Public services	0,5
Alternative systems	0,5
Recovery	0,8
TOTAL SYSTEMS AND PROCESSES	1,8
INTERPRETATION	♦

LOW	0,0-1,0
MEDIUM	1,0-2,0
HIGH	2,0-3,0

By assessing the consolidated vulnerability with explosion, rating is medium for variable analyzed as resources, systems and processes, and high for people, which indicates that within occupational health and safety management system we must strengthen education and training and include intervention processes in this area.

10.3.6.7 Technological hazard vulnerability – Absence of electrical flow

Vulnerability analysis associated with absence of electrical flow is performed below, where its interaction with people, resources and systems, see Table 10-24.

To know assessment criteria, it is recommended to see Appendix 10.7 Absence of electrical flow-vulnerability analysis.

Table 10-24 Consolidated vulnerability associated with absence of electrical flow

CONSOLIDATED VULNERABILITY – ABSENCE OF ELECTRICAL FLOW	
	CONSOLIDATED
PEOPLE	
Organization	0,4
Training	0,7
Equipment	0,5
TOTAL PEOPLE	1,6
INTERPRETATION	◆
RESOURCES	
Material	0,3
Building	0,3
Equipment	0,4
TOTAL RESOURCES	0,96
INTERPRETATION	◆
SYSTEMS AND PROCESSES	
Public services	0,8
Alternative systems	0,5
Recovery	0,6
TOTAL SYSTEMS AND PROCESSES	1,9
INTERPRETATION	◆

LOW	0,0-1,0
MEDIUM	1,0-2,0
HIGH	2,0-3,0

By assessing the consolidated vulnerability with absence of electrical flow, rating is medium for variable analyzed as systems, processes and people, and low for people, which indicates that within occupational health and safety management system we must strengthen education and training and include intervention processes in this area, mainly in medium rating.

10.3.6.8 Technological hazard vulnerability- Chemical spills and dumping

Vulnerability analysis associated with absence of chemical spills and dumping is performed below, where its interaction with people, resources and systems, see

Table 10-25.

To know assessment criteria, it is recommended to see Appendix 10.8 Chemical spills and dumping.

Table 10-25 Consolidated vulnerability associated with chemical spills and dumping

CONSOLIDATED VULNERABILITY – CHEMICAL SPILLS AND DUMPING	
	CONSOLIDATED
PEOPLE	
Organization	0,4
Training	0,8
Equipment	1,0
TOTAL PEOPLE	2,2
INTERPRETATION	◆
RESOURCES	
Material	0,5
Building	0,8
Equipment	0,8
TOTAL RESOURCES	2,0
INTERPRETATION	◆
SYSTEMS AND PROCESSES	
Public services	0,5
Alternative systems	0,5
Recovery	1,0
TOTAL SYSTEMS AND PROCESSES	2,0
INTERPRETATION	◆

LOW	0,0-1,0
MEDIUM	1,0-2,0
HIGH	2,0-3,0

By assessing the consolidated vulnerability with chemical spills and dumping, rating is medium for variable analyzed as resources, but high for systems, processes and people, which indicates that, within occupational health and safety management system, we must strengthen education and training and include intervention processes in this area, mainly in high rating.

10.3.6.9 Technological hazard vulnerability - Aircraft accident

Vulnerability analysis associated with aircraft accident is performed below, where its interaction with people, resources and systems, see

Table 10-26.

To know assessment criteria, it is recommended to see Appendix 10.9 Aircraft accidents.

Table 10-26 Consolidated vulnerability associated with Aircraft accident.

CONSOLIDATED VULNERABILITY – AIRCRAFT ACCIDENT	
	CONSOLIDATED
PEOPLE	
Organization	0,4
Training	0,7
Equipment	0,5
TOTAL PEOPLE	1,6
INTERPRETATION	◆
RESOURCES	
Material	0,3
Building	0,3
Equipment	0,7
TOTAL RESOURCES	1,3
INTERPRETATION	◆
SYSTEMS AND PROCESSES	
Public services	0,6
Alternative systems	0,5
Recovery	0,9
TOTAL SYSTEMS AND PROCESSES	2,3
INTERPRETATION	◆
LOW	0,0-1,0
MEDIUM	1,0-2,0
HIGH	2,0-3,0

By assessing the consolidated vulnerability with aircraft accident, rating is medium for variable analyzed as resources and people, and high for systems and processes, which indicates that, within

occupational health and safety management system, we must strengthen education and training and include intervention processes in this area, with emphasis on systems and processes.

10.3.6.10 Social hazard vulnerability - Terrorism

Vulnerability analysis associated with terrorism is performed below, where its interaction with people, resources and systems, see Table 10-27.

To know assessment criteria, it is recommended to see Appendix 10.10 Terrorism – vulnerability analysis.

Table 10-27 Consolidated vulnerability associated with terrorism

CONSOLIDATED VULNERABILITY – TERRORISM	
	CONSOLIDATED
PEOPLE	
Organization	0,7
Training	0,8
Equipment	0,8
TOTAL PEOPLE	2,2
INTERPRETATION	◆
RESOURCES	
Material	0,3
Building	0,3
Equipment	0,6
TOTAL RESOURCES	1,2
INTERPRETATION	◆
SYSTEMS AND PROCESSES	
Public services	0,3
Alternative systems	0,5
Recovery	0,9
TOTAL SYSTEMS AND PROCESSES	1,7
INTERPRETATION	◆

LOW	0,0-1,0
MEDIUM	1,0-2,0
HIGH	2,0-3,0

By assessing the consolidated vulnerability with aircraft accident, rating is medium for variable analyzed as resources, systems and processes, and high for people, which indicates that, within occupational health and safety management system, we must strengthen education and training and include intervention processes in this area, with emphasis on people.

10.3.6.11 Social hazard vulnerability (assault and/or theft)

Vulnerability analysis associated with assault and/or theft is performed bellow, where its interaction with people, resources and systems, see Table 10-28.

To know assessment criteria, it is recommended to see Appendix 10.11 Assault and/or theft – vulnerability analysis.

Table 10-28 Consolidated vulnerability associated with assault or theft

CONSOLIDATED VULNERABILITY – THEFT OR ASSAULT	
	CONSOLIDATED
PEOPLE	
Organization	0,6
Training	0,8
Equipment	0,8
TOTAL PEOPLE	2,1
INTERPRETATION	◆
RESOURCES	
Material	0,3
Building	0,3
Equipment	0,6
TOTAL RESOURCES	1,2
INTERPRETATION	◆
SYSTEMS AND PROCESSES	
Public services	0,3
Alternative systems	0,5
Recovery	0,9
TOTAL SYSTEMS AND PROCESSES	1,7
INTERPRETATION	◆

LOW	0,0-1,0
MEDIUM	1,0-2,0
HIGH	2,0-3,0

By assessing the consolidated vulnerability with theft or assault, rating is medium for variable analyzed as resources, systems and processes, and high for people, which indicates that, within occupational health and safety management system, we must strengthen education and training and include intervention processes in this area, with emphasis on people.

