DRAFT ENVIRONMENTAL IMPACT ASSESMENT REPORT AND ENVIRONMENTAL MANAGEMENT PLAN

("B1" Category of 1 (a) column 4 of EIA Notification dated 14.09.2006 and its subsequent amendment vide S.O. 3977(E) dated 14th Aug 2018) and MoEF&CC office memorandum dated: 12th December, 2018)

Sector: 1 (a) Mining of Minerals

FOR
"IRON ORE MINING PROJECT (M.L NO. 10/98)"
LOCATED AT KHASRA NO. 1583, 1601, 1582, 1602, 1604, 1606, 1566, 1567, 1568, 1569, 1570 & 1571
NEAR VILLAGE- BHAGOLI, TEHSIL: UDAIPURWATI,
DISTRICT: JHUNJHUNU, RAJASTHAN
PRODUCTION CAPACITY: 1, 50,700 TPA (ROM)
(IRON ORE: 1, 29,170 TPA, WASTE: 21,530 TPA)
MINE LEASE AREA - 4.945 Hectare (Government Waste Land)
PROJECT COST: 1.00 Crore

CATEGORY - 'B1'
Study period: Winter Season (1/12/2020 - 28/02/2021)
ToR Details: File No. - F1 (4)/SEIAA/SEAC-Raj/Sectt/Project/Cat.1(a)B1(15503)/2019-20

Name of Laboratory: Noida Testing Laboratories
MoEF& NABL Accredited Laboratory (NABL certificate Number: TC-6814; Validity Date: 02/12/2021)

PROJECT PROPONENT

M/s. Nilkanth Concast Pvt. Ltd
R/o In front of Gandhidham, Plot No. 403, Ward 6/C,
Opposite Om Cineplex, Adipur, Kutch (Gujarat)
Email: msnilkanthconcast@gmail.com,
Phone No.: 2838283495

EIA CONSULTANT

Environmental and Engineering Services India Pvt. Ltd.

(NABET Accreditated & ISO 9001: 2015 Certified Company)

27, Ashok Vatika, Khatipura Road, Jhotwara, Jaipur-302012
Email: info@fulgro.in, Contact: 0141-2466841, 91-9982170000
Website: www.fulgro.in

(As per QCI NABET List of Accredited Consultant Organisations List-'A' Accredited EIA Consultant Organisations as on 9th June , 2021 FEES Jaipur, Listed at S.No.-100)

UNDERTAKING BY CONSULTANT

I, Neha Sharma, EIA Coordinator with Fulgro Environmental & Engineering Services India Pvt. Ltd, Jaipur for Sector 1 (a) – Mining of Minerals gives this undertaking to the effect that the conditions laid down in the Terms of Reference of the project Iron Ore Mining Project, (ML No.- 10/98, Area- 4.945 ha.) Production Capacity- 1,50,700 TPA (ROM) located at Khasra no.- 1583, 1601, 1582, 1602, 1604, 1606, 1566, 1567, 1568, 1569, 1570 & 1571, Near village-Bhagoli, Tehsil - Udaipurwati, District- Jhunjhunu (Raj.) issued by State Expert Appraisal Committee (SEAC) Rajasthan vide letter no. F1 (4)/SEIAA/SEAC-Raj/Sectt/Project/Cat.1(a)B1(15503)/2019-20 has been complied with and the data submitted and the information presented in this Draft EIA/EMP report is factually correct.

Neha Sharma

Place: Jaipur
Date:

Neha Sharma
(EIA Coordinator)

UNDERTAKING BY PROJECT PROPONENT

I, Suresh Sarbaliya, (Vice President) of Iron Ore Mining Project, (ML No.- 10/98, Area- 4.945 ha.) Production Capacity- 1,50,700 TPA (ROM) located at Khasra no.- 1583, 1601, 1582, 1602, 1604, 1606, 1566, 1567, 1568, 1569, 1570 & 1571, Near village-Bhagoli, Tehsil - Udaipurwati, District- Jhunjhunu (Raj.) gives this undertaking to the effect that the conditions laid down in Terms of Reference prescribed by State Expert Appraisal Committee (SEAC) Rajasthan vide letter no. F1 (4)/SEIAA/SEAC-Raj/Sectt/Project/Cat.1(a)B1(15503)/2019-20 have been complied with and the data submitted and the information presented in the Draft EIA/EMP report is factually correct.



Place: Gujarat
Date:

Suresh Sarbaliya
Signature:

Declaration by experts contributing to the Draft EIA/EMP of Iron Ore Mining Project (M.L. No. 10/98) located at Village Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu (Rajasthan)

I, hereby, certify that I was a part of the EIA team in the following capacity that developed the above EIA.

EIA Coordinator: Mining of minerals including opencast/ underground mining

Name : Neha Sharma

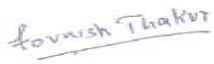
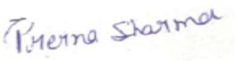
Signature & Date : Neha Sharma

Period of involvement : November 2020 to till date

Contact information : 91-9672567222

Functional Area Experts:

Sr. No	Functional Area	Name of Expert/s	Involvement (period and task)	Signature and Date
1.	AP (Air Pollution Monitoring, Prevention and Control)	Ms. Neha Sharma	**Period:** November 2020 to till date **Task:** Identification of air pollution sources associated with said mining project and suggesting the mitigation measures in the EIA/EMP report.	Neha Sharma
2.	WP (Water Pollution Monitoring, prevention and Control)	Ms. Neha Sharma	**Period:** November 2020 to till date **Task:** Identification of water pollution sources associated with said Mining project and suggesting the mitigation measures in the EIA report. General water quality of the area and its interpretation	Neha Sharma
3.	SHW (Solid & Hazardous Waste Management)	Ms. Prerna Sharma	**Period:** November 2020 to till date **Task:** As per the approved Mining Plan 77,870 Tonne waste will be generated which will be dumped in the lease area and the same incorporated in the EIA/EMP report.	Prerna Sharma

4.	SE (Socio Economic)	Mr. Laxman Singh	**Period:** November 2020 to till date **Task:** Socio-economic data were collected by primary survey and from secondary sources from Census for population, occupation and incorporated in the EIA/EMP report.	
5.	EB (Ecology & Biodiversity)	Mr. Lovnish Thakur Ms. Prerna Sharma	**Period:** November 2020 to till date **Task:** No National Park, Wild Life Sanctuary, Biosphere Reserve, Tiger Reserve, Wildlife Corridor, fall within 10 km radius of the mine lease area. Field survey for ecology and biodiversity, identification of species. Impact prediction and mitigation measures.	 
6.	HG (Hydrology, Ground Water and Water Conservation)	Dr. Sanjay Raj	**Period:** November 2020 to till date **Task:** No intersection of groundwater table due to mining as proposed depth of mining is above the ground water table as per the approved mining plan. Also validated in field that water table in the lease area is about 40 meter whereas mining pit is limited to 30 meter. All observation incorporated in the EIA/EMP report.	
7.	Geo (Geology)	Dr. Sanjay Raj	**Period:** November 2020 to till date **Task:** Iron Ore in the mine lease area is exposed from surface.	
8.	SC (Soil Conservation)	Dr Sanjay Raj	**Period:** November 2020 to till date **Task:** The soil cover in the mine lease area is very marginal and by the mining activities the soil will only be disturbed at the propose place of excavation. Top soil will be used for plantation purpose.	
9.	AQ (Meteorology, Air Quality Modeling and prediction)	Ms. Neha Sharma	**Period:** November 2020 to till date **Task:** Identification of sources of emissions and accordingly calculating the emission rates for area sources and line sources (PM_{10}, $PM_{2.5}$) and air dispersion modelling was done using Breeze Aermod Software version 9.2, which shows that due to mining activity there will be no major adverse impact on ambient air environment.	

10.	NV (Noise & Vibration)	Mr Hanish K R	**Period:** November 2020 to till date **Task:** Drilling & Blasting will be done in most scientific manner with the use of latest technology which will produce less noise and better fragmentation, prediction of noise pollution and mitigation measures.	
11.	LU (Land Use)	Dr. Sanjay Raj	**Period:** November 2020 to till date **Task:** For land use study satellite data of May 2021 was procured and digitally processed.	
12.	RH (Risk Assessment and Hazard Management)	Mr. Awadesh Kumar	**Period:** December 2020 **Task:** Risk Identification and accordingly suggesting mitigation measures, For the safety purpose fencing around the pit and safety slogans/caution boards suggested in the EIA/EMP report.	

INDEX

SECTION NO.	PARTICULARS	PG NO.
CHAPTER 1 INTRODUCTION		**1-24**
1.1	PURPOSE OF THE REPORT	1
1.1.1	IDENTIFICATION OF PROJECT & PROJECT PROPONENT	2
1.1.2	PROJECT PROPONENT	3
1.2	BRIEF DESCRIPTION OF THE NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY AND REGION.	3
1.2.1	LOCATION AND APPROACH TO THE MINE	7
1.2.2	IMPORTANCE TO THE COUNTRY AND REGION	8
1.3	SCOPE OF EIA STUDY AS PER TERMS OF REFERENCE-TOR (DETAILS OF THE REGULATORY SCOPING CARRIED OUT)	8
1.3.1	LEGISLATIVE BACKGROUND	23
1.3.1.1	POST ENVIRONMENTAL MONITORING	24
1.3.1.2	LITIGATION PENDING AGAINST THE PROJECT	24
CHAPTER-2 PROJECT DESCRIPTION		**25-42**
2.1	PROJECT DESCRIPTION	25
2.1.1	TYPE OF THE PROJECT AND ITS SIZE AND MAGNITUDE	25
2.1.2	NEED OF THE PROJECT	25
2.1.3	LOCATION OF THE PROJECTS	25
2.1.4	SITE HISTORY OF THE AREA	26
2.2	PROJECT DESCRIPTION INCLUDING TECHNOLOGY, ASSOCIATED ACTIVITIES AND SCHEDULE OF COMPLETION	26
2.2.1	PROJECT LAYOUT PLAN	27
2.2.2	COMPONENTS OF THE PROJECT	28
2.2.2.1	MINERAL RESERVE	28
2.2.2.2	UNFC CLASSIFICATION	28
2.2.2.3	LIFE OF MINE	32
2.2.2.4	WATER REQUIREMENT	33
2.2.2.5	POWER REQUIREMENT	34
2.2.2.6	MANPOWER-REQUIREMENT	34
2.2.2.7	AMENITIES/ FACILITIES	34
2.2.2.8	TRANSPORTATION	34
2.2.3	TECHNOLOGY AND PROCESS DESCRIPTION	34
2.2.3.1	METHOD OF MINING	34
2.2.3.2	EXTENT OF MECHANIZATION	35
2.2..3.3	YEAR WISE PRODUCTION DETAIL	36
2.2.3.4	TOP SOIL AND SOLID WASTE GENERATION AND WASTE MANAGEMENT	36
2.2.4	CONCEPTUAL PLAN	36
2.2.4.1	FINAL SLOPE ANGLE TO BE ADOPTED	37

2.2.4.2	ULTIMATE EXTENT AND SIZE OF PIT	37
2.2.5	SCHEMATIC DIAGRAM OF MINING PROCESS	38
2.2.6	PROPOSED SCHEDULE OF PROJECT COMPLETION	38
2.3	DESCRIPTION OF THE ASPECTS OF THE PROJECT LIKELY TO CAUSE ENVIRONMENTAL IMPACT AND MITIGATION MEASURES	40
2.3.1	MITIGATION MEASURES INCORPORATED INTO THE PROJECT TO MEET ENVIRONMENTAL STANDARDS, ENVIRONMENTAL OPERATING CONDITIONS, OR OTHER EIA REQUIREMENTS (AS REQUIRED BY THE SCOPE)	40
2.3.1.1	POTENTIAL IMPACTS ON AIR QUALITY AND MITIGATION MEASURES	41
2.3.1.2	POTENTIAL IMPACTS AND WATER QUALITY MANAGEMENT	41
2.3.1.3	POTENTIAL IMPACTS AND NOISE POLLUTION CONTROL	41
2.3.1.4	POTENTIAL IMPACTS ON LAND USE	42
2.4	ASSESSMENT OF NEW AND UNTESTED TECHNOLOGY FOR THE RISK OF TECHNOLOGICAL FAILURE	42
CHAPTER -3 DESCRIPTION OF THE ENVIRONMENT		**43-118**
3.1	DESCRIPTION OF ENVIRONMENT	43
3.1.1	STUDY AREA OF EIA	43
3.1.2	PERIOD OF STUDY	43
3.1.3	COMPONENTS	43
3.1.4	METHODOLOGY OF THE STUDY	44
3.2	ESTABLISHMENT OF BASELINE	47
3.2.0	GEOLOGY OF THE REGION	47
3.2.1	HYDROGEOLOGY OF THE REGION	50
3.2.1.1	OBJECTIVES OF THE STUDY	50
3.2.1.2	PHYSIOGRAPHY & DRAINAGE PATTERN	50
3.2.1.3	AQUIFER OF THE REGION	53
3.2.1.4	GROUND WATER RESOURCES	55
3.2.1.5	DEPTH TO WATER LEVEL	56
3.2.1.6	SEASONAL FLUTUATION	56
3.2.1.7	MANAGEMENT PLAN FOR THE RECHARGING OF THE AQUIFER	56
3.2.1.8	GROUND WATER MODELLING	57
3.2.1.9	RECHARGE MEASURES AND IMPACT ON GROUND WATER REGIME	57
3.2.1.9.1	RAIN WATER HARVESTING	57
3.2.1.9.2	RECHARGE MEASURES AND ARTIFICIAL RECHARGE	58
3.2.2	LAND ENVIRONMENT	60
3.2.2.1	OBJECTIVE	60
3.2.2.2	LAND USE BASED ON DISTRICT CENSUS HANDBOOK (2011)	60
3.2.2.3	LAND USE BASED ON SATELLITE IMAGERY	60

3.2.2.4	DATA REQUIREMENTS	61
3.2.2.5	METHODOLOGY ADOPTED FOR THEMATIC DATA EXTRACTION FROM THE SATELLITE IMAGERIES	61
3.2.2.6	PRE-FIELD INTERPRETATION OF SATELLITE DATA	61
3.2.2.7	SOFTWARE'S USED	62
3.2.2.8	GROUND TRUTH COLLECTION	62
3.2.2.9	POST FIELD WORK	62
3.2.2.10	FINAL OUTPUT	62
3.2.2.11	OBSERVATION OF THE LU/LC DATA	63
3.2.2.12	DIGITAL ELEVATION MODEL (DEM)	63
3.2.2.13	DEM FROM TOPOGRAPHIC MAPS	63
3.2.3	MICRO AND MACRO METEOROLOGIACAL DATA	68
3.2.3.1	MACRO METEROLOGY	68
3.2.3.2	CLIMATE	68
3.2.3.3.	RAINFALL	68
3.2.3.4	METEOROLOGY DATA FROM SECONDARY SOURCE	69
3.2.4	MICRO METEROLOGY	71
3.2.4.1	MICRO METEROLOGY DATA	71
3.2.5	AMBIENT AIR ENVIRONMENT	72
3.2.5.1	SAMPLING METHODOLOGY	73
3.2.5.2	SOURCE OF AIR POLLUTION	73
3.2.5.3	SAMPLING SCHEDULE	73
3.2.5.4	SELECTION OF SAMPLING LOCATION	73
3.2.5.5	AMBIENT AIR QUALITY MONITORING	74
3.2.5.6	MINERALOGICAL COMPOSITION FOR PM10	75
3.2.6	NOISE ENVIRONMENT	76
3.2.6.1	OBJECTIVES	76
3.2.6.2	METHODOLOGY OF AMBIENT NOISE MONITORING	76
3.2.6.3	IDENTIFICATION OF SAMPLING LOCATIONS	77
3.2.6.4	PRESENTATION OF RESULTS	77
3.2.7	WATER ENVIRONMENT	77
3.2.7.1	OBJECTIVES	77
3.2.7.2	SURFACE WATER QUALITY MONITORING	78
3.2.7.3	SAMPLING METHODOLOGY	78
3.2.7.4	PRESENTATION OF RESULTS	78
3.2.8	SOIL CHARCTERSTICS	82
3.2.8.1	OBJECTIVES	82
3.2.8.2	METHODOLOGY	82
3.2.8.3	SOIL ANALYSIS RESULT	83
3.2.9	BIOLOGICAL ENVIRONMENT	84
3.2.91	INTRODUCTION	84

3.2.9.2	OBJECTIVES OF ECOLOGICAL STUDIES	84
3.2.9.3	METHODOLOGY ADOPTED FOR THE SURVEY	84
3.2.9.4	SITE SELECTION IN THE STUDY AREA	85
3.2.9.5	TERRESTRIAL VEGETATION SURVEY IN THE CORE ZONE	85
3.2.9.6	TERRESTRIAL VEGETATION SURVEY IN THE STUDY AREA	86
3.2.9.7	RARE AND ENDANGERED FLORA IN THE STUDY AREA	88
3.2.9.8	ENDEMIC FLORA IN THE STUDY AREA	88
3.2.9.9	TERRESTRIAL FAUNAL SURVEY IN THE CORE ZONE	88
3.2.9.10	ENDEMIC FAUNA OF THE STUDY AREA	89
3.2.9.11	SCHEDULED FAUNA OF THE STUDY AREA	91
3.2.9.12	BASIS FOR SELECTION OF PROPOSED AREA	91
3.2.9.13	SECONDARY DATA COLLECTION	91
3.2.9.14	STATUS OF CROP SPECIES IN THE STUDY AREA	93
3.2.10	SOCIO-ECONOMIC ENVIRONMENT	93
3.2.10.1	INTRODUCTION	93
3.2.10.2	OBJECTIVES OF THE STUDY	94
3.2.01.3	METHODOLOGY ADOPTED FOR THE STUDY	94
3.2.10.4	BACKGROUND OF THE STUDY AREA	95
3.2.10.5	DEMOGRAPHY	97
3.2.10.6	BASELINE DATA	100
3.2.10.7	SECONDARY DATA COLLECTION THROUGH CENSUS	102
3.2.10.8	AWARENESS AND OPINION	109
3.2.10.9	PEOPLES EXPECTATIONS	109
3.2.10.10	TECHNOLOGY SUPPORT FOR LOCAL OCCUPATION	110
3.2.11	DETAILS OF TRANSPORTATION OF MINED OUT MATERIALS AS PER THE INDIAN ROAD CONGRESS FOR BOTH THE WAYS (LOADED AS WELL AS UNLOADED TRUCKS) AND ITS IMPACT ON ENVIRONMENT	110
3.2.11.1	PRESENTATION OF RESULTS	111
3.3	MONITORING LOCATION WITH SELECTION CRITERIA OF ALL ENVIRONMENTAL COMPONENTS	114
CHAPTER – 4 ANTICIPATED ENVIRONMENTAL IMPACT AND MITIGATION MEASURES		**119-158**
4.1	INVESTIGATED ENVIRONMENTAL IMPACT, DATA ANALYSIS AND INTERPRETATION & ASSESSMENT OF SIGNIFICANCE OF IMPACT	119
4.1.1	INTRODUCTION	119
4.1.2	IMPACT ASSESSMENT METHODOLOGY	119
4.1.2.1	IDENTIFICATION OF IMPACTS	119
4.1.2.2	RANKING THE SEVERITY OF IMPACT	120
4.1.3	ENVIRONMENTAL IMPACTS DURING CONSTRUCTION PHASE	123
4.1.4	ENVIRONMENTAL IMPACTS DURING OPERATIONAL PHASE	123

4.1.4.1	AIR ENVIRONMENT	123
4.1.4.2	NOISE ENVIRONMENT	134
4.1.4.3	GEOLOGY	135
4.1.4.4	HYDROGEOLOGY	136
4.1.4.5	IMPACT ON WATER ENVIRONMENT	136
4.1.4.6	IMPACT ON SOIL	137
4.1.4.7	LANDSCAPE AND LAND USE PATTERN	138
4.1.4.8	SOCIO ECONOMIC ENVIRONMENT	140
4.1.4.9	OCCUPATIONAL HEALTH AND SAFETY	141
4.1.4.10	PUBLIC HEALTH IMPLICATION	147
4.1.4.11	IMPACT ON CIVIC AMENITIES	148
4.1.4.12	IMPACT ON HISTORICAL MONUMENTS	148
4.1.4.13	IMPACT ON LOCAL TRANSPORT INFRASTRUCTURE	148
4.1.4.14	IMPACT ON BIOLOGICAL ENVIRONMENT	148
4.1.4.15	DATA ANALYSIS/INTERPRETATION AND ASSESSMENT OF SIGNIFICANCE OF IMPACTS	149
4.2	MINIMIZING/OFFSETTING ADVERSE IMPACTS	152
4.3	MITIGATION MEASURES DURING CONSTRUCTION AND OPERATION PHASE	155
CHAPTER -5 ANALYSIS OF ALTERNATIVES (TECHNOLOGY & SITE)		**159**
5.0	ANALYSIS OF ALTERNATIVES (TECHNOLOGY & SITE)	159
5.1	ANALYSIS OF ALTERNATE TECHNOLOGY	159
5.2	ANALYSIS OF ALTERNATE SITE	159
CHAPTER -6 ENVIRONMENTAL MONITORING PROGRAMME		**160-178**
6.1	INTRODUCTION	160
6.1.1	OBJECTIVES OF MONITORING	160
6.1.2	ENVIRONMENTAL MONITORING PROGRAM	160
6.1.2.1	MONITORING PROGRAM DURING CONSTRUCTION PHASE	160
6.1.2.2	MONITORING PROGRAM DURING OPERATIONAL PHASE	160
6.1.3	METHODOLOGY	163
6.1.3.1	INSTRUMENT TO BE USED	165
6.1.4	REPORTING SCHEDULES OF THE REPORTING DATA	165
6.1.5	DATA ANALYSIS OF PERFORMANCE PARAMETERS OF CONTROL MEASURES	165
6.1.6	EMERGENCY PROCEDURES	166
6.1.6.1	RISK ANALYSIS AND DISASTER MANAGEMENT PLAN	166
6.1.6.2	POSSIBLE HAZARDS IN OPEN-CAST MINE	168
6.1.6.3	FUEL STORAGE	168
6.1.6.4	WATER LOGGING	168
6.1.6.5	SAFETY MEASURES	169
6.1.6.6	DISASTER MANAGEMENT PLAN	169

6.2	BUDGET AND PROCUREMENT SCHEDULE	177
CHAPTER -7 ADDITIONAL STUDIES		**179**
7.1	INTRODUCTION	179
7.1.1	PUBLIC CONSULTATION	179
CHAPTER-8 PROJECT BENEFITS		**180-181**
8.0	PROJECT BENEFITS	180
8.1	INTRODUCTION	180
8.2	EMPLOYMENT POTENTIAL	180
8.3	SOCIO- ECONOMIC BENEFITS	180
CHAPTER-9 ENVIRONMENTAL COST BENEFIT ANALYSIS		**182**
9.1	ENVIRONMENTAL COST BENEFIT ANALYSIS	182
CHAPTER -10 ENVIRONMENTAL MANAGEMENT PLAN		**183-187**
10.0	GENERAL	183
10.1	ENVIRONMENTAL MONITORING CELL (EMC)	183
10.1.1	ENVIRONMENTAL MONITORING AND REPORTING PROCEDURE	185
10.2	ROLES & RESPONSIBILITIES	186
10.2.1	PROPONENT	186
10.2.2	MINING ENGINEER (ME)	186
10.2.3	ENVIRONMENTAL OFFICER	186
10.2.4	MINING MATE	186
10.3	DOCUMENTS AND RECORD KEEPING	187
CHAPTER -11 SUMMARY AND CONCLUSION		**188-206**
11.1	SUMMARY OF THE PROJECT	188
11.1.1	JUSTIFICATION OF THE PROJECT	188
11.1.2	LOCAL GEOLOGY	190
11.1.3	DESCRIPTION OF THE ENVIRONMENT	191
11.1.4	ANTICIPATED ENVIRONMENTAL MEASURES AND MITIGATION MEASURES	201
11.1.5	ENVIRONMENTAL MONITORING PROGRAMME	204
11.1.6	ADDITIONAL STUDIES	204
11.1.7	RISK ASSESSMENT AND MANAGEMENT	204
11.1.8	PROJECT BENEFITS	205
11.1.9	ENVIRONMENTAL MANAGEMENT PLAN	205
11.2	CONCLUSION	205
CHAPTER-12 DISCLOSURE OF CONSULTANTS ENGAGED		**207-209**
13.0	DISCLOSUER OF COUNSULTANT	207
13.1	ABOUT FULGRO ENVIRONMENTAL & ENGINEERING SERVICES INDIA PVT LTD	207
13.1.1	THE QUALITY POLICY	207

LIST OF TABLES

Table No.	Particulars	Pg. No.
1.1	DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT	3
1.3	POINT WISE COMPLIANCE TO TERMS OF REFERENCE	8
2.1	GEOGRAPHICAL LOCATION OF ALL THE MINE LEASE AREA	25
2.2	UNFC CLASSIFICATION	32
2.3	WATER REQUIREMENT	33
2.4	DETAILS OF EMPLOYMENT	34
2.5	MINING DETAILS	34
2.6	LIST OF EQUIPMENTS	35
2.7	YEAR WISE PRODUCTION AND WASTE DETAILS	36
2.8	LAND: STAGE WISE LAND USE AND RECLAMATION AREA	37
2.9	POST MINING LAND USE OF CORE ZONE WITH ENVIRONMENT MANAGEMENT	38
3.1	ENVIRONMENTAL ATTRIBUTES AND FREQUENCY OF MONITORING	44
3.2	DYNAMIC GROUND WATER RESOURCES, AVAILABILITY, UTILIZATION AND STAGE OF GROUND WATER DEVELOPMENT	55
3.3	RECHARGE POTENTIAL	59
3.4	LAND USE/LAND COVER CLASSIFICATION SYSTEM	60
3.5	LAND USE BREAKUP OF THE STUDY AREA	62
3.6	MONTH-WISE RAINFALL PATTERN OF EASTERN RAAJSTHAN	68
3.7	CLIMATOLOGICAL DATA COLLECTED FOR A PERIOD FROM 1981-2010	70
3.8	METEOROLOGY DATA FROM IMD (1981-2010)	71
3.9	METEOROLOGY AT SITE (WINTER SEASON- DECEMBER 2020 – FEBRUARY 2021)	72
3.10	AMBIENT AIR QUALITY MONITORING RESULTS STUDY PERIOD –WINTER SEASON (DECEMBER 2020 – FEBRUARY 2021)	74
3.11	NATIONAL AMBIENT AIR QUALITY STANDARDS THE FOLLOWING TABLE SHOWS THE NAAQS PRESCRIBED BY CPCB	75
3.12	CLASSIFICATION OF RSPM	75
3.13	NOISE (SOUND) MEASURING INSTRUMENT	77
3.14	TESTING METHOD FOLLOWED	77
3.15	NOISE LEVELS IN THE STUDY AREA	77
3.16	STANDARD OPERATING PROCEDURE (SOP) FOR WATER SAMPLING & ANALYSIS	79
3.17	ANALYTICAL TECHNIQUES FOR WATER ANALYSIS	79
3.18	GROUND WATER ANALYSIS REPORT, STUDY PERIOD WINTER SEASON (DECEMBER 2020 – FEBRUARY 2021)	81
3.19	SOIL ANALYSIS REPORT	83
3.20	FLORA AND FAUNA SURVEY SITES	85
3.21	LIST OF FLORA IN THE CORE ZONE	85
3.22	LIST OF FLORA IN THE STUDY AREA	86
3.23	LIST OF FAUNA IN CORE ZONE	88
3.24	LIST OF FAUNA IN BUFFER ZONE	89
3.25	POPULATIONS OF SMALL ANIMALS IN JHUNJHUNU DISTRICT	92

3.26	POPULATIONS OF LARGE ANIMALS IN JHUNJHUNU DISTRICT	92
3.27	LIST OF MAJOR FIELD CROPS CULTIVATED IN THE STUDY AREA	93
3.28	DEMOGRAPHIC PROFILE OF STUDY AREA	96
3.29	SOCIO-ECONOMIC PROFILE OF THE STUDY AREA	97
3.31	SOCIO-ECONOMIC PROFILE OF THE SURVEYED VILLAGES	101
3.32	WORK FORCES OF THE SURVEYED VILLAGE	104
3.33	EDUCATIONAL FACILITIES IN THE SURVEYED VILLAGES	105
3.34	HEALTH FACILITIES IN THE SURVEYED VILLAGES	106
3.35	WATER RESOURCES AND FACILITIES IN THE SURVEYED VILLAGES	107
3.36	INFRASTRUCTURE FACILITIES IN THE SURVEYED VILLAGES	108
3.37	LEVEL OF SERVICE (LOS)	110
3.38	RECOMMENDED PCU FACTORS FOR VARIOUS TYPES OF VEHICLES ON ROAD	111
3.39	TRAFFIC VOLUME COUNT ON SH-15, 1.60 KM NNW DIRECTION	111
3.40	IMPACT DURING MINE OPERATION	111
3.41	INCREMENTAL RISE AT SH-15 DUE TO MINING PROJECT	112
3.42	LOCATIONS OF AMBIENT AIR QUALITY MONITORING STATIONS	114
3.43	LOCATIONS OF NOISE MONITORING STATIONS	115
3.44	WATER SAMPLING LOCATIONS	116
3.45	SOIL SAMPLING LOCATIONS	117
4.1	IMPACT RANKING SYSTEM	120
4.2	MAIN IMPACTS OF AIR POLLUTANTS ON HEALTH OF HUMAN, ANIMALS AND PLANTS	123
4.3	PREDOMINANT SOURCES OF AIR POLLUTION	124
4.4	INPUT PARAMETERS FOR PIT SOURCE MODELING (DEPOSIT 1)	126
4.5	INPUT PARAMETERS FOR PIT SOURCE MODELING (DEPOSIT 2)	126
4.6	STABILITY CLASSIFICATION	127
4.7	RURAL CONDITIONS	128
4.8	MIXING HEIGHT FOR WINTER SEASON	128
4.9	PREDICTED HIGHEST GLCs of PM10 WITHIN 10 KM RADIUS OF THE STUDY AREA	133
4.10	HAULAGE EMISSIONS (UNPAVED) – TRANSPORT OF MINERAL FROM MINE PIT TO METALLED ROAD	133
4.11	IMPACT IDENTIFICATION ON NOISE ENVIRONMENT AND IMPACTS SIGNIFICANCE	135
4.12	IMPACT IDENTIFICATION ON GEOLOGY OF AREA	135
4.13	IMPACT IDENTIFICATION ON HYDROGEOLOGY OF AREA	136
4.14	IMPACT IDENTIFICATION ON WATER ENVIRONMENT AND ITS SIGNIFICANCE FROM PROPOSED PROJECT	137
4.15	IMPACT IDENTIFICATION ON SOIL AND IMPACTS SIGNIFICANCE	138
4.16	STAGE WISE LAND USE CHANGE	139
4.17	IMPACT IDENTIFICATION ON SOIL AND IMPACTS SIGNIFICANCE	140
4.18	LIST OF WORKERS AND HAZARDOUS TASK ASSIGNED WITH DURATION	142
4.19	MEDICAL FACILITIES AND HEALTH CHECK UP DETAILS	142
4.20	DETAIL OF HEALTH CHECK UP AND PERIODICAL MEDICAL EXAMINATION SCHEDULE	146
4.21	BUDGETARY BREAK UP FOR LABOUR WELFARE	147

4.22	ACTIVITY-ASPECT BASED DETERMINATION OF IMPACTING ECOLOGICAL COMPONENTS	148
4.23	LIKELY IMPACTS IDENTIFICATION	149
4.24	POTENTIAL ENVIRONMENTAL IMPACTS AND DATA ANALYSIS/INTERPRETATION	150
4.25	MINIMIZING AND OFFSETTING THE VARIOUS ENVIRONMENTAL IMPACTS ON ENVIRONMENTAL RECEPTORS	152
4.26	PROPOSED MITIGATION MEASURES ON VARIOUS ENVIRONMENTAL RECEPTORS	155
6.1	ENVIRONMENTAL MONITORING DURING OPERATIONAL PHASE (POST PROJECT ENVIRONMENTAL MONITORING)	161
6.2	METHODOLOGY TO BE ADOPTED DURING OPERATIONAL PHASE	163
6.3	DATA ANALYSIS OF PERFORMANCE PARAMETERS OF CONTROL MEASURES	165
6.4	EMERGENCY RESPONSES	171
6.5	EXPENDITURE ON ENVIRONMENTAL MANAGEMENT	178
11.1	MINING METHOD AND RELEVANT DETAILS	189
11.2	ENVIRONMENTAL SETTINGS	189
11.3	LAND USE PATTERN AT END OF LIFE	190
11.4	DETAILS OF SAMPLING LOCATIONS WITHIN 10 KM RADIUS OF THE STUDY AREA	191
11.5	LAND USE BREAKUP OF THE STUDY AREA	191
11.6	GROUND WATER ANALYSIS, STUDY PERIOD WINTER SEASON (DECEMBER 2020 – FEBRUARY 2021)	193
11.7	METEOROLOGY AT SITE (WINTER SEASON- DECEMBER 2020 – FEBRUARY 2021)	194
11.8	TABLE NO. 11.8 AMBIENT AIR QUALITY MONITORING RESULTS STUDY PERIOD – WINTER SEASON (DECEMBER 2020 – FEBRUARY 2021)	194
11.9	NOISE LEVELS IN THE STUDY AREA	195
11.10	SOCIO-ECONOMIC PROFILE OF THE SURVEYED VILLAGES	196
11.11	LIST OF FLORA IN CORE ZONE	197
11.12	LIST OF FLORA IN THE STUDY AREA	197
11.13	LIST OF FAUNA IN THE CORE ZONE	199
11.14	LIST OF FAUNA IN THE STUDY AREA	200
11.15	ANTICIPATED ENVIRONMENTAL MEASURES AND MITIGATION MEASURES	201

LIST OF FIGURES

Figure No.	Particulars	Pg. No.
1.1	LOCATION MAP	5
1.2	MAP SHOWING LOCATION ON GEOREFERENCED SOI GT SHEET OF THE 10 KM RADIUS OF THE STUDY AREA	6
1.3	PHOTOGRAPHS OF MINE LEASE AREA	7
2.1	GOOGLE IMAGERY SHOWING THE BOUNDARY PILLAR OF THE MINE LEASE AREA	26

2.2	MINE LAYOUT PLAN	27
2.3	WATER BALANCE FLOWCHART	33
2.4	SCHEMATIC DIAGRAM SHOWING WATER TABLE AND ULTIMATE WORKING DEPTH OF MINING	37
2.5	PROCESS FLOW DIAGRAM	38
2.6	FLOW CHART OF PROPOSED SCHEDULE FOR OBTAINING EC	40
3.1	SOME OF BASELINE DATA COLLECTION PHOTOGRAPHS	46
3.2	MAP SHOWING GEOLOGICAL FORMATION OF THE 10 KM RADIUS FROM THE STUDY AREA	48
3.3	MAP SHOWING GEOMORPHOLOGICAL FORMATION OF THE 10 KM RADIUS FROM THE STUDY AREA	49
3.4	HYDROGEOLOGY MAP OF DISTRICT JHUNJHUNU	51
3.5	DRAINAGE MAP OF THE STUDY AREA	52
3.6	AQUIFER SYSTEM OF JHUNJHUNU DISTRICT	54
3.7	THE THEMATIC MAP OF THE STUDY AREA	65
3.8	LAND USE PATTERN OF THE STUDY AREA	66
3.9	DEM MAP OF THE STUDY AREA	67
3.10	YEAR WISE RAINFALL PATTERN OF AJMER DISTRICT FROM YEAR 2012-2017	69
3.11	WIND ROSE DIAGRAM AT SITE	72
3.12	CULTURAL MAP OF RAJASTHAN DULY SHOWING MAP OF JHUNJHUNU DISTRICT	91
3.13	MAP OF JHUNJHUNU DISTRICT AT A GLANCE	95
3.14	VILLAGE MAP OF 10 KM RADIUS FROM THE MINE SITE	99
3.15	GRAPH SHOWING POPULATION IN THE SURVEYED VILLAGE	102
3.16	CHART SHOWING ST/SC AND POPULATION IN THE SURVEYED VILLAGE	102
3.17	GRAPH SHOWING VILLAGE WISE SC / ST POPULATION IN THE SURVEYED	103
3.18	GRAPH SHOWING PERCENTAGE OF MALE AND FEMALE LITERATE IN THE SURVEYED VILLAGES	104
3.19	CHART SHOWING WORK FORCE OF THE SURVEYED VILLAGE	105
3.20	TRANSPORTATION ROUTE MAP FOR MASONRY STONE MINING PROJECT	113
3.21	TOPOGRAPHICAL MAP SHOWING FOREST AREA, SENSITIVE AREA, HABITATION WITHIN 10 KM RADIUS FROM THE STUDY AREA	118
4.1(A)	ISOPLETH SHOWING SPATIAL DISTRIBUTION OF PM10 (DEPOSIT 1) DUE TO EMISSION FROM PIT SOURCE	129
4.1 (B)	ISOPLETH SHOWING CONCENTRATION OF PM2.5 (DEPOSIT 1) DUE TO EMISSION FROM PIT SOURCE	130
4.2 (A)	ISOPLETH SHOWING SPATIAL DISTRIBUTION OF PM10 (DEPOSIT 2) DUE TO EMISSION FROM PIT SOURCE	131
4.2 (B)	ISOPLETH SHOWING CONCENTRATION OF PM2.5 (DEPOSIT 2) DUE TO EMISSION FROM PIT SOURCE	132
6.1	POSSIBLE HAZARDS IN THE PROPOSED PROJECT	168
6.2	ONSITE EMERGENCY PLAN	175
10.1	OBJECTIVE OF ENVIRONMENT MANAGEMENT PLAN (EMP)	183
10.2	ORGANOGRAM	185

LIST OF ANNEXURES

Annexure No.	Particulars
I	TOR LETTER
II (A)	LEASE DOCUMENT & KHASRA DETAILS
II (B)	AUTHENTICATED PRODUCTION FIGURE
III	APPROVED MINING PLAN
IV	500 MTS CLUSTER CERTIFICATE WITH MAP
V	ARAVALI CERTIFICATE
VI	AFFIDAVIT FROM PP & CONSULTANT REG. NO NATIONAL PARK, WILDLIFE SANCTUARY, ECO-SENSITIVE AREA FALL WITHIN 10 KM RAIUS OF THE MINE LEASE AREA
VII	DISTRICT SURVEY REPORT
VIII	NABL ACCREDITATION LETTER ALONGWITH THE APPROVED SCOPE OF NOIDA TESTING LABORATORY
IX	ADOPTED METHODOLOGY FOR SAMPLING AND ANALYSIS OF AIR, WATER, SOIL AND NOISE
X	BASELINE MONITORING REPORTS FROM NABL APPROVED LABORATORY
XI	NABET CERTIFICATE

1.1 PURPOSE OF THE EIA REPORT

Any industrial (mining, highways, infra-structural, industries etc) development leaves a impact on socio-economic-environmental aspect. This impact may be a positive or negative at a local or regional level or moreover may impact on a regional eco-system of the area. For a project whether it is a new or expansion the approach of development should be a sustainable development. Hence, an EIA report is the document which gives a concept of sustainable development through mitigation measures.

Environmental Impact Assessment (EIA) is the management tool to ensure the sustainable development and it is a process, used to identify the environmental, social and economic impacts of a project prior to decision-making. It is a decision-making tool, which guides the decision makers in taking appropriate decisions for any project. EIA systematically examines both beneficial and adverse consequences of the project and ensures that these impacts are taken into account during the project designing. It also reduces conflicts by promoting community participation, information, decision makers, and helps in developing the base for environmentally sound project. In order to assess the likely impacts arising out of the project, the Environmental Impact Assessment (EIA) study is undertaken, which will be followed by preparation of a detailed Environmental Management Plan (EMP) to minimize adverse impacts.

EIA is also necessary to develop sustainable growth with respect to exploration and exploitation of natural resources, socio-economic changes and conserving the environmental aspects of the surroundings.
The sole purpose of the EIA report is to provide a coherent statement of the potential impacts of a proposal and the measures that can be taken to eliminate, reduce and mitigate them. It contains essential information for:

- The proponent to implement the proposal in an environmentally and socially responsible way.
- The responsible authority to make an informed decision on the proposal, including the terms and conditions that must be attached to an approval or authorization.
- The public to understand the proposal and its likely impacts on people and the environment along with remediation measure.

Under the EIA Notification, dated 14th September, 2006, Environmental clearance is required for the new (green field) and expansion (brown field) under different category (Category A, B1 and B2) depending upon the size and type of the project.
This project as per the MoEF & CC Gazette vide S.O.3977 (E) dated 14th August 2018 falls under Category "B1" Schedule 1 (a).

1.1.1 Identification of Project & Project Proponent

This is an **Iron Ore mining project** of **M/s. Nilkanth Concast Pvt. Ltd,** having mine lease number 10/98 falling in Survey of India toposheet no. 45M/9 having area of 4.945 Hectare with proposed annual production capacity 1, 50,700 TPA (ROM) located at Khasra No. 1583, 1601, 1582, 1602, 1604, 1606, 1566, 1567, 1568, 1569, 1570, 1571 near village- Bhagoli, Tehsil: Udaipurwati & District: Jhunjhunu, Rajasthan.

Mining Lease Detail: Initially the lease was granted in favor of **Sh. Bajrang Kumar Bansal S/o Sh. Mahaveer Prasad Agrawal** vide government order P-17(32)Khan/Group-1/2002 on dated 10/05/2002 and registered on 31/10/2002 for 30 years i.e: 31/10/2032. Lease document enclosed as ***'Annexure –II(A)***' with this EIA report.
Further lease was transferred in favor of **M/s Nilkanth Concast Pvt. Ltd.** vide order no. P 17(32)/Khan/Group-2/2000-Part on dated 10/10/2013 and executed on 22/11/2013 and registered on 04/12/2013. Lease period was extended for 50 years i.e.: 31/10/2052 vide letter dated 20/02/2015. Lease transfer document enclosed as '***Annexure –II(A)'*** with this EIA report.

The lessee has already explored the area. Two pits of 3x3x3 meter in average length, width and depth were proposed for tracing the Iron Ore. The lessee developed the pits which were converted to present workings. Prior Production figure as per the approved Mining Plan is given below:

Year	Iron Ore in Tonne (Production achieved)
2007-08	18681
2008-09	12425.5
2009-10	Nil
2010-11	Nil
2011-12	Nil
2012-13	Nil
2013-14	4550
2014-15	Nil
2015-16	Nil
2016-17	Nil
2017-18	Nil

Applicability of EC for major mineral came into force as per MoEF & CC Notification vide S.O 2601 (E) dated 7th Oct 2014. (Presently, the working was suspended by order dated 26.11.2014). Authenticated Production detail for the same is enclosed as ***Annexure II(B).***

Power Line: A high tension line is passes through the lease area. This line was erected during the period when mine was un-operational. However as per rule 50 m safety zone will be left

from the HTL.

Status of approval of Mining Plan: Review Mining Plan for period 2017-18 to 2021-22 was approved by Regional Controller of Mines, Indian Bureau of Mines Ajmer vide letter no 584(4)(3)(1731)/2018 RCM-AJM on dated 27/04/2018. Copy of the approved mining plan with approval letter is enclosed as '***Annexure –III'*** with the EIA report**.**

1.1.2 Project Proponent

Applicant : M/s. Nilkanth Concast Pvt. Ltd.
In front of Gandhi dham, Plot No. 403, Ward 6/C,
Opposite Om Cineplex, Adipur, Kutch (Gujarat)

1.2 BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY, REGION

TABLE No.-1.1: DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT

<table>
<tr><th>Sr. No.</th><th>Particulars</th><th>Details</th></tr>
<tr><td>A.</td><td>Name of the project</td><td>Iron Ore Mining Project</td></tr>
<tr><td>B.</td><td>Size of the project</td><td></td></tr>
<tr><td>1.</td><td>Mine Lease area</td><td>4.945 Hectare</td></tr>
<tr><td>2.</td><td>Proposed Production capacity</td><td>1, 50,700 TPA (ROM)
(Iron Ore: 1, 29,170 TPA, Waste: 21,530 TPA)</td></tr>
<tr><td>C.</td><td>Project Location</td><td></td></tr>
<tr><td>1.</td><td>Village</td><td>Khasra No. 1583, 1601, 1582, 1602, 1604, 1606, 1566, 1567, 1568, 1569, 1570 & 1571, near village- Bhagoli</td></tr>
<tr><td>2.</td><td>Tehsil</td><td>Udaipurwati</td></tr>
<tr><td>3.</td><td>District</td><td>Jhunjhunu</td></tr>
<tr><td>4.</td><td>State</td><td>Rajasthan</td></tr>
<tr><td>5.</td><td>Latitude & Longitude</td><td>
<table>
<tr><th>Pillar No.</th><th>Latitude(N)</th><th>Longitude(E)</th></tr>
<tr><td>A.</td><td>27°45' 28.86" N</td><td>75°41'45.01" E</td></tr>
<tr><td>B.</td><td>27°45' 19.94" N</td><td>75°41'32.92" E</td></tr>
<tr><td>C.</td><td>27°45' 22.82" N</td><td>75°41'30.24" E</td></tr>
<tr><td>D.</td><td>27°45' 31.74" N</td><td>75°41'42.33" E</td></tr>
</table>
</td></tr>
<tr><td>6.</td><td>Toposheet No.</td><td>45M/9, 45M/10, 45M/13 &45M/14</td></tr>
<tr><td colspan="3">Location Map and Map Showing Location on Geo-referenced SOI GT Sheet of the 10 km radius of the study area is shown at Figure 1.1 & 1.2 respectively.</td></tr>
<tr><td>D.</td><td colspan="2">Environmental Settings Details (with aerial distance & direction from the mining lease boundary)</td></tr>
<tr><td>1.</td><td>Nearest Village</td><td>Papra Village is at a distance of 1.23 Km towards SW direction from M.L. area.
Bhagoli Village is at a distance of 1.70 Km towards NW direction from M.L. area.</td></tr>
<tr><td>2.</td><td>Nearest Town</td><td>Neem Ka Thana is at a distance of 7.85 Km towards ESE direction from M.L. area.</td></tr>
<tr><td>3.</td><td>Nearest Highway</td><td>• SH-37 B which is at a distance of 6.30 Km towards SE direction</td></tr>
</table>

		from M.L. area. • SH-13 which is at a distance of 9.60 Km towards East direction from M.L. area.
4.	Nearest Railway Station	Neem Ka Thana Railway Station at a distance of 8.40 Km towards ESE direction from M.L. area.
5.	Nearest Airport	Jaipur International Airport at a distance of 103.25 Km towards South direction from M.L. area.
6.	National Parks, Wild Life Sanctuaries, Biosphere Reserves etc.), Reserved /Protected Forest within 10 Km radius study area	No, National Parks, Wildlife Sanctuaries, Biosphere Reserves etc.), within 10 Km radius study area. Kankriya Block Protected Forest — 3.22 Km towards NW direction from M.L. area Norangpura Block Protected Forest — 4.60 Km towards North direction from M.L. area Kankriya Block Protected Forest — 4.85 Km towards West direction from M.L. area Kankriya Block Protected Forest — 7.71 Km towards NW direction from M.L. area Chichdoli Protected Forest — 7.90 Km towards NE direction from M.L. area
7.	Water Bodies within 10km radius	**Water bodies:** Kantli River at a distance of 0.35 Km towards West direction from M.L. area Water Body Near Village Mavanda Tarla at a distance of 7.90 Km towards NE direction from M.L. area Chandrabhaga River at a distance of 8.83 Km towards SE direction from M.L. area Khakli Nala at a distance of 9.65 Km towards North direction from M.L. area
8.	Interstate Boundary	No Interstate Boundary is located within the 15 Km radius of the mining lease area.
9.	Places of Archaeological importance	No archaeological importance place falls within 10 km radius from the mining lease boundary.
10	Seismic Zone	Seismic Zone- II (as per IS 1893 (Part-I): 2002) ***(Source: National Disaster Management Authority www.ndma.gov.in/en/zone-map.html)***
11	Inland, coastal, marine or underground waters.	No such area is located within the 15 Km radius of the mining lease area.
E.	State, National boundaries.	No State, National Boundaries are located within the 15 Km radius of the mining lease area.
Cost Details		
1.	Total Project Cost	1.00 Crore
2.	Cost for Environmental Protection Measures	5.00 Lac (Recurring Cost)

FIGURE 1.1 LOCATION MAP

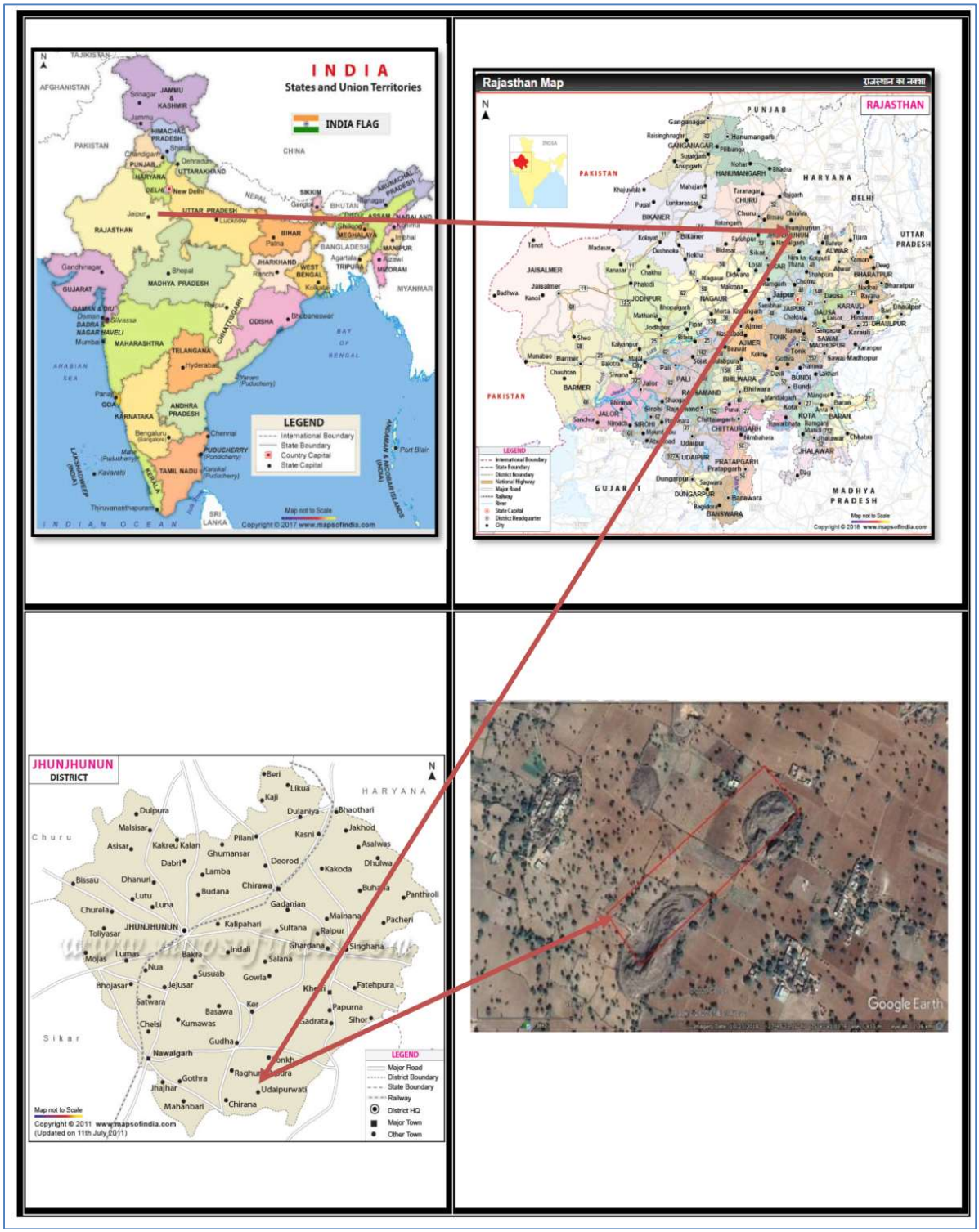


FIGURE 1.2: MAP SHOWING LOCATION ON GEOREFERENCED GT SHEET OF THE 10 KM RADIUS OF THE STUDY AREA

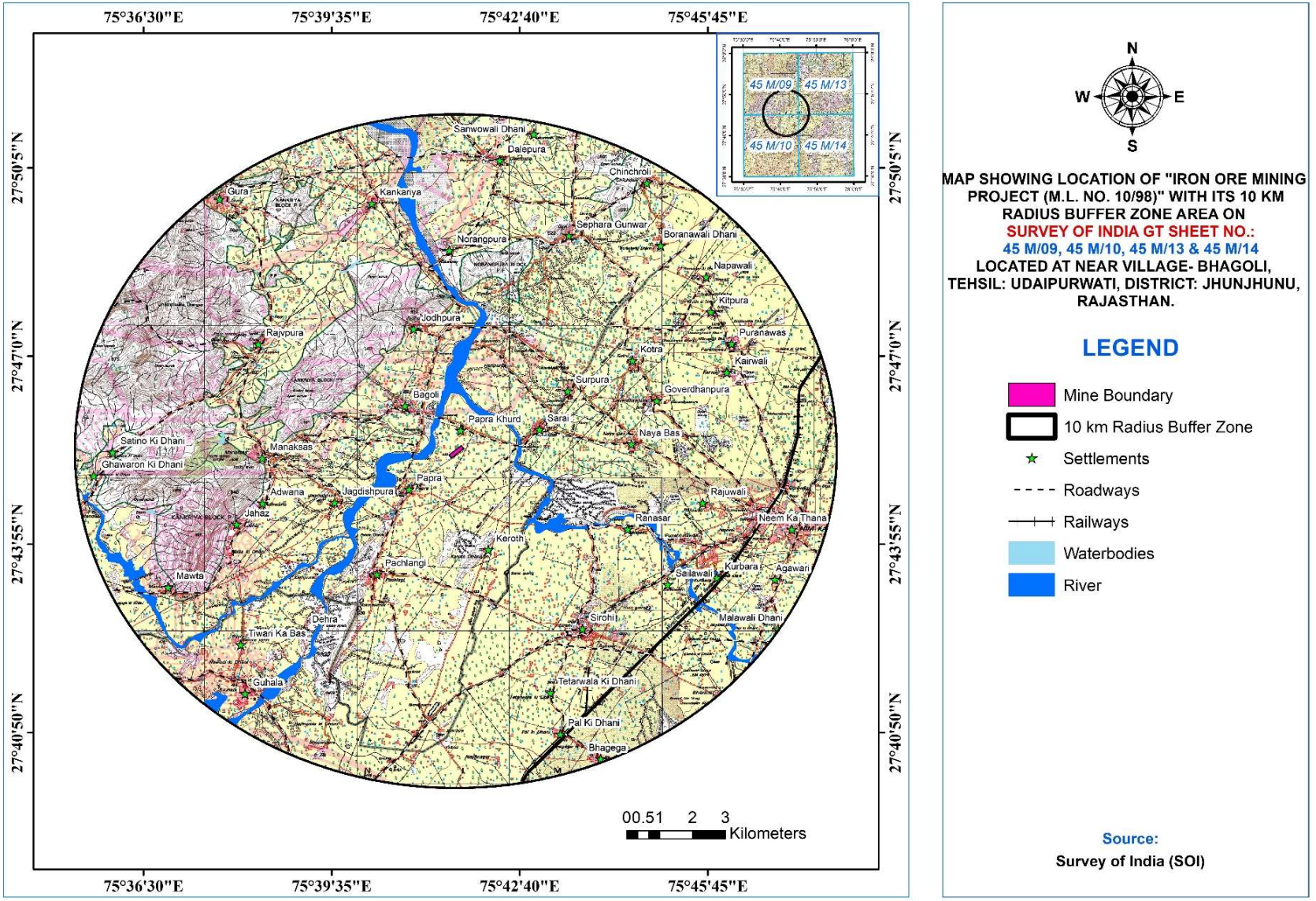


FIGURE No. 1.3: PHOTOGRAPHS OF THE MINING LEASE AREA



West Direction



East Direction



South Direction



North Direction

1.2.1 Location and approach to the mine

Mining lease area is located Near Village: Bhagoli, Tehsil- Udaipurwati & District- Jhunjhunu, Rajasthan. Mine site is well connected with SH-37 which is located at a distance of 6.30 Km towards South-East direction from mining lease area. The site is well connected with communication facilities like telephone, fax and wireless. Nearest District Headquarters: Jhunjhunu is at a distance of 50.45 Km towards North West direction from mining lease area. Nearest Town: Neem Ka Thana is at a distance of 7.85 Km towards ESE direction from mining lease area. Neem Ka Thana Railway Station which is at a distance of 8.40 Km towards ESE direction from mining lease area. Jaipur International Airport at a distance of 103.25 Km towards South direction from mining lease area.

1.2.2 Importance to the country and region

In respect to the importance of the project to the nation, it can be very well said that in a developing nation like India, iron ore is very essential it used to make steel. Steel is used to make automobiles, locomotives, ships, beams used in buildings, furniture, paper clips, tools, reinforcing rods for concrete, bicycles, and thousands of other items. Thus, keeping in mind this requirement, mining of Iron Ore is necessary for durability and to beautify by carving as per the requirement of the consumer. The said iron ore mining project will cater the requirement of iron ore by nearby area. Besides this, the project will be beneficial in terms of socio-economic development as it will provide employment to locals/nearby villagers. Further, the average income level, which is the indicator of socio–economic status of households, is expected to be increase, which will ultimately result in better standard of living of the local people.

1.3 SCOPE OF EIA STUDY AS PER TERMS OF REFERENCE-TOR (DETAILS OF THE REGULATORY SCOPING CARRIED OUT)

The application to prior EC (Form-1 and PFR along with requisite documents) for the proposed project has been submitted to SEAC and ToR has been accorded for the preparation of EIA report vide letter no. F1 (4)/SEIAA/SEAC-Raj/Sectt/Project/Cat.1(a)B1(15503)/2019-20. A copy of the ToR issued is enclosed as '***Annexure No.01'.***

To carry out EIA study and the compliance of all the points suggested as per granted ToR letter for Mining project is being discussed below in table no 1.3. As per the ToR granted, 10 km radius area around the mine area is considered as the study area to carry out baseline environmental monitoring. The environmental attributes like ambient air quality, meteorological parameters, water quality, soil characteristics, noise level, biological environment and socioeconomic environment have been monitored during Winter season starting from 1st December to 2020 to 28th February, 2021.

TABLE No 1.2: POINT WISE COMPLIANCE TO TERMS OF REFERENCE

Point No.	Points mentioned in TOR issued by SEAC	Compliance	Ref. in EIA & EMP Report
General ToR			
1.	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production	Applicable, we are submitting year-wise production (since inception of the mines). No exploration was carried out after 2014 details is being attached	Copy of Lease Document enclosed as '***Annexure II(A)'*** with this Draft EIA/EMP report. Prior Production data duly authenticated by

	achieved prior to 1994.	as **"*Annexure-II(B)*".** Although Proposed Year wise production details clearly indicating the highest production in the review of mining plan period is given as per the approved review of mining plan with Progressive Mine Closure Plan.	DMG from year 2012 to 2020 is enclosed as ***Annexure II (B)*** with this Draft EIA/EMP report.
2.	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.	Initially mining lease has been granted to Sh. Bajrang Kumar Bansal over an area of 4.945 ha near village Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu (Raj.) by vide order no. P-17(32) Khan/Group-1/2002 on dated 10/05/2002 for 30 Years & registered on 31/10/2002 i.e: till 30/10/2032. Further the lease was transferred to M/s Nilkanth Concast Pvt. Ltd., vide order no. P 17(32)/Khan/Group-2/2000-Part on dated 10/10/2013. Later on as per rule 9(2) of RMMCR 2017 lease period has become 50 years from date of lease registration. So, lease is valid till 30/10/2052.	Copy of Lease document is enclosed as '***Annexure II (A)'*** with this EIA/EMP report.

3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.	The documents submitted are compatible with one another w.r.t. following information: Mining Lease Area- 4.945 ha Proposed Production – 1,50,700 TPA (ROM) Waste generation- As per approved review of mining plan with Progressive Mine Closure Plan around 77,870 MT of waste will be generated during first five years of mining activity. Mining Technology – Opencast Semi-Mechanized Method Name of the Lessee – M/s. Nilkanth Concast Pvt. Ltd	Chapter 2, Section 2.1.1 Type of the project its size and magnitude, Pg. No.25 and Section 2.2.3, Table 2.5: Mining details. Pg. No. 34-35.
4.	All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone)	All corner coordinates of the mine lease area superimposed on a High-Resolution Imagery as shown in Chapter 3, Figure No. 3.7 (Thematic Map of the study area) with this Draft EIA / EMP Report. Geomorphology & Geology of the area is incorporated in Chapter 3, Figure No. 3.2 & 3.3. Land Use / Land Cover map of the study area clearly showing land use and other ecological features in core and	High resolution Imagery: Chapter 3, Figure 3.7 (Thematic Map of the study area) Pg. No. 65 Geology: Chapter 3, Figure No. 3.2 & 3.3 Pg. No.48 & 49. Land Use: Chapter – 3, Figure 3.8, Pg. No.66.

		buffer zone) have been shown in Chapter – 3, Figure 3.8 with this Draft EIA / EMP Report.	
5.	Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.	A map of Survey of India Toposheet in 1:50,000 scale indicating desired features such as important water bodies, streams & rivers has been given in Chapter 1, Figure 1.2.	Chapter 1, Figure 1.2 Pg. No. 6.
6	Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.	The land proposed for mining activity is a Govt. land and the lease document is granted by SME, Jaipur.	Copy of Lease document enclosed as '***Annexure II(A)'*** with this Draft EIA & EMP report.
7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.	Lessee is an individual owner of the mine lease however a well laid down Environment policy to take care of any infringement / deviation/ violation of the environmental or forest norms/ conditions applicable for the mine lease is proposed in the EIA report. Organogram showing hierarchy to deal with the environmental issues and for ensuring compliance with the EC conditions is discussed in Chapter 10 Section 10.1 and 10.2.	Chapter 10 Section 10.1 and 10.2 Pg. No. 183 to 187 Chapter 10, Figure 10.2 Pg. No. 185.
8.	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed.	Issues related to mine safety are discussed in Chapter 6, Section 6.1.6. Proposed safeguard	Chapter 4, Section 4.3, Table 4.26 at Sr. no. 8. Pg. No.158 Chapter 2, Table 2.5

	The proposed safeguard measures in each case should also be provided.	measures discussed in Chapter 4, Section 4.3, Table 4.26 at Sr. no. 8. Slope details given in Chapter 2, Table 2.5.	Pg. No. 34-35
9.	The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine/lease period.	The study area comprises of 10 km around periphery of the mine lease area. As per approved review of mining with Progressive Mine Closure Plan around 77,870 MT of waste will be generated during first five years of mining activity.	Study Area: Chapter 3, Section 3.3, Figure 3.25, Pg. No. 118 Waste Generation: Section 2.2.3.3, Table 2.7: Year wise production and waste details, Pg. No. 36.
10.	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Land use / land cover map of the study area showing present land use pattern and also, delineating agricultural land, water bodies, human settlements and other ecological features etc. is given in Chapter 3, Section 3.2.2.10, Figure 3.8. Land use plan of the mine lease area in pre-operational, operational and post operational phases has been prepared and detailed in Chapter 4, Section 4.1.4.7 Table 4.16.	Land use / land cover map of the study area is given in Chapter 3 Figure 3.8, Pg. No 66. Land Use Plan: Chapter 4, Section 4.1.4.7 Table 4.16, Pg. No. 139
11	Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.	As per approved review of mining plan mining scheme with Progressive Mine Closure Plan around 77,870 MT of	--

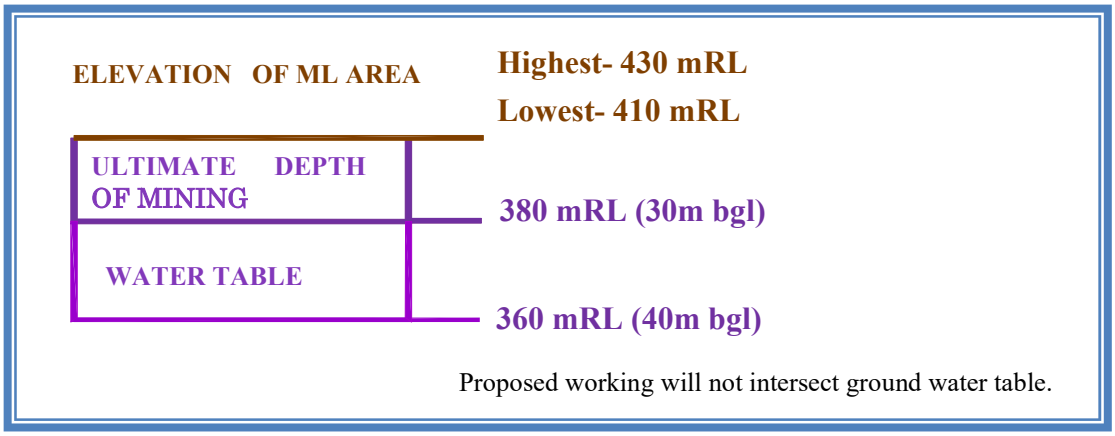
		waste will be generated during first five years of mining activity. No R & R issues involved.	
12	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.	No forest land is involved. Khasra details enclosed with the Lease document with this Draft EIA & EMP report.	Khasra Details enclosed with lease document as ***Annexure II (A).***
13	Status of forestry clearance for the broken-up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.	No forest land is involved. Khasra details enclosed with the Lease document with this Draft EIA & EMP report.	Khasra Details enclosed with lease document as ***Annexure II (A).***
14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.	No forest land is involved. Khasra details enclosed with the Lease document with this Draft EIA & EMP report.	Khasra Details enclosed with lease document as ***Annexure II (A).***
15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given.	Vegetation in RF/PF areas in the study area discussed in Chapter 3, Section 3.2.9.5, Terrestrial vegetation survey in the study area.	Chapter 3, Section 3.2.9.5, Table No. 3.22 Pg. No. 85-88
16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly,	Faunal study has been carried out in the core area and buffer zone. Refer Chapter 3 Section 3.2.9.8 & 3.2.9.9.	Faunal Study: Chapter 3 Section 3.2.9.8, 3.2.9. 9, Pg. No. 85-91 Impact on Biological Environment: Chapter

	detailed mitigative measures required, should be worked out with cost implications and submitted	Impact on Biological Environment discussed in Chapter 4, Section 4.1.4.14 Table No. 4.22 and corresponding mitigation measures discussed in Chapter 4 Section 4.3 Table 4.26, Sr. No. 7.	4, Section 4.1.2.15 Table No. 4.23, Pg. No.149. Mitigation measures, Chapter 4 Section 4.3 Table 4.26, Sr. No. 7, Pg. No. 157-158.
17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.	No National Parks, Wildlife Sanctuaries, Biosphere Reserves, wildlife corridors, Tiger/Elephant Reserves (existing as well as proposed) etc. falls within the study area (10 km radius of the mine boundary).	--
18	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.	Detailed Biological study for the study area (core zone & buffer zone) has been carried out and discussed in Chapter 3, section 3.2.9 of this Draft EIA/EMP report.	Chapter 3, Section 3.2.9 Pg. No. 84-92.
19.	Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come	The mine lease area is not located in 'Critically	Certificate regarding mine lease area not

	under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.	Polluted' and under the 'Aravali Range' (attracting court restrictions for mining operations). Certificate regarding mine lease area not falling in the Aravalli Hills issued by the Mining Engineer, Jhunjhunu in the prescribed format, vide letter no. ME/Jhunjhunu/MAP/M. L. No. 10/98/569 on dated 17/06/2020 issued by the ME, Department of Mines and Geology, Jhunjhunu is attached as ***Annexure V.***	falling in the Aravalli Hills is enclosed as ***Annexure V.***
20	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need-based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.	No R& R study involved.	--
21	One season (non-monsoon) [i.e., March-May (Summer Season); October-December (post monsoon season); December-February (winter	One season baseline data (Winter season 1st December to 2020 to 28th	Air monitoring results given in Chapter 3 Section 3.2.5.5, Table

	season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.	February, 2021) has been collected for ambient air quality, water quality, noise level, soil, flora & fauna. The locations of the monitoring stations were decided on the basis of prevailing meteorological condition (wind direction & wind speed) in the area. The selection criteria for monitoring locations have been discussed in Chapter 3.	No. 3.10 Pg. No. 74. Noise levels results given in Chapter 3 Section 3.2.6.4, Table 3.15, Pg. No. 77. Water analysis results given in Chapter 3 Section 3.2.7.4, Table 3.18 Pg. No.81 Soil quality results given in Chapter 3 Section 3.2.8.3, Table 3.19 Pg. No. 83. Flora and fauna details given in Chapter 3 Section 3.2.9.3, Table 3.20 Pg. No. 84-92. Original lab reports enclosed as ***Annexure No. X*** with the Draft EIA/EMP report.
22	Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.	Air quality modeling has been carried out for the prediction of impacts by the mining activity on the quality of air in the surrounding area by using AERMOD software. Details regarding air quality modeling have been incorporated in Chapter 4 Section 4.1.4.1 with Draft EIA&EMP Report. The wind rose diagram has also been incorporated on the map showing predicted incremental concentration.	Chapter 4 Section 4.1.4.1, Pg. No.123-133.

23	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.	Water requirement for the project is 7.50 KLD and will be made available by nearby village Bhagoli through private water tanker.	Chapter 2 Section 2.2.2.4, Pg. No.33
24	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	No ground water abstraction involved, water demand will be met available by tanker water supply from nearby village Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu (Raj.)	--
25	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	At the end of life of mine excavated pit will be left over as water reservoir which will help in ground water recharge.	
26	Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.	Impact of the project on water quality both surface and ground water discussed in Chapter 4 Section 4.1.4.5 Table No. 4.14 and corresponding mitigation measures discussed in Chapter 4 Section 4.3, table 4.26, Sr. No. 3.	Impacts: Chapter 4 Section 4.1.4.5 Table No. 4.14, Pg. No. 141 Mitigation measures: Chapter 4 Section 4.3, table 4.26, Sr. No. 3. Pg. No. 159.
27.	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and	Mining is planned 10 m above ground water table and there will be no intersection of ground water table. Details are given in Chapter 2 Section 2.2.4.2 with this Draft EIA & EMP report.	Chapter 2 Section 2.2.4.2, Pg. No.37.

	for pumping of ground water should also be obtained and copy furnished.		
SCHEMATIC DIAGRAM SHOWING WATER TABLE AND ULTIMATE WORKING DEPTH OF MINING 			
28	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.	No stream, seasonal nallah passing through the lease area.	--
29.	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.	Site elevation, working depth, groundwater table etc. for the mining project is being given in both AMSL and bgl. Schematic diagram showing water table and ultimate working depth of mining is discussed in Chapter 2 Section 2.2.4.2 with this Draft EIA & EMP report	Chapter 2 Section 2.2.4.2, Pg. No.37.
30	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly	Progressive Greenbelt Development Plan is being prepared for the mine lease and same will be executed up front on commencement of the project. Phase-wise plan of plantation is being prepared, local and	Chapter 6 Section 6.1.2.2, Table 6.1 Pg. no.161-162.

	indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.	native species and the species which are tolerant to pollution will be preferred. Details given in Chapter 6 Section 6.1.2.2, Table 6.1 (Environmental Monitoring during Operational Phase).	
31	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.	For mining operation purpose local labors will be deployed hence there will be no additional load on local transport infrastructure. Further considering 300 working days and maximum production 1,50,700 TPA (ROM) per day 25 trucks (capacity 20 Tonne) will apply on SH-37-B which is very near to project site. This will have insignificant impact on the traffic load on SH.	Details regarding transportation details mentioned in Chapter 3 Section 3.2.11 Pg. No. 110-114.
32	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	Details of the infrastructure facilities to be provided for the mine workers are given in Chapter 2 Section 2.2.2.7.	Chapter 2 Section 2.2.2.7, Pg. no.34
33	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.	Conceptual post mining land use of mined out area is discussed in Chapter 2 Section 2.2.4. Conceptual plan also enclosed with approved review of mining enclosed as ***Annexure III*** with this Draft EIA/EMP report.	Chapter 2 Section 2.2.4 Pg. No.36 Mining Plan (Plate No.7) enclosed as ***Annexure III***

34	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed	Occupational health impacts are discussed in Chapter 4 Section 4.1.2.10. Details of pre-placement medical examination and periodical medical examination schedules have been incorporated in Chapter 4, Section 4.1.4.9, Sub-section *Health and safety monitoring plan.* Mitigation measures discussed in Chapter 4, Section 4.3, table 4.26, Sr. No. 8.	Occupational health impacts: Chapter 4 Section 4.1.4.9, Pg. No. 141-146 *Health and safety monitoring plan* Chapter 4, Section 4.1.4.9, Pg. No. 141-146. Mitigation measures: Chapter 4, Section 4.3, Table 4.26, Sr. No. 8, Pg. No.158.
35	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	Public health implications of the project and related activities for the population in the impact zone have been evaluated and there are as such no public health implications.	Chapter 4, Section 4.1.4.10, Pg. No. 147.
36	Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation	Socio economic significance and influence is discussed in in Chapter 3, Section 3.2.10.9.	Chapter 3, Section 3.2.10.8, Pg. No. 109
37	Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.	Detailed Environmental Management Plan to mitigate the environmental impacts of the project has been detailed in Chapter 6 Section 6.12, Table No. 6.5.	Chapter 6 Section 6.2, Table No. 6.5, Pg. No. 177-178.

38	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.	This is Draft EIA/EMP report to be submitted to regional officer, RSPCB for conduction of public hearing and after the generation of minutes of public hearing time bound action plan for the points raised in the public hearing will be detailed in the final EIA/EMP report.	
39	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.	No litigation is pending against the project in any court and the affidavit regarding the same has been submitted along with the proposal for the grant of ToR.	Copy of the affidavit regarding no litigation pending against the project is already submitted with the proposal for the grant of ToR.
40	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.	The Cost of the Project (Capital & recurring cost) as well as the cost towards implementation of EMP is incorporated in Chapter 1, Table 1.1. Detailed Environmental Management Plan to mitigate the environmental impacts of the project has been detailed in Chapter 6 Section 6.2, Table No. 6.5: Expenditure on Environmental Management.	Project cost: Chapter 1 Table 1.1, Pg. No. 4. Chapter 6 Section 6.2, Table No. 6.5, Pg. No. 178.
41	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	Disaster management plan is prepared and detailed in the Chapter 6, Section 6.1.6.6.	Chapter 6, Section 6.1.6.6, Pg. No.169-177.
42	Benefits of the Project if the Project is implemented should be spelt out. The benefits	Project benefits discussed in a separate	Chapter 8, Pg. No.180-181.

	of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	Chapter 8.	
43	**Besides the above, the below mentioned general points are also to be followed: -**		
a)	Executive Summary of the EIA/EMP Report	Summary and Conclusions of the EIA/EMP Report prepared as a separate Chapter 11 with this Draft EIA & EMP report.	
b)	All documents to be properly referenced with index and continuous page numbering.	All documents are properly referenced with index and with continuous page numbering	
c)	Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated	Complied wherever data are presented in the report especially in Tables, the period in which the data were collected and the sources is clearly indicated	
d)	Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF & CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.	All the analysis / testing reports of water, air, soil, noise by MoEF & CC and NABL accredited laboratory has been incorporated with this EIA report as ***Annexure X*** with this EIA/EMP report.	All the analysis / testing reports of water, air, soil, noise by MoEF & CC and NABL accredited laboratory has been incorporated with this EIA report as ***Annexure X*** with this EIA/EMP report.
e)	Where the documents provided are in a language other than English, an English translation should be provided.	All the documents are either in English or Hindi language.	
f)	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	Duly filled Questionnaire for environmental appraisal of mining project will be submitted with final EIA report.	
g)	While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA. II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.	Instructions issued by MoEF vide O.M. No. J-11013/41/2006-IA. II (I) dated 4th August, 2009, have been followed both by project proponent and consultant.	
h)	Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission	No changes have been made in the basic scope and project parameters.	

	should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.		
i)	As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.	The said project is applied for the fresh grant of Environmental Clearance.	
j)	The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.	EIA report includes surface plan, geological plans and other related plans along with the approved review of mining	Approved review of mining enclosed as ***Annexure III*** with this EIA /EMP report.
Specific ToR:			
1.	The PP shall conduct Environmental Impact Assessment Study and prepare Environmental Management plan for the entire cluster in order to capture all the possible externalities. These reports are required to incorporate carrying capacity of the cluster, transportation and related issues, replenishment and recharge issues, geo-hydrological study of the cluster.	Cluster certificate & 500 mts Composite map was issued by ME, Jhunjhunu vide letter No-ME/Jhunjhunu/M.L. 10/98/570 on dated 17/06/2020. No other mining lease is located within 500 mtr of the said lease area. So, there is no cluster formation.	
2.	The EIA/EMP shall be prepared by the state or state nominated agency or group of PP in the cluster or the PP in the cluster. The PP shall get one public consultation done for the entire cluster and after which prepare final EIA/EMP reports.	This EIA is being prepared by individual Project proponent (M/s. Nilkanth Concast Pvt. Ltd). No other mining lease is located within 500 mtr of the said lease area. So, there is no cluster formation.	

1.3.1 Legislative Background

The project is covered under several environmental legislations such as Air (Prevention & Control of Pollution) Act 1981, The Environment (Protection) Act, 1986. It will be ensured that

the applicable Act's are followed strictly.

1.3.1.1 Post Environmental Monitoring

The project management will submit a half yearly EC compliance report in respect of stipulated prior Environmental Clearance terms and conditions on or before 1st June and 1stDecember of each calendar year. The latest EC compliance report will be uploaded online on parivesh portal so as to display on the website of the concerned regulatory authority.

Environmental surveillance shall be carried out by the project proponent on half yearly basis. The monitoring data generated on routine basis shall serve as tools for: Environmental status of the area, performance of the environmental protection measures, and overall effectiveness of EMP.

1.3.1.2 Litigation pending against the project

There is no litigation pending against the project till date. Affidavit regarding the same also being submitted along with the ToR proposal.

2.1 PROJECT DESCRIPTION

This chapter addresses the details of the proposed iron ore mining project along with the project aspects likely to cause environmental impacts.

2.1.1 Type of the project its size and magnitude

This is an **Iron Ore mining project** of **M/s. Nilkanth Concast Pvt. Ltd** having mine lease number 10/98 falling in Survey of India toposheet no. 45M/9 having area of 4.945 Hectare with proposed annual production capacity 1, 50,700 TPA (ROM) (by open cast semi-mechanized method) located at Khasra No. 1583, 1601, 1582, 1602, 1604, 1606, 1566, 1567, 1568, 1569, 1570, 1571 near village- Bhagoli, Tehsil: Udaipurwati & District: Jhunjhunu, Rajasthan.

Iron Ore produced will be loaded by hired loaders/excavator and transported to the own industries located at Kachha Ghandhi Dham Gujarat by hired dumpers and trucks.

2.1.2 Need of the project

The Iron Ore is used to make steel. Steel is used to make automobiles, locomotives, ships, beams used in buildings, furniture, paper clips, tools, reinforcing rods for concrete, bicycles, and thousands of other items. Thus, keeping in mind this requirement, mining of Iron Ore is necessary for durability and to beautify by carving as per the requirement of the consumer. With respect to the importance of the project to the nation, it can be well said that in a developing nation like India, iron ore is required for infrastructural and industrial development projects.

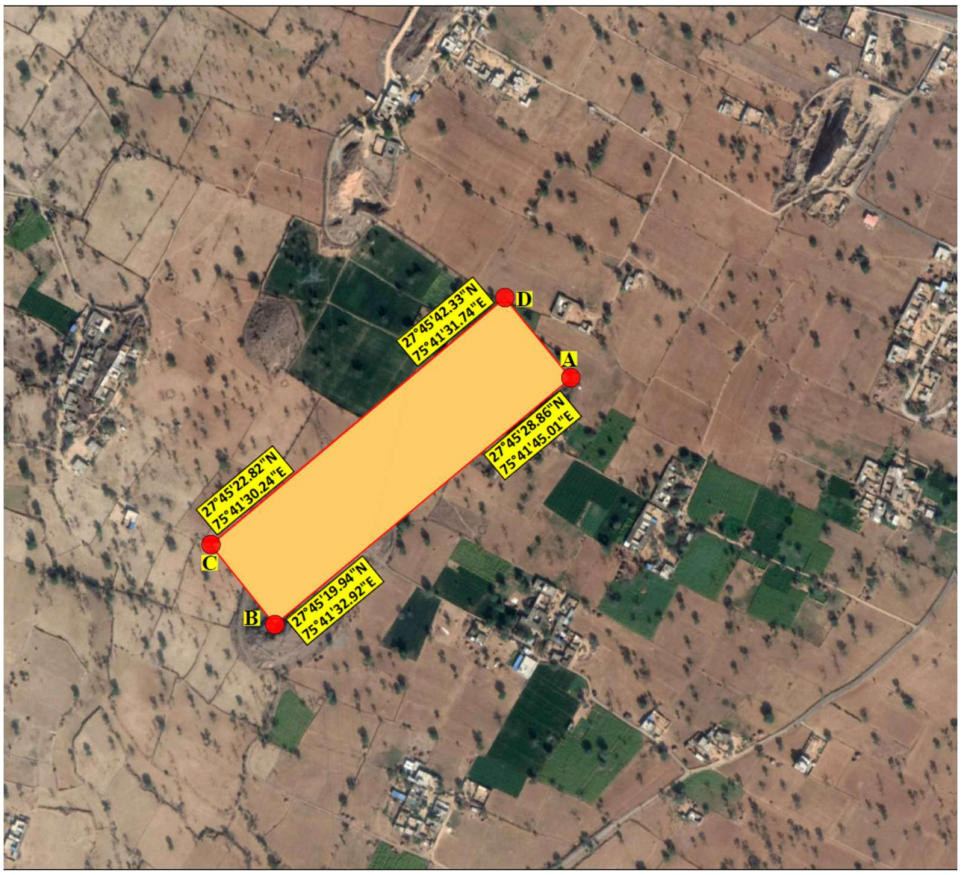
2.1.3 Location of the project

Mining lease area is located Near Village: Bhagoli, Tehsil: Udaipurwati & District: Jhunjhunu, Rajasthan and falls on Survey of India Toposheet No. 45M/9.

TABLE NO.: 2.1 GEOGRAPHICAL LOCATION OF THE LEASE AREA

Pillar	Latitude (N)	Longitude (E)
A.	27°45' 28.86" N	75°41'45.01" E
B.	27°45' 19.94" N	75°41'32.92" E
C.	27°45' 22.82" N	75°41'30.24" E
D.	27°45' 31.74" N	75°41'42.33" E

FIGURE NO. 2.1: GOOGLE IMAGERY SHOWING THE BOUNDARY PILLAR OF THE MINE LEASE AREA



2.1.4 Site History of the area

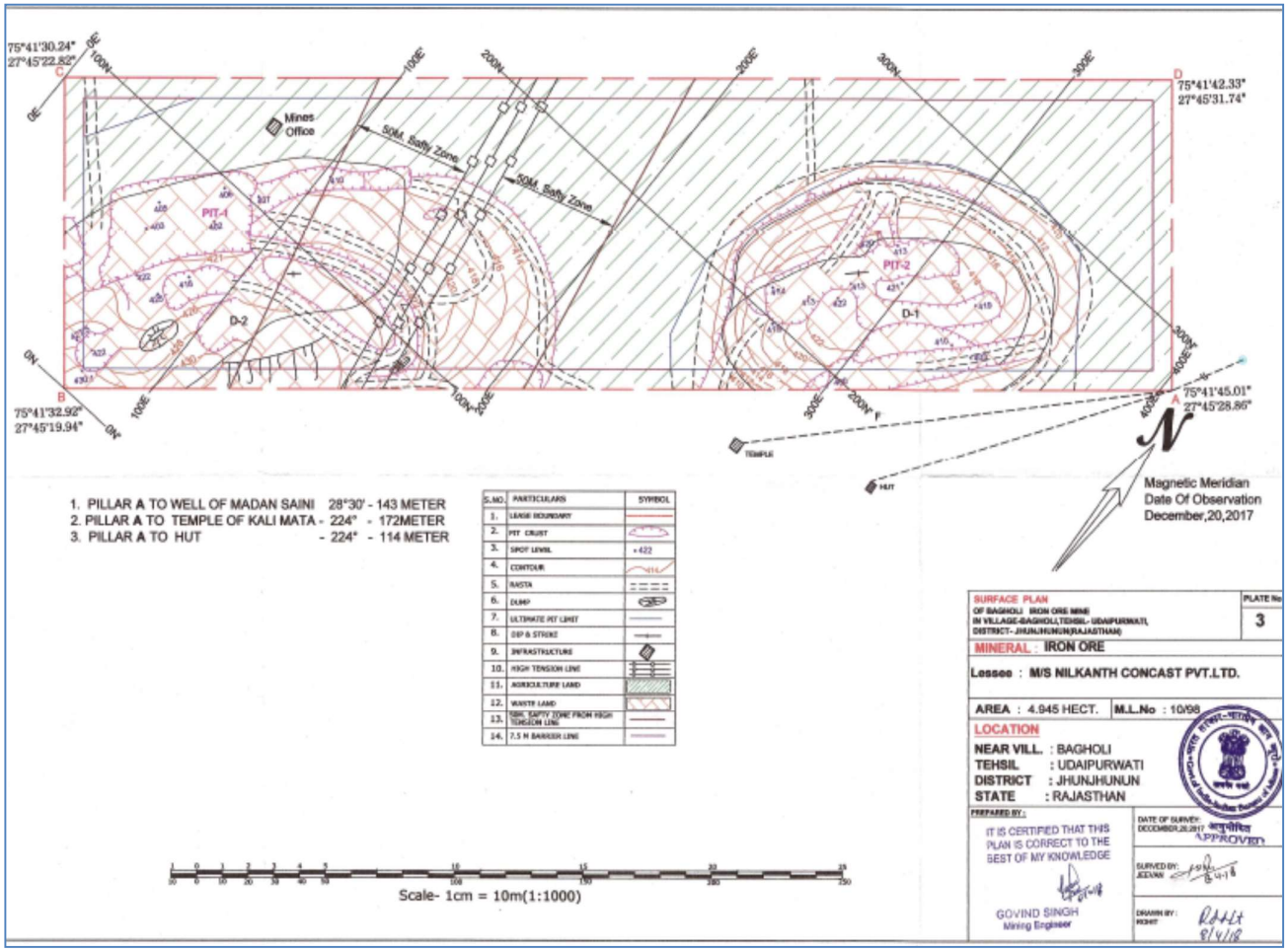
Lease area is a Govt. Waste land and was utilized for agriculture but after the exploration of iron ore deposit and its economic value over the agriculture income and need of the mineral by various industries, lessee applied for mining of iron ore mineral.

2.2 PROJECT DESCRIPTION INCLUDING TECHNOLOGY, ASSOCIATED ACTIVITIES AND SCHEDULE OF COMPLETION

After exploration of mineral in the area a detailed geological study was carried out by DMG to establish the iron ore deposit. Further, iron ore availability was also found in the Govt. Waste Land and other nearby area hence detailed investigation was carried to understand the economic value with respect to available mineral reserves, which calculated as follows:

2.2.1 Project layout Plan

FIGURE NO. 2.2 MINE LAYOUT PLAN



2.2.2 Components of the Project

2.2.2.1 Nature of Mineralization

The iron ore is located as primary iron ore deposit, which is mainly consist of hematite with some magnetite. It occurs as lenses, bands and pods with pinching and swelling nature and confined to granitic gneisses. There are the prominent exposures of iron ore observed. The iron ore is exposed for 402 m RL in deposit D-2 up to 400 m RL in deposit D-1.

The iron ore is hematite in nature. The existing working pits and exposures show good potentiality about the deposit. The iron ore has quartzite as wall rocks and the quartzite near iron ore deposit has market in cement industries.

2.2.2.2 Mineral Reserves

Parameters or estimation or category of reserves and there categorization

Based on available information and field observations that the whole lease area is an iron ore mineralized area. The shape, size and depth extension of mineral as delineated on geological plans and sections have been considered. The following parameters have been considered while estimating the in-situ geological reserves:

- 7.5 meters zone from the lease boundary and 50 meters from HT line.
- 3.9 MT /m^3 have been considered as a bulk density of iron ore.
- Recovery of iron ore seems 90% in its deposit. The 10% is intrusive. In 90% recovery of iron ore is fully saleable including ferruginous material.

Reserves & Resources as per UNFC with respect to the threshold value Notified by IBM / Rajasthan State:

It is assumed as per the present mining scenario:

i) Total Mineable Reserve in Proved Category:

I. The depth of proved mineral is taken up to 400 mRL from surface.

II. Based on the prior experience & nearby lease the recovery factor may be considered as 90%.

Year	UNFC Axis	Area Covered	No. of Boreholes (Core/RC/DTH)	Grid Interval	Depth (mRL/Level)	Total Meterage
2018	G1	100 Meter Interval	BH-1 BH-2 BH-3 BH-4 BH-5	00 NN'-100 NN' 00 EE'-100 EE' 100 NN'-200 NN' 00 EE'-100 EE' 100 NN'-200 NN' 200 EE'- 300 EE' 200 NN'-300 NN' 200 EE' -300 EE' 300 NN'-300 NN' -300 EE'-400EE'	300 meters or up to the continuity of mineral	1500
--	G2	--	--	--	--	--
--	G3	--	--	--	--	--
--	G4	--	--	--	--	--

Reserves are calculated by following formula:

Volume of Deposit = Area of section x Section influence Length

Mineral in tonne = Volume of deposit x Bulk Density x Recovery

Reserves area computed for Proved Category, Probable category and possible category

Proved Category (111)

Section	Area of Section (Sq. meter)	Sectional Influence Length	Volume of ROM in Cu. Meter	Mineral in Cu. Meter 90%	Minera in MT V x 3.9
Deposit D-1					
AA'	960	35	33600	30240	117936
BB'	930	30	27900	25110	97929
CC'	740	30	22200	19980	77922
DD'	--	30	--	--	--
Total	--	--	--	--	293787
D-2	--	--	--	--	
EE'	400	35	14000	12600	49140
FF'	500	30	15000	13500	52650
GG'	630	35	22050	19845	77395.5
Total	--	--	--	--	**179185.5**
Grand Total	--	--	--	--	**472972.5**
Reserves in nearest tens			--	--	**7,72,970**

Proved Category (211)

Section	Area of Section (Sq. meter)	Sectional Influence Length	Volume of ROM in Cu. Meter	Mineral in Cu. Meter 90%	Minera in MT V x 3.9
Deposit D-1					
AA'	560	35	19600	17640	68796
BB'	660	30	19800	17820	69498
CC'	380	30	11400	10260	40014
DD'	1080	30	32400	29160	113724
Total	--	--	--	--	292032
D-2	--	--	--	--	
EE'	300	35	10500	9450	36855
FF'	--	--	--	--	-
GG'	--	--	--	--	-
Total	--	--	--	--	**36855**
Grand Total	--	--	--	--	**328887**

Reserves in nearest tens	**--**	**--**	**3,28,890**

Possible Category (333)

Section	Area of Section (Sq. meter)	Sectional Influence Length	Volume of ROM in Cu. Meter	Mineral in Cu. Meter 90%	Minera in MT V x 3.9
Deposit D-1					
AA'	360	35	12600	11340	44226
BB'	390	30	11700	10530	41067
CC'	300	30	9000	8100	31590
DD'	275	30	8250	7425	28957.5
Total	-	-	-	-	145840.5
D-2	-	-	-	-	
EE'	220	35	7700	6930	27027
FF'	280	30	8400	7560	29484
GG'	235	35	8225	7402.5	28869.75
Total	-	-	-	-	**85380.75**
Grand Total	-	-	-	-	**231221.25**
Reserves in nearest tens			**--**	**--**	**231220**

Probable Reserve

The depth of probable mineral is taken further 15 m below the proved reserve.

Probable Category (121)

Section	Area of Section (Sq. meter)	Sectional Influence Length	Volume of ROM in Cu. Meter	Mineral in Cu. Meter 90%	Minera in MT V x 3.9
Deposit D-1					
AA'	525	35	18375	16537.5	64496.25
BB'	555	30	16650	14985	58441.5
CC'	430	30	12900	11610	45279
DD'	--	30			--
Total	--				168216.75
D-2	--	--			
EE'	200	35	7000	6300	24570
FF'	630	30	18900	17010	66339
GG'	600	35	21000	18900	73710
Total					**164619**
Grand Total					**3,32,835.75**
Reserves in nearest tens			**--**	**--**	**3,32,840**

Probable Category (221)

Section	Area of Section (Sq. meter)	Sectional Influence Length	Volume of ROM in Cu. Meter	Mineral in Cu. Meter 90%	Minera in MT V x 3.9
Deposit D-1					
AA'	600	35	21000	18900	73710
BB'	660	30	19800	17820	69498
CC'	480	30	14400	12960	50544
DD'	825	30	24750	22275	86872.5
Total					280624.5
D-2					
EE'	475	35	16625	14962.5	58353.75
FF'	210	30	6300	5670	22113
GG'	120	35	4200	3780	14742
Total					**95208.75**
Grand Total					**375833.25**
Reserves in nearest tens			**--**	**--**	**3,75,830**

Possible Reserve

The depth of possible mineral is taken further as 5.0 m below to probable reserve.

Based on the prior experience the recovery may be considered as 90%.

Section	Area of Section (Sq. meter)	Sectional Influence Length	Volume of ROM in Cu. Meter	Mineral in Cu. Meter 90%	Minera in MT V x 3.9
Deposit D-1					
AA'	360	35	12600	11340	44226
BB'	390	30	11700	10530	41067
CC'	300	30	9000	8100	31590
DD'	275	30	8250	7425	28957.5
Total	-	-	-	-	145840.5
D-2	-	-	-	-	
EE'	220	35	7700	6930	27027
FF'	280	30	8400	7560	29484
GG'	235	35	8225	7402.5	28869.75
Total	**-**	**-**	**-**	**-**	**85380.75**
Grand Total	**-**	**-**	**-**	**-**	**231221.25**
Reserves in nearest tens			**--**	**--**	**231220**

Total Geological Reserve

Category	Total Reserve (tonnes)
Proved	4,45,850
Probable	2,43,165
Possible	1,62,110
Total	**6,20,110**

Feasibility Axis: -		**Depth (mRL) Level**
Feasibility of Mining		**-**
Area Considered non mineable under various items	7.5 meters zone from the lease boundary and 50 meters from HT line	-
Mineral Reserves/Resources Blocked/Non-Mineable Category		
G1-Iron ore	111-4,81,400 tonnes, 211-3,20,460 tonnes	Up to 400 mRL
G2-Iron ore	121,122-13,32,840,221,222-3,75,830 tonnes	Between 400 mRL-385 mRL
G3-Iron ore	333-2,31,220 tonnes	Between 385 mRL-380 mRL

ii) Mineable Reserve

Total Mineable Reserve: (Proved + probable= 4,72,970 +3,32,840) = 8,05,810 Tonne

Reserves & Resources as per UNFC with respect to the threshold value Notified by IBM / Rajasthan State:

TABLE No 2.2: UNFC CLASSIFICATION

A. Total Mineral Reserve	UNFC Code	Quantity in Tone Iron Lumps
Proved Mineral Reserve	111	4,72,970
Probable Mineral Reserve	121	3,32,840
B. Total Remaining Resources		
Feasibility Mineral Resources	211	3,28,890
Pre-feasible mineral Resources	221	3,75,830
Measured Mineral Resources	331	-
Indicated Mineral Resources	332	-
Inferred Mineral Resources	333	2,31,220
Reconnaissance mineral resources	334	-

The reserves are re-assesses as per the present situation of the area and deposit.

Total Mineable Reserves Iron Ore is around 8, 05,810 tonnes.

2.2.2.3 Life of mine

The Mineable Reserves are 8, 05,810 tonnes of Iron Ore. Around 4, 67,220 tonnes of mineral

will be excavated during the period of this mining plan and after with a target of 1, 29,170 tonnes of iron ore per year the life of mine will be around 6.62 years. As the mineral is expending at depth and after the proposed working and proposed prospecting the life of mine will be increased.

Life of mine= Total mineable reserve/ Target Production
= 8, 05,810 /1, 29,170 = **6.62 year**

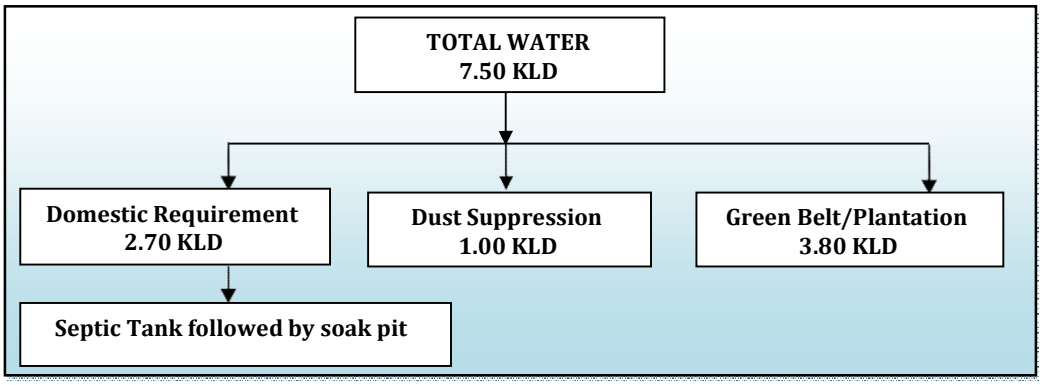
2.2.2.4 Water Requirement

The total water requirement for the project will be 7.50 m^3/day. A detail of the water requirement is given in below table:

TABLE No 2.3: WATER REQUIREMENT

Sr. No.	Water Consumption	Quantity (m^3day)
1	Domestic/Drinking	2.70
2	Dust Suppression	1.00
3	Greenbelt Development	3.80
Total Water Requirement		**7.50**

FIGURE No. 2.3: FLOW CHART FOR WATER REQUIREMENT



2.2.2.5 Power Requirement

There is no requirement of the electricity for mining operations as mining activity will be carried out from sunrise to sunset. However, electricity is required for mines office, rest shelter and for the same electricity connection will be taken from the nearest Vidyut Nigam Limited.

2.2.2.6 Manpower-Requirement

Total manpower requirement during the mining activity is estimated to be about 77. Most of the labors will be recruited from the neighboring villages. The contractor will provide tractor trolley to laborers so there will no permanent migration of people.

TABLE NO. 2.4: DETAILS OF EMPLOYMENT

S. No.	Designation	Number
1.	Mining Engineer	1
2.	Mines Manager	1
3.	Skilled	6
4.	Semi-skilled	6
5.	Un-skilled	45 to 63
	Total	**77**

Source-*Approved Mining Plan with Mine Closure Plan*

2.2.2.7 Amenities/ Facilities

The site services like rest room, shelter, first-aid facility, mines office etc. will be constructed at the mine site for the workers. In the rest room drinking water and first aid facility will be provided.

2.2.2.8 Transportation

Transportation of the mineral will be done by tarpaulin covered trucks/tippers. Mine site is connected to the SH-37-B via a village road. Transportation route map shown in Chapter 3 Section 3.2.9.

2.2.3 Technology and Process Description

2.2.3.1 Method of Mining

Mining will be done by **open cast semi- mechanized** method with the use of excavator, rock breaker and other machinery like loader/dozer etc. The mining operations will include drilling, lifting of mineral and material, loading of mineral and transportation of material. Blasting will be done as and when required. The bench height will be kept at 6 m whereas the width of bench will be maintained more than the height of the bench with slope angle of 75°. A strip of 7.5 meter of statuary barrier will be left for no mining activity and designated as "No mining zone/Barrier zone". Mining details are mentioned below in **Table 2.5.**

TABLE No.: 2.5: MINING DETAILS

S. No.	Particulars	Detail
1.	Method of Mining	Opencast semi- mechanized

2.	Proposed Production per year	1, 50,700 TPA (ROM) (Iron Ore: 1, 29,170 TPA, Waste: 21,530 TPA)
3.	Mineable reserve	8,05,810 TPA
4.	Life of mine	6.62 year
5.	Bench Height	6.0 meter
6.	Bench Slope	~10^0 haulage slope
6.	Bench Width	≥3.0 meter
7.	Elevation Range	410 mRL – 430 mRL
8.	Ground Water Table in the area	Pre-Monsoon season - 45 mbgl Post-Monsoon season - 40 mbgl
9.	Ultimate Working Depth	Deposit 1 mining will take place from elevation of 410 mRL depth of mining will be 30 m bgl (380 mRL) Deposit 2 mining will take place from elevation of 428 mRL depth of mining will be 48 m bgl (380 mRL)
10.	Overall Pit Slope	45^0
11.	Number of Working Days per year	300
12.	Number of shifts per day	01(08 hour per shift)
13.	Total soil /waste generation at the conceptual stage	77,870 TPA of Waste will be generated as per approved Mining Plan.

Source-*Approved Mining Plan with Mine Closure Plan*

Power Line: A HT line is passes through the area. This line erect during the close period of the lease without giving information to the lessee. However as per rule the lessee will not work in 50 meters zone from the Centre of the power line. The 50 meters zone is illustrated on plate-5

2.2.3.2 Extent of Mechanization

TABLE No. 2.6: LIST OF EQUIPMENTS

Sr. No.	Machine	Nos.	Capacity/HP
1.	Excavation	1	120 CFM
2.	Loader / Excavator (JCB 3D)	1	Loading Capacity 0.3 cu. Meter or 0.78 Tonne (minimum capacity 40 tonne per hour)
3.	L & T Poclain with rock breaker attachment (Poclain-90)	1	Loading Capacity 0.9 cu. Meter or 2.34 Tonne (minimum capacity 120 tonne per hour)
4.	Long hole drill	1	6-meter-deep hole
5.	Rock breaker	2	
6.	Tipper	2	10 tonne

7.	Water holding (Tractor with Tank)	2	4000 liter

Source-*Approved Mining Plan with Mine Closure Plan*

2.2.3.3 Year wise Production Detail

The year wise development of mines for the first five years will progress as per the table below**:**

TABLE No.: 2.7: YEAR WISE PRODUCTION AND WASTE DETAILS

Year	Total Excavation in MT (ROM)	Waste in Tonnes	Mineral in Tones
I (2017-18)	Year Passed		
II (2018-19)	1,07,020	15,290	91,730
III (2019-20)	1,44,690	20,670	1,24,020
IV(2020-21)	1,42,680	20,380	1,22,300
V (2021-22)	1,50,700	21,530	1,29,170
Total	**5,45,090**	**77,870**	**4,67,220**

Source-*Approved Mining Plan with Mine Closure Plan*

Prior Production details since year 2012-2020 is enclosed as ***Annexure II(B).***

Applicability of EC for major mineral came into force as per MoEF & CC Notification vide S.O 2601 (E) dated 7th Oct 2014.

2.2.3.4 Top soil and solid waste generation and waste management

Top Soil: The separate soil is not observed on the site of proposed working. However, if any soil comes across during mining it will be scraped and stacked separately to be used for plantation on dumps and on upper benches when required.

Waste Management: At the end of fifth year 77,870 TPA of Waste will be generated. The waste generated will be upper part of overburden and side burden i.e. quartzite etc. The existing dumping sites are located towards NE side slope of the mounds. The proposed dump is towards NW side slope of the lease area in barren land. The waste will be dumped in two terraces of 4 meter height each in an area of 0.15 ha. Maximum height of dump will be of 8 meter.

Waste including low grade mineral and dust will be sold in the market to cement industries. The lessee will also sale the waste after taking short term, permit from dept. as per state Govt. policy.

2.2.4 Conceptual Plan

Total mine lease area is 4.945 ha; out of which 1.860 ha will be excavated till the end of life of mine and the pit generated will be converted into water reservoir which would have a positive impact by recharging the ground water table and 1.632 ha area will be planted by native plants species.

TABLE NO.2.8: LAND: STAGE WISE LAND USE AND RECLAMATION AREA

S. No.	Land use Category	Present (Ha)	End of 5th year (Ha)	End of mine (Ha)
1.	Pit & Quarries	0.600	1.500	1.860
	i. Water Reservoir	--	--	1.860
	ii. Backfilling	--	--	--
2.	O.B. Dump	0.050	0.150	0.150
3.	Waste Dumps	--	--	--
4.	Backfilled Area	--	--	--
5.	Storage of Top Soil	--	0.010	--
6.	Mineral Stack Yard	--	--	--
7.	Infrastructure (Work shop, administrative Building)	0.010	0.010	0.010
8.	Roads	0.180	0.200	0.200
9.	Green Belt	0.100	1.632	1.632
10.	Undisturbed/Non-Utilized	4.005	1.443	1.093
Total		**4.945**	**4.945**	**4.945**

Source: *Approved Mining Plan with Mine Closure Plan*

2.2.4.1 Final slope angle to be adopted

The bench height will be kept at 6 m whereas the width of bench will be maintained more than the height of the bench with slope angle of 40°.

2.2.4.2 Ultimate Extent and Size of pit

- Deposit 1 mining will take place from elevation of 410 mRL depth of mining will be 30 m bgl (380 mRL)
- Deposit 2 mining will take place from elevation of 428 mRL depth of mining will be 48 m bgl (380 mRL)

FIGURE NO 2.4: SCHEMATIC DIAGRAM SHOWING WATER TABLE AND ULTIMATE WORKING DEPTH OF MINING

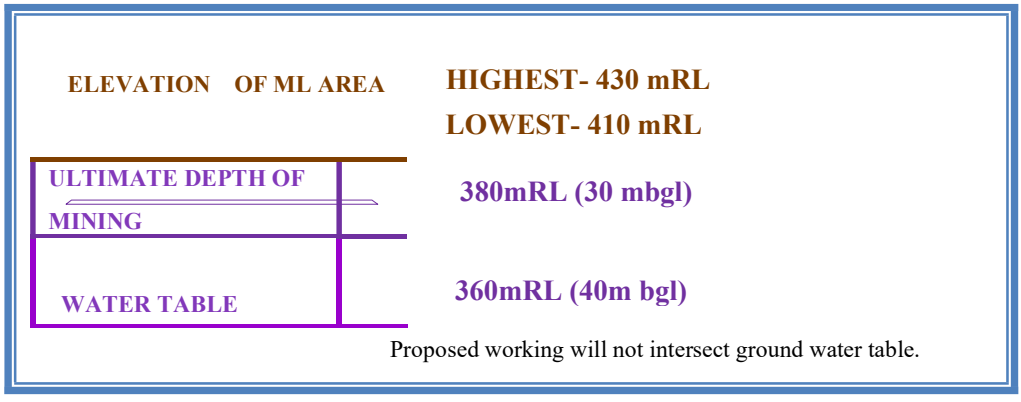


TABLE No.2.9: POST MINING LAND USE OF CORE ZONE WITH ENVIRONMENT MANAGEMENT

S. No.	Description	Land Use (In Ha.)				
		Plantation	Water Body	Public Use	Undisturbed	Total
1.	Top Soil Dump	--	--	--	--	--
2.	Overburden Dump	0.1500	--	--	--	0.1500
3.	(a) Excavation (Voids)	--	1.8600	--	--	1.8600
	(b) Excavation (backfilled)	--	--	--	--	--
4.	Road	--	--	0.2000	--	0.2000
5.	Infrastructure	--	--	0.0100	--	0.0100
6.	Township Area	--	--	--	--	--
7.	Greenbelt	1.632	--	--	--	1.6320
8.	Crusher Plant	--	--	--	--	--
9.	Undisturbed Area	--	--	-	1.0930	1.0930
	Total	**1.782**	**1.8600**	**0.2100**	**1.0930**	**4.9450**

Source: *Approved Mining Plan with Mine Closure Plan*

2.2.5 Schematic Diagram of Mining Process

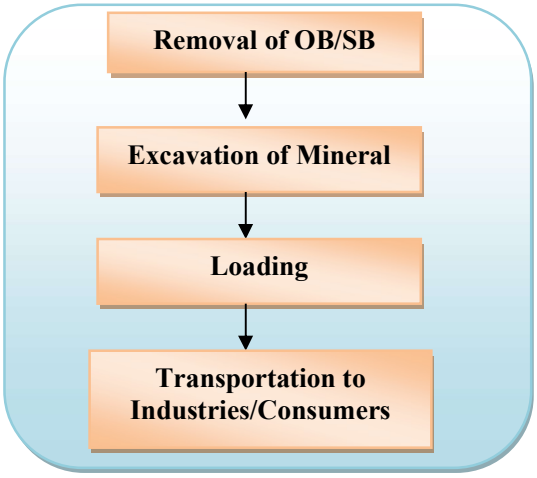


FIGURE No. 2.5 SCHEMATIC DIAGRAM OF MINING PROCESS

2.2.6 Proposed Schedule of Project Completion

➢ Initially the lease was granted in favor of Sh. Bajrang Kumar Bansal S/o Sh. Mahaveer Prasad Agrawal vide government order P-17(32)Khan/Group-1/2002 on dated 10/05/2002 and registered on 31/10/2002 for 30 years i.e.: 31/10/2032.

- Further lease was transferred in favor of M/s Nilkanth Concast Pvt. Ltd. vide order no. P 17(32)/Khan/Group-2/2000-Part on dated 10/10/2013 and executed on 22/11/2013 and registered on 04/12/2013. Lease period was extended for 50 years i.e.: 31/10/2052 vide letter dated 20/02/2015. Lease transfer document enclosed as ***'Annexure –II'*** with this EIA report.
- Review Mining Plan for period 2017-18 to 2021-22 was approved by Regional Controller of Mines, Indian Bureau of Mines Ajmer vide letter no 584(4)(3)(1731)/2018 RCM-AJM on dated 27/04/2018 on a maximum production capacity 1,50,7000 TPA (ROM). Approved Mining Plan enclosed as ***Annexure II*** with this EIA report.
- According to Mining plan life of mine is 6.62 Years.
- After approval of Mining Plan, Lessee applied for Environmental Clearance on dated 20/03/2020 and TOR was granted from SEAC-Rajasthan dated vide letter No. F1 (4)/SEIAA/SEAC-Raj/Sectt/Project/Cat.1(a)B1(15503)/2019-20. Copy of approved ToR enclosed as ***Annexure I*** with this EIA report**.**
- After obtaining EC and CTO, Mining will be started with immediate effect.
    - First month to develop to infrastructure facilities like mine office, rest shelter, toilets, haul road, identification of mine staff and labor etc.
    - Mining will be in operation as per the approved mining plan from Ist Year to 5th year along with compliance of all conditions in the EC, CTO and MMCR and other applicable rules on mines.
    - According to Mining plan, life of mine is 6.62 years, hence at the end of 5th year mining period, geological investigation will be carried out, if mineral is available life of mine can be increase and in such case, a revised Mining plan will be submitted otherwise after completion of 6.62 years mine will be close as per the approved mine closure plan.

An overall project schedule has been developed which identifies all the major activities leading to iron ore of mining project. Operation of mining activity and other works will be commenced after seeking all necessary clearances from the governing bodies. Implementation of the proposed project will take approximately 1-2 months time period after the grant of Environmental Clearance from SEIAA, Rajasthan and subsequently after the grant of Consent to operate from the Rajasthan State Pollution Control Board. A time Schedule plan for getting EC is as follows:

FIGURE No. 2.6 FLOW CHART OF PROPOSED SCHEDULE FOR OBTAINING EC

Activities (Months)	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Baseline data generation after the grant of ToR by SEAC														
Draft EIA submission for conduction of Public hearing to R.O-RSPCB, Rajasthan														
Final EIA submission to SEAC for the grant of EC after incorporation of minutes of public hearing in the EIA report														
Grant of Environmental Clearance by SEIAA (Raj)														
Grant of CTO from RSPCB														
Note: The proposed Schedule may be vary due to unforeseen reasons.														

2.3 DESCRIPTION OF THE ASPECTS OF THE PROJECT LIKELY TO CAUSE ENVIRONMENTAL IMPACT AND MITIGATION MEASURES

Mining activity is a cause of air pollution in the form of fugitive dust, permanent change in land use, if mineral is soluble, may change water quality and if intersect the groundwater table completely disturb the aquifer system which will adversely impact groundwater movement and water table in the area. Similarly, use of heavy machineries and a number of traffic movements, if higher, ambient level of noise will increase. Fugitive dust, if having hazardous contents may spoil the fertility of soil. If mine labors not protected or not use face mask this may cause of occupational health hazards. There is always a chance of safety hazards of mine workers and nearby villagers if safety sign board is not placed at proper place. To reduce all said factors EIA has been carried out and precautionary and mitigation measures need to be incorporated in the EIA and lessee need to comply the same.

2.3.1 Mitigation Measures Incorporated into The Project to meet Environmental Standards, Environmental Operating Conditions or Other EIA Requirements (As Required By The Scope)

2.3.1.1 Potential impacts on air quality and mitigation measures

Following measures are suggested for control of air/fugitive pollution during mining operation:

- Drilling & Blasting will be done in most scientific manner with the use of latest technology which will produces less pollution that would be in tolerable limits.
- Haul roads and loading area will be regularly sprayed with water to arrest dust from becoming air-borne.
- Proper maintenance (preventive as well as scheduled maintenance) of vehicles will be carried out regularly for minimization of generation of gaseous pollutants.
- Personal Protective Equipment's (PPEs) such as dust masks, hand gloves and ear plugs will be provided to employees working in dust prone areas.
- No overloading of iron ore should be allowed during transportation.
- Green belt will be developed along the mine lease boundary and on undisturbed area.
- Periodical air quality monitoring will be carried out.

2.3.1.2 Potential impacts and water quality management

Following measures will be taken to control water pollution and water quality management during mining operation.

- No waste water will be generated due to mining operation.
- Garland drains will be constructed to check surface run-offs.
- The rainwater collected into the mine pit will be used for plantation and dust suppression.
- At the conceptual stage an area of 1.860 ha will be converted into water reservoir which will serve as recharge structure and ultimately have a positive impact by recharging the ground water table.
- Municipal sewage generated will be disposed off via septic tank followed by soak pit.
- Periodical monitoring of ground water quality will be carried out.

2.3.1.3 Potential impacts and noise pollution control

- Blasting with down the hole initiation technique will be adopted which produces less vibration, less noise and better fragmentation.
- In order to reduce the effect of noise pollution, personal protective equipment's (PPEs) like earplugs, ear muffs etc. will be provided to workers exposed to high noise levels.
- Green belt will be developed along the mine lease boundary and on undisturbed area to attenuate noise level.
- Proper maintenance, oiling and greasing of machines at regular intervals will be done to reduce generation of noise.
- Regular monitoring of ambient noise level will be carried out.
- PUC certified vehicles will be used for transportation purpose.

2.3.1.4 Potential impacts on land use change

There will be a permanent change in land use of the area (pit will be formed of 1.860 ha.) although it will be utilize for rain water harvesting and also a water reservoir. The said water reservoir may help in increase the water level of the area.

2.4 ASSESSMENT FOR THE RISK OF TECHNOLOGICAL FAILURE

The said project is of open cast semi-mechanized mining project. The mining operations will include drilling, lifting of mineral and material, loading of mineral and transportation of material. Blasting will be done as and when required. A sliding of benching may be a risk hazard which be taken care by making proper slope and height of hanging wall. There is no involvement of heavy machineries; hence, mechanical failure is not anticipated. Still, risk hazard training will be given to mine staff and workers time to time. The area is under seismic zone II, hence, the area is not prone to earthquake.

==========

3.1 DESCRIPTION OF THE ENVIRONMENT

This chapter illustrates the description of the existing environmental status of the study area with reference to the prominent environmental attributes. The study area covers 10 km radius from the mine lease boundary.

The existing environmental setting is considered to know the baseline environmental conditions, which are described with respect to climate, hydro- geological aspects, atmospheric conditions, water quality, soil quality, ecology, land use and socio-economic profile of people.

This Report incorporates the baseline data monitored for three months covering winter season and secondary data collected from Indian Meteorological (IMD), State Mines & Geology Department, Central Ground Water Board, District Forest Office, Socio-Economic data was collected from Directorate of Census, Water Resource department, District Statistical departments etc.

3.1.1 Study area for EIA

The study area for Environmental Impact Assessment is 10 km radius area around the periphery of the project site.

3.1.2 Period of study

Baseline data collected for Air, Water, Soil, Noise, Socio Economic, Hydrogeology, Geology and Ecology & Biodiversity during winter season December 2020 to February 2021. For Land use study (core and buffer zone) Resource Sat-2, LISS-IV sensor, was acquired for imagery dated 19th May, 2021 and was used for the mapping and interpretation. Air Quality modelling was done in May 2021.

3.1.3 Components

To assess the impact of project activities on existing, physical, biological and social environment, it is necessary to study the present scenario of the area by collecting the information on following parameters:

- Land Environment
- Soil Environment
- Water Environment
- Air Environment
- Meteorology
- Noise & Vibration Environment
- Biological Environment

- Socio-Economic Environment
- Geology
- Hydrogeology
- Risk Hazards
- Solid & Hazardous waste

3.1.4 Methodology of the study

Survey was conducted by Fulgro Environmental and Engineering Services India Pvt. Ltd., Jaipur and sampling locations were identified on the basis of:

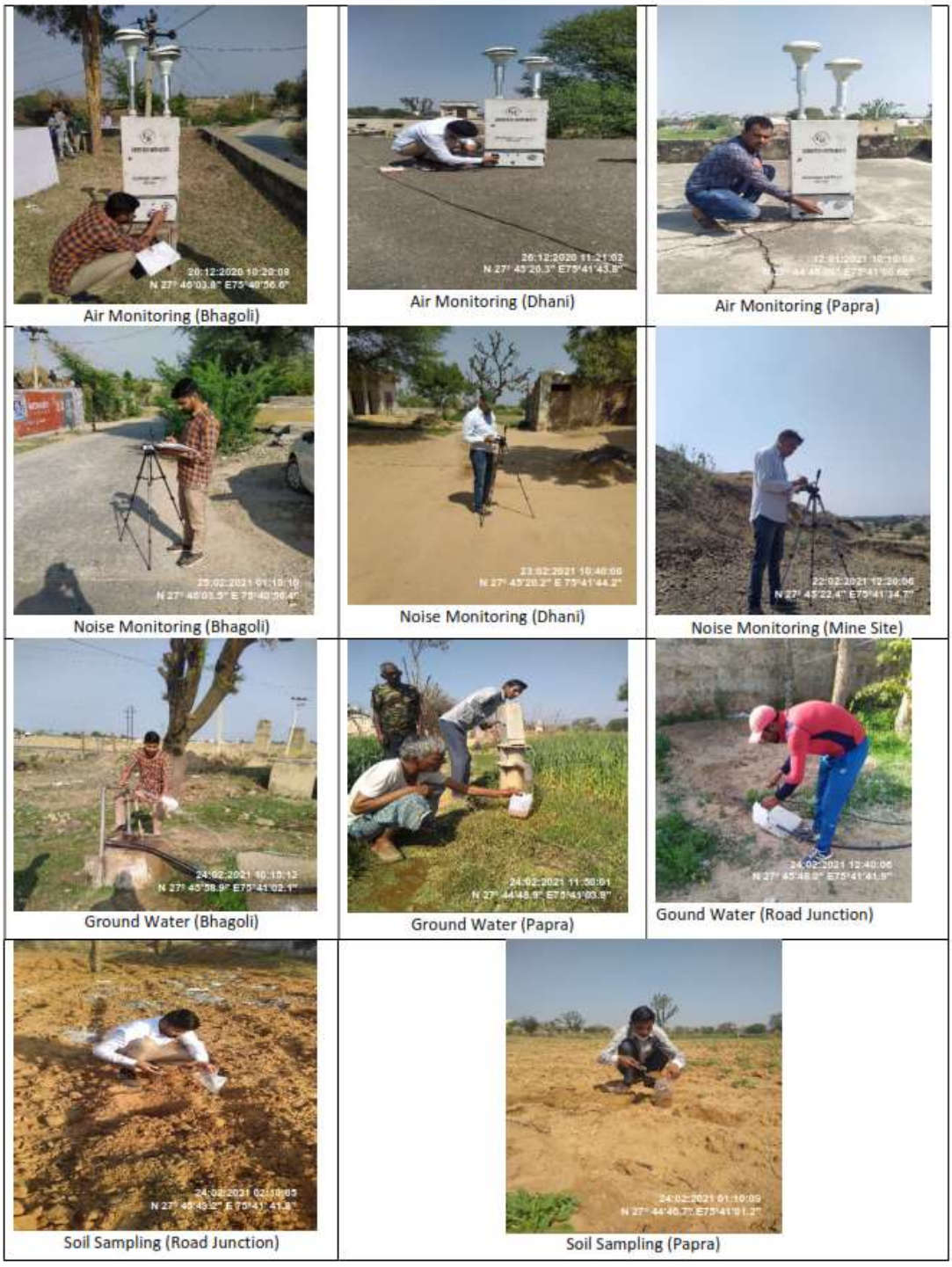
- Predominant wind direction, sensitive receptors, expected during the period of baseline monitoring in the study area as per the secondary sources such as Indian Meteorological Department (IMD).
- Topography and Highway
- Location of surface water bodies like ponds, canals and rivers.
- Identified pollution pockets, if any in the study area;
- Accessibility, power availability and security of monitoring equipment;
- Areas which represent baseline conditions; and collection, collation and analysis of baseline data for various environmental attributes. The frequency of environmental attributes is given in Table No. 3.1.

TABLE No. 3.1: ENVIRONMENTAL ATTRIBUTES AND FREQUENCY OF MONITORING

S. No.	Attributes	Parameters	Frequency	Total No. of samples
1	Ambient Air Quality	As per NAAQS 2009	24 hourly samples twice a week for 12 weeks (covering one season 01st December 2020 – 28th February, 2021) at 7 locations.	168
2	Meteorology	Wind Speed, Wind Direction, Temperature, Relative Humidity, Rainfall, Cloud Cover, and other non-instrumental observations.	Continuous for three months with hourly recording at one central location and secondary data referred from nearest IMD station.	90 days
3	Water Quality	Physical, Chemical and Bacteriological parameters.	Grab samples were collected at 6 locations. Sampling and analysis were carried out once during the study period.	(6 Ground water samples)

4	Soil Quality	Soil profile with chemical constituents and parameters related to agricultural and afforestation potential.	Once during study period at 6 locations.	6
5	Land Use	Trend of land use change for different categories.	Satellite data used	May 2021
6	Ecology and Biodiversity	Existing terrestrial and aquatic flora and fauna in 10 km radius area.	Primary survey through field study carried out during study period and by referencing some authentic sources such as District Forest Office.	--
7	Noise Levels	Noise levels in db (A) at 6 locations.	Day and night monitoring at 6 locations, once during study period.	6
8	Socio-economic aspects	Socio-economic characteristics and labor force characteristics.	Primary data collection through field survey and group discussion with villagers and nearby Govt. Schools. Also referred data published in district census hand book 2011.	--

FIGURE NO. 3.1: SOME OF BASELINE DATA COLLECTION PHOTOGRAPHS



3.2 ESTABLISHMENT OF BASELINE

3.2.0 Geology of the region

Regional Geology

Geologically, the district is mostly covered by blown sand. Apart from these, small isolated outcrop of the rocks of Delhi Super Group and Malani igneous suite are found in Khetri, Udaipurwati, Buhana and Jhunjhunun blocks of the district. The Alwar Groups of rocks are exposed in the southeastern part (around Udaipurwati) and northeastern part (around Khetri), with Ajabgarh Group of rocks, but here they as thin and narrow outcrops only. The Alwar Groups are represented by quartzite, schist, grit, arkose etc. These have been intruded by Post Delhi intrusives such as amphibolites, granite, pegmatite, quartz veins etc. The Ajabgarhs are represented by phyllites, biotite schists, calc gneisses etc. intruded by Post Delhi intrusives viz. amphibolite, granite, albitites, pegmatites, epidiorite, quartz veins etc. The basic intrusives include epidiorite, diorite amphibolite etc

Super Group	Group	Formation
	Recent to Sub-Recent	Alluvium, Aeolian sand
	Post –Delhi	Pegmatite- Erinpura Granite
	Intrusives	Epidiorite, dolerite, albitite, granite (Malani Igneous Suite) amphibolite.
Delhi	Ajabgarh	Phyllites, phyllites interbedded with quartzites, biotiteschiest, calcgneissesetc
	Alwar	Quartzite, schist, flaggy quartzite, grit, arkose, felspathic quartzite etc.
	Malani Plutonic	

Local Geology

Recent to sub-recent	--	**Alluvium, Soil**
Intrusive	--	*Pegmatite*
Delhi Super Group	*Ajabgarh Group*	*Iron Ore, Quartzite*

Source-Approved Mining Plan with Progressive Mine Closure Plan

FIGURE No.-3.2 MAP SHOWING GEOLOGICAL FORMATION OF THE 10 KM RADIUS FROM THE STUDY AREA

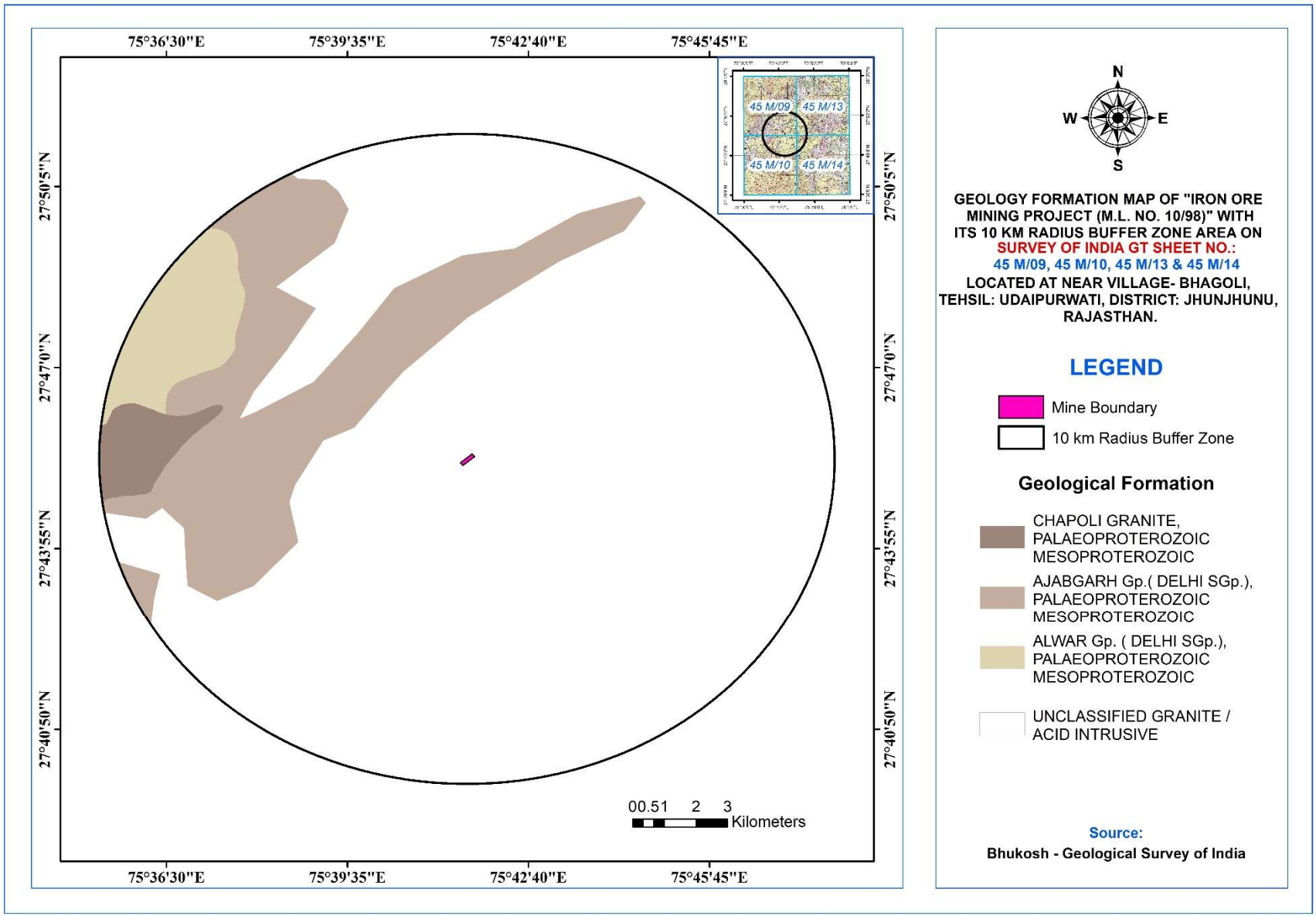
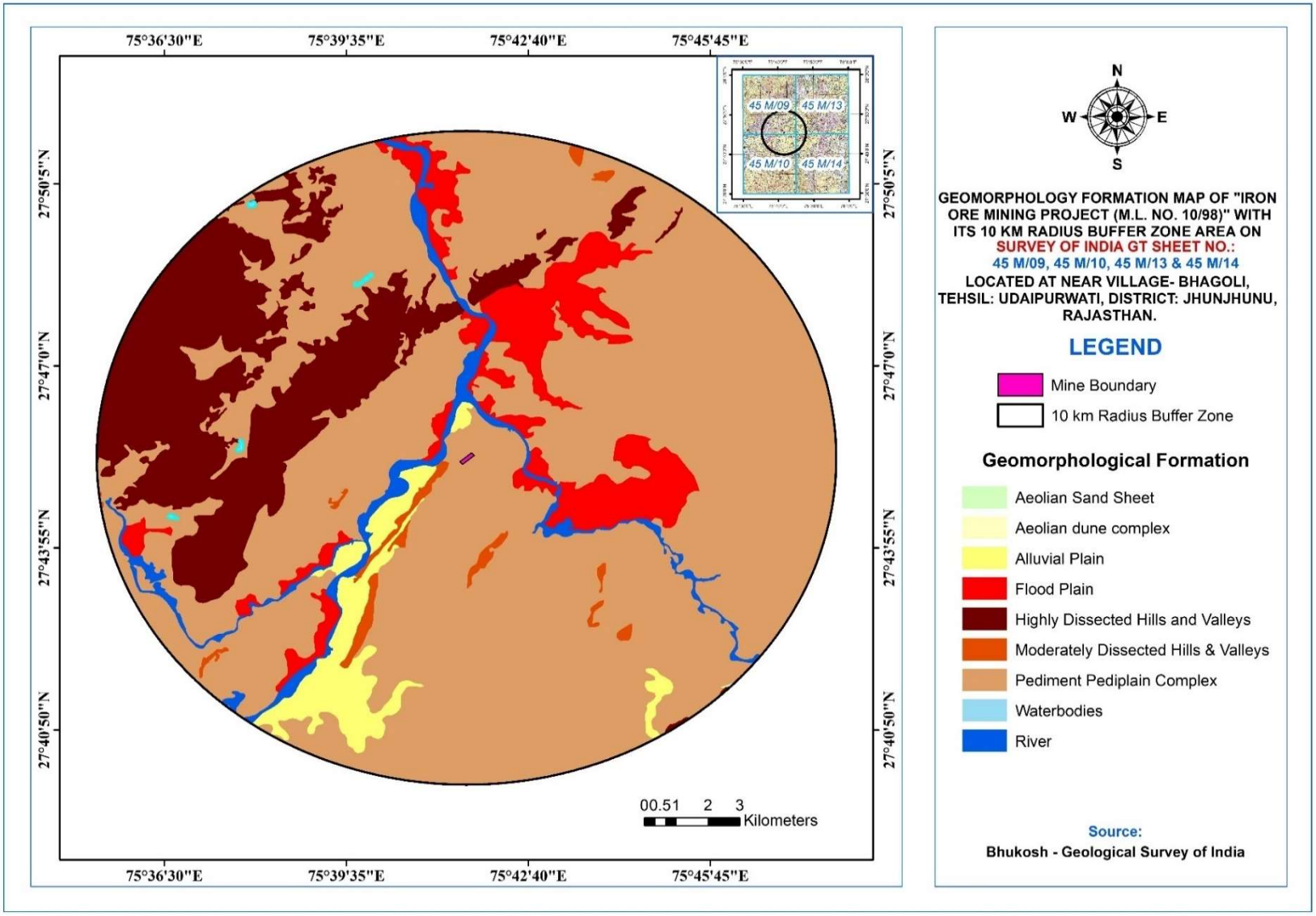


FIGURE No.-3.3 MAP SHOWING GEOMORPHOLOGICAL FORMATION OF THE 10 KM RADIUS FROM THE STUDY AREA



3.2.1 Hydrogeology of the region

The mine lease area falls in Udaipurwati Block, which comes under notified over exploited zone according to CGWB criteria for assessment.
(Source CGWA 2013)

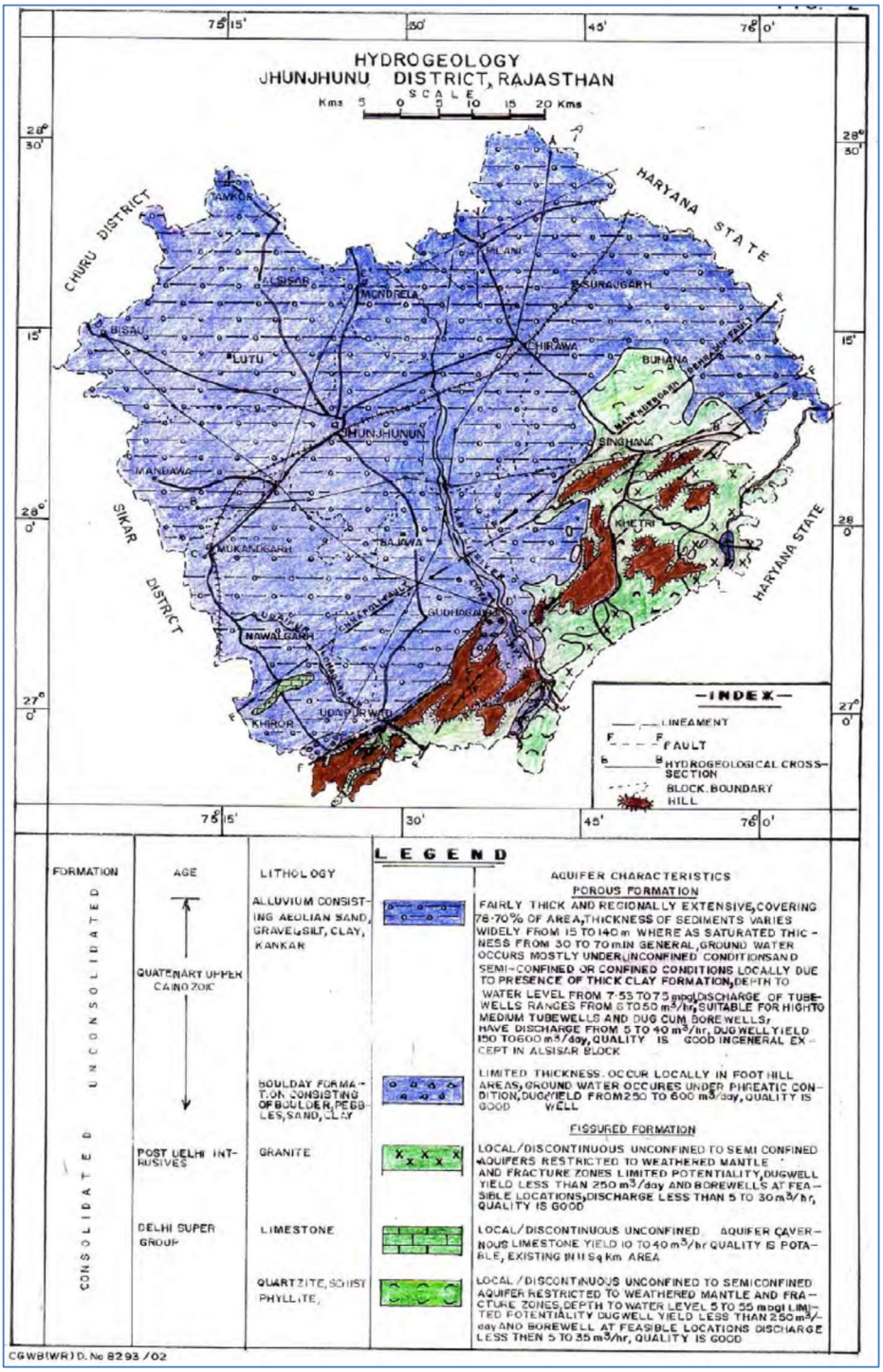
3.2.1.1 Objectives of the study

- To observe Hydrogeological conditions of the area.
- To study drainage pattern of the area.
- To understand depth to water level behavior of the area.
- To study qualitative aspects of groundwater.
- To study impact of rainfall and recharge measures on groundwater regime of the area.
- To study ground water reserves of the area**.**
- To assess impact on ground water due to mining activity.

3.2.1.2 Physiography & Drainage Pattern

Physiographically, the district is a mass of rolling sand dunes, hillocks and low-lying mounds in its western parts. The south eastern part, has off shoots of Aravalli range of hills, which extend from south of Udaipurwati tehsil and continue up to Khetri and Singhana following an almost NE-SW trend. The average elevation is 300 -400 mt. above MSL with highest peak near Lohagarh at 1051 mts. Above MSL. The undulating area with small isolated hills having steep slope lies in the south western part of district. The major portion of hills is found in Khetri and Udaipurwati tehsils. The desertic plain generally lying at an altitude of about 300m AMSL occupies the northern part of the district and is covered with sand dunes. The general slope of the area is from south to north. Sand dunes are drifting in nature.

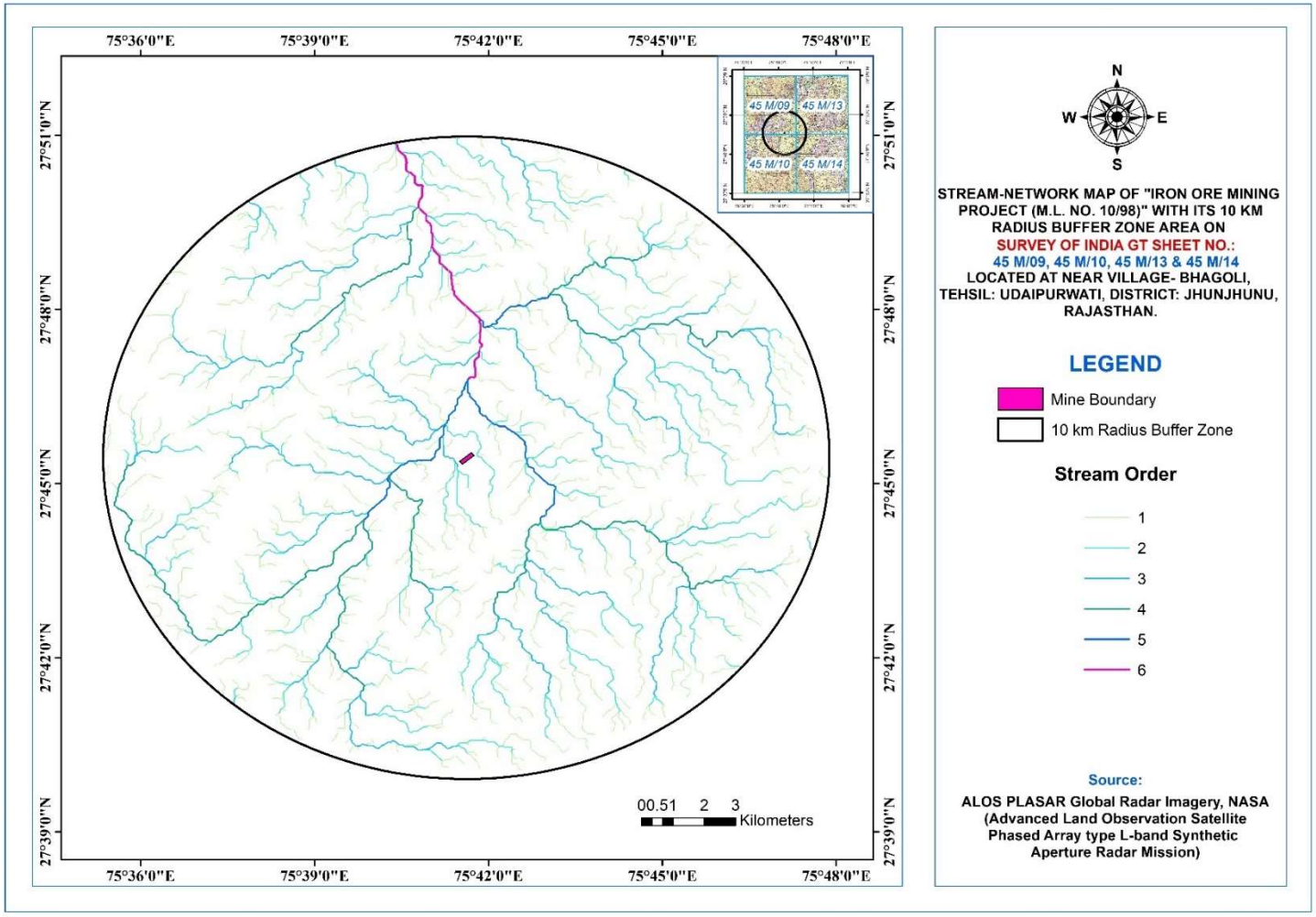
Jhunjhunu district is covered under mainly Sekhawati basin and north western part falls under the outside the basin i.e.; having inland drainage. The area is drained mainly by Kantli river. The area in the south eastern part is drained by Singhana river and a small area in south western corner of district is drained by Budhi nala. The south and east of hill ranges in Khetri area is drained by Dohana river. All the rivers/nalas are ephemeral in nature and flows in response to heavy precipitation during monsoon. Being a desertic terrain particularly in north eastern and north western part of district has inland drainage.



Source: *Central Groundwater Board, Jhunjhunu District*

FIGURE No. - 3.2 HYDROGEOLOGY MAP OF JHUNJHUNU DISTRICT

FIGURE No.-3.5 DRAINAGE MAP OF THE 10 KM RADIUS FROM THE STUDY AREA



3.2.1.3 Aquifer of the region

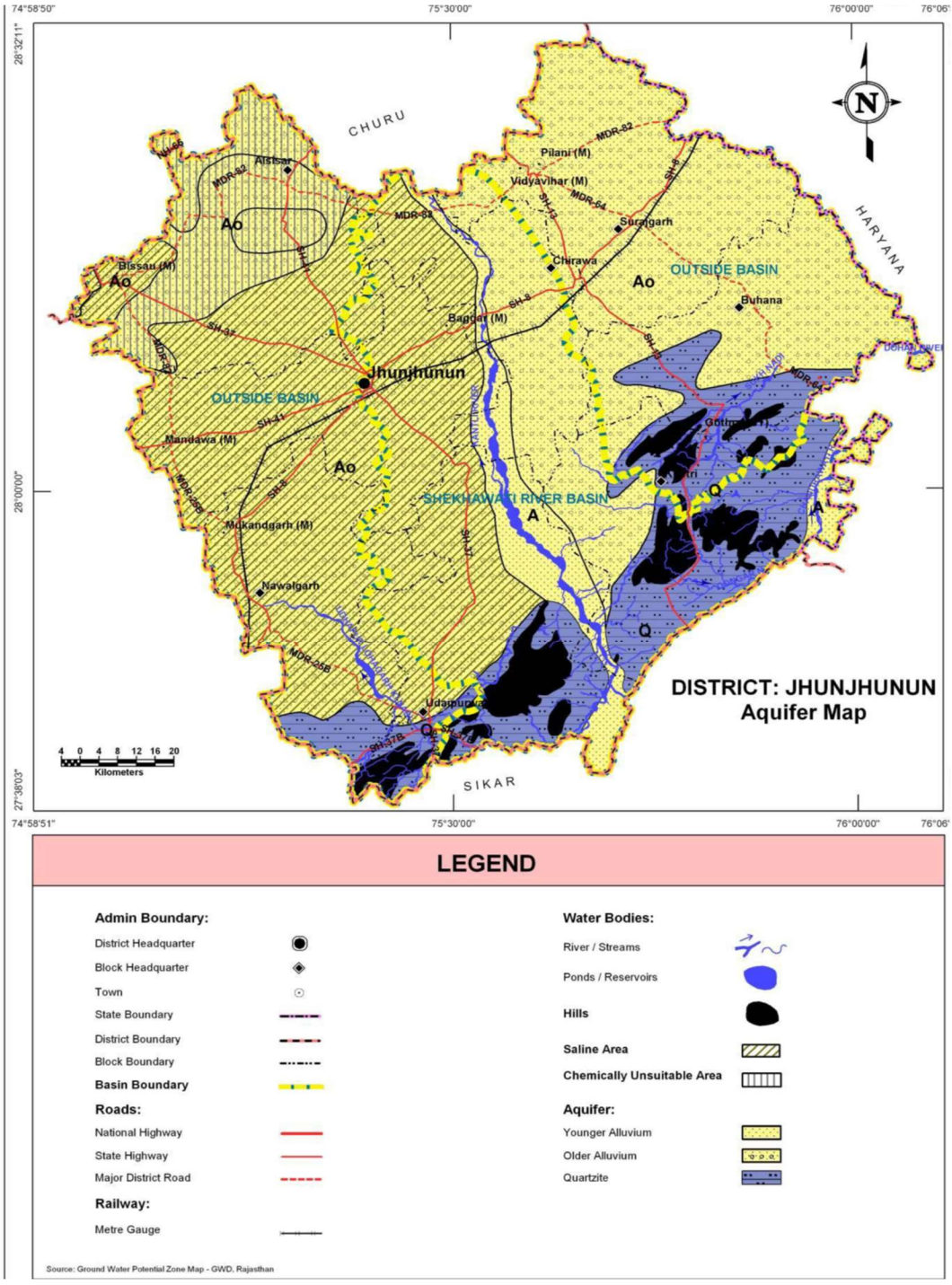
Quaternary alluvium is the principal water bearing formation (occupies 4639sq.km. forming 78.25 % of district) and hard rocks of Delhi Supergroup. Hard rock's aquifers include quartzite and post Delhi Intrusive (covers 754 sq.km. forming 12.71% of district) form ancillary aquifers in the district.

Quartzite, schist, phyllite, gneisses and limestone of Delhi Super Group including granites, amphibolites and pegmatites of post Delhi intrusives form the ancillary aquifer and occupy the south eastern area of the district covering parts of Khetri and Buhana blocks. Ground water occurs under unconfined condition in the weathered mantle (ranging in thickness from 10 to 15 m) and under unconfined to semi-confined conditions in deep seated secondary porosity i.e. fractures, joints, contacts etc. of hard formation.

Alluvial aquifers composed of sand, silt, clay; kankar and gravel form the principal and potential aquifer system in the area. Thickness of alluvial sediments increases from south (having less than 60m) to north and north eastern parts of district (more than 100m). Groundwater occurs under unconfined to semi-confined conditions in the primary porosity i.e.; pore spaces.

The stage of ground water development for the district is 200.05%. Out of total 8 blocks, seven blocks viz. Chirawa, Buhana, Surajgarh, Udaipurwati, Nwalgarh, Jhunjhunu and Khetri have more than 100% stage of ground water development ranging from minimum 107.41% in Khetri block to a maximum of 314.78% in Chirawa block and have been categorized under over-exploited category. No recommendation is extended for additional ground water development. Alsisar block has 88.34% stage of ground water development and is categorized in safe category. Alsisar block has lesser ground water draft being area laden with saline ground water.

FIGURE No.-3.6 AQUIFER SYSTEM OF JHUNJHUNNU DISTRICT



Source: *Central Groundwater Board, Jhunjhunu District*

(https://phedwater.rajasthan.gov.in/content/dam/doitassets/water/Ground%20Water/Pdf/PublicReports/Groundwater_Atlas/Districts/Districtwise%20Atlas%20-%20Jhunjhunun.pdf)

3.2.1.4 Ground water resources

The quantity of recharge depend upon intensity and duration of rainfall, nature and texture of soil vegetation cover, fractures, joints and fissure pattern in hard rock areas and land use pattern of the area. Ground water resource assessment studies have revealed that in all the blocks of the Jhujhunu district significant development of ground water has taken place. Alsisar is the only block where ground water can still be developed as it falls in 'Safe' category. All the remaining blocks are either in 'Over Exploited' or in 'Critical' category implying that the ground water resources have nearly been exhausted and no more development be resorted to in those blocks to prevent further depletion. The other sources which replenish the ground water are as under:

- Return flow from applied irrigation
- Sub-surface inflow from adjoining areas.
- Influent recharge from the river system.

Ground water resources have been reassessed & based on Ground Water Estimation Committee (2004) are mentioned below in Table 3.2.

Source: *http://cgwb.gov.in/District_Profile/Rajasthan/jhunjhunu.pdf*

TABLE No. 3.2 DYNAMIC GROUND WATER RESOURCES, AVAILABILITY, UTILIZATION AND STAGE OF GROUND WATER DEVELOPMENT

Block	Area of Block (Sq.Km.)	Type of area	Poten-tial Zone	Net Annual G W Availabi-lity (mcm)	Existing Gross Ground Water Draft for Irrigation (mcm)	Existing Gross Ground Water Draft for Dom.& Industrial Use (mcm)	Existing Gross Ground Water Draft for All Uses (mcm)	Net G.W. Availabi-lity for future Irrigation Develop-ment (mcm)	Stage of Ground Water Develop-ment (%)	Category
1	2	3	4	6	7	8	9	11	12	13
		NC	Ao/1	10.2004	10.2855	3.6011	13.8866	-7.8651	136.14	
		NC	Ao/2	2.7521	1.6845	0.7001	2.3846	-0.8824	86.65	
Alsisar	827.15	NC	Ao1	11.3777	3.4575	1.7637	5.2212	4.4502	45.89	
Block Total				**24.3301**	**15.4275**	**6.0649**	**21.4924**	**-4.2974**	**88.34**	**SAFE**
		NC	Ao	26.1770	32.5056	6.0889	38.5954	-16.6586	147.44	
Buhana	651.14	NC	Q	5.4642	5.0760	2.0008	7.0768	-3.6018	129.51	
Block Total				**31.6412**	**37.5816**	**8.0897**	**45.6713**	**-20.2604**	**144.34**	**O.E.**
		NC	A	4.2657	10.6950	0.6892	11.3842	-7.9293	266.88	
Chirawa	493.04	NC	Ao	17.8892	49.9200	8.4345	58.3545	-44.0308	326.20	
Block Total				**22.1549**	**60.6150**	**9.1237**	**69.7387**	**-51.9601**	**314.78**	**O.E.**
Jhunjhunu	751.90	NC	Ao	29.2610	50.4030	12.7615	63.1645	-42.6420	215.87	
Block Total				**29.2610**	**50.4030**	**12.7615**	**63.1645**	**-42.6420**	**215.87**	**O.E.**
		NC	A	4.4183	3.0144	0.5227	3.5371	0.4839	80.06	
		NC	Ao	6.2667	6.6615	0.8468	7.5083	-3.1648	119.81	
Khetri	819.44	NC	Q	22.3438	20.8440	3.5865	24.4305	-6.2302	109.34	
Block Total				**33.0289**	**30.5199**	**4.9560**	**35.4759**	**-8.9114**	**107.41**	**O.E.**
		NC	Ao	23.9934	62.9100	8.9849	71.8949	-57.2166	299.64	
Nawalgarh	696.80	NC	Q	3.4068	6.5610	0.6388	7.1998	-4.4242	211.34	
Block Total				**27.4002**	**69.4710**	**9.6237**	**79.0947**	**61.6408**	**288.66**	**O.E.**
Surajgarh	779.09	NC	Ao	27.9985	61.5540	7.5022	69.0562	-48.0555	246.64	
Block Total				**27.9985**	**61.5540**	**7.5022**	**69.0562**	**-48.0555**	**246.64**	**O.E.**
Udaipurwati	867.28	NC	A	14.6425	21.7680	8.6848	30.4528	-22.1255	207.98	
		NC	Ao	17.7440	36.5796	2.5806	39.1602	-22.6556	220.70	
		NC	Q	6.9226	15.4080	1.6418	17.0498	-11.7954	246.29	
Block Total				**39.3090**	**73.7556**	**12.9072**	**86.6628**	**-56.5766**	**220.47**	**O.E.**
Alsisar		NC	Ao(S)	3.6635	1.3620	0.5767	1.9387	2.3015	52.92	
Block Total				**3.6635**	**1.3620**	**0.5767**	**1.9387**	**2.3015**	**52.92**	**SAFE**
Total of District	5885.84	NC		**235.1238**	**399.3276**	**71.0289**	**470.3565**	**-294.3438**	**200.05**	
		SAL		**3.6635**	**1.3620**	**0.5767**	**1.9387**	**2.3015**	**52.92**	

Stage of ground water development in the district is 200.05%. Out of total 8 blocks, seven blocks viz. Chirawa, Buhana, Surajgarh, Udaipurwati, Nwalgarh, Jhunjhunu and Khetri have more than 100% stage of ground water development ranging from minimum 107.41% in Khetri block to a maximum of 314.78% in Chirawa block and have been categorized under over-exploited category. No recommendation is extended for additional ground water development. Alsisar block has 88.34% stage of ground water development and is categorized in safe category. Alsisar block has lesser ground water draft being area laden with saline ground water.

The entire area falls under non-command and all the blocks except Alsisar fall under over-exploited category due to excessive use of ground water being the only source of irrigation. Alsisar block rests in safe category which is attributed by negligible ground draft being area underlain by saline water.

Source: ***http://cgwb.gov.in/District_Profile/Rajasthan/Junjhunu.pdf***

3.2.1.5 Depth to water level

Pre-Monsoon & Post-Monsoon: Depth to water level varies from 16.45 to 73.29 m during pre-monsoon, 2007 and 15.23 m to 75.67 m during post-monsoon, 2007. Deeper water level i.e. more than 40 m is constituted by 70.84% stations and rests in entire north eastern part of district covering entire Surajgarh, Buhana blocks, most part of Chirawa, Nawalgarh and Jhunjhunu blocks. Depth to water level between 20 to 40 m is constituted by 20.83% of stations covering most part of Alsisar, Udaipurwati and Khetri blocks. 8.33% of stations forms water level less than 20m which rests in isolated pockets falling in Khetri and Udaipurwati blocks. 85.70% of stations exhibit negative seasonal water level fluctuation (pre versus post-monsoon) has been noticed in major part of the district. Amplitude of negative fluctuation ranges from less than 0.08 m to 4m. Positive fluctuation (ranging from 0.57m to 1.53m) has been observed at local pockets falling in Khetri block.

3.2.1.6 *Seasonal fluctuation*

The study of long-term water level trend for the last ten years (pre-monsoon) reveals that 89% of hydrograph stations exhibit declining trend ranging from 0.02 to 0.20 m/ year whereas only 11% of stations show marginal rising trend ranging from 0.008 m to 0.017m/ year indicated by only those stations falling in saline area having negligible ground water draft. Maximum declining trend has been noticed in eastern part of the district covering parts of Surajgarh, Bhuana and Khetri blocks.

Source: *Central Groundwater Board, Jhunjhunu District*

3.2.1.7 Management plan for the recharging of the aquifer

Rain water harvesting structure is being proposed as a ground water recharge structure in the excavated mine pit at the end of life of mine or after the exhaustion of mineral in mine pit which would show positive impact on ground water table of the area. Recharge table details are mentioned in section 3.2.8 below.

3.2.1.8 Ground water modelling

Ground water abstraction is very negligible (7.50 KLD) and the project area lies in the Notified zone as per CGWA Notification 2011, Hence as such no ground water modeling is required.

3.2.1.9 Recharge Measures and Impact on Ground Water Regime

3.2.1.9.1 Rain water harvesting

A wise and viable solution to enhance water availability is to collect the precious water drops falling from the sky and divert maximum possible water to the ground water regime in project premises by suitable rainwater harvesting structures. In designing any rainwater harvesting structure, capturing rainfall and runoff for local use is the key concept. Hard surface such as roof pavements and roads that decrease groundwater percolation constitute catchments and generate the high runoff which has to be diverted in to the storage tank and recharged in to ground water regime through simple filtration and injection well system for subsequent extraction by service wells. To improve water availability, rainwater harvesting is the most imminent and long-term solution. In view of above, rainwater-harvesting structures at this point can serve the purpose of arresting roof top rainwater and runoff generated through roads in the area. The design is based on average annual rainfall and its intensity and the intake capacity of the water by the aquifers.

Design of Rainwater Harvesting

For good design of rainwater harvesting, following points are to be kept under consideration:

- Ideal location with good ground slope
- The location has adequate subsurface permeability of the aquifer to accommodate maximum recharge of rainwater through injection well
- Rate of filtration should exceed average rainfall intensity
- Clogging of filtration media should be cleaned periodically
- Ground water pollution does not take place

Open and green belt area rain water harvesting

The open area (including mine pit) of the project is 18600 m^2 and green belt area of project is 16320 m^2. Mine pit will be developed as rainwater harvesting reservoir and percolation pits as per sites having rooms for recharge in resonance with average rainfall, catchment area and peak rainfall intensity and rainwater falling on the unused area is carried through the drains to rainwater harvesting structure and allow to infiltrate in groundwater regime. This will improve groundwater quality as well as quantity in and around the project premises. Average surface run-off coefficients considered for different surfaces as per CGWB norms are given below:

Run –off coefficient of roof top area : 85%
Run- off coefficient of paved area : 75%
Run- off coefficient of open alluvial land with flat to gentle slope topography : 15%

Following dimensional parameters are considered for design of rainwater harvesting system in

the project premises.

Open area rain water harvesting
Total Open area (including mine pit and unused area) = 18600 m^2
Average rainfall = 358.5 mm = 0.3585 m
Catchment factor for open area = 0.15 (As per CGWA norms)
Total volume of water to be captured = 18600 x 0.3585 x 0.15 = 1000.215 m^3 say 1000 m^3

Green belt area rain water harvesting
Total Green belt Area = 16320 m^2
Average rainfall = 358.5 mm = 0.3585 m
Catchment factor for open/green belt area = 0.15 (As per CGWA norms)
Total volume of water to be captured = 16320 x 0.3585 x 0.15 = 877.60 m^3say 878 m^3

3.2.1.9.2 Recharge Measures and Artificial Recharge

Artificial recharge is the process by which rain water infiltrate into groundwater system and ground water resources are augmented by altering natural conditions of replenishment. There are several methods for artificial recharge depending upon the feasibility in different regions.

Recharge through open area (including mine pit and unused area)
As 18600 m^2 area is green area/open area and average rainfall is 0.3585 m/annum, the runoff generated would be 1000 m^3/annum.

Recharge through green area
As 16320 m^2 area is green area/open area and average rainfall is 0.3585 m/annum, the runoff generated would be 878 m^3/annum.

Recharge through plantation
As 300 m^3/annum water is to be used for Plantation @ 3.80 m^3/day as per water utilization chart, 5% of this water would be recharged to ground water as per norms of applied irrigation. Total water recharged would be 1140 x 0.05 = 57 m^3/annum.

Total Recharge Potential
Recharge potential of rooftop area, green area and open area storm water harvesting and other recharge factors is shown in below table No. 3.3.

TABLE NO. 3.3: RECHARGE POTENTIAL

S. No.	Rainwater Harvesting in Project Premises	Quantity in m^3/Annum
1	Recharge through Paved Area	-
2	Recharge through open area	1000
3	Recharge through Green Belt area	878
4	Roof Top Water Harvesting	--
5	Recharge due to Gardening Water	57
	TOTAL	**1935**

3.2.2 LAND ENVIRONMENT

3.2.2.1 Objective

The main objective of this section is to provide a baseline status of the study area covering 10 km radius around the mine site so that temporal changes due to the mining activities on the surroundings can be assessed in future. The objectives of land use studies are as follows:

- Establishment of the existing land use pattern.
- Assessment of the likely impacts due to the said project on the land use pattern of the study area and
- Making recommendations for optimizing the future land use pattern after the mining in the study area.

The land use pattern of study area has been studied based on satellite imagery (19th May 2021) as well as on the review of secondary data provided in the 2011 District Census Handbook of Jhunjhunu District, Rajasthan State.

3.2.2.2 Land use Based on District Census Handbook (2011) and other sources

For the study of land use, literature review of various secondary sources such as District Census Handbooks, regional maps regarding topography, zoning settlement, industry, forest etc., were taken. The data was collected from various sources like District Census Handbook, Revenue records, State and Central government offices and Survey of India (SOI) Toposheets and also through primary field surveys. Based on the census report, 10 km radial distance around mine lease area has been considered in the study.

3.2.2.3 Land Use based on Satellite Imagery

Present land use based on remote sensing satellite imageries (19th May 2021) was collected and interpreted for the 10 km radius study area for analysing the land use pattern of the study area. Based on the satellite data, land use/land cover maps have been prepared. Land use/Land Cover Classification System: The present land use/land cover maps were prepared based on the classification system of National standards. For explanation for each of the land use category the details as given in **Table-3.4** are considered.

TABLE No. 3.4: LAND USE/LAND COVER CLASSIFICATION SYSTEM

Sr. No.	Level-1	Level-2
1	Built-up Land	Town/cities
		Villages
		Institution/Industry/Godown etc.
		Plotted Area/Layout
2	Agriculture Land	Crop Land
		Plantation

		Fallow
3	Forest	Evergreen/Semi evergreen
		Deciduous
		Forest Plantation
4	Wastelands	Rocky/Stony Waste
		Land with /without scrubs
		Saline/sandy & Marshy/swampy
5	Water Bodies	River/Stream
		Lake/Reservoir/Tanks
6	Others	Orchard/Other Plantation
		Shifting cultivation
		Salt Pans, Snow covered/Glacial
		Barren/Vacant Land

3.2.2.4 Data Requirements

Resource Sat-2, LISS-IV sensor, was acquired for imaginary dated 19th May, 2021 and was used for the mapping and interpretation. Besides, other collateral data as available in the form of maps, charts, census records, other reports and especially topographical survey of India maps are used. In addition to this, ground truth survey was also conducted to verify and confirm the ground features.

3.2.2.5 Methodology adopted for thematic data extraction from the satellite imageries

The methodology adopted for preparation of landuse/ landcover thematic map is monoscopic visual interpretation of geocoded scenes of Resource Sat-2, LISS-IV sensor and field observations are taken. The various steps involved in the study are preparatory field work, field survey and post field work.

3.2.2.6 Pre-field Interpretation of Satellite Data

The False Colour Composite (FCC) of Resource Sat-2, LISS-IV sensor, Sentinal-2 data are used for pre-field interpretation work. Taking the help of toposheets, geology, geo-morphology and by using the image elements the features are identified and delineated the boundaries roughly. Each feature is identified on image by their image elements like tone, texture, colour, shape, size, pattern and association. A tentative legend in terms of land cover and land use, physiography and erosion was formulated. The sample areas for field check are selected covering all the physiography, land use / land cover feature cum image characteristics.

3.2.2.7 Software's used

a) ERDAS-2014 Imagine for image processing/rectification/geo-coding;
b) Auto CAD for data preparation after visual interpretation of the image; and
c) Arc GIS 10.4 used for Image/Landuse presentation.

3.2.2.8 Ground Truth Collection

Both toposheet and imageries were taken for field verification and a transverse plan using existing road network was made to cover as many representative sample areas as possible to observe the broad land use features and to adjust the sample areas according to field conditions. Detailed field observations and investigations were carried out and noted the land use features on the imagery.

3.2.2.9 Post Field Work

The base maps of the study area were prepared, with the help of Survey of India Toposheet. Preliminary interpreted land use and the land cover features boundaries from Resource Sat-2, LISS-IV sensor, Sentinal-2 for false colour composite were modified in light of field information and the final thematic details were transferred onto the base maps. The final interpreted and classified thematic map was cartographed. The cartographic map was coloured with standard colour coding and detailed description of feature with standard symbols. All the classes noted and marked by the standard legend on the map.

3.2.2.10 Final Output

The final output would be the land use/land cover map and numerals were given different colour code for each category as shown in map. Area estimation of all features of Land use/Land cover categories was noted. The thematic map and land use pattern is shown in **Figure-3.7** and **Figure-3.8**. The details of the land use in 10 km radial study area are given in **Table-3.5.**

TABLE 3.5: LAND USE BREAKUP OF THE STUDY AREA

Sr. No	Class	Area in ha.	(Area)%
1.	Urban	532.6674	1.61
2.	Rural	650.4027	1.97
3.	Waterbodies	14.7539	0.04
4.	Mining/Mine Dump	22.231	0.07
5.	River	1769.1766	5.36
6.	Flood Plain	2457.4901	7.44
7.	Irrigation	911.225	2.76

8.	Wastelands/Scrubs land	21113.3128	63.91
9.	Moderately dissected hills	326.8665	0.99
10.	Highly dissected hills	5236.6396	15.85
Total		**33034.7657**	**100.00**

Source: *ResourceSat-2 Satellite Imagery*

3.2.2.11 Observation of the LU/LC data

- The land use pattern of the study area indicates total 2.76 % of the land us under irrigation land and 63.91 % of the land as under Wastelands/Scrubs land, 16.84% of the land as under Moderately & Highly dissected hills, 0.07% of the land as under mine dump, whereas the remaining 12.84% of the land comes under river, flood plain and bodies etc.
- Wastelands/Scrubs land area comprises of 21113.3128 ha. i.e., 63.91% of total study area, Built-up Rural & Urban comprises of 1183.0701 ha. i.e., 3.58% of the total study area and irrigation land comprises of 911.225 ha i.e., 2.76% of the total study area, Moderately & Highly dissected hills comprise of 5563.5061 ha i.e., 16.84 % of the total study area.

3.2.2.12 Digital Elevation Model (DEM)

A digital elevation model (DEM) is a digital representation of ground surface topography or terrain. It is also widely known as a digital terrain model (DTM). A DEM (Digital Elevation Model) is simply a digital map of elevation data. These maps, a type of DTM (Digital Terrain Model), are raster data meaning that they are made up of equally sized gridded cells each with a unique elevation or as a triangular irregular network.

Methods for obtaining elevation data used to create DEMs include Real Time Kinematic GPS, Stereoscopic pairs of satellite image, Stereo photogrammetric, LIDAR, Topographic maps, Theodolite or Total Station, Doppler radar, Focus variation and Inertial surveys. DEMs are used often in geographic information systems, and are the most common basis for digitally-produced relief maps, extracting terrain parameters, modelling water flow or mass movement, rendering 3D visualization, rectification of aerial photography or satellite imagery, reduction of gravity measurements, flight simulation etc. The present DEM generation process consists of interpolating the elevation values between the elevation contour lines and spot heights extracted from digitized topographic maps.

3.2.2.13 DEM from Topographic Maps

The methodology of generating DEM from topographic maps using ILWIS is detailed in the following parts:

- Contour line and spot height extraction from the topographic maps as segment and point

maps.

- Combining elevations from contour line and spot heights in a single map.
- The resulting map is converted to raster defining pixel value of 30. The raster map resulting from the segment to raster conversion contains values for those pixels covered by a contour line and spot heights. All other pixels in the map remain undefined.
- A linear interpolation is made between the pixels with altitude values, to obtain the elevations of the undefined values in between the rasterized contour lines and spot heights. The output of the interpolation is a raster map showing the Digital Elevation Model in which every pixel has a value.

The 3D view of the DEM is generated creating a TIN (Triangulated Irregular Network) and 3D scene presentation in 3D Analyst under Arc View environment. 2D DEM and 3D view for the 10 km area are presented in **Figure-3.9.**

FIGURE No. 3.7 THE THEMATIC MAP OF THE 10 KM RADIUS OF THE STUDY AREA

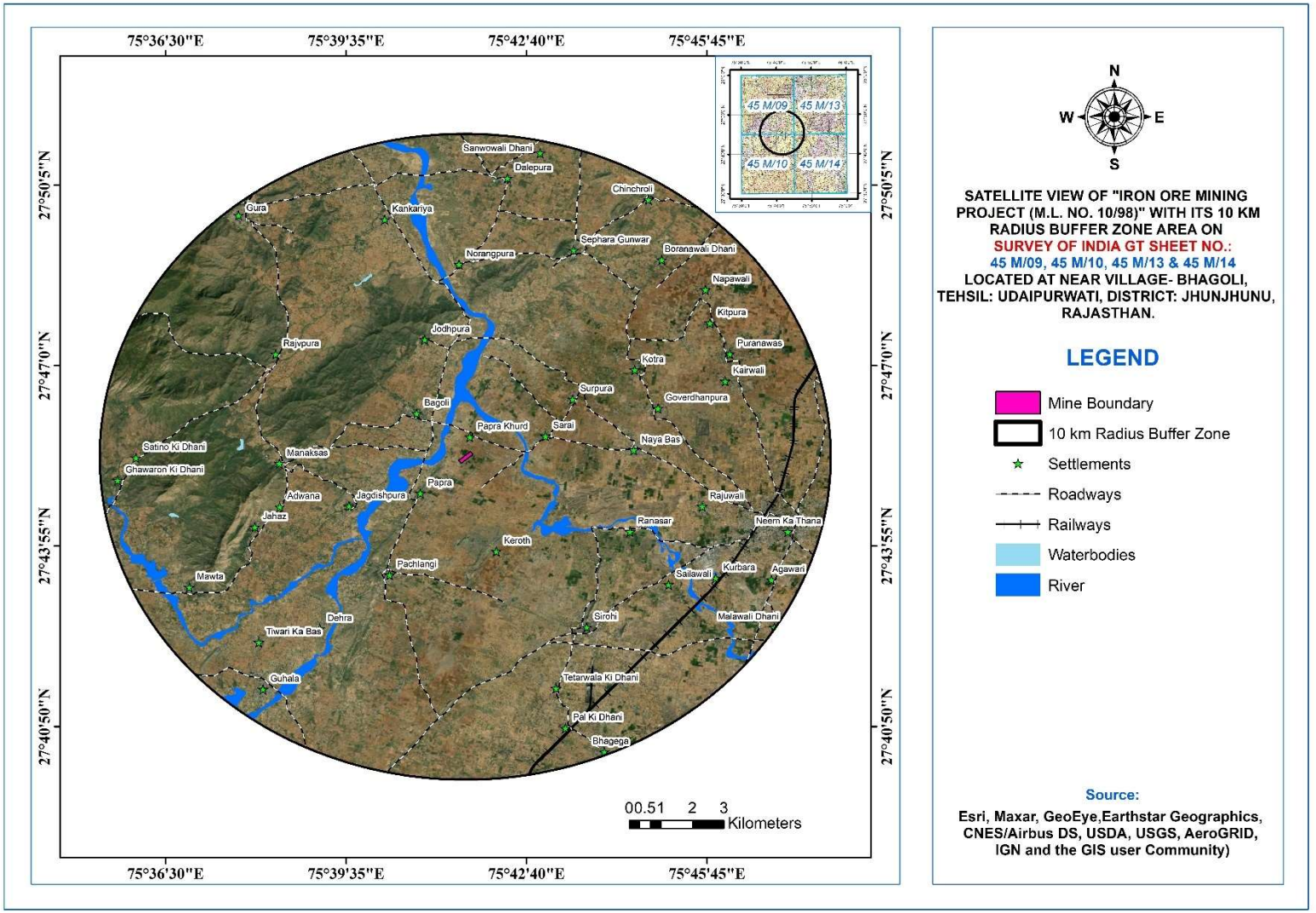


FIGURE No.-3.8: LAND USE PATTERN OF THE 10 KM RADIUS OF THE STUDY AREA

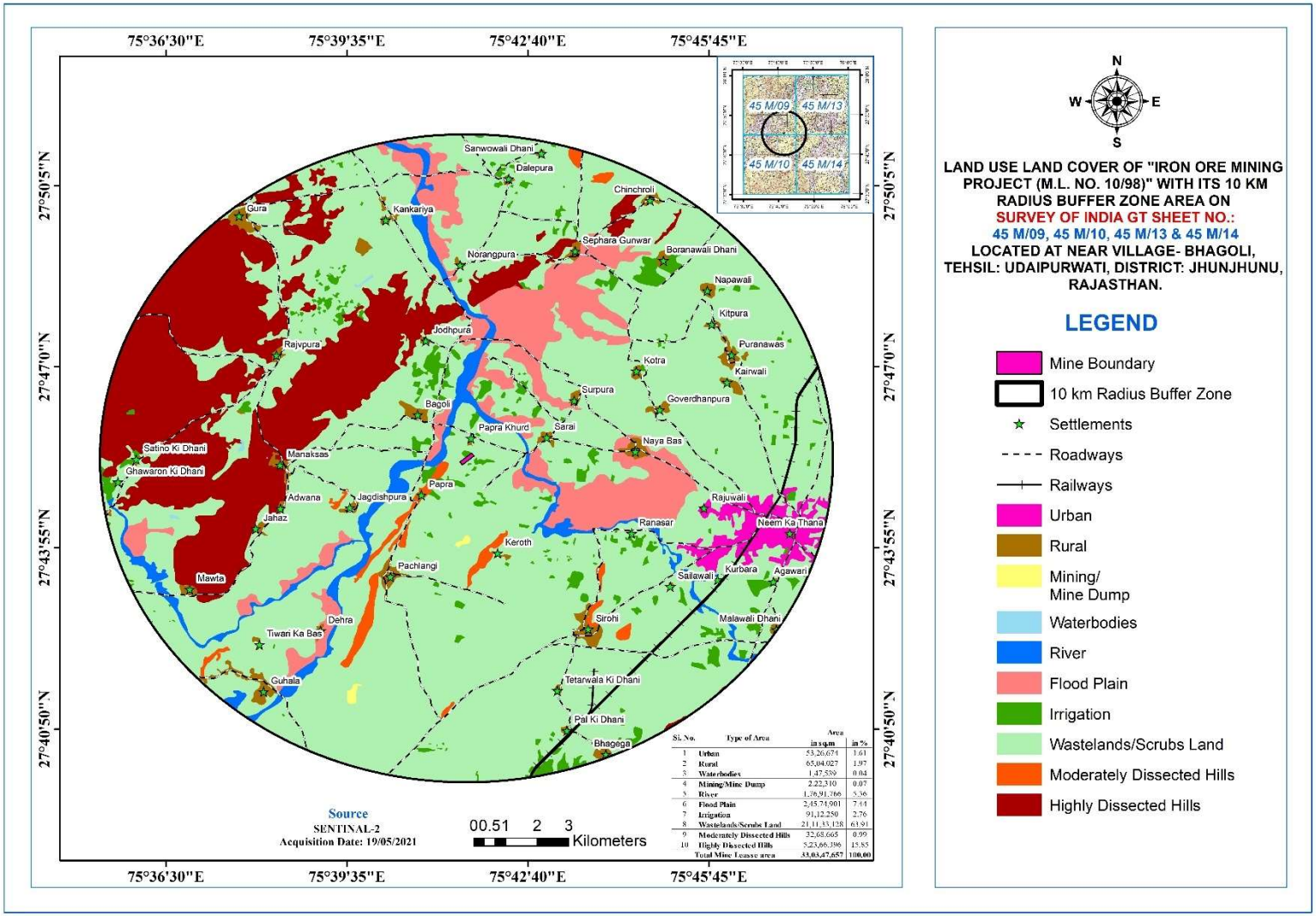
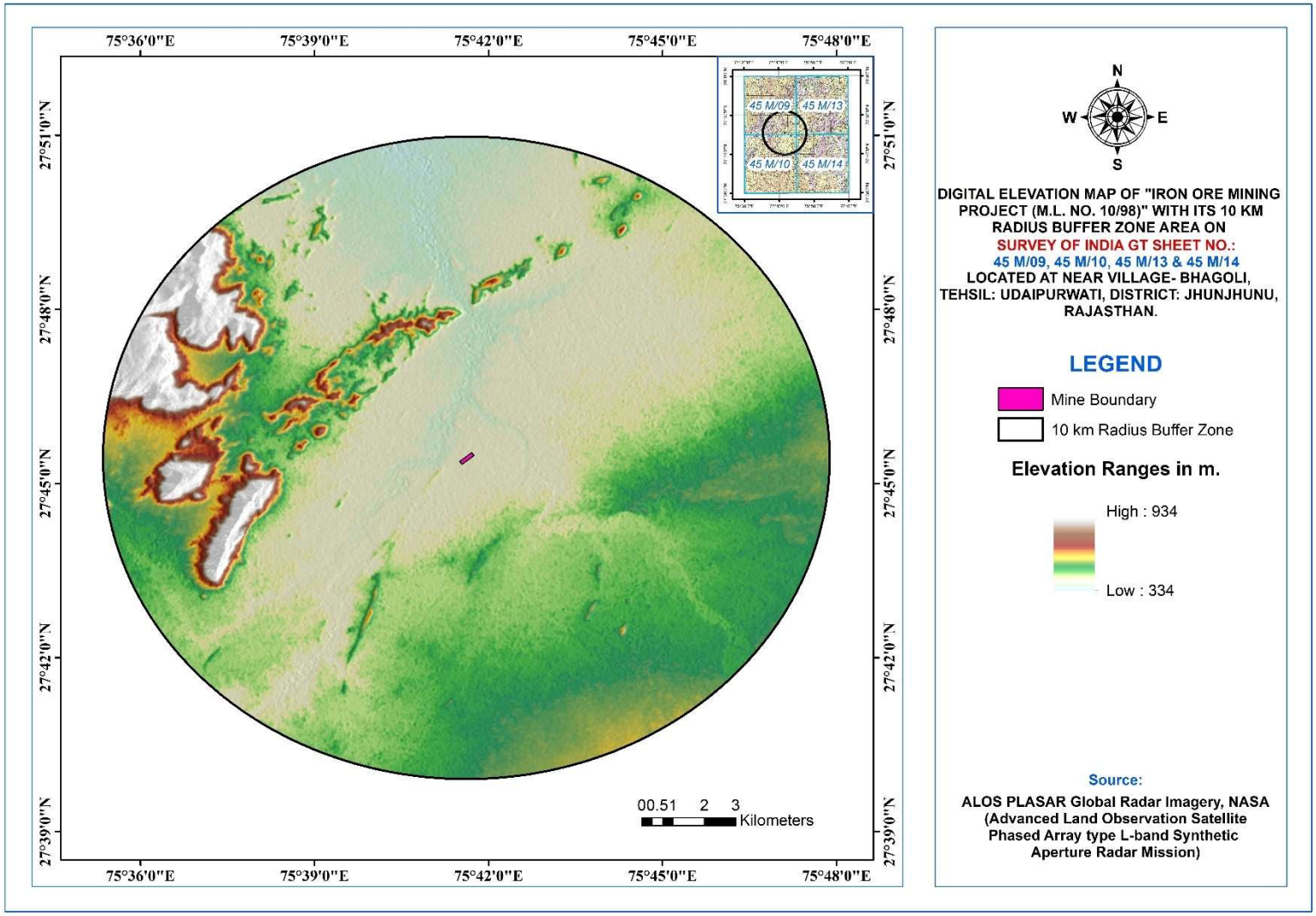


FIGURE-3.9: DEM MAP OF THE STUDY AREA



3.2.3 MICRO AND MACRO METEOROLOGY

3.2.3.1 Macro Meteorology

3.2.3.2 Climate

The climate of the district can be classified as semi-arid. It is characterized by very hot summers and very cold winters with poor rainfall during south-west monsoon period. The district witnesses three distinct seasons viz, winters, summer and monsoon. In winter season, extending between November to February, average temperature is 11 °C whereas in summer months of March to June, the average temperature is 36.8 °C. Summers are dry and hot with temperatures soaring to 49.7 °C in the months of June. Monsoon months between July and Sept-Oct are wet and humid as the district receives fairly good rainfall. The average total annual rainfall is 358.5 mm. Indian Meteorological Department (IMD), long term climatological data collected for a period of 30 year from 1981-2010 for nearest IMD station Sikar is incorporated in Table 3.6.

3.2.3.3 Rainfall

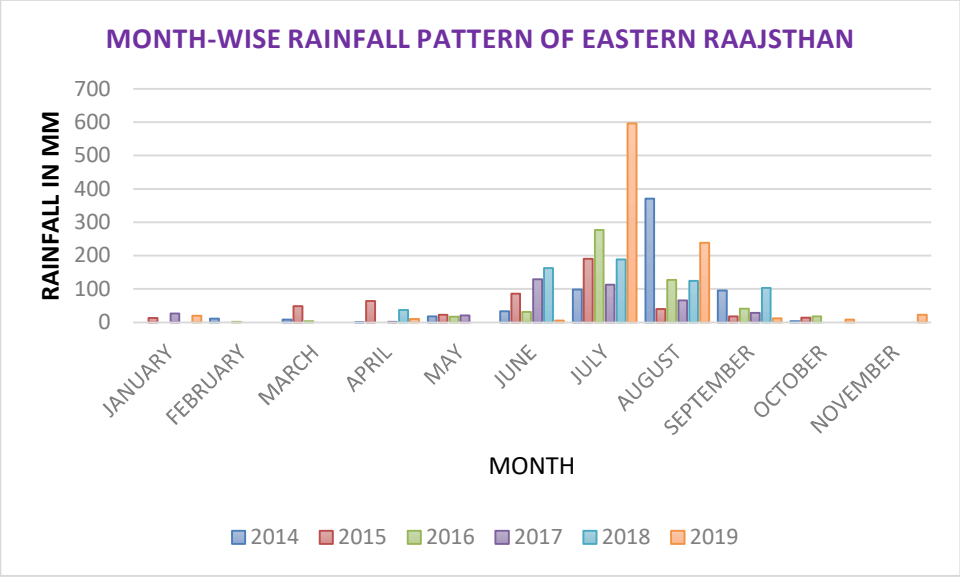
The average annual rainfall in the area is 0.3585 mm based on last 05-year data from 2014 to 2019 as given in table 3.6 below:

TABLE 3.6: MONTH-WISE RAINFALL PATTERN OF EASTERN RAAJSTHAN

YEAR / MONTH	2014	2015	2016	2017	2018	2019
	RAINFALL DATA IN (MM)					
JANUARY	0.0	13.0	0.0	27.0	0.0	20.0
FEBRUARY	11.0	0.0	2.0	0.0	0.0	0.0
MARCH	8.0	49.0	4.0	0.0	0.0	0.0
APRIL	1.0	64.0	0.0	2.0	37.0	10.0
MAY	18.0	23.0	17.0	21.0	0.0	0.0
JUNE	33.0	86.0	31.0	129.0	163.0	6.0
JULY	99.0	191.0	277.0	113.0	189.0	597.0
AUGUST	371.0	40.0	127.0	66.0	125.0	239.0
SEPTEMBER	96.0	18.0	41.0	29.0	103.0	12.0
OCTOBER	4.0	14.0	18.0	0.0	0.0	8.0
NOVEMBER	0.0	0.0	0.0	0.0	0.0	23.0
DECEMBER	0.0	0.0	0.0	3.0	0.0	14.0

Source: *https://data.gov.in/resources/sub-divisional-monthly-rainfall-1901-2017*

FIGURE 3.10 YEAR WISE RAINFALL PATTERN OF YEAR 2014-2019 (JHUNJHUNU DISTRICT)



Source: http://hydro.imd.gov.in/hydrometweb/(S(zj1nth55dl22vv55he0kqoel))/DistrictRaifall.aspx

3.2.3.4 Meteorology data from secondary source

The source of data is India Meteorological Department (IMD), which maintains a network of meteorological stations at several important locations. The nearest IMD station to the mine site is located in Sikar (56.83 Km towards WSW direction from the mine lease area). The Meteorological data i.e. temperature, relative humidity, rainfall, wind speed, wind direction, was obtained from IMD to study their trend.

TABLE 3.7-CLIMATOLOGICAL DATA COLLECTED FOR A PERIOD FROM 1981-201

जलवायवी सारणी

CLIMATOLOGICAL TABLE

BACK

स्टेशन : **सीकर** अक्षांश LAT. 27° 37' देशांतर LONG. 75° 08' समुद्री तल माध्य से ऊंचाई *HEIGHT ABOVE M.S.L.* 432 मीटर *METRES* प्रक्षणों पर आधारित **BASED ON OBSERVATIONS** 1981-2009

STATION : Sikar

माह / MONTH		स्टेशन का सतह दाब / STATION LEVEL PRESSURE	वायु तापमान / AIR TEMPERATURE — माध्य / MEAN: शुष्क बल्ब / DRY BULB	नम बल्ब / WET BULB	दैनिक अधिकतम / DAILY MAX	दैनिक न्यूनतम / DAILY MIN	माह में उच्चतम / HIGHEST IN THE MONTH	माह में निम्नतम / LOWEST IN THE MONTH	चरम / EXTREMES: उच्चतम / HIGHEST	दिनांक और वर्ष / DATE AND YEAR	निम्नतम / LOWEST	दिनांक और वर्ष / DATE AND YEAR	आर्द्रता / HUMIDITY: सापेक्ष आर्द्रता / RELATIVE HUMIDITY	वाष्प दाब / VAPOUR PRESSURE	मेघ की मात्रा / CLOUD AMOUNTS: समस्त मेघ / ALL CLOUDS	निम्न मेघ / LOW CLOUDS	वर्षा / RAINFALL: मासिक योग / MONTHLY TOTAL	वर्षा के दिनोंकी संख्या / NO. OF RAINY DAYS	वर्षसहित सबसे नम महीने का योग / TOTAL IN WETTEST MONTH WITH YEAR	वर्षसहित शुष्कतम महीने का योग / TOTAL IN DRIEST MONTH WITH YEAR	24 घंटोंकी सबसे भारी वर्षा / HEAVIEST FALL IN 24 HOURS	दिनांक और वर्ष / DATE AND YEAR	माध्य पवन गति / MEAN WIND SPEED
		एच.पी.ए hPa	डि. से °C	डि. से °C	डि. से °C	डि. से °C	डि. से °C	डि. से °C	डि. से °C		डि. से °C		प्रतिशत %	एच.पी.ए hPa	आकाश के अष्टमाश Oktas of sky		मि.मि. mm		मि.मि. mm	मि.मि. mm	मि.मि. mm		कि.मी. प्र. घं. Kmph
जनवरी JAN	I	967.6	12.1	8.9	22.2	4.9	27.3	1.1	31.4	30	-3	1	64	9.1	0.7	0.6	5.1	0.6	52.9	0	39.8	10	
	II	964.8	20.5	14.5						1991		1977	50	12	0.8	0.7			1948			1982	
फरवरी FEB	I	965.8	16	11.2	25.1	8	30.4	3.9	37.4	27	-4.2	7	53	9.9	0.5	0.4	7.7	0.9	108	0	39	13	
	II	963.2	24.1	16.2						1973		1974	41	12.8	0.8	0.7			1990			1990	
मार्च MAR	I	963.3	21.9	15.4	30.9	13.9	36.2	9.3	45	31	1.3	2	48	12.6	0.5	0.4	2.8	0.4	33.2	0	20.2	26	
	II	960.6	29.4	19.3						1984		1982	36	14.5	0.7	0.7			1967			1967	
अप्रैल APR	I	959.7	27.7	19.4	36.8	19.5	41.9	13.9	45.5	29	7	1	43	16.1	0.5	0.4	4.5	0.6	51.5	0	24.7	13	
	II	956.7	35.4	23						1993		1982	33	18.3	0.9	0.8			1983			1983	
मई MAY	I	956.6	31.1	23.3	39.8	24.4	44.1	19.7	49	26	10.1	20	50	22.7	0.4	0.3	17	1.4	179.5	0	75.6	22	
	II	953.6	38.9	26.1						1994		1982	35	23.2	1	1			1971			1971	
जून JUN	I	954.4	31.6	24.6	40.1	26.2	44.7	21.5	49.7	12	11.9	4	55	24.8	0.7	0.7	50.7	2	280.5	0	183.5	26	
	II	951.2	38.3	26.3						1993		1999	39	24.8	1.2	1.2			1996			1996	
जुलाई JUL	I	952.4	28.9	24.9	35.4	25	40.4	22	44.4	15	15.1	12	71	28.6	1.8	1.7	125.8	5.3	591.5	0	236	13	
	II	949	33.3	26.5						1947		1982	58	29	2.4	2.4			1978			1968	
अगस्त AUG	I	953.5	28.3	24.6	33.7	24.4	37.4	21.9	41.1	20	16.9	20	72	28.1	1.6	1.5	95.5	5	471.3	12.7	184.4	25	
	II	950.5	32.4	26.1						1965		1992	60	29	2.1	2			1964	1949		1964	
सितम्बर SEP	I	957.3	27.7	23.3	34.5	23.3	37.7	20.4	40	20	13.1	28	67	25	0.6	0.5	36.1	2.4	300	0	150	22	
	II	954.6	32.8	25.2						2009		1963	52	25.9	1.1	1			1947			2010	
अक्तूबर OCT	I	961.5	24.9	18.8	34	17.9	37.4	13.6	41	21	5.4	31	54	17.4	0.1	0.1	9.6	0.5	114.5	0	50	2	
	II	958.9	32.2	21.8						1995		1964	38	18.2	0.5	0.5			1997			2004	
नवम्बर NOV	I	966.1	19.4	13.9	28.7	11	33.1	6.8	37.8	17	0	30	52	12	0.2	0.1	1.9	0.4	58.2	0	38	3	
	II	963.4	27.3	18.2						1972		1962	38	13.8	0.2	0.2			1981			1981	
दिसम्बर DEC	I	967.9	14	9.5	23.5	6	28.6	1.8	32.5	2	-4.9	19	53	8.5	0.2	0.2	1.8	0.2	98.1	0	48.2	3	
	II	965.5	22.8	15.2						1993		1986	42	11.4	0.4	0.3			1967			1967	
वार्षिक योग या माध्य ANNUAL TOTAL OR MEAN	I	960.6	23.6	18	32.1	17.0	44.9	1	49.7	12	-4.9	19	57	17.7	0.6	0.6	358.5	19.8	1032.4	56.6	236	13	
	II	957.7	30.6	21.4					6	1993	12	1986	43	19.2	1	0.9			1977	2008	7	1968	
वर्षोंकी सं NUMBER OF YEARS	I																						
	II	18	18	18	22	21	22	21	57		57		18	17	18	17	25	25	57	57	58		

Source: *Indian Meteorological Department (IMD)*

TABLE 3.8: METEOROLOGY DATA FROM IMD (1981-2009)

MONTH	MEAN TEMPERATURE (^{0}C)		MEAN TOTAL RAINFALL (mm)	MEAN NUMBER OF RAINY DAYS	MEAN NUMBER OF DAYS WITH			
	DAILY MAXIMUM	DAILY MINIMUM			HAIL	THUNDER	FOG	SQUALL
Jan	22.2	4.9	5.1	0.6	0	0	0	0
Feb	25.1	8	7.7	0.9	0	0	0	0
March	30.9	13.9	2.8	0.4	0	0	0	0
April	36.8	19.5	4.5	0.6	0	0	0	0
May	39.8	24.4	17	1.4	0	0	0	0
June	40.1	26.2	50.7	2	0	0	0	0
July	35.4	25	125.8	5.3	0	0	0	0
August	33.7	24.4	95.5	5	0	0	0	0
Sept	34.5	23.3	36.1	2.4	0	0	0	0
October	34	17.9	9.6	0.5	0	0	0	0
Nov	28.7	11	1.9	0.4	0	0	0	0
Dec	23.5	6	1.8	0.2	0	0	0	0

3.2.4 MICRO-METEOROLOGY

Meteorology plays a vital role in determining the transport and diffusion pattern of air pollutants released into atmosphere. The principal variables include horizontal convective transport (average wind speed and direction), vertical convective transport (atmospheric stability) and topography of the area. Meteorological characteristics of an area are very much important in assessing possible environmental impacts and in preparing environmental management plan. Since meteorological factors show wide fluctuations with time, meaningful interpretation can be drawn only from long-term reliable data.

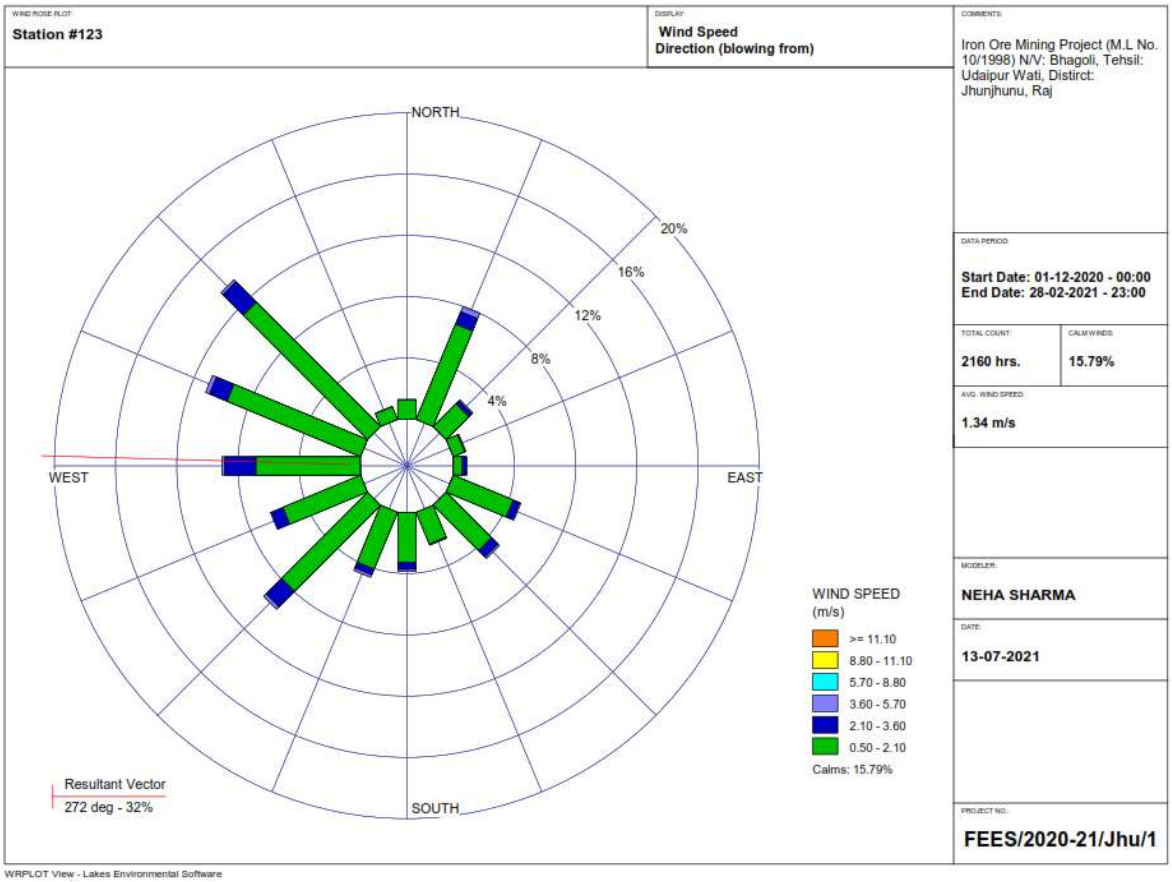
3.2.4.1 Micro-Meteorological data

Meteorological station was set-up at site to record surface meteorological parameter during winter season (1st December 2020 to 28th February 2021). Wind speed and wind direction data recorded during the study period have significance influence on the air quality of the area. Based on the collected meteorological data, relative percentage frequencies of different wind directions were calculated and plotted as wind rose diagram during the base line study period of (1st December 2020 to 28th February 2021). Maximum and minimum temperatures including percentage relative humidity were also recorded simultaneously. It was observed that the predominant over all wind patterns for the study period was from North West. Wind speed during this period is 1.34 m/s. Summary of the meteorology at site is given in **Table 3.9**.

TABLE No. 3.9: METEOROLOGY AT SITE (WINTER SEASON-DECEMBER 2020 - FEBRUARY 2021)

Month	Temperature(^{0}C)		Relative Humidity (%)		Wind Speed (m/sec)	
	Max.	Min.	Max.	Min.	Max.	Min.
December	24.06	5.85	89.41	20.3	6.89	0.45
January	24.18	7.51	86.71	27.29	4.8	0.40
February	31.79	9.52	82.05	15.13	8.25	0.40

FIGURE 3.11: WIND ROSE DIAGRAM (WINTER SEASON-DECEMBER 2020 - FEBRUARY 2021)



3.2.5 AMBIENT AIR ENVIRONMENT

Ambient air quality monitoring was carried out to determine the general background concentration levels. Samples were collected from the 10 km study area from the monitoring locations as per the site selection criteria to observe pollution trends in the study area. It helps in providing a data base for evaluation of effects of a project activity in that area. It will be also useful in ascertaining whether the quality of air environment is in conformity with the standards of the ambient air quality during operation phase of project.

3.2.5.1 Sampling Methodology

The air quality monitoring was carried out twice a week for 12 weeks during Winter Season i.e., 1st December 2020 to 28th February, 2021 within 10 km radius of the study area. The samples were collected for the following air quality parameters:

- Particulate Matter (PM_{10})
- Particulate Matter ($PM_{2.5}$)
- Sulphur Dioxide (SO_2)
- Nitrogen Dioxide (NO_2)
- Carbon Monoxide (CO)

3.2.5.2 Sources of Air Pollution

The sources of air pollution in the area are dust rising from unpaved roads, domestic fuel burning, industrial and mining activity, vehicular traffic, agricultural activities etc.

3.2.5.3 Sampling Schedule

The sampling was done continuously for 24 hours for SO_2, NO_2, PM_{10} & $PM_{2.5}$ with a frequency of twice a week for three months. The details of measurement methodology and test procedure are given below in Table 3.9.

3.2.5.4 Selection of Sampling Location

The below table shows the monitoring stations selected along with the site selection criteria for selection for Ambient Air quality monitoring stations during the study period (1st December 2020 to 28th February, 2021). Monitoring for the said mine site was carried out as per standard ToR for Mining activities. The baseline status of the air quality in the study area was assessed though a scientifically designed ambient air quality monitoring network. The selection of monitoring network was based on the following aspects:

- Predominant wind direction
- Topography/terrain of the study area.
- Populated area within the study area.
- Prominent Wind direction during study period
- Residential and sensitive receptors within the study area.
- Magnitude of the surrounding industries.

It can be observed from the wind rose diagram (shown above) that the predominant wind direction during the study period was from North West direction. Villages/locations have been selected in the downwind direction as well as in the upwind direction for AAQ monitoring from the mine location. The monitoring locations are given in Section 3.3 Table 3.43.

3.2.5.5 Ambient Air Quality Monitoring

Table 3.10 shows the maximum and minimum concentrations of the air pollutants monitored at different locations during the study period. All 24 observations for each location (twice a week) are detailed in Ambient Air Quality Monitoring tables enclosed as ***Annexure X*** with this Draft EIA/EMP report.

TABLE No. - 3.10 AMBIENT AIR QUALITY MONITORING RESULTS STUDY PERIOD –WINTER SEASON (DECEMBER 2020 - FEBRUARY 2021)

Station Name	Sampling Location	PM_{10} (µg/m³)				$PM_{2.5}$ (µg/m³)				NAAQS Ind., Res, Rural & Other
		Min	Max	Avg.	98%	Min	Max	Avg.	98%	
AAQ1	Near Mine Site	41.3	50.1	45.16	49.47	22.5	30.2	25.77	29.91	**100 µg/m³ (PM_{10}) 60 µg/m³ ($PM_{2.5}$**
AAQ2	Near to Mine Site: Dhani (180 m downwind)	41.6	51.4	45.30	51.11	21.8	30.4	25.45	30.26	
AAQ3	Near Road Junction (Neem Ka Thana Road)	46.8	55.8	50.12	54.52	24.3	32.9	28.23	32.49	
AAQ4	Bhagoli	42.6	52.4	46.42	52.07	23.6	31.6	28.10	31.51	
AAQ5	Papra	43.9	54.8	48.93	54.49	25.7	35.6	30.43	35.33	
AAQ6	Sarai	47.4	58.6	52.96	58.60	27.4	38.7	33.69	38.36	
AAQ7	Neem Ka Thana	65.6	78.9	71.48	78.63	35.8	45.6	40.91	45.49	
Range		**41.3 – 78.9**				**21.8 – 45.6**				
All values are expressed in µg/m³										

Station Name	Sampling Location	SO_2 (µg/m³)				NO_2 (µg/m³)				NAAQS Ind., Res, Rural & Other
		Min	Max	Avg.	98%	Min	Max	Avg.	98%	
AAQ1	Near Mine Site	4.78	5.2	4.91	5.14	9.17	12.4	10.68	12.35	**80µg/m³ ($SO_2$and NO_2)**
AAQ2	Near to Mine Site: Dhani (180 m downwind)	4.9	5.4	5.16	5.39	9.5	12.8	10.66	12.41	
AAQ3	Near Road Junction (Neem Ka	5.6	6.9	6.01	6.78	11.7	14.5	12.78	14.32	

	Thana Road)									
AAQ4	Bhagoli	5.00	6.3	5.73	6.29	10.5	13.7	11.92	13.49	
AAQ5	Papra	5.3	6.6	5.76	6.46	11.08	14.2	12.29	14.10	
AAQ6	Sarai	5.7	7.5	6.62	7.50	12.1	16.8	14.28	16.58	
AAQ7	Neem Ka Thana	7.6	9.8	8.46	9.71	15.4	20.2	17.49	20.06	
Range		**4.78 -9.8**				**9.5– 20.2**				
All values are expressed in µg/m³										

All values are expressed in mg/m³

TABLE 3.11: NATIONAL AMBIENT AIR QUALITY STANDARDS
THE FOLLOWING TABLE SHOWS THE NAAQS PRESCRIBED BY CPCB

S. No	Parameters	Time weighted average	Industrial residential /rural and others	Ecologically sensitive area (Notified by Central Govt.)	Methods of Measurement
1	Sulphur Dioxide (SO2), µg/m³	Annual	50	20	Improved West and Gaeke Method. Ultraviolet fluorescence.
		24 Hours	80	80	
2	Nitrogen Dioxide (NO_2), µg/m³	Annual	40	30	Modified Jacob & Hochheiser (Na-Arsenite) Method. Chemiluminescence (Gas phase).
		24 Hours	80	80	
3	Particulate Matter, PM_{10}, µg/m³	Annual	60	60	Gravimetric, TOEM, Beta attenuation.
		24 Hours	100	100	
4	Particulate Matter, $PM_{2.5}$, µg/m³	Annual	40	40	Gravimetric, TOEM, Beta attenuation.
		24 Hours	60	60	
5	Carbon Monoxide (CO), mg/m³	8 hours	02	02	Non dispersive Infra-Red (NDIR) spectroscopy
		1 Hours	04	04	

3.2.5.6 Mineralogical Composition for PM_{10}

RSPM is "defined as the component of respirable dust small enough to reach the pulmonary or alveolar region of the lung".

TABLE NO.3.12 CLASSIFICATION OF RSPM

Classification	Type of Particle	Size of Particle
PM_{10}	Inhalable particle	≤10µm
$PM_{2.5}$	Fine particles	≤2.5µm

3.2.6 NOISE ENVIRONMENT

3.2.6.1 Objectives

The main objective of noise monitoring in the study area is to establish the baseline noise level and assess the impact of the total noise expected to be generated during the project operations around the project site. The physical description of sound concerns its loudness as a function of frequency. Noise in general is sound which is composed of many frequency components of various types of loudness distributed over the audible frequency range. Various noise scales have been introduced to describe, in a single number, the response of an average human to a complex sound made up of various frequencies at different loudness levels. The most common and universally accepted scale is the A weighted Scale which is measured as dB (A). This is more suitable for audible range of 20 to 20,000 Hz. The scale has been designed to weigh various components of noise according to the response of a human ear.

The impact of noise sources on surrounding community depends on:

- Characteristics of noise sources (instantaneous, intermittent or continuous in nature). It can be observed that steady noise is not as annoying as one which is continuously varying in loudness;
- The time of day at which noise occurs, for example high noise level sat night in residential areas are not acceptable because of sleep disturbance; and
- The location of the noise source, with respect to noise sensitive landuse, which determines the loudness and period of exposure.

The environmental impact of noise can have several effects varying from Noise Induced Hearing Loss (NIHL) to annoyance depending on loudness of noise.

3.2.6.2 Methodology of Ambient Noise Monitoring

Instant Sound Level Meter (SLM) is used for the collection of data related to noise at an interval of one hour. The day noise levels have been monitored during 6:00 AM to 10:00 PM and night noise levels during 10:00 PM to 6:00 AM at all the locations covered in the study area. Measured noise level displayed as a function of time provides a useful scheme for describing the acoustical climate of a community. Noise levels recorded at each station are computed for equivalent noise levels. Equivalent noise level is a single number descriptor for describing time varying noise levels. The equivalent noise level is defined mathematically as:

-

$$10 \text{ Log}1/ T \Sigma (10Ln/10)$$

Where L = Sound pressure level a function of time dB (A)

T = Time interval of observations

Table 3.13: Noise (Sound) Measuring Instrument

Instrument	Make	Model No.	Instrument Identification	Detection Limit
Sound Level Meter	RT/ET-933 (R-tek)		Sound Level Meter	30dB -130dB (Leq)

Table 3.14: Testing Method followed

Particular		Testing Method to be Followed	
Noise Level Measurement			
A	Noise Level in dB (A) for continuous 24 hours at 1 hour interval	IS 9989 – 1981 (RA 2008)	Operational Manual of Sound level Meter

3.2.6.3 Identification of Sampling Locations

A preliminary reconnaissance survey has been undertaken to identify the major noise generating sources in the area. Noise at different noise generating sources has been identified based on the activities in the village area, ambient noise due to traffic and the noise at sensitive areas like hospitals and schools. The noise monitoring has been conducted for determination of noise levels at six locations in the study area. The noise levels at each location were recorded for 24 hours. The environment setting of each noise monitoring location is given in Section 3.3 Table 3.21.

3.2.6.4 Presentation of results

The statistical analysis is done for measured noise levels at six locations during winter season. The parameters are analyzed for L_{day}, L_{night}, and L_{dn}. These results are tabulated in Table 3.15.

TABLE 3.15 NOISE LEVELS IN THE STUDY AREA

Code	Date of Monitoring	Location	L_{day}	L_{night}
NQ1	22/2/2021	Mine Site	48.5	38.7
NQ2	23/2/2021	Dhani	47.1	38.3
NQ3	24/2/2021	Near Road Junction (Neem Ka Thana Road)	51.2	42.3
NQ4	25/2/2021	Bhagoli	51.8	43.4
NQ5	26/2/2021	Papra	49.4	40.7
NQ6	27/2/2021	Sarai	50.3	41.4
Range			**47.1 – 51.8**	**38.3 – 43.4**

3.2.7 WATER ENVIRONMENT

3.2.7.1 Objectives

Water is a universal solvent and one of the fundamental resources, most commonly available compound. Although its chemical formula is deceptively simple, the effect of water on almost everything including the plant and the animal kingdom is far more consequential than might be imagined. It occurs in all spheres of environment such as in oceans, on land surface, in lakes, in rivers, as groundwater, water vapour and polar ice caps. It occurs in hard materials like ores and minerals too. The purpose of the study is to: -

- Assess the water quality characteristics for critical parameters;
- Evaluate the impacts on agriculture productivity, habitat conditions, recreational resources and aesthetics of the vicinity; and
- Predict the likely impacts on water quality due to the mining and other related activities.
- Understanding the water quality is essential in preparation of Environmental Impact Assessment and to identify critical issues with a view to suggest appropriate mitigation measures for implementation.

3.2.7.2 Surface Water Quality Monitoring

The quality of surface water was assessed by taking samples from different locations based on the following objectives:

- Assess the Water Quality characteristic for critical parameters.
- Evaluate the impacts on agricultural productivity, habitat conditions, recreational resources and aesthetics in the vicinity; and
- Predict impact on water quality by this project and related activities.

3.2.7.3 Sampling Methodology

Reconnaissance survey was undertaken and monitoring locations were selected based on:

- Location of the major water bodies
- Critical pockets of pollution occurrence
- Likely areas that can represent baseline conditions
- The water samples were collected as grab samplers and were analyzed for physical, chemical and biological characteristics as per CPCB guidelines.

The information required has been collected through primary surveys and secondary sources.
Six groundwater and one surface water sources covering 10 km radial distance were examined for physico – chemical, heavy metals and bacteriological parameters in order to assess the effect of industrial and other activities on surface and ground water. Samples for Chemical analysis were collected in Polyethylene carboys. Samples collected for metal content were acidified with 1 ml HNO_3. Samples for bacteriological analysis were collected in sterilized glass bottles. Selected Physico-chemical and Bacteriological parameters have been analyzed for projecting the existing water quality status in the study area. Parameters like Temperature, Dissolved Oxygen (DO) and pH were analyzed at the time of sample collection. The methodology for sample

collection and Preservation techniques was followed as per the standard operating procedures (SOP) mentioned below:

TABLE 3.16: STANDARD OPERATING PROCEDURE (SOP) FOR WATER SAMPLING & ANALYSIS

Sr. No.	Parameter	Type and Container for sample collection	Sample quantity in ml	Storage/Preservation
1	pH, Colour, Odour, Taste	Grab Sampling Plastic / glass	50	On site analysis
2	Electrical Conductivity	Grab Sampling Plastic / glass	50	On site analysis
3	Total Dissolved Solids	Grab Sampling Plastic / glass	100	Refrigeration, can be stored for 7 days
4	Hardness	Grab Sampling Plastic / glass	100	Add HNO3 to pH<2, Refrigeration, 6 Months
	Alkalinity	Plastic/glass	100	Refrigeration, 14 days
5	Chlorides	Grab Sampling Plastic / glass	50	Not required, 28 days
6	Nitrates	Plastic	100	Refrigeration, 48 Hours
7	Sulphates	Grab Sampling Plastic / glass	100	Refrigeration, 28 days
8	Fluorides	Plastic container only	100	Not required, 28 days
9	Sodium, Potassium	Plastic	100	Not required, 28 days
10	Trace Metals (Hg, Cd, Cu, Fe, Zn, Pb)	Plastic/glass containers rinse with 1+1 HNO	100 ml	Add HNO_3 to pH >2, Grab sample; 6 months
11	BOD	Grab sampling Plastic/glass container	500 ml	Refrigeration, 48 hrs
12	COD	Grab sampling Plastic/glass container	100 ml	Add H2SO4 to pH>2, refrigeration; 7 days

Source: Standard methods for the examination of Water & Wastewater, published by APHA, AWWA, WEF 21st edition 2005.

Analytical Techniques: The Analytical techniques are given below:

TABLE 3.17: ANALYTICAL TECHNIQUES FOR WATER ANALYSIS

Sr. No.	Parameter Method (IS Standards)	Parameter Method (IS Standards)
1	pH	IS 3025:(Part11):2002
2	Colour	IS 3025:(Part4):1983
3	Odour	IS 3025:(Part5):2002
4	Taste	IS 3025:(Part8):2002
5	Turbidity	IS 3025:(Part10):2002
6	Electrical Conductivity	IS 3025:(Part14):2002
7	Total Dissolved Solids	IS 3025:(Part16):2002
8	Alkalinity	IS 3025:(Part23):2003
9	Total Hardness	IS 3025:(Part21):2009
10	Chlorides	IS 3025:(Part32):2007
11	Fluorides	APHA4500F(D):2017

12	Phosphate	IS 3025: (Part 31) 1988
13	Nitrates	IS 3025(Part 34):2003
14	Sulphates	IS 3025:(Part24):2003
15	Phenolic Compounds	IS 3025:(Part43):1992
16	Calcium	IS 3025:(Part40):2002
17	Magnesium	IS 3025(Part46):2003
18	Sodium	IS 3025:(Part45):2003
19	Potassium	IS 3025:(Part45):2003
20	Copper	IS 3025:PART42:1992
21	Zinc	IS 3025:PART49:1994
22	Lead	IS 3025:PART47:1994
23	Arsenic	IS 3025:PART37:1988
24	Cadmium	IS 3025:PART41:1992
25	BOD	IS 3025:PART44:2003
26	COD	IS 3025:PART58:2006
27	Coliform Organisms	IS 1622:2003

Protocols and Standards followed

Type of Sampling: Six number of grab water samples as single sample collected at a specific location, depth and over a short period of time from pond, dug well and bore well were collected from different locations within study area as described in Section 3.3 Table 3.44. Ground water samples have been collected after pumping the bore hole or well for a period of at least one hour.

TABLE 3.18: GROUND WATER ANALYSIS REPORT, STUDY PERIOD WINTER SEASON (DECEMBER 2020 - FEBRUARY 2021)

S. No.	Parameters	Unit	Date of Sampling	GW1	GW2	GW3	GW4	GW5	GW6	Acceptable Limits as per IS 10500 :2012	Permissible Limits as per IS 10500 :2012
1	pH	-	24/02/2021	7.6	7.7	7.6	7.8	7.8	7.7	6.5-8.5	NR
2	Colour	Hazen Unit		<5	<5	<5	<5	<5	<5	5	15
3	Odour	-		Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU		<1	<1	<1	<1	<1	<1	1	5
5	Conductivity	mS/cm		1411	1385	1285	1413	1389	1419	--	--
6	Total Dissolved solids (TDS)	mg/l		901	793	758	910	884	893	500	2000
7	Total Alkalinity	mg/l		375	289	215	382	341	389	200	600
8	Total Hardness (as CaCo3)	mg/l		470	368	303	472	425	482	300	600
9	Nitrate	mg/l		4.2	2.5	3.2	5.8	3.4	4.4	45	NR
10	Chloride (as Cl)	mg/l		210	195	159	214	190	215	250	1000
11	Potassium (as K)	mg/l		3.2	3.6	4.0	3.5	4.1	3.8	45	NR
12	Sulphate	mg/l		70	65	49	75	68	70	200	400
13	Fluoride (as F)	mg/l		0.1	0.1	0.1	0.2	0.1	0.1	1	1.5
14	Sodium (as Na)	mg/l		106	103	95	108	98	105	-	-
15	Magnesium (as Mg)	mg/l		39.05	40.08	38.6	31.5	40.1	36.8	30	100
16	Calcium (as Ca)	mg/l		125	136	121	128	120	127	75	200
17	Phenolic Compounds	mg/l		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.002
18	Iron as Fe	mg/l		<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	1.0	NR

3.2.8 SOIL CHARACTERISTICS

Soil is one of the most important natural resources because the mankind has depended on soil for food. Soil formation is interplay between the climatic forces and geomorphic agent. Soil forming processes determine the nature of available soil and regulate it. The major part of Rajasthan's soil have developed under the arid and humid climate over the bed rocks of complex nature, predominantly under the process of laterisation. The characteristic of soil mainly dependent upon chemical composition, texture, structure, large scale variations and source of origin.

The soils of the district fall under the broad categories of Desertic, Sand Dunes & red desertic. Areal extent of various types of soil in Jhunjhunu district is given below:

a) Desertic
b) Sand Dunes
c) Red Desertic
d) Lithosols and regosols of hill
e) Older alluvium

3.2.8.1 Objective

- To determine the baseline soil characteristics of the study area.
- To determine the impact of said activity on soil characteristics.
- To determine the impact on soil more importantly agriculture production point of view.

3.2.8.2 Methodology

Soil Sampling Criteria: - Soil sampling location was selected on the basis of soil map prepared by interpretation of satellite data to represent the soil classes within the study area. The soil samples were collected from the depths of 30cm. The sample were then packed in polythene plastic bags and sealed. The sample from three different depths were homogenized and then analyzed. The present study on the soil quality establishes the baseline characteristics and identifies the incremental concentrations if any, due to the said project. Soil Sampling location map is shown in section 3.3.

3.2.8.3 Soil Analysis result

The results of soil analysis are given below in Table 3.19 collected from six different locations.

TABLE 3.19: SOIL ANALYSIS REPORT

S. No	Parameters		Date of Sampling	Units	SQ1	SQ2	SQ3	SQ4	SQ5	SQ6
1	Soil Colour		24/02/2021	-	Yellowish Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown	Light Brown
2	Soil Type			-	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam
3	Texture %	Sand		-	44	42	52	48	42	44
		Silt		-	38	39	40	36	43	39
		Clay		-	18	19	8	16	15	17
4	pH			-	8.2	8.1	8.2	7.9	8.1	8.2
5	Electrical Conductivity			dS/m	0.408	0.301	0.235	0.370	0.240	0.20
6	Moisture			%	3.2	3.6	3.1	4.1	7.2	6.4
7	Bulk Density			gm/cm^3	1.5	1.5	1.4	1.6	1.5	1.5
8	Nitrogen			Kg/Ha	132	141	105	129	135	125
9	Phosphorous			Kg/Ha	56	35	28	73	51	43
10	Potassium			Kg/Ha	245	208	121	380	129	205
11	Organic Matter			%	0.21	0.31	0.16	0.27	0.41	0.35
12	Iron			Mg/kg	4.8	--	--	--	--	--

3.2.9 BIOLOGICAL ENVIRONMENT

3.2.9.1 Introduction

Ecological studies are one of the important aspects of Environmental Impact Assessment with a view to conserve environmental quality and biodiversity. Ecological systems show complex inter-relationships between biotic and abiotic components including dependence, competition and mutualism. Biotic components comprise of both plant and animal communities, which interact not only within and between themselves but also with the abiotic components viz. physical and chemical components of the environment.

Generally, biological communities are good indicators of climatic and edaphic factors. Studies on biological aspects of ecosystems are important in Environmental Impact Assessment for safety of natural flora and fauna. The biological environment includes terrestrial and aquatic ecosystems.

The animal and plant communities co-exist in a well-organized manner. Their natural settings can get disturbed by any externally induced anthropological activities or by naturally occurring calamities or disaster. So, once this setting is disturbed, it sometimes is either practically impossible or may take a longer time to come back to its original state. Hence the impact on flora and fauna are an elementary requirement of Environmental Impact Assessment studies proposed project.

3.2.9.2 Objectives of Ecological Studies

The present study was undertaken with the following objectives:

To collect Baseline data for the study area along with a description of the existing, terrestrial, wetland and aquatic vegetation.

- To assess the nature and distribution of vegetation in and around the project site.
- To assess the distribution of animal life spectra.
- To assess the biodiversity and to understand the resource potential.
- To identify locations and features of ecological significance.
- To ascertain migratory routes of fauna and possibility of breeding grounds, if any.
- To identify Impact of the project before, after and during development phase.

3.2.9.3 Methodology adopted for the Survey

To achieve the above objectives a detailed study of the area was undertaken in 10 km radius from the mine lease area. The primary objective of survey was to describe the floristic and faunal communities within the study area. This rapid biodiversity assessment was undertaken by identifying potentially rich sites from satellite imagery (Google Earth) and conducting the field survey in the potential habitats. GPS was utilized for locating field sample plots as well as gathering positional attributes of sighted flora and faunal species.

Floral Survey: For Floral survey, sample plots have been randomly distributed across the suitable stratum within 10 km radius of project site. Tree species were sampled using 10mx10m or 5mx5m plots depending upon the stratum variability on the ground and tree species occurrence. For sampling shrub species two plots of size of 5 meter x 5 meter at two opposite corner of tree plots or the same 5 meter X 5 meter plot of tree plots were taken. For herbaceous plant five plots of 1meter x 1 meter at four corners of tree plots and one at center.

Faunal Survey: The methodology adopted for faunal survey involve; faunal habitat assessment, random intensive survey, opportunistic observations, diurnal bird observation, active search for reptiles and review of previous studies. Desktop literature review was conducted to identify the representative spectrum of threatened species, population and ecological communities as listed by IUCN, ZSI, BSI and in Indian wild Life Protection act, 1972. The status of individual species was assessed using the revised IUCN category system. (Rau and Wooten, Environmental Impact Analysis Handbook, 1980, pp 7-44).

3.2.9.4 Site selection in the Study Area

The study area has been marked as 10 Km radial distance from the mine lease area near village Bhagoli. Study sites were selected on the basis of forests, species richness and direction of the area.

TABLE 3.20: FLORA AND FAUNA SURVEY SITES

Sr. no.	Code	Site	Distance (In Km)	Direction
1.	FL1 FA1	Kankriya Block Protected Forest	3.22	NW
2.	FL2 FA2	Norangpura Block Protected Forest	4.60	North
3.	FL3 FA3	Kankriya Block Protected Forest	4.85	West

FL: Flora; FN: Fauna

3.2.9.5 Terrestrial Vegetation survey in the core zone

Core Zone / Project site: During survey, lease area reported with following common floral species, which includes two grasses and five herbs, and two shrub species apart from green belt plantation. Taxonomic details of floral species recorded from project site are given in the **Table 3-21.**

TABLE 3.21: LIST OF FLORA IN THE CORE ZONE

S. No.	Vernacular Name	Scientific name	Family
Trees			
1	Neem	*Azadirachtaindica*	Meliaceae

2	Khejari	*Prosopis cineraria*	Fabaceae
3	Ker	*Capparis deciduas*	Capparidaceae
4	Babool	*Acacia Nilotica*	Fabaceae
5	Vilayati Babool	*Prosopis juliflora*	Fabaceae
6	Ardu	*Ailanthus excelsa*	Simaroubaceae
7	Sisam	*Dalbergia Sisoo*	Fabaceae
8	Sainjna	*Moringa oleifera*	Moringaceae
Shrubs & Herbs			
1.	Datura	*Datura innoxia*	Solanaceae
2.	Gokhru	*Tribulusterrestris Linn*	Fabaceae (Papilionaceae)
3.	Thor	*Euphorbia nivulia ham*	Euphorbiaceae
4.	Ber	*Ziziphus mauritiana*	Rhamnaceae
5	Satyanashi	*Argemone mexicana*	Papaveraceae
6	Arand	*Ricinus communis*	Euphorbiaceae
7	Jhar Beri	*Ziziphus nummularia*	Rhamnaceae
8	Aak	*Calotropisgigantea R. Br.*	Asclepiadaceae
9	Guwar Patha	*Aloe vera*	Asphodelaceae
Grasses			
1.	Dab	*Desmostachyabipinnata*	Poaceae
2.	Bhurut	*CechrusBarbatus*	Poaceae
3	Doab	*Cynodon dactylon*	Poaceae

Source: Field survey

3.2.9.6 Terrestrial Vegetation survey in the Study Area

Topography of the region was characterized by mainly agricultural fields. Most of the area available for cultivation has been converted into Sugar cane, opium cultivation. The over exploitation of ground water for the water intensive crop like Sugar cane and then the spillage of excess water from these agriculture fields to the adjoining low-lying area has been resulted in to good ground cover vegetation at all most the entire study area even in the summer period. The unused landscape like Guacher land other and barren lands were covered with shrubs like *Prosopis juliflora*. The tree density is more along the border of agriculture fields and road side. The trees are not uniformly distributed clustered between vast agriculture fields. The trees are dominated by *Prosopis cineraria, Mangifera indica, Azadirachta indica, Phoenix dactylifera*.

TABLE 3.22: LIST OF FLORA IN THE STUDY AREA

S. No.	Vernacular Name	Scientific Name	Family
Trees/ Plants			
1	Aritha	*Sapindus*	Sapindaceae
2	Dhak	*Butea monosperma*	Fabaceae
3	Karanja	*Millettiapinnata*	Fabaceae
4	Aranda	*Ricinus communislinn*	Euphorbiaceae
5	Gum Arabic, Kumta	*Acacia Senagal*	Fabaceae
6	Ardu	*Ailanthus excels Roxb.*	Simaroubaceae

7	Jungal Jalebi	*Pithecellobiumdulce*	Fabaceae
8	Babul	*Aacia-nilotica*	Mimosaceae
9	Bargad	*Ficusbengalensislinn*	Moraceae
10	Khejari	*Prosopis cineraria*	Mimosaceae
11	Pipal	*Ficusreligiosalinn*	Moraceae
12	Vilayati Babool	*Prosopis juliflora*	Mimosaceae
13	Neem	*Azadirachtaindica a. Juss*	Meliaceae
14	Amaltas	*Cassia fistula Acacia*	Fabaceae
15	Ker	*Capparis deciduas*	Capparidaceae
16	Avla	*Emblica officianalis*	Euphorbiaceae
17	Kala Siras	*Albiziaprocera*	Fabaceae
18	Shesham	*Dalbergia sissoo*	FabaceaePapilionaceae
19	Gulmohar	*Delonix regia*	Caesalpiniaceae
20	Shahtoot	*Morus alba*	Moraceae
21	Imli	*Tamarindusindica*	Fabaceae (Leguminosae)
22	Karanj	*Pongamiapinnata*	FabaceaePapilionaceae
23	Ashok	*Polyalthialongifolia*	Annonaceae
24	Khajoor	*Phoenix sylvestris*	Arecaceae (Palmae)
25	Lasoda	*Cordia dichotoma*	Boraginaceae
26	Sainjna	*Moringa oleifera*	Moringaceae
27	Jamun	*Syzygium cumini*	Myrtaceae
28	Mahua	*Madhuca longifolia*	Sapotaceae
29	Aam	*Mangifera indica*	Anacardiaceae
30	Chandan/Sandalwood	*Santalum album*	Santalaceae
31	Lemon	*Citrus limon*	Rutaceae
32	Guava	*Psidium guajava*	Myrtaceae
33	Khajur / Date Palm	*Phoenix dactylifera*	Arecaceae
34	Desi Babool	*Indigeneous Acacia*	Fabaceae
Shrubs & Herbs			
1.	Ashwagandha	*Withaniasomnifera*	Solaniaceae
2.	Nagpahani	*Opuntia dillenii*	Cactaceae
3.	Kaner	*Nerium oleander*	Apocynaceae
4.	Satyanasi	*Argemone mexicana Linn*	Papervaceeae
5.	Badi Dudhi	*Euphorbia hirta Linn*	Euphorbiaceae
6.	Arand	*Ricinus communis*	Euphorbiaceae
7.	Jhar Beri	*Ziziphus nummularia*	Rhamnaceae
8.	Aakra	*Calotropis gigantea R. Br.*	Asclepiadaceae
9.	Gokhru	*Tribulus terrestris Linn*	Zygophyllaceae
10.	Ber	*Ziziphus mauritiana*	Rhamnaceae
11.	Nimbu	*Citrus aurantiifolia*	Rutaceae
12.	Kanti	*Acanthospermumhispidum*	Asteraceae
13.	Kali Musli	*Curculigo orchioides*	Hypoxidaceae
14.	Jungle Begun	*Solanum viarum*	Solanaceae

15.	Gwarpatha	*Aloe barbadensis*	Liliaceae
Grasses			
1.	Kans	*Saccharum spontaneum*	Poaceae
2.	Dab	*Desmostachya bipinnata*	Poaceae
3.	Doab	*Cynodondactylon*	Poaceae
4.	Gehusa	*Phalaris minor*	Poaceae
5.	Bhurut	*Cechrus barbatus*	Poaceae
Climbers			
1.	Amarbel	*Cuscuta approximata*	Convolvulaceae
2.	Giloy	*Tinospora cordifolia*	Manispermanceae

Source: Field Survey by FEES India Pvt. Ltd. and Literature study

3.2.9.7 Rare and Endangered Flora in the study area

Among the enumerated flora in the study area, no rare and endangered or rare flora was observed.

3.2.9.8 Endemic flora in the study area

There is no endemic plant observed in the study area.

3.2.9.9 Terrestrial faunal survey in the Core Zone

Reptiles

*(Project Site / Core Zone)**:** Calotes versicolor* (Indian Garden Lizard) was sighted in the proposed mine lease.

Mammals (Core Zone): One mammal species i.e. *Funambulus pennantii* (Five striped squirrel) was sighted from this zone.

TABLE 3.23: LIST OF FAUNA IN CORE ZONE

S. No.	Vernacular Name	Scientific name	Family	Status (IWPA 1972)
Aves				
1.	Baya Weaver	*Ploceus philippinus*	Ploceidae	Schedule IV
2.	Bank Myna	*Acridotheres ginginianus*	Sturnidae	Schedule IV
3.	Jungle Babbler	*Turdoidesstriatus*	Timaliinae	Schedule IV
4.	Rose-ringed Parakeet / Parrot	*Psittacula krameri*	Psittaculidae	Schedule IV
5.	House Sparrow	*Passer domesticus*	Passeridae	Schedule IV
6.	House Crow	*Corvussplendens*	Corvidae	Schedule - V
7.	Common Hoope	*Upupa epops*	Upupidae	--
8	Cattle egret	*Bubulcus ibis*	Ardeidae	Schedule IV
9	Common Myna	*Acridotherestristis*	Sturnidae	Schedule IV
10	Pigeon	*Columba livia*	Columbidae	Schedule IV

S. No.	Vernacular Name	Scientific name	Family	Status (IWPA 1972)
11.	Asian Koel	*Eudynamys scolopaceus*	Cuculidae	Schedule IV
Mammals				
1.	Striped squirrels	*Funambulus spp.*	Sciuridae	Schedule IV
2.	Common House Rat	*Rattus rattus*	Muridae	Schedule IV
3.	Indian Field Mouse	*Mus booduga*	Muridae	Schedule V
4.	Indian Hare	*Lepus nigricollis*	Leporidae	Schedule IV
Reptiles				
1.	Common garden lizard / Girgit	*Calotes versicolor*	Agamidae	Schedule V
2.	Dhaman	Ptyas mucosa	Colubridae	Schedule II

3.2.9.10 Terrestrial faunal survey in the Study Area

For the documentation of the faunal biodiversity of the study area with respect to birds, reptiles, amphibians, and butterfly species, a baseline survey had been conducted. The fauna from study area is documented in Table 3.24.

TABLE 3.24: LIST OF FAUNA IN BUFFER ZONE

S. No.	Vernacular Name	Scientific name	Family	Status (IWPA 1972)
Avifauna				
1.	Bank Myna	*Acridotheres ginginianus*	Sturnidae	Schedule IV
2.	Red-vented bulbul	*Pycnonotidae*	Pycnonotidae	Schedule IV
3.	Large grey babbler	*Turdoidesmalcolmi*	Timaliinae	Schedule IV
4.	Indian Roller	*Coracias benghalensis*	Coraciidae	Schedule IV
5.	Intermediate egret	*Mesophoyx intermedia*	Ardeidae	Schedule IV
6	Red whiskered Bulbul	*Pycnonotusjocosus*	Pycnonotidae	Schedule IV
7	Red-wattled Lapwing	*Vanellusc indicus*	Charadriidae	Schedule V
8	House Crow	*Corvussplendens*	Corvidae	Schedule - V
9	Baya weaver	*Ploceusphilippinus*	Ploceidae	Schedule IV
10	Common Myna	*Acridotherestristis*	Sturnidae	Schedule IV
11	Pigeon	*Columba livia*	Columbidae	Schedule IV
12	Cattle egret	*Bubulcus ibis*	Ardeidae	Schedule IV
13	Jungle Babbler	*Turdoidesstriatus*	Timaliinae	Schedule IV
14	Grey Francolin	*Francolinus pondicerianus*	Phasianidae	Schedule IV
15	Common Indian Parrot	*Psittaculakrameri*	Psittaculidae	-
16	Common Hoopoe	*Upupa epops*	Upupidae	-
17	White throated Kingfisher	*Halcynosmyrnensis*	Alcedinidae	Schedule IV
18	Green bee-eater	*Merops orientalis*	Meropidae	-

S. No.	Vernacular Name	Scientific name	Family	Status (IWPA 1972)
19	House swift	*Apus affinis*	Apodidae	-
20	White eared Bulbul	*Pycnonotusleucotis*	Pycnonotidae	Schedule IV
21	Wire tailed swallow	*Hirundosmithii*	Hirundinidae	-
22	Laughing Dove	*Streptopelia senegalensis*	Columbidae	Schedule IV
23	House Sparrow	*Passer domesticus*	Passeridae	Schedule IV
24	Rose-ringed parakeet, Parrot	*Psittacula krameri*	Psittaculidae	Schedule IV
Mammals				
1	Striped squirrels	*Funambulus spp.*	Sciuridae	Schedule IV
2	Common House Rat	*Rattus rattus*	Muridae	Schedule IV
3	Indian Field Mouse	*Mus booduga*	Muridae	Schedule V
4	Nilgai	*Boselaphustragocamelus*	Bovidae	Schedule III
5	Indian Porcupine	*Hystrixleucura*	Hystricidae	Schedule IV
6	Common mongoose	*Herpestesedwardsii*	Herpestidae	Schedule II
7	Sheep	*Ovis aries*	Bovidae	LC
8	Goat	*Capra aegagrushircus*	Bovidae	LC
9	Common Gray Langur	*Presbytis entellus*	Cercopithecidae	Schedule II
10	Buffalo	*Bubalusbubalis*	Bovidae	LC
Reptiles				
1.	Common garden lizard / Girgit	*Calotes versicolor*	Agamidae	Schedule V
2.	Dhaman	Ptyas mucosa	Colubridae	Schedule II
3.	Indian Sand Boa	*Eryxjohnii*	Boidae	Schedule IV
4.	Indian Krait	*Bungarus Cacrulcus*	Elapidae	Schedule IV
5.	Indian Chameleon	*Chamaeleozeylanicus*	Chamaeleonidae	Schedule II
Amphibians				
1.	Indian Pond Frog	*Rana hexadactyla*	Dicroglossidae	Schedule IV
2.	Common Frog	*Rana tigrina*	Dicroglossidae	Schedule IV
3.	Common Indian toad	*Bufomelanostictus*	Bufoniade	Schedule IV
Butterflies				
1.	Common Grass Yellow	*Euremahecabe*	Pieridae	-
2.	Lime Butterfly	*Papilio demoleus*	Papilionidae	-
3.	Plain Orange Tip	*Colotis eucharis*	Pieridae	-

Source: Field Survey by FEES India Pvt. Ltd. and District Forest Department Jhunjhunu

3.2.9.10 Endemic Fauna of the Study area

None of the sighted animal species can be assigned endemic species category of the study area.

3.2.9.11 Scheduled Fauna of the study area

Wild Life (Protection) Act, 1972, amended on 17th January 2003, is an Act to provide for the protection of wild animals, birds and plants and for matters connected therewith or ancillary or incidental thereto with a view to ensuring the ecological and environmental security of the country. Some of the sighted fauna was given protection by the Indian Wild Life (Protection)Act, 1972 by including them in different schedules. Among the birds in the study area, no schedule I species found as per Wild life protection Act (1972), while many other birds are included in schedule IV. Among the mammals; Common Mongoose (*Herpