MINERAL EXPLORATION CORPORATION LIMITED

(A Government of India Enterprise)

ISO 9001:2008 COMPANY

RISK MANAGEMENT PLAN

CORPORATE & REGISTERED OFFICE

Dr. Babasaheb Ambedkar Bhawan
High Land Drive Road, Seminary Hills, Nagpur- 440006 (Maharashtra)

Telephone : 0712-2511841,2510310,316,317,141,142, Fax: 0712 -2510548
E-mail: cmrcl_ngp@sancharnet.in, Web Site : www.mecl.gov.in

MINERAL EXPLORATION CORPORATION LIMITED

RISK MANAGEMENT PLAN

C O N T E N T S

LIST OF ABBREVIATIONS

Abbreviation	Description
CMPDIL	Central Mine Planning & Design Institute
CMC	Central Maintenance Centre
CRM	Chief Risk Manager
CVC	Central Vigilance Commission
DPR	Daily Progress Report
EMP	Environment Impact Assessment
HCL	Hindustan Copper Limited
MECL	Mineral Exploration Corporation Limited
M	Meter
MIS	Management Information System
MOM	Ministry of Mines
MOC	Ministry of Coal
MoU	Memorandum of Understanding
R&D	Research & Development
RMIS	Risk Management Information System
RMC	Regional Maintenance Centre
SAIL	Steel Authority of India Limited
UCIL	Uranium Corporation of India Limited

LIST OF KEY PERSONNEL

SR.NO	NAME	DESIGNATION
DIRECTORS		
1	Dr. Gopal Dhawan	Chairman cum Managing Director
2.	Shri R.N.Jha	Director (Technical)
3.	Shri M.S.N.Murty	Director (Finance)
SENIOR MANAGEMENT		
4.	Shri Rakesh Sharma	General Manager (Mining)
5.	Shri S.K.Thakur	General Manager (Exploration)/ HOD
6.	Shri S.M.Joshi	Dy. General Manager (Drilling)/HOD
7.	Shri Inder Singh	Dy. General Manager (Mining)/HOD
8.	Shri Arun Goel	Dy. General Manager (Finance)/HOD
9.	Dr. C.S.Murty	Dy. General Manager(HR)/ HOD
10.	Shri M.S.Sahare	Dy. General Manager (Engg.)
11.	Shri S. Mitra	Dy. General Manager (Geophysics)
12.	Shri C.K.Thoolkar	Dy. General Manager (Instrumentation)
11.	Shri B.L.Mallikarjun	Sr. Manager (Geology)/ HOD (BD &P)
12.	Shri B.P.Dwivedi	Sr. Manager (Materials)/HOD
13.	Shri Prabhir Roy	Sr. Manager, HOD (Procurement & Contracts)
14.	Mrs. Preeti Ujjaoney	Sr.Manager (Systems)/OIC
ZONAL MANAGERS		
15.	Shri L.K.Mohanta	Sr. Manager (Geology)/Zonal Manager(East)
16.	Md.Mushtaque	Sr. Manager (Geology)/ Zonal Manager(Centre)
17.	Shri D.Mohan	Sr. Manager (Geology)/ Zonal Manager(South)
PROJECT MANAGERS		
18.	22 Exploration Projects and 03 Mining Projects	

(As on 01.08.2014)

MINERAL EXPLORATION CORPORATION LTD

RISK MANAGEMENT PLAN

1.0.0 RISK MANAGEMENT PLAN

The Risk Management Plan is the process of systematic identification, quantification and management of all risks and opportunities to attain sustainable business growth.

1.1.0 DEFINITION

1.1.1 Company

The word company wherever used shall mean Mineral Exploration Corporation Limited (MECL)**.**

1.1.2 Risk

The occurrence of events or circumstances which may have any harmful/ negative impact on the organisations business prospects are termed as Risks. The exposure to the consequences of uncertainty constitutes a risk.

1.1.3 Risk Strategy

It is standpoint of the company towards dealing with various risks associated with the business. It includes the company's decision on the risk tolerance levels and acceptance, avoidance or transfer of risks faced by the company.

1.1.4 Risk Assessment

The overall process of risk analysis and evaluation.

1.1.5 Risk Estimation

The process of quantification of risks.

1.1.6 Risk Tolerance/Risk Appetite

The maximum quantum of risk which the company is willing to take as determined from time to time in accordance with the Risk Strategy of the company.

1.1.7 Risk Description

The comprehensive collection of information about a particular risk recorded in a structured manner.

1.1.8 Risk Register

It is a tool for recording the risks encountered at various locations and levels in a standard format of Risk Description.

1.2.0 OBJECTIVES OF THE PLAN

1.2.1 The main objective of the Plan is to ensure Sustainable Business Growth with stability and to promote a pro-active approach in reporting, evaluating and resolving risks associated with the business.

1.2.2 For achievement of the key objective, the plan establishes a standard and disciplined approach to Risk Management including the development of Risk Matrix for guiding decisions on risk related issues.

1.2.3 The Specific Objectives of the Risk Management Plan are:

a) To ensure that all the current and future material risk exposures are identified, assessed, quantified, appropriately mitigated and managed.

b) To establish a framework for the company's risk management process and to ensure project/department-wise implementation.

c) To ensure systematic and uniform assessment of risks with Project/Business Development and Operations.(Drilling, Developmental Mining, CMC and RMC's)

d) To enable compliance with appropriate regulations, wherever applicable, through adoption of best practices.

e) To ensure business growth with Financial Stability.

2.0.0 PRINCIPLES OF RISK MANAGEMENT

2.1.1 All Business Decisions will be made with the prior information and acceptance of risks involved.

2.1.2 The Risk Management Plan shall provide the Enhancement and Protection of business value from uncertainties and consequent losses.

2.1.3 All employees of the company shall be made aware of risks in their domains and their mitigation measures.

2.1.4 The risk mitigation measures adopted by the company shall be effective in the long-terms and to the extent possible be embedded in the business processes of the company.

2.1.5 Risk Tolerance levels will be regularly reviewed and revised depending upon the changes in company's strategy and business environment.

2.1.6 The occurrence, progress and status of all risks to be promptly reported and appropriate actions should be taken thereafter.

2.2.0 Risk Management Plan Statement.

2.2.1 To ensure protection of share-holders value through the establishment of an integrated Risk Management Framework for Identifying, Assessing, Mitigating, Monitoring, Evaluating and Reporting of all risks.

2.2.2 To provide clear and strong base for informed decision-making at all levels of the organization.

2.2.3 To continually strive towards strengthening the Risk Management system through continuous learning and improvement.

2.3.0 Scope and Extent of Application

2.3.1 The guidelines of Risk Management Plan (RMP) is devised in the context of:

1. Future Growth Objectives.
2. Business Profile Envisaged.
3. New Business Endeavors including new products and services that may be necessary to achieve

    i) The above goals
    ii) The emerging global standards
    iii) The best practices amongst comparable organisations
    iv) Ensure continuity of business, and
    v) Protection of Interests of the investors.

2.3.2 Thus this plan covers all the activities within the company and events outside the company which have bearing on the company's business.

2.3.3 The plan shall operate in conjunction with other business, operating and administrative policies.

2.4.0 Risk Assessment

2.4.1 The process of Risk Assessment shall constitute of the following:

a) **Risk Identification & Categorization** : The process of identification of the company's exposure to uncertainty can be categorized as :

(i) Strategic Risk (ii) Business Risk (iii) Operational Risk

b) **Risk Description** : The method of systematic gathering, capturing & recording the company's identified risks in a Structured Format is the Risk Description.

c) **Risk Estimation** : It is done by the process of estimating the cost of likely impact either by quantitative, semi quantitative or qualitative approach.

3.0.0 IDENTIFICATION AND CATEGORIZATION OF RISKS.

a) As already defined, the occurrence of Events or circumstances which have a harmful/negative impact on the achievement of the organisations business prospects are described as Risk/(s).
b) The Key Characteristics by which risks can be identified are :

i) Risks are adverse consequences of events or changed circumstances.
ii) Their occurrence may be identified by the happening of the trigger events.
iii) Their occurrence is uncertain and may have different extents of impact.

Recognizing the risks that the company is/may be exposed to the risks are broadly categorized into the following categories and classified into:

1. **Strategic Risk** : External events & trends (like Government Policy, Competition, a change in the stakeholders requirements, new investments or joint ventures) that can have adverse impact on the company's strategic growth trajectory.

2. **Business Risk** : The risk associated specifically with the company and having adverse effect/impact on the company's capability to execute activities critical for business growth, thereby, affecting the company's short term performance.

3. **Operational Risk** : Risks which are associated with operational uncertainties like unpredictable changes such as Geological uncertainties, aggressive/hostile attitude of the villagers (land holder), force majeure events like unprecedented floods, extremists activities which affects/ hinders/stops works at sites, production of company etc. are operational Risks.

4.0.0 IDENTIFICATION OF RISKS PERTAINING TO MECL

4.1.0 Strategic Risks of MECL

4.1.1 Dependence on work mainly from MOM, MOC, CMPDIL, SAIL, UCIL etc. (promotional & contractual).

4.2.0 Business Risks of MECL

4.2.1 Low diversification, low percentage of high value work

4.2.2 Low profitability & Meagre Cash Reserve.

4.2.3 Outsourcing increases competition in future.

4.2.4 Unsecured bad debts.

4.2.5 Increasing competition in market.

4.3.0 Operational Risks of MECL.

4.3.1 Gradual reduction/shortage of skilled & experienced Technical & Scientific Manpower, especially graduate drilling engineers.

4.3.2 Time over-run of projects.

4.3.3 Delay in adoption of Innovative techniques and developed technology.

4.3.4 Jamming, Fishing in boreholes & Breakdown of machineries.

4.3.5 Working in highly remote, law & order problem and disturbed areas.

4.3.6 Deeper level proving of mineral resources.

4.3.7 Greenfield exploration in forest covered areas.

5.0.0 RISK DESCRIPTION

5.1.0 A Risk description helps in understanding the nature and its likely impact and possible mitigation measures. Risk description, for each identified risk, should be documented and recorded in a structured format for each area where the risk is identified.

5.1.1 Risk Description

1	Name of Risk	Short description by which the risk may be referred to
2	Scope of Risk	1. Qualitative description of events by which the occurrence of the risk may be identified. 2. Any measurement indicating the size, type, number of the events and their related dependencies.
3	Nature of risk	Strategic/business/operational
4.	Stakeholders	List of stakeholders affected and impact on their expectations.
5.	Quantification	Quantitative cost of impact, if risk occurs
6.	Risk Tolerance & Trigger	1. Loss of potential & financial impact of risk on the business value. 2. Probability of occurrence and size of potential losses. 3. Objective(s) for control of the risk and desired level of performance to assimilate Risk Trigger.
7.	Risk Treatment & Control Mechanisms	Primary means by which the risk is currently being managed, level of confidence in existing control system, identification of protocol for monitoring and review of the process of treatment and control.
8.	Potential action for improvement	Recommendation to reduce the occurrence and/or quantum of adverse impact of the risk.
9.	Strategy & Policy Development	Identification of functions/ responsibilities for developing the strategy and policy for monitoring, controlling and mitigation of the risk.

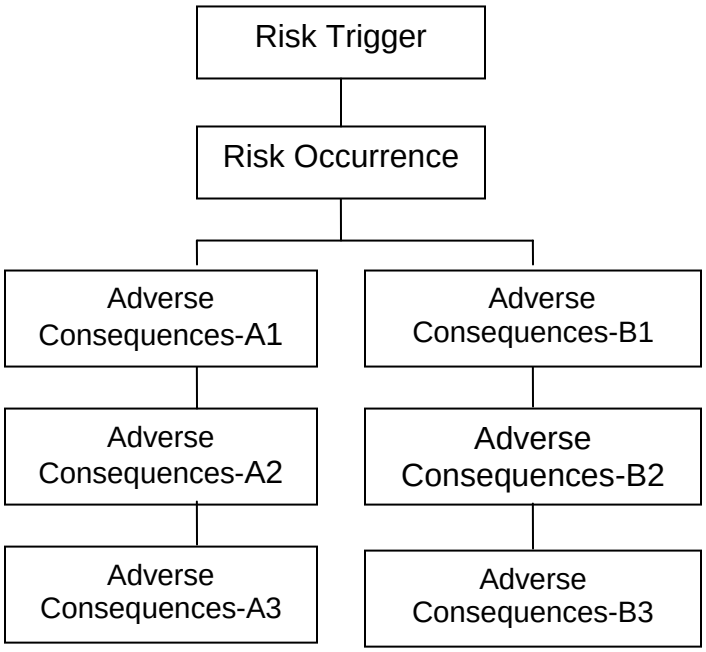
5.1.2 The various risks that the company is or may be exposed to, are identified in the Risk Matrix.

6.0.0 RISK ESTIMATION

6.1.0 In this process, the consequences of the risk occurrences have to be quantified to the maximum extent possible, using quantitative, semi-quantitative or qualitative techniques.

6.1.1 Process of risk quantification for the company has to be qualitative, supported by quantitative impact analysis. To apply this approach, the chain of adverse consequences which may occur in case the risk occurs should be enlisted. For each of the chain of adverse consequences the cost impact needs to be calculated and attributed to the particular risk. In such an exercise, actual cost impacts as well as opportunity costs must be captured to arrive at the total cost of impact of occurrence of the risk.

6.1.2 Accordingly to the adverse impact analysis for identified risks, an appropriate risk rating shall be determined for each risk identified as per the criteria below.



6.1.3 Risk Estimation

Consequences of Risk (Cost of Impact – Stakeholder or strategic or Financial)

Rating 4 (Devastating)	Significant stake holder's concern. 1. Significant impact on strategy or operational activities. 2. Cost of Impact exceeding upto Rs. 5 crores
Rating 3 (Major)	Major stakeholders concern. 1. Major Impact on strategy or operational activities. 2. Cost impact upto Rs. 3 crores
Rating 2 ((Tolerable)	Moderate stakeholders concern. 1. Moderate impact on strategy or operational activities. 2. Cost impact upto Rs.1 crore
Rating 1 (Minor)	Minor stakeholder concern. 1. Minor impact on strategy or operation activities. 2. Cost impact less than 50 lakhs.

7.0.0 RISK MATRIX

Risk Rating : 4 3 2 1

Risk Category : Applicability to Company : MECL
N : Nature of risk as Controllable : C
Uncontrollable : UC
Partly Controllable : PC

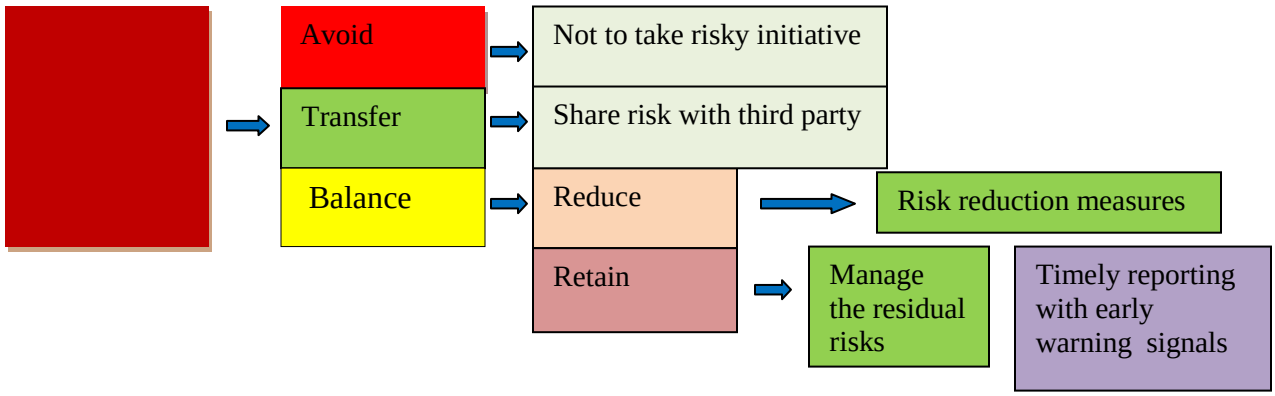
No.	Risk Head	Risk Description	Cate-gory	Risk Trigger	Risk Rating	Proposed Risk mitigation mechanism	Responsibility
A.	**STRATEGIC RISKS**						
1	Policy change by Govt./ Client	Unilateral policy change by MoM/ MoC/ CMPDIL /SAIL/HCL/UCIL etc.	UC	Announcement of policy by the client	4	MECL should try to penetrate other agencies domain particularly private sector for exploration in aggressive manner to reduce dependency on one agency.	BD & Planning Division
B.	**BUSINESS RISKS**						
1.	Company	Low diversification, Low % of high value work	PC	Uncertainty of existence of such works	3	Aggressive BD activities, in related field like preparation of feasibility report, mine closure plan, geo-thermal, geo-technical etc. apart from ongoing work.	BD & Planning division.
2.	Company	Low profit margin	PC	Adversity in progress & work availability	3	Better utilization of available resources (man, machineries, materials and infrastructure) for increasing productive work which generates revenue.	All divisions.
3.	Company	Outsourcing is increasing competitors for company	PC	Outsourced companies are directly engaged by companies clients.	3	Should not be beyond limit. For exigency only. Should not be of a routine & regular nature.	Exploration, Drilling and BD & Planning division
4.	Company	Unsecured bad – Debts.	PC	A degree of financial crunch may appear.	3	Corrective measures in formulation of contracts, agreement, offers, MoU etc. Frequent review meeting in-house & with customers.	Exploration, Finance and BD & Planning division
5.	Market scenario	Increasing competition in market	PC	Market forces	3	Better utilization of resources, increasing efficiency, optimum cost, quality work, timely completion to enhance brand image.	Executing divisions (Exploration, Drilling, Mining & IT Centre)

No.	Risk Head	Risk Description	Cate-gory	Risk Trigger	Risk Rating	Proposed Risk mitigation mechanism	Responsibility
C.	**OPERATIONAL RISKS**						
1	Company	Gradual reduction, shortage of skilled, experienced Technical & Scientific manpower	PC	Hindrance in Progress, increase in fishing in drilling resulting in less profit margin.	2	1.Adequate measures to be taken for re-engaging/retaining experienced manpower because competitors may utilize their services in the exploration field. 2.Phase-wise recruitment should be continued in W1, W3, W6 & E0 levels to meet MECL's requirement with attractive promotion policy for retaining new comers & existing employees.	HR Division.
2	Company	Time overrun of projects	C	Increases projects cost & expenditure	2	Planning should be done to complete the project within 80% of time with optimum resources.	Exploration, Mining & Drilling division
3.	Company	Delay in adaptation of innovative technology/high technology	PC	Decreasing productivity & thereby increasing cost & time.	2	Speedy implementation of procurement of high-tech advance state of the art & reliable machineries	Exploration, Mining, Drilling, Material & Finance division
4.	Company	Jamming, Fishing & breakdown	C	Structurally disturbed areas	2	Proper monitoring and systematic operations & maintenance	Drilling & Exploration division
5.	Company	Working in highly remote, law & order problem and disturbed areas	PC	Time overrun	2	1. Well informed about the area of working & advance action. 2. Obtaining necessary clearance from concerned statutory authority before deployment of resources. 3. Close monitoring & timely action.	Exploration, Drilling & Mining division
6.	Nature	Deeper level proving of mineral resources.	UC	Exhaustion of shallow mineral deposit	2	1. Gradual acquisition of hydrostatic machineries suitable for deep drilling.	Drilling & Exploration Division.
7	Nature	Greenfield exploration in forest covered areas	UC	Exhaustion of work in Non-forest areas	2	1. Advance action to be taken. Work should be undertaken after regulatory clearances.	BD & Plg and Exploration Division

8.0.0 RISK STRATEGY

8.1.0 The following framework shall be used for implementation of the Risk Strategy.

Risk Assessment : Risk Strategy



8.1.1 Risk Avoidance: By not performing an activity that could carry risk. Avoidance of risk may be seen as answer to all risks but avoiding risk may lose potential gain that taking the risk might have allowed.

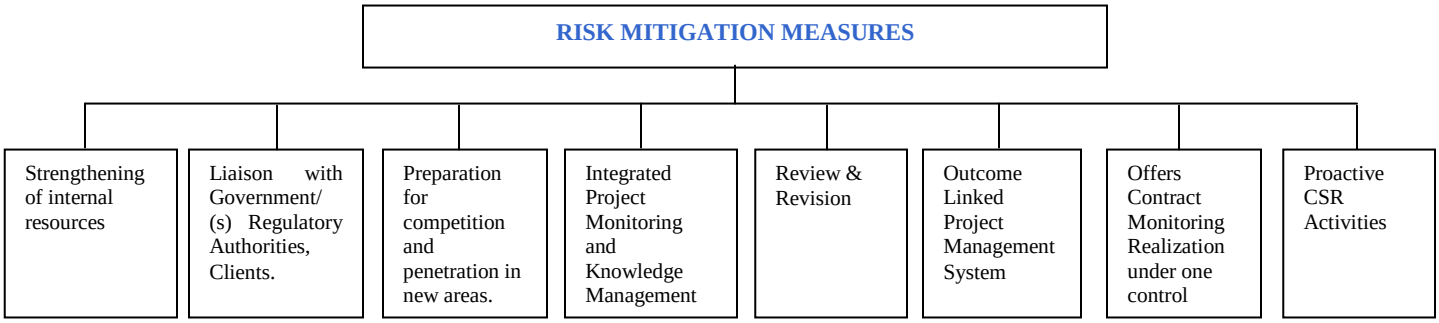
8.1.2 Risk Transfer: Mitigating by having another party to accept risk either partial or total typically by contract or by hedging.

8.1.3 Risk Reduction: Employing methods / solutions that reduce the diversity of the loss.

8.1.4 Risk Retention: Accepting the loss when it occurs. Risk retention is a viable strategy for small risks where cost insuring against the risk would be greater over time than the total losses sustained, The Risks those can not be avoided or transferred or reduced or are non insurable are retained by default for example borehole loss etc.

9.0.0 KEY IMPLEMENTATION AREAS FOR RISK MITIGATION

9.1.0 The following are the key areas where risk mitigation measures need to be implemented.



10.0.0 RISK ORGANISATION STRUCTURE

10.1.1 The risk management plan in MECL will be implemented through a establishment structure. A risk cell each in all divisions shall be established and the executive dealing with such related matter will be earmarked for this purpose and will be the Risk Manager under the control of the concerned HOD, who will be the Chief Risk Manager. For further line functions the ZM / ROM will be next line functionaries and will be the concerned Risk Managers for their domain. The Project Manager/(s) will be the Risk Officer for his concerned project.

The overall monitoring of Risks will be done by Director (Technical) and Director (Finance) who will be assisted by the HOD (BD & Planning) who will be Chief Risk Manager (co-ordination).

All personnel forming part of the Risk Organization Structure, shall be trained on the company's risk management system.

10.1.2 The risk managers will report to the CRM for the implementation of this plan within their respective areas of responsibility.

10.1.3 Risk Manager & officers will be responsible for identification, preliminary assessment, reporting and monitoring of the risk related to their individual area of function.

11.0.0 RISK MANAGEMENT INFORMATION SYSTEM (RMIS) :

11.1.1 An integrated Risk Management Information System (RMIS) needs to be put in place in the company. The information is needed at all levels of the organization to identify, assess and respond to future occurrences of risk events. Pertinent information from both internal and external sources must be captured and shared in a form and timeframe that equips personnel to react quickly and efficiently.

11.1.2 Historical data tracks, actual performance against target, identified trends, correlative results and forecasts performance. Historical data also provides early warning signals concerning potential risk related events. Current data gives management a real time view of risks inherent in a process, function or unit. This will enable to alter its activities as needed in keeping with its risk appetite.

11.1.3 The company needs to keep and maintain 'Risk Registers' as an immediate measure. The Risk Registers will be maintained at the Risk Officer Level and Risk Manager Level for capturing all risks comprehensively. Each risk will be identified, categorized and assessed using the methodology in the sections of the policy already specified.

11.1.4 Each Risk Manager/Chief Risk Manager shall have access to risk registers of all Risk Officers/Risk Manager under their control & shall be responsible for monitoring them. Directors would in turn monitor all risks.

11.1.5 The Risk Register should contain the following information :

a) Description of the risk.
b) The impact, should the event actually occur.
c) A summary of the planned response, should the event occur.
d) A summary of the mitigation plan (i.e. the actions taken in advance to reduce the probability and / or impact of the event).
e) The responsible functionary / person.

All the information mentioned above can be captured adopting the Risk Description format given in the earlier section of the plan. (at 5.1.1 on Page-6)

The structure of the RMIS will be as follows:

11.2.0 Risk Management Information System.

Authority	Function level	Reporting	Risk Escalation
Audit Committee		To the Board	For regular review and monitoring of the key Risks and the Risk Management System
			
Director (T) Director (F)	Corporate	To the CMD	For review and monitoring the key risks and the risk management system.
			
CRM(Co-ord), Risk Cell (CRM/HOD) assisted by identified officials/Risk Managers.	Corporate	To the Director (T) & Director (F)	To be escalated on the basis of need, impact level & exigency of situation.
			
Risk Manager (ZM/Unit In-charges / ROM)	Technical/ Projects / Units/ Finance HR / P&A/ Materials	To the Zone, Risk Cell under each HOD / CRM	To be escalated on the basis of need, impact level & exigency of situation.
			
Risk Officer	All Projects	Respective Risk Managers	All the Risks are to be reported as & to risk registers.

12.0.0 MAINTENANCE OF THE RISK MANAGEMENT SYSTEM:

12.1.1 The Risk Cell will be the key group which will work on an ongoing basis within the risk framework outlined in this plan to mitigate the risks to the company's business as it may evolve over time.

12.2.0 Effective maintenance of the system will require the following actions:

12.2.1 Each Risk Cell, under the guidance of Chief Risk Manager (CRM), will meet periodically with the Directors to identify specific business & operational risk and analyse the risk in terms of consequences, if the risk materialize.

12.2.2Among all the risks identified the Risk Cell will prioritize and focus on key risks and their mitigation measures.

12.3.0 Evaluation and Control:

12.3.1 Identified risks will be assessed in terms of potential consequences and cost of impact.

12.3.2 Risks will be ranked in accordance with their likely impact.

12.3.3 The acceptability of each identified risk will be assessed.

13.3.4 Proposed actions to eliminate, reduce or manage each material risk will be considered and agreed.

12.3.5 Responsibilities for the management of each risk will be assigned to appropriate managers.

Based on a cost benefit assessment of a risk, as is undertaken, some risks may be judged as having to be accepted because it is believed that mitigation is not possible or warranted.

12.4.0 Monitoring:

12.4.1 Risk exposure of any business may undergo change from time to time due to continuously changing environment. The updation of the Risk Matrix will be done on a regular basis. The following process will be followed.

12.4.2 **On an immediate basis** : Escalation of risks which have substantial impact to the business and meet determined escalation tolerance / levels should be monitored by the respective Risk Manager or the Risk Cell.

12.4.3 Monthly basis:

a) The respective CRMs will review the status of risks and take actions with key staff in their respective areas.
b) Any new or changed risks will be identified and included, if necessary.
c) The Risk Manager / Unit Incharge / PM of each project will report to Risk Cell.
d) Particular emphasis is to be given to risks with high ratings and their corrective actions/measures.

12.4.4 Quarterly:

a) The risk management process is to be reviewed by the CMD for efficiency and effectiveness, on quarterly basis.
b) The risk contexts are to be reviewed.

12.4.5 Review by Board of Directors:

a) The Board will review the Risk Management Process annually.
b) The Risk Management Plan is subject to annual audit by the Audit committee.

12.4.6 Everyone in the company is responsible for the effective management of the risk. All the staff is responsible for identifying potential risks. Management is responsible for developing risk mitigation plans and implementing the risk reduction strategies. The risk management process will be integrated with other planning processes and management activities.

13.0.0 APPROVAL OF THE PLAN:

13.1.1 The Board will be the approving authority for the company's Risk Management Plan. The Board will therefore monitor, if required, the compliance and approve the Risk Management Plan and carry amendments thereto from time to time.

14.0.0 REVIEW OF THE POLICY:

The Risk Management Plan will be the guiding document for Risk Management of MECL and will be reviewed as and when required due to the change in the risk management regulations / standards / best practices as appropriate. The risk management framework for identifying and monitoring the risks associated with the proposed projects will be a part of plan after commencement of the project. In any case, the policy will be regularly reviewed semi-annually in December and June every year.

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15.0.0 DISASTER RECOVERY PLAN

Disaster Recovery Planning is an integral part of a risk management assessment. It is the process to enable an organization to resume critical business operations in the event of a natural or human caused disaster. Disaster Recovery Plans are a comprehensive roadmap detailing how to recover from a disastrous event, if occurs, and how to resume and continue the normal business operations after such event. Disaster Recovery Plans define activities into mission critical and business critical and define roles and responsibilities in the event of an emergency.

15.1.0 Disaster Recovery That a Company Can Afford

Balancing disaster recovery planning with risk management will save the company's money in the long run while offering adequate protection from the most likely disasters. Ideally, a disaster recovery plan will protect the company from every foreseeable disaster and return the company to full operations in the shortest possible amount of time. However, this is cost prohibitive. The company cannot afford to protect itself against every possible disaster. Selecting which scenarios and how to protect the company against them is called risk management.

The hardest part of disaster recovery planning is asking the employees on the disaster recovery planning team to work through different disaster scenarios. The company actually have to think of what bad things could happen to it. When defining disaster scenarios the company has to think in terms of what area the company will be affected and the duration that area will be out of operation.

15.2.0 Risk Management Balances Cost With Speed of Recovery

A comprehensive disaster recovery plan will take into consideration of different scenarios for recovery and their associated one time and annual costs. The more disaster scenarios the company covers, the more expensive it will be to implement. Each scenario that is covered should include an estimate of the time it will take to bring the company's business operations back. It's not cheap, but it's like buying insurance as it would be useful when company needs it. The company's budget for disaster recovery should be properly planned and implemented. Also, for each disaster scenario the company should check that the insurance comprehensively covers all the ill effects related to the business operations.

15.3.0 Budget for the Most Likely Scenarios

It is cost prohibitive to plan for each and every type of disaster that could possibly impact company's business. The company should spend money wisely in order to cover the disasters that are most likely to occur to company's business. The company should identify the more likely disasters that would impact company's business operations at different locations of the working. The company should create a plan to buy the resources necessary to communicate with the employees during and after the disaster. This may include cell phones, walkie-talkies etc.

15.4.0 Completeness of Disaster Recovery Plan

Business is a chain of interconnected systems. If one link is missing, the whole system may not work. As such, the disaster recovery plan may be got reviewed by an other company or a consultant. The disaster recovery plan should include: data, employees, facilities, network, communications equipment etc.

16.0.0 DISASTER RECOVERY PLAN OF MECL

A **disaster recovery plan** (DRP) of MECL is a documented process or set of procedures to recover and protect the business operations of the company in the event of a disaster. The plan specifies the procedures the organization has to follow in the event of a disaster. It is "a comprehensive statement of consistent actions to be taken before, during and after a disaster''. The disaster could be natural, environmental or man-made.

The objective of MECL's 'Disaster Recovery Plan' is its relationship to business, continuity plan, benefits, types of plan and types of disasters foreseen in the perspective of MECL's business operations are enumerated in the following paras:

16.1.0 Objective

Organizations cannot always avoid disasters, but with careful planning the effects of a disaster can be minimized. The objective of a disaster recovery plan is to minimize loss/ damage of human life, property, materials etc. and downtimes for resuming continuing business operations in the event of disaster. The primary objective is to protect the organization in the event that all or part of its operations rendered unusable. The plan minimizes the disruption of operations and ensures that some level of organizational stability and an orderly recovery after a disaster will prevail.

16.2.0 Relationship to the Business Continuity Plan

The Business Continuity Plan (BCP) consists of the five component plans:

- Business Resumption Plan
- Occupant Emergency Plan
- Continuity of Operations Plan
- Incident Management Plan
- Disaster Recovery Plan

16.3.0 Benefits

Some of the benefits expected from implementing "Distance Recovery Plan' are as follows:

- Providing a sense of security
- Minimizing risk of delays
- Guaranteeing the reliability of standby systems
- Providing a standard for testing the plan
- Minimizing decision-making during a disaster
- Reducing potential legal liabilities
- Lowering unnecessarily stressful work environment

16.4.0 Types of Plans

There is no one right type of disaster recovery plan, nor is there a one-size-fits-all disaster recovery plan. However, there are three basic strategies that feature in the disaster recovery plans: (1) preventive measures, (2) detective measures, and (3) corrective measures. Preventive measures will try to prevent a disaster from occurring. These measures seek to identify and reduce risks. They are designed to mitigate or prevent an event from happening. Detective measures are taken to discover the presence of any unwanted events within the business operations of the company. Their aim is to uncover new potential threats. They may detect or uncover unwanted events. These measures include installing fire alarms. Corrective measures are aimed to restore business operations after a disaster or otherwise unwanted event takes place. These measures focus on fixing or restoring business operations after a disaster.

16.5.0 Types of Disasters

Disasters can be natural or man-made. Man-made disasters could be intentional (for example, sabotage or an act of terrorism) or unintentional (that is, accidental, such as the breakage of a man-made dam).

16.5.1 Natural Disaster

A natural disaster is a major adverse event resulting from the earth's natural hazards. Examples of natural disasters are heavy rains, floods, hurricanes/cyclones, volcanic eruptions, earthquakes, heat waves, and landslides etc. Other types of disasters include the more cosmic scenario of an asteroid hitting the Earth.

16.5.2 Man-Made Disasters

Man-made disasters are the consequence of technological or human hazards. Examples include fire accidents, drill site / mine site accidents, acts of war, terrorism, willful disruptions, and acts of negligence, carelessness resulting in heavy losses to property, materials, vehicles and loss / damage to human life. Other types of man-made disasters include the more cosmic scenarios of catastrophic global warming, nuclear war, and bioterrorism, which are rarely expected in MECL’s operations.

The following table categorizes some disasters and notes first response initiatives in the perspective of MECL’s business operations.

	Responses to Disaster		
	Example	**Profile**	**First Response**
Natural	Earthquake	The shaking of the earth's crust, caused by underground volcanic forces of breaking and shifting rock beneath the earth's surface	**At Project work site:** Shift the people to safer places. Inform local authorities, Corporate office. **At Corporate office / Zonal offices /Project offices**: Shift employees /people to safer places. Shut off utilities; Evacuate building if necessary; Determine impact on the equipment and facilities and any disruption
	Fire (wild)	Fires that originate in uninhabited areas and which pose the risk to spread to inhabited areas	Attempt to suppress fire in early stages; Evacuate personnel on alarm, as necessary; Notify fire department; Shut off utilities; Monitor weather advisories
	Flood	Flash flooding from nearby rivers/ nalas at drill sites/ mines areas, low lying areas flooding quickly	Shift people quickly to safer/ elevated areas. Monitor floods; Determine effect of flood on plant and machineries Assess damage. Inform local authorities / corporate office.
	Heavy Rains	Excessive heavy rains disturbing drilling / mining work at sites and movement at office establishments.	Monitor weather advisories; Notify employees of arrangement made for shifting to safer places. Arrange for evacuation of water, transport to people, food, etc.
	Heat wave	A prolonged period of excessively hot weather relative to the usual weather pattern of an area and relative to normal temperatures for the season in hot summers affecting normal work at drilling / mining sites	Listen to weather advisories; Make arrangement for working in nights and rest in day.
	Hurricane	Heavy rains and high winds	Power off all equipment; listen to hurricane advisories; Evacuate area, if flooding is possible; Check gas, water and electrical lines for damage; Do not use telephones, in the event of severe lightning; Assess damage

	Landslide	Geological phenomenon which includes a range of ground movement, such as rock falls, deep failure of slopes and shallow debris flows (More likely in geothermal, geotechnical projects, in mines areas)	Shut off utilities; Evacuate area of working, Determine impact on the equipment and facilities and any disruption
	Lightning strike	An electrical discharge caused by lightning, typically during thunderstorms	Power off all equipment; listen to hurricane advisories; Evacuate area, move to safer place; Check gas, water and electrical lines for damage; Do not use telephones, in the event of severe lightning; Assess damage
Man-made	Civil unrest	A disturbance caused by a group of people that may include sit-ins and other forms of obstructions, riots, sabotage and other forms of crime, and which is intended to be a demonstration to the public and the government, but can escalate into general chaos	Caution employees and not to indulge in any confrontation with external people. Contact local police or law enforcement inform and seek advise from Management.
	Fire (Office buildings, establishments)	Even with strict building fire codes, sudden fire occurs, resulting in heavy damage, loss to human life, property, etc.	Attempt to suppress fire in early stages; Evacuate personnel on alarm, as necessary; Notify fire department; Shut off utilities;
	Power Failure	Caused by summer or winter storms, lightning or construction equipment digging in the wrong location	Wait 5–10 minutes; Power-off all Servers after a graceful shutdown; Do not use telephones, in the event of severe lightning; Shut down main electric circuit usually located in the basement or the first floor.

Annexure- A

Ref : Risk Matrix

Sub : Diversification as Risk Mitigation Mechanism

1. STRATEGIC RISK :

No.	Risk Head	Risk Description	Cate-gory	Risk Trigger	Risk Rating	Proposed Risk mitigation mechanism	Responsibility
1	Policy change by Govt./ Client	Unilateral policy change by MoM/ MoC /CMPDIL /SAIL /HCL /UCIL etc.	UC	Announcement of policy by the client	4	MECL should try to penetrate other agencies domain particularly private sector for exploration in aggressive manner to reduce dependency on one agency.	BD & Planning Division

Proposed Risk mitigation mechanism :

Exploration activity of MECL is mainly dependent on contractual work from CMPDIL for Coal and regular promotional work from MoM & MoC (80-90%).

MECL has intensified its activity in exploration of other minerals also (Iron ore, Copper, limestone etc.) so as to reduce dependency on CMPDIL and MoC /MoM since 2011-12. Due to sustained efforts, large scale exploration work for Iron ore has been acquired from SAIL. The work has gradually increased from Rs 1.13 crores in 2011-12 to Rs.24.23 crores in 2014-15 (up to August, 2014) as shown in sheet–I. During remaining period of the current year and next year, the work will continue to enhance. Similarly, major work orders were obtained from HCL also in Surda and Chandmari block and work order for Siddeshwar Block is expected shortly.

The company has received the work order for exploration of Iron ore for Rs 20 crore from State Government, Karnataka during 2014-15. The work has commenced on 30.06.2014 and shall be completed in December,2014.

3. BUSINESS RISKS :

No.	Risk Head	Risk Description	Cate-gory	Risk Trigger	Risk Rating	Proposed Risk mitigation mechanism	Responsibility
1.	Company	Low diversification, Low % of high value work	PC	Uncertainty of existence of such works	2	Aggressive BD activities, in related field like preparation of feasibility report, mine closure plan, geo-thermal, geo-technical etc. apart from ongoing work.	BD & Planning division.

Proposed Risk mitigation mechanism :

Developmental mining work is gradually shrinking. The work has reduced from 6 mining projects up to 2009-10 to 5 projects in 2112-13 and 4 projects presently. There are two projects at Jaduguda and Narwapahar for M/s Uranium Corporation Limited and two projects at Khetri Mines of Hindustan Copper Limited for developmental mining presently undergoing. The work may further likely to reduce after completion of ongoing projects.

MECL has planned for production mining for Bauxite deposit in Serendag, in Balrampur District (MP) so that Manpower of mining division is engaged. Work for acquiring statutory Environmental clearance (EC) and Forest clearance (FC) is under process. The work for EC has been offered to a consultant M/s Ramky Enviroo. Engineers Ltd, Hyderabad. A meeting for finalizing TOR for EC has been held on 27.08.2014 in MoEF, New Delhi. The production work in Block-I may likely to commence in July, 2017 while in Block-II, in July, 2019. The activity schedule for Serendag Bauxite Mines is enclosed in sheet-II.

Similarly, MECL has taken initiative for preparation of Feasibility Report of Mining Projects and for getting exploratory exploration drilling work for Geothermal and Geo technical.

3. OPERATIONAL RISKS :

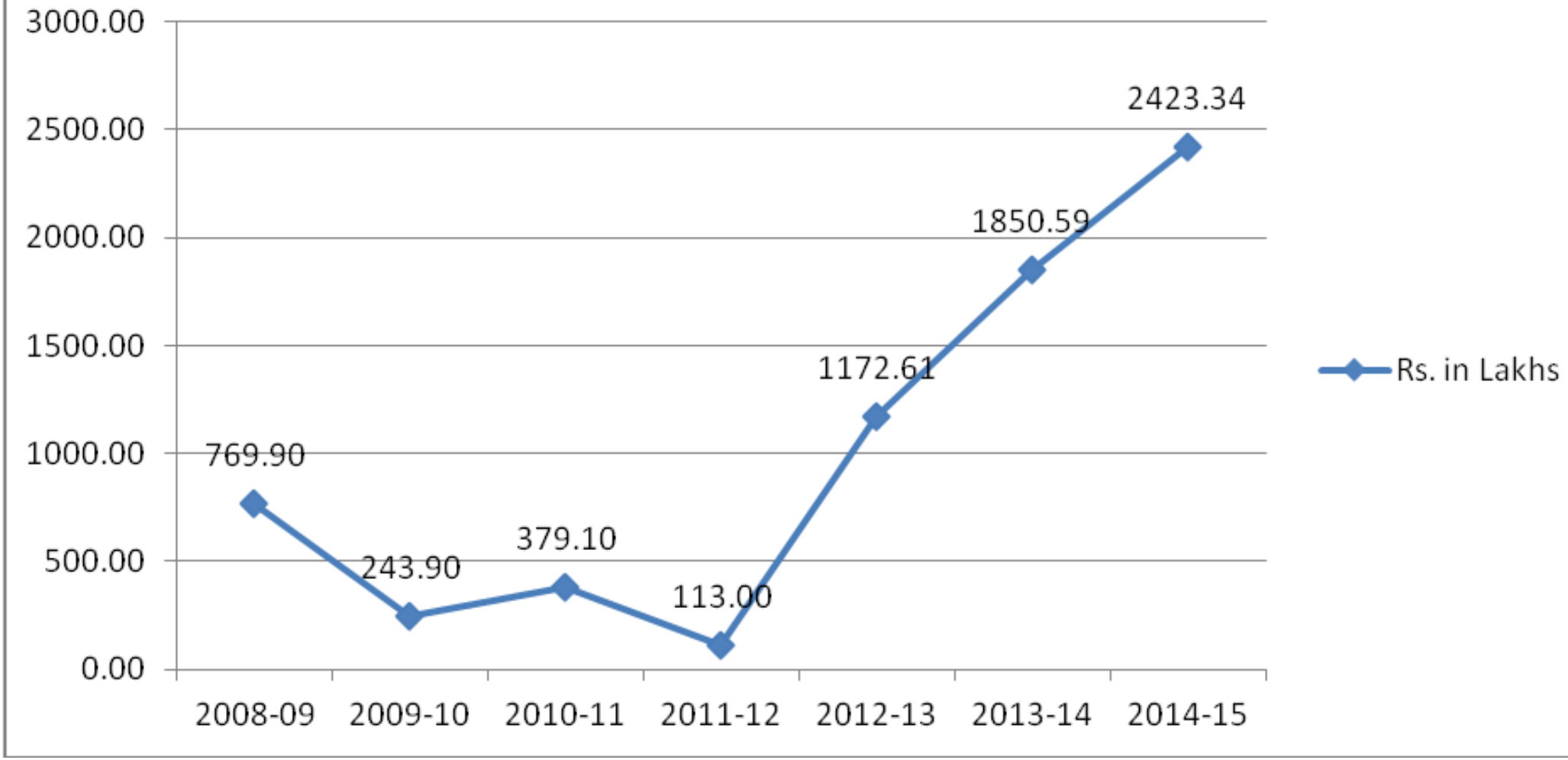
No.	Risk Head	Risk Description	Cate-gory	Risk Trigger	Risk Rating	Proposed Risk mitigation mechanism	Responsibility
1.	Nature	Deeper level proving of mineral resources.	UC	Exhaustion of shallow mineral deposit	2	1. Gradual acquisition of hydrostatic machineries suitable for deep drilling.	Drilling & Exploration Division.

Proposed Risk mitigation mechanism :

MECL has planned to purchase 5 no. of Hydrostatic Coring Drill Rigs with capacity of 1000m drilling in 2014-15 for deeper level of proving of mineral resources. The tender for this has been received from the prospective suppliers and finalization of tender is under process. Year wise procurement plan is as under :

Sl. No.	Machineries	2014-15	2015-16
1	Hydrostatic Coring Drill Rigs. i) Truck Mounted ii)Crawler Mounted	 4 No. 1 No.	 4 No. 1 No.

WORK CARRIED OUT BY MECL FOR IRON ORE EXPLORATION (MAIN CLIENT-M/S SAIL) FOR THE PERIOD FROM 2008-09 TO 2014-15 (UPTO AUGUST 2015)



Tentative Activity Schedule for Serangdag Bauxite Mines Development

Revised in Sept. 2014

w.e.f. 1st April 2014

		Activity	Tentative time period in quarters																							
			2014-15				2015-16				2016-17				2017-18				2018-19				2019-20			
		Quarter →	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
		Block-I																								
(i)		EC - Service Provider started work, As per EAC minutes TOR is Approved, Official Letter for TOR mandatory for start of work, EIA/EMP work, Gram Sabha etc.																								
(ii)		Pre-feasibility Report (PFR)	Work completed																							
(iii)		Demarcation & Mining Lease deed execution																								
(iv)		Land acquisition - Gram Sabha etc.																								
(v)		Expected Start of Mine Development & Production														→										
		Block-II																								
(i)		FC (Stage – I & II) - Registration (started in Apr. 2013) - yet to be completed, Induction of Service Provider, Proposal submission, Gram Sabha etc.																								
	a	FC-Tender processing for service provider																								
(ii)		EC Tender processing for service provider																								
(iii)		EC - TOR & EIA/EMP																								
(iv)		Pre-feasibility Report (PFR)	Work completed																							
(v)		Demarcation & Mining Lease deed execution																								
(vi)		Land acquisition - Gram Sabha etc.																								
(vii)		Expected Start of Mine Development & Production																						→		

Note:

1. **Activity Chart prepared keeping in view prevailing Industry trend.**
2. **Considering all required resources are made available on time.**
3. **Procedural delays on account of State & Central Govt. are not considered in the schedule**
4. **For desired results, rigrous persuasion considered to control / better time management.**