After carrying out the characterization of each variables associated with vulnerability analysis, the general consolidation known as the risk rhombus methodology is performed, where hazards may

have assessed and their general interaction with resources, people and systems and processes, see Table 10-29.

Table 10-29. Scheme that allows to consolidate the level of risk by Risk rhombus methodology - Mining Concession 5969

INTERPRETATION		
3 to 4 red rhombuses	High	
1 to 2 red rhombuses 4 yellow	Medium	
1 to 3 yellow rhombuses and/or the remaining ones in green	Low	

After doing the interpretation of each variable and consolidate the level of risk, results and respective ranking are obtained (see Table 10-30):

Table 10-30. General consolidated risk level of the variables analyzed-Mining Concession 5969

		CONSOLIDATED RISK LEVEL				POSSIBLE	◆
						LIKELY	◆
HAZARD		Vulnerability				IMMINENT	◆
DEFINITION	COLOR	PEOPLE	RESOURCES	SYSTEMS & PROCESS	USE RHOMBUS	RISK LEVEL	
NATURAL	Seismic Movement	◆	◆	◆	◆	MEDIUM	
	Thunderstorm (lightning)	◆	◆	◆	◆	MEDIUM	
	Wildfire	◆	◆	◆	◆	MEDIUM	
	Flood	◆	◆	◆	◆	MEDIUM	
TECHNOLOGICAL	Fire	◆	◆	◆	◆	MEDIUM	
	Explosion	◆	◆	◆	◆	MEDIUM	
	Absence of electrical flow	◆	◆	◆	◆	MEDIUM	
	Chemical spills and dumping	◆	◆	◆	◆	MEDIUM	
	Aircraft accident	◆	◆	◆	◆	MEDIUM	
SOCIAL	Terrorism	◆	◆	◆	◆	MEDIUM	
	Assault-theft	◆	◆	◆	◆	MEDIUM	

Intervention of risk level

In order to prevent occurrence of emergencies inside the company caused by threats identified or other that may arise, it is necessary to develop prevention and mitigation activities aimed at the intervention of the vulnerability.

The Educational Plan is aimed at each of the instances that make up the administrative structure of the company, thus obtaining full implementation and operation of the Emergency Plan.

The vulnerability estimate leads to the analysis and implementation of mitigation measures in areas rated as deficient (high rating range, red diamonds) in people, resources and / or systems and processes.

As mechanism to intervene the risk level in the TOUCHSTONE COLOMBIA company, a training and education plan was defined that involves all people working on the project, see Table 10-31.

Table 10-31. Training and Education plan to intervene the risk level in the Touchstone Colombia – Mining Concession 5969.

 EDUCATION PLAN			
This is the Education Plan, which must be followed with every instance that makes up the administrative structure of the TOUCHSTONE company for the full implementation and operation of the Emergency Plan.			
GROUP	TOPIC	STRATEGIES	RESPONSIBLE
COPASST	Emergency Plan Presentation	Presentation Meeting	Directorate of Occupational Safety And Health (OSH)
Evacuation Leaders	<ul style="list-style-type: none"> • General concepts about emergency plan • Evacuation routes • Alarm System and company alarm • Actions in the event of an emergency 	Training and maintenance of the Emergency Plan	Directorate of Occupational Safety And Health (OSH)
Brigade	<ul style="list-style-type: none"> • General concepts about emergency plan • Evacuation Plan • First Aid • Evacuation And Self-Care Techniques • Fire Prevention and Control • Use of fire extinguishers 	Training and maintenance of the Emergency Plan	Directorate of Occupational Safety And Health (OSH)
All Personnel	<ul style="list-style-type: none"> • Information about Evacuation Plan 	Dissemination through newsletter, posters and meetings	Directorate of Occupational Safety And Health (OSH)
	<ul style="list-style-type: none"> • Self-care strategies in case of fire, terrorism attack, theft and assault, seismic motion, flood and explosions. 	Dissemination through newsletter, posters and meetings	
	<ul style="list-style-type: none"> • General procedure for evacuation routes - Evacuation And Self-Care Techniques • Emergency notification systems 	Training	
	<ul style="list-style-type: none"> • Principles and control techniques in case of emergency 	Training and maintenance of the Emergency Plan	

10.4 ADMINISTRATIVE SECTION OF EMERGENCY PLAN

10.4.1 Emergency policies

One of the priorities of TOUCHSTONE COLOMBIA is to promote the implementation of the Emergency and Disaster Response Plan, supported by directors and especially management, which should provide safety and protection.

With the purpose to comply with the above, it is suggested items to be established:

- To comply with current national and international law on emergency and disaster.
- To allocate the necessary resources for the development of prevention, mitigation and recovery activities.
- To ensure preservation of health in their physical and mental integrity.
- The responsibility for compliance with emergency plan belongs to all levels of the organization.
- All people with a contractual or extra contractual relationship with TOUCHSTONE COLOMBIA shall be responsible for their safety by adopting safe and continuous evacuation practices in case of emergency, through the routes and departures established by the company to the places of lower risk.
- Preservation of health and protection of persons shall be priority over any other situation and in activities considered as drills or simulations, of an emergency, the necessary and timely security measures of those who are involved.

The dissemination, education and simulation activities shall be responsibility of the TOUCHSTONE COLOMBIA Project management.

The updating of this emergency plan shall be responsibility of the TOUCHSTONE COLOMBIA Company.

10.4.2 Emergency committee

The emergency committee is a group of people who constitute the strategic support of the emergency plan. It must be made up of people whose position guarantees decision-making and management capacity in the company. Therefore, it constitutes the managerial level of the emergency plan.

The member list of emergency committee can be see bellow (see Table 10-32)

Table 10-32 Member list of the emergency committee - Mining Concession 5969

 EMERGENCY COMMITTEE	
Emergency Committee	
Name and surname	Committee
LUZ MARIA GÓMEZ	Communication Committee
JORGE VAZQUEZ	Public Relations Committee
CRISTIAN CAMILO HENAO	Evacuation Committee
BERNARDO SALAZAR	Logistics Support Committee
GUSTAVO GUTIERREZ	Injury Support Committee
OTONIEL LOPEZ	Wildfire Committee
OTONIEL LOPEZ	Mobilization Coordinator

10.4.3 Emergency brigade

Assistant team, support and service, especially trained and prepared for emergencies.

The member list of emergency brigade can be seen bellow (see Table 10-33)

Table 10-33. Member list of the emergency Brigade - Mining Concession 5969

BRIGADE MEMBERS	
Name and surname	Position
OTONIEL LOPEZ	Assistant
LUIS A. CORREA	Assistant
MARIO LEON OSPINA	Assistant
CRISTIAN HENAO	Project Director
DANIEL OSPINA	Geologist

10.4.4 Strings alert system and alarm.

In order to determine the procedure of identification, notification and early and timely management, the TOUCHSTONE COLOMBIA company, structures an alarm system which is observed bellow:

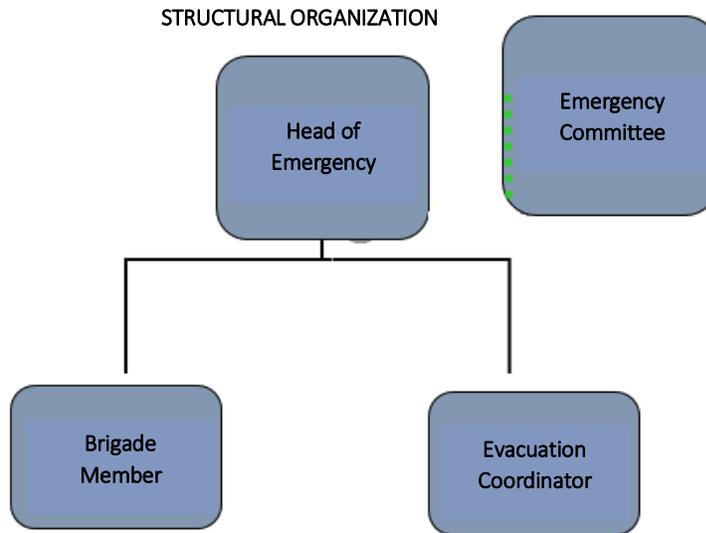
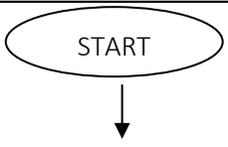


Illustration 10-18. Basic organizational structure in case of emergency - Mining Concession 5969

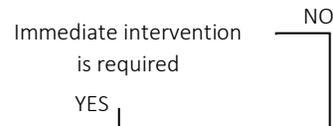
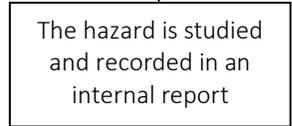
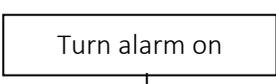
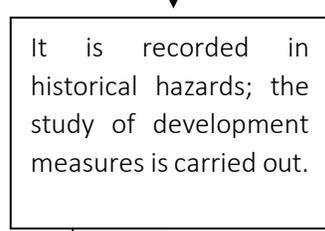
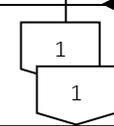
To better understand the process of call strings, warning system and alarm, it is recommended to see Appendix 10.12 call strings.

10.4.5 Hazard notification

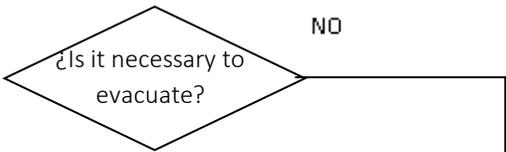
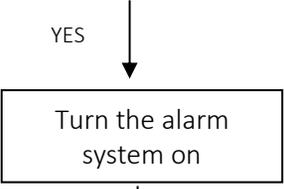
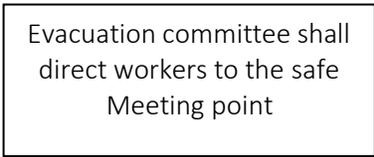
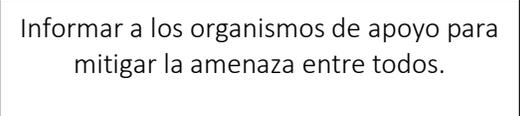
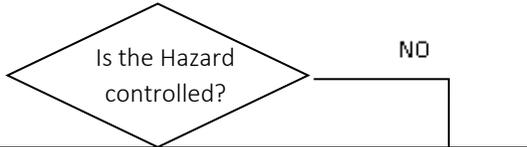
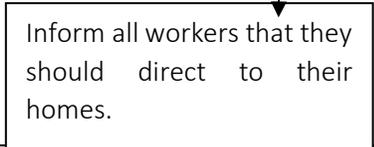
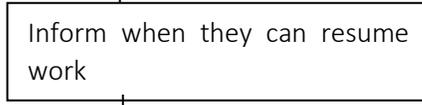
The TOUCHSTONE COLOMBIA company, present the following procedure to mitigate consequences in the magnification of any threat regardless its origin:

No	ACTIVITY	RESPONSIBLE	OBSERVATIONS
			
1.	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Identify hazard, of any type, natural, social or technological </div>	Any employee, visitor, or interested party of the company.	Identify if the Hazard could be potential or magnified.



No	ACTIVITY	RESPONSIBLE	OBSERVATIONS
2	 <p>Immediate intervention is required</p>	Employee who identifies the threat and head of emergency and/or emergency committee	A verdict is given on the conditions of the hazard and the probability of magnification and damage.
3	 <p>The hazard is studied and recorded in an internal report</p>	Employee who identifies the threat and head of emergency and/or emergency committee	A vulnerability analysis of the hazard is performed, it is recorded in the internal report of conditions and a follow-up must be carried out.
4	 <p>Turn alarm on</p>	Employee who identifies the threat and head of emergency and/or emergency committee	Only the whistle located in the camp must sound. This shall only inform that the organization is facing a hazard but there is no need to evacuate.
5	 <p>Is the hazard controlled?</p>	Emergency committee and Evacuation Brigade Leader and rescue	Hazard mitigation activities to mitigate or disappear the danger.
6	 <p>It is recorded in historical hazards; the study of development measures is carried out.</p>	Emergency committee	It must be documented the magnification of the hazard occurred, the report must contain: date, time, photographic record, affected persons, consequences of the magnification, investigation to determine their basic cause, and report of effects.
7			

NO

No	ACTIVITY	RESPONSIBLE	OBSERVATIONS
8		Employee who identifies the threat and head of emergency and/or Emergency Committee	It is estimated conditions that may arise if the worker falls, and actions are taken to avoid severe damage.
9		Head of emergency and/or Emergency Committee	Only the whistle located in the camp must sound. This shall only inform that the organization is facing a hazard but there is no need to evacuate.
10		Evacuation Committee	Evacuation committee shall be in strategic places so that can direct workers to the safest Meeting point depending on the threat.
11		Communications Committee	The committee must communicate with the appropriate support entities considering the threat and the seriousness of it.
12		Head of emergency and/or Emergency Committee	To protect the worker the worker in the rescue work a cervical and dorsal-lumbar immobilization is done.
13		Evacuation Committee	Inform all workers that they should direct to their homes. Do not let any collaborator enter the facilities of the company.
14		Head of emergency and/or Emergency Committee	Study company conditions after controlling threat and inform when they can resume work.

No	ACTIVITY	RESPONSIBLE	OBSERVATIONS
	END		

Table 11. Procedure in the event of an emergency – Mining Concession 5969.

To better understand of the Hazard notification process, it is recommended to see Appendix 10.12 call strings.

10.4.6 Call strings

Call strings must be activated whenever an emergency is magnified, all collaborators must know the numbers which are displayed on the corporate poster.

NEAREST ENTITIES	TELEPHONE NUMBER
Mining Rescue	3128046438
Red Cross	3147000950
San Juan de Dios Hospital	8315626
Police	8314040
Fire Department	3135199013
Civil Defense	3113972753
Remedios Civil Defense	3128477652
Remedios Fire Department	3128660246

10.5 EVACUATION PLAN

10.5.1 Evacuation route

Evacuation routes are pre-established paths at the TOUCHSTONE COLOMBIA headquarter in order to ensure at a given movement, the exit of all personnel in the fastest and safest manner of the facilities.

The evacuation routes are established in the Appendix 10.13 signaling and evacuation routes.

If these routes cannot be used, the evacuation coordinator should define quickly in a timely manner the best way to leave the building or await the instructions given by internal and external support entities.

10.5.2 Meeting point and medical center and injured classification

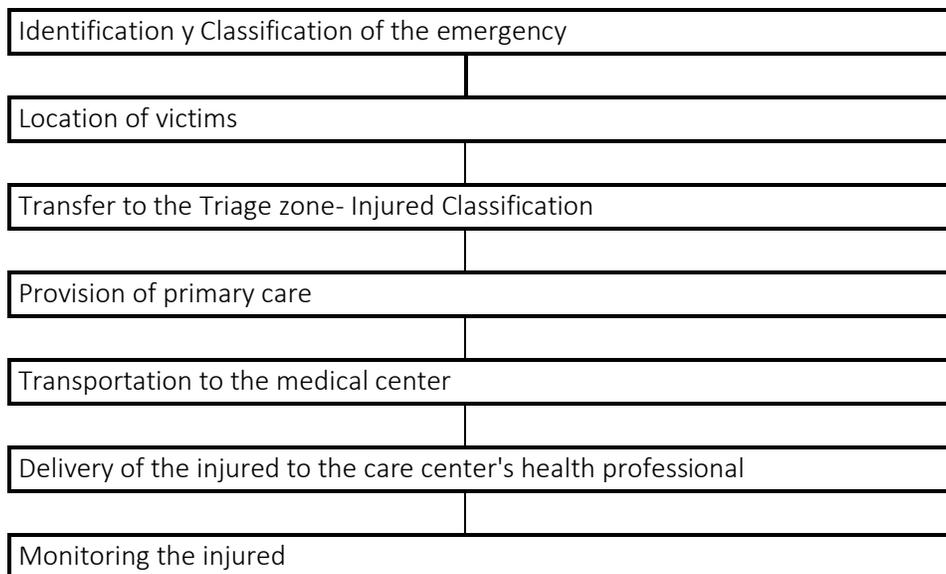
Meeting point is the outside area the infrastructure and represents a safe zone for all the personnel of TOUCHSTONE COLOMBIA, in which all people working on the project must arrive at the event of emergency.

At this point, count people and ensure their safety while the emergency is over.

Meeting point 1: see Appendix 10.3 signaling and evacuation routes

Medical Center and Injured Classification is a point that will be determined at the event of emergency, seeking to comply with the appropriate characteristics to carry out the basic care process for the injured based on the triaged that must be performed.

10.5.3 Diagram of procedure for injury management



10.5.4 Signaling

In order to create culture and those who frequent facilities of the TOUCHSTONE COLOMBIA project identify evacuation routes and meeting points (see Appendix 10.13 signaling and evacuation routes), it is suggested to keep direct influence area of the project marked following the recommendations mentioned below:

It must be ensured that the "evacuation routes" signs indicating the direction of the evacuation are in direct influence area of the project.

It must be ensured that the "Emergency Exit" signs are found at the emergency exit door.

In the extinguishers must be ensured the signaling indicating their type.

10.5.5 Education program

Provide all company personnel with basic knowledge of emergency preparedness for they can respond appropriately and contribute to their personal safety and to preserve the company's goods. (See Appendix 10.14 Education program)

10.5.6 Induction training for new staff

Because an emergency could arise at any time, the way to ensure reasonable chance of survival is that every person occupying the facilities has knowledge of the Evacuation Program. Therefore, any new employee who enters the company must receive "induction" training on the Evacuation Program.

Contents of the induction: the fundamentals on which induction should be done on the Evacuation Program are:

- Alarm and communication systems.
- Evacuation routes established.
- Evacuation coordinator (s) name.
- Final meeting point assigned and meeting point in the area.
- Importance of reporting at the meeting site.
- Evacuation procedure.
- Tour of the exit route

Responsibility: The evacuation coordinator is responsible of induction process, which, if possible, should be carried out in the first week in which the new employee has entered.

10.5.7 Audit and control

Verification of conditions: In the event of an emergency, there are

In the event of an emergency is unlikely to correct abnormal issues in the conditions necessary to evacuate.

Therefore, it is necessary to ensure these conditions permanently, by verifying periodically.

Responsibility and frequency: The evacuation coordinator must verify

Evacuation coordinator must verify exit conditions and notify timely to the Emergency Committee about the abnormal issues found in his area.

Control and analysis: In order to keep the Evacuation Plan updated, emergency committee will be responsible for preparing a report whenever it is necessary to evacuate for any reason, in which opportunities for improvement are assessed and action plans are established.

Revision: Emergency Committee should review reports and compare them with the parameters originally established. In case of important differences with respect to the planned procedures, their cause must be investigated, and the necessary corrective measures introduced to ensure operation of Evacuation Plan.

Files: Safety and Health at work and Emergency Committee, must keep an updated file with all the information regarding the Evacuation Plan, involving: The Evacuation Plan copy, results report, anomalies report, proposal of modifications, meeting minutes, records of practices and drills.

10.5.8 General information for visitors and contractors

To strengthen and ensure safety of people who are not part of the TOUCHSTONE COLOMBIA operations and who enter as visitors, accurate information, evacuation routes, meeting points, alarm signs, main risk and especial recommendations will be provided.

Similarly, all TOUCHSTONE COLOMBIA employees who require visitors will take care of them from the moment they arrive until they leave, they will be responsible for ensuring that they know the information given to the project's income and will act as evacuation leader for them.

The contractor personnel who enters the project is informed before starting work on the actions of Emergency Plan, their responsibilities and right way to respond in case of emergency, which will be carried out in an induction delivered by health and safety department at work of TOUCHSTONE COLOMBIA.

10.6 DRILLS

10.6.1 Frequency of drills

Two drills shall be conducted annually (once every 6 months) with injury care.

Practices must include at least:

Recognition of the alarm signal

Use of the escape route established

Location in the assigned meeting site (both in the area and in general)

Frequency of drills

In each area an independent practice must be carried out at least once a year

At least one total evacuation simulation involving external groups; it must be done at least every three years

All new employees must be instructed when they start their work

A theoretical instruction session in the areas, of a minimum of 30 minutes, 1 or 2 times per year

Obligatory nature of drills

Without exception, the training sessions and/or simulations are mandatory participation for all officials and employees working in the TOUCHSTONE COLOMBIA Company.

10.7 OPERATION PLAN

Protocols established by TOUCHSTONE COLOMBIA:

10.7.1 Instructional material for evacuation coordinator

10.7.1.1 *In case of fire*

If you receive the information there is a fire and it may be considered official.

Before leaving:

- Check the veracity of the information.
- If you are in a different area than the one assigned, locate the meeting point of that place, when you are there, contact the evacuation coordinator and inform him of the event.
- Encourage people to stop their activity and to carry out the actions previously established.
- Remind people where the exit is located and the final meeting point.
- Make sure that everyone has left the area, quickly verify infrastructure belonging to the TOUCHSTONE project, among others.

Leaving:

- Prevent the return of people.
- Keep verbal contact with your group: quietly repeat the special instructions (do not run, keep calm, etc.).
- Avoid uncontrolled behavior; separate those who have it and make them react.
- In case of smoke, move people at ground level.
- Help in a timely manner to those who require it (fainting, injuries, etc.).
- If the evacuation route is blocked, look for a safe alternate exit and direct people.
- If you cannot leave, take your group to a safe area. Immediately request help for the means at your disposal.

After leaving:

- Arrive at the final meeting site agreed and check if everyone in your area got out.
- In case of doubt about whether someone cannot get out, notify the emergency brigade immediately.
- Report to the Emergency Director and report news and abnormal situations.
- If the emergency is considered critical by the Emergency Committee, you will receive instructions for the evacuated persons to leave the place. Otherwise disband the group, warning them to keep away from the risk site and paying attention to return to their area.

10.7.1.2 *In case of earthquake:*

- Keep people in their site; Speak to them loud and calm.
- If there are clear signs of damage to the structure (walls, ceilings, among others), take the decision to evacuate the area in advance and notify the Emergency Manager.
- Make people use the nearest exit.
- Block entry to affected area and prevent people from returning.
- If there is an imminent risk in the exit route, redirect people another exit.
- Go to the final meeting point and check group is leaving. In case of any abnormal situations, notify the Emergency Brigade.
- Report to the Emergency Director.

10.7.1.3 *In case of terrorist attack:*

If there is an explosion in your area:

- Evacuate immediately by the nearest exit.
- Notify the Emergency Director.
- Provide help to those who need it.
- If there is an imminent risk in the exit route, redirect the flow of people to a safe alternate exit.
- Go to the established meeting point, check group is leaving and report.
- Await final instructions from the Emergency Director.
- If there is a threat or is suspicion
- Have them stop activities in the area.
- Coordinate the search for strange elements or materials.
- If it is necessary to evacuate, it must be done by the nearest exit.
- Suspicious elements must keep still.
- Do not allow people to return.
- Notify the Emergency Director.
- Go to the final meeting site, check the group's exit and report.
- Follow instructions from emergency groups and authorities.

10.8 INSTRUCTIONAL MATERIAL FOR TOUCHSTONE COLOMBIA STAFF

10.8.1.1 *In case of wildfire*

If a fire is discovered:

- Inform the fire brigade, which must start firefighting with the appropriate extinguisher. If it is a case of fire; do it yourself if you have enough knowledge about the proper use of fire extinguishers.
- If a fire breaks out, immediately transmit the alert.
- If a possible evacuation is indicated
- Stop immediately what you are doing and execute the actions assigned in case of emergency.
- When coordinator of your area orders it, leave calmly along the route established.
- Do not run.
- If you have a visitor, take him with you.
- Do not return for any reason.
- Follow the instructions of the coordinators and emergency groups.
- Go to the assigned assembly point and await instructions from your coordinator.

10.8.1.2 *In case of earthquake*

During the earthquake

- Stay on the floor where you are and move away from windows, shelves and objects that may fall.
- Find yourself under a desk or look for the frame of a door, a corner or a corridor.
- Do not leave the building while is shaking.
- Only start evacuation when ordered by the area coordinator.

After earthquake:

- Help anyone who needs it.
- If the electrical Flow has been interrupted, do not try to reactivate equipment until the system has been checked.
- When ordered to evacuate after the earthquake, leave camps, office your others using the nearest exit.
- Do not return for any reason.
- Follow the instructions of the coordinators or emergency groups.
- Go to the assigned assembly point and await instructions from the coordinator

10.8.1.3 *Threat of terrorist attack*

If you receive a terrorist threat call:

- Try to prolong the conversation; ask who and why, where; try to get significant details (voice, accent, noises, idioms, etc.). Do not hang up until the caller does it.
- Indicate in writing or signs to other people that you notify the Emergency Director or the area manager.
- If the possible place is known, do not touch or move any object.
- Await indications from emergency groups or authorities.
- If a threat of a possible explosive element placement has been reported.
- Do not touch or move any object.
- Observe the presence of unknown or unusual objects and report them.
- Await and follow the instructions of the emergency groups and authorities.
- If ordered to evacuate, do so by the nearest exit.
- Take visitors with you and do not return.
- Go to the established assembly point and await directions from the area coordinator.
- If the explosion of an artifact inside the organization has occurred
- If there are injured, try to help them and take them away the site.
- Leave the place and notify from another area.
- Await and follow instructions of the emergency groups and authorities.
- If ordered to evacuate, do so immediately using the nearest exit.
- Take visitors with you and do not return.
- Go to the assigned assembly point and await instructions from the Area Coordinator.

Similarly, TOUCHSTONE COLOMBIA declares the following standard procedures:

- Natural hazard.
- Earthquake hazard.
- Wildfire hazard.
- Technological hazard.
- Social hazard.

To better understand all the standard operating procedures, it is recommended to see Appendix 10.15 PONS STANDARIZED

Likewise, TOUCHSTONE COLOMBIA shall implement a series of actions to consider in the event of an emergency and are proposed through appendixes:

APPENDIX 10.16: FUNCTIONS OF ORGANIZATIONAL STRUCTURE FOR EMERGENCY

EMERGENCY COMMITTEE

Function: Coordination and decision making for emergency prevention and preparedness

BEFORE EMERGENCY		RESPONSIBLE
PHVA	ACTIVITY	Committee Members
P	Plan and organize the different actions and resources for effective response of a possible emergency.	X
P	Know the operation of the entity and the neighboring companies, the facilities, the emergencies that may arise and their regulatory and operational plans.	X
P	Identify the most vulnerable zones	X
P	Keep updated the inventory of human resources and physical materials that may be taken for direct influence area and those from the company.	X
P	Maintain permanent control over the different risks of the entity.	X
P	Design and promote training programs for all personnel to deal with emergencies.	X
P	Hold regular meetings to keep the Emergency Plan permanently updated.	X
P	Evaluate emergency response processes to obtain feedback on planning actions.	X

DURING EMERGENCY		RESPONSIBLE
PHVA	ACTIVITY	Committee Members
H	Activate call strings of the Emergency Committee members	X
H	Evaluate the conditions and magnitude of the Emergency	X
H	Distribute the different resources for effective response of emergency.	X
H	Make decisions regarding the total or partial evacuation	X
H	Meet at the site assigned as P.M.U (Unified Command Post)	X
H	Coordinate operational actions in emergency response	X
H	Collect and process all the information related to the emergency	X
H	Coordinate the transfer of the injured to Medical Assistance Centers	X

AFTER EMERGENCY		RESPONSIBLE
PHVA	ACTIVITY	Committee Members
V	Evaluate development of the different activities referred to Plan, after each emergency or simulation developed	X
A	Prepare and present reports of such activities to Directors	X
A	Update the different inventories of resources	X
A	Remain vigilant until "return to normality" (recovery)	X
A	Feedback on each elements of Emergency Plan of the building	X
A	Establish or determine the necessary corrections of the plan	X

FIRE FIGHTING

Function: Wildfire Control and Rescue

BEFORE EMERGENCY		RESPONSIBLE
PHVA	ACTIVITY	Brigade Members
P	Train in necessary subjects to fulfill their functions	X
P	Know the general and specific risks that arise in the different areas	X
P	Know the critical points of the company (control electrical circuits, valves, firefighting, substation)	X
P	Know the existence and use of alarm system and alerts, and technical means of protection available	X
P	Ensure that the firefighting equipment is in good condition, well demarcated and located, with the updated resume and timely maintenance	X
P	Ensure that evacuation routes and equipment are free of obstacles and appropriate signage	X

DURING EMERGENCY		RESPONSIBLE
PHVA	ACTIVITY	Brigade Members
H	Act quickly when there is an emergency report of fire, earthquake, terrorist attack etc., performing activities tending to the attention and control of the emergency, avoiding the propagation of its effects	X
H	Define the limits of the risk area and inform the evacuation group	X
H	Provide support in recruitment activities, evacuation control or direction, when the emergency does not involve operational actions of the brigade member	X
H	In any emergency, act in coordination with the other members of the Emergency Operation Team in your area	X
H	Serve as a "support" group of external support agencies	X
H	Locate the possible injured and affected people and inform the evacuation group and/or help evacuate them from the danger zone	X

AFTER AN EMERGENCY		RESPONSIBLE
PHVA	ACTIVITY	Brigade Members
H	Participate in the removal of debris, preserve evidence or proofs that will be used to investigate causes of the fire.	X
H	Take inventory of loss	X
H	Recondition equipment used during the emergency and report on the deteriorations suffered during the event	X

FIRST AID STAFF

Function: Injured Care

BEFORE EMERGENCY		RESPONSIBLE
PHVA	ACTIVITY	
P	Participate in training, drills and keep updated in first aid	X
P	Design and provide formats for first aid care	X
DURING EMERGENCY		RESPONSIBLE
PHVA	ACTIVITY	Brigade Members
H	Participate in training, drills and keep updated in first aid	X
H	Assess the situation and the injured, classify them and assist them according to priority	X
H	Provide First Aid to those injured by the emergency. If the injury is serious and there are several injured people, ask the Coordinator of the brigade or the Head of Emergency and help stabilize them.	X
H	Decrease nervous tension in the injured and co-workers	X
H	Coordinate the correct transfer of the injured to the appropriate healthcare center in its level of complexity	X
H	Complete the registration of first aid care	X
H	Coordinate access and intervention of the External Support Groups (Red Cross or the Health Service following the instructions of the Head of Emergency)	X
H	In the case of Evacuation, when the final meeting place is reached, it must be ready to respond to the Head of Emergency orders.	X
AFTER EMERGENCY		RESPONSIBLE
PHVA	ACTIVITY	Brigade Members
V	Evaluate the quality of first aid provided	X
A	Make the necessary adjustments to the care plan	X
A	Replace the material used	X
A	Comment to the other members staff about the care provided	X
A	Present periodically a report of activities executed to the Brigade Coordinator or Head of Emergency	X

EVACUATION COORDINATORS

Function: Participate in the evacuation process encouraging and guiding people to follow evacuation

BEFORE EMERGENCY		RESPONSIBLE
PHVA	ACTIVITY	Brigade Members
P	Know the Emergency Plan and train the personnel area in charge (no Brigade Members)	X
P	Know the emergency exit routes, both main and alternate routes, and inspect them periodically	X
P	Design the feasibility of safe temporary shelters in case of not being able to evacuate to the meeting place, to inform the brigade leader of these alternatives	X
P	Maintain an updated list of people who work in your area	X
P	Carry out safety inspections and inform abnormal ISSUES	X
P	Identify security measures of the company and its location	X

DURING EMERGENCY		RESPONSIBLE
PHVA	ACTIVITY	Brigade Members
H	Carry out an inspection of the area, think and act according to the plan	X
H	Evacuate and indicate exit route of the area under your responsibility and remind them the meeting point	X
H	Prevent people under your charge from returning to danger zone	X
H	Control behaviors that can cause panic, avoid agglomeration and control it	X
H	Prevent the use of elevators	X
H	Help and coordinate with first aid group the evacuation of other people who have physical or psychological handicaps or have suffered an injury	X
H	If you find a blocked escape route, coordinate evacuation through the alternate route. In case of not being able to leave, take the group to a place or area or safe room (temporary accommodation) constantly check the security of this and communicate to inform and await new orders	X
H	Verify that no person is enclosed in the emergency area, in traps or confined spaces	X
H	Repeat instructions established such as: "Do not run", "advance on your knees", "keep clam", "walk on the right side"	X
H	Take special decisions to protect sensitive equipment, files and others; make sure to leave behind all closed doors and Windows, but without locking them and disconnect electrical circuits	X
H	Remove those elements, documents or files that are really worth rescuing and place them in the place of final disposal (according to plan of salvage of goods).	X
H	Check that all the brigade members have left	X

AFTER AN EMERGENCY		RESPONSIBLE
PHVA	ACTIVITY	Brigade Members
H	Check that all your dependents have left; otherwise notify the Brigade Coordinator, in no case return you return	X
H	Report to the Head of brigade the situation of your personnel, as well as the abnormal conditions you detected during the evacuation of your group	X
H	Meet with all leaders and coordinator to evaluate what happened	X
H	Coordinate when authorizing the return to building, with your group consider that first enter the upper floors and then the lower ones	X
H	Find evidence that can clarify the fact	X

H	Help coordinate activities to put in order and into operation all works of the area	X
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FUNCTIONS OF THE COMMUNICATION COORDINATOR

BEFORE AN EMERGENCY		RESPONSIBLE
PHVA	ACTIVITY	
P	With the emergency director, shall coordinate type of communication and its content	X
P	Follow up on the procedures that must be follow by the person responsible for the switch	X
P	Know communication system of the organization	X

DURING EMERGENCY		RESPONSIBLE
PHVA	ACTIVITY	
H	Get in contact with the company's directors, support groups and external aid (Police, Red Cross, Civil Defense, Fire Department, Traffic Police, Labor Insurance Company (A.R.L))	X

AFTER EMERGENCY		RESPONSIBLE
PHVA	ACTIVITY	
H	Is the person of issuing reports and communications to media	X
H	Shall watch over the company's image, communicating actions carried out to control the emergency	X

APPENDIX 10.17: DIRECTORY OF EXTERNAL AID AGENCIES

INSTITUTION	TELEPHONE

APPENDIX 10.18: GENERAL FORMAT- DIRECTORY OF COMMITTEE MEMBERS AND EMERGENCY BRIGADE

NAME	POSITION	TELEPHONE

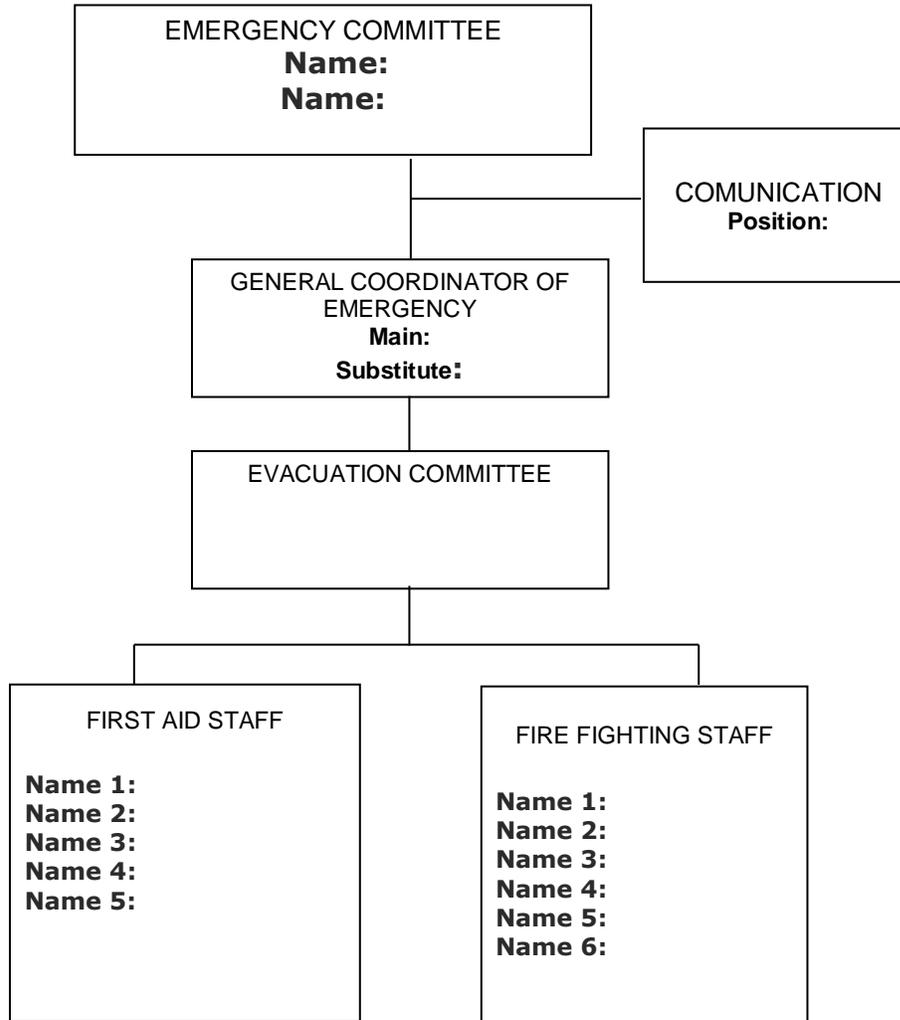
APPENDIX 10.20: INVENTORY OF PHYSICAL RESOURCES

FIRE EXTHINGUISHERS					
TYPE OF EXTHINGUISHER					LOCATION
A	BC	CO2	PQS	SOLKAFLAN	
			X		Camp (1)
		X			
			X		
			X		
	X				
			X		
	X	X			
	X	X			
			X		
				X	
			X		
	X				
	X				
	X				

FIRST AID KIT		
NUMBER OF FIRST AID KITS	LOCATION	
2		

STRETCHERS		
NUMBER OF STRETCHERS	LOCATION	TYPE
1	Dining room	Rigid

APPENDIX 10.21: GENERAL ORGANIZATIONAL STRUCTURE FOR EMERGENCY



APPENDIX 10.22: BASIC CONCEPTS

Alarm: Preset signal or warning, which implies executing a specific action.

Alert: Sign or warning that warns of the existence of a danger.

Hazard: External risk factor of a subject or system, represented by a latent danger associated with a physical phenomenon of natural, technological or anthropic origin, which may manifest itself in a specific place and at a certain time causing adverse effects on people, goods and environment.

Background: Action, saying or previous circumstance used to judge subsequent events.

Emergency Brigade: A specialized and equipped support group, whose purpose is minimizing injuries and losses that may occur because of an emergency.

CACH (by its initials in Spanish): Medical Center and Injured Classification

Call Strings: System that allows to activation the administrative structure for emergency response (Emergency Committee).

Chain of rescue: It is the mechanism through which immediate response can be provided to a determined injured due to an emergency situation.

Emergency Committee: Responsible for designing and coordinating execution of the activities before, during and after an emergency or disaster.

Emergency: It is a partial or total disruption of the system (company), which may endanger its stability and may require for its control, procedures different and/or superior to those normally used by the company, and temporal, partial and total modification of the organization to be able to assist it.

Evacuation: Action aimed at establishing a barrier (distance) between a source of risk and people threatened, by moving them.

Explosion: Sudden release of energy in an extreme manner generating heat, light and gases.

Wildfire: Phenomenon that occurs when one or more combustible or flammable materials are consumed in an uncontrolled way by fire, affecting human life and property.

Imminent: Hazard that according to its permanent predisposition to occur, clear and detectable.

Seismic Motion: Friction between tectonic plates creates a huge energy storage, this low process causes deformations in the rocks inside the earth, which when broken, cause the energy to be suddenly released in waves and shake the earth's surface.

Level of risk: Relative ranking of a risk based on the combination of the hazard due to the vulnerability of elements under risk.

Notification: It is the mechanism by which the Emergency Committee is informed about an alert.

P.M.U (Unified Command Post by its initials in Spanish): Temporary agency in charge of coordination, organization and urgent command control during the impact phase. its creation makes easier work rescue, management and medical care of those affected, evacuation of victims according its emergency and rationalization of human and technological resource.

Planning for emergencies: Necessary measures to respond to disaster, controlling undesired events, mitigating their consequences and recovering the system.

Care Plan: Set of pre-established actions and procedures to deal with or control an event of emergency.

Possible: Hazard that according its diagnosis of its inherent conditions has not happened but may occur.

First Aid: Implementation of measures or appropriate care temporarily as soon as an emergency is recognized and before its attention.

Probable: Hazard that according to its diagnosis has already occurred under these conditions.

Resource: They are people, elements, equipment and tools available to prevent a disaster and deal correctly with the hazardous situation.

Risk: it is the probability that an object, subject or matter, substance or phenomenon may disturb the physical integrity of person or environment.

Evacuation route: Way or direction taken for a purpose, EXIT. It is a continuous route that allows the transfer from any point of the building or structure to outside and at ground level.

Exit: It is the part of evacuation route of the building from which is intended to escape, by walls, floors, doors and other means that provide a necessary protected path so that occupants may safely access the outside of the building.

Triage: Classification of the system of injures according to their type of injury, in an event of emergency.

Vulnerability: It is understood as predisposition or susceptibility of an element to be affected or suffer a loss.

APPENDIX 10.23: LEGAL REQUIREMENTS

Legal requirements applicable in the Emergency Plan are presented in Table 10-34

Table 10-34 Legal matrix applicable to the preparation and development of emergency plans

Requirement	Description
National Sanitary Code (Law 9 of 1979).	<p>Art. 93 - Circulation areas: Clearly demarcated, sufficient amplitude for the safe transit of people and provided with adequate signaling.</p> <p>Art. 96 - Exit doors: Sufficient number and of appropriate characteristics to facilitate evacuation of the personnel in case of emergency or disaster, which shall not be able to remain obstructed or with insurance during the working day.</p> <p>Art. 114 - Prevention and Firefighting: Trained personnel, methods, equipment and appropriate and enough material.</p> <p>Art. 116 - Equipment and devices for firefighting: With design, construction and maintenance that allows immediate use with maximum efficiency.</p> <p>Art. 117 - Equipment, tools, installations and electrical grids: Designed, constructed, installed, maintained, operated and marked in such a way as to prevent the risk of fire or contact with elements subjected to tension.</p>
Decree 614 of 1984 and Resolution 1016 of 1989.	Based on the Decree 614 of 1984 (Art. 28 to 30) and the Resolution 1026 of 1989 (Art.11) every company is required to permanently carry out the occupational health program, which is necessary to organize and develop an emergency plan considering preventive, passive or structural and active or control branches.
Decree 919 of 1989 – System for Disaster Prevention and Response	Establishes the inclusion of the risk prevention component for all public and private entities that finance studies for preparation in plans, programs and projects of regional and urban development.
Law 99 of 1993 (National Environmental System).	Art. 5 – numeral 35: functions of the Ministry of Environment, “to carry out evaluation, follow-up and control of ecological risk factors and that may affect the occurrence of natural disasters and coordinate with other authorities the actions aim to prevent emergency or extension of their effects”.
Decree law 1295 of 1994.	Art. 35 – Prevention Services, Literal b: Basic training for the assembly of First Aid brigade.
Resolution 04445 of 1996 of Ministry of Health	Establishes the conditions that Health providing institutions must comply with in the matter.
Law 322 of 1996.	Colombia Firemen National System
Decree 93 of 1998.	National Plan for Disaster Prevention and Response, which aims to guide the actions of State and civil society for Risk Prevention and Mitigation, preparedness response and recovery in case of disaster, contributing to reduce risk and sustainable development of vulnerable communities facing natural and anthropic events.
Statute of Industrial Safety (Resolution 2400 of 1979).	<p>Art. 4 – Buildings and premises: Safe and strong construction; roof or trusses with strength sufficient to resist win and its own load; foundation or floor without overload; factor of security, structural steel (4 for static and 5 for dynamic loading).</p> <p>Art. 14 – Stairs communicating between DIRECT INFLUENCE OF THE PROJECTS of the building: conditions of stability and security, preferably of incombustible and large materials.</p> <p>Art. 205 – Fire or explosions risk at workplace: provided of water with their corresponding hose, storage tank and extinguishers.</p> <p>Art. 206 – Buildings under fire or explosion risk: Equipped with firewall walls to prevent the spread of fire between one workplace and another.</p> <p>Art. 207 – Emergency Exit: Sufficient, free of obstacles and distributed properly.</p> <p>Art. 220 – Extinguishers: Suitable according to the fuel used and class of fire.</p> <p>Art. 223 – Firefighting Brigade: Appropriately trained.</p>

Decree 1400 of 1984 and regulatory requirements	Colombian Code for Seismic Resistant Constructions
Resolution 80582 of April 1996.	Art. 73 - Storage, handling and distribution of compressed natural gas for use in motor vehicles, their conversion and some functions are delegated. Art. 74 - Portable fire extinguishers according to the capacity of storage tanks.
NSR- 98.	Colombian Earthquake Resistant Building Regulations, Colombian Association for Earthquake Engineering, 1998
Decree 321 of 1999.	National Contingency Plan against Oil Spill and Harmful Substances.
Decree 1609 of July 2002.	Handling and land transportation of dangerous goods
Circular of the Ministry of social protection of 2004.	Item 14 – numeral b: reference to Emergency Brigades, Emergency Plans and Evacuation.
International Standards NFPA - National Fire Protection Association	NFPA 1: Fire Code NFPA 10: Standard for Portable Fire Extinguishers NFPA 20: Installation of Stationary Pumps for Fire Protection NFPA 22: Water Tanks for Private Fire Protection NFPA 30: Flammable and Combustible Liquids Code NFPA 54: Fuel Gas Code NFPA 58: Liquefied Petroleum Gas Code NFPA 75: Fire Protection of Information Technology Equipment NFPA 72: National Fire Alarm and Signaling Code NFPA 101: Life Safety Code NFPA 170: Fire Safety and Emergency Symbols NFPA 600: Standard on Facility Fire Brigades NFPA 704: Identification of the Hazards of Materials for Emergency Response NFPA 1600: Disaster/Emergency Management and Business Continuity/Continuity of Operations Programs.
National technical standards (NTC- Colombia Technical Standards by its initials in Spanish)	NTC 1410: Graphic symbols for signaling NTC 1461: Colors and Safety Signs. NTC 1867: Signs System Against Fire NTC 1916: Fire Extinguishers: rating and testing. NTC 1931: Hygiene and Safety. Fire Protection. Safety Signs. NTC 2885: Portable Fire Extinguishers. NTC 2886: Water Tanks for Private Fire Systems NTC 3807: Wheeled Portable Fire Extinguishers. NTC 4166: Equipment for Fire Protection and Fire Fighting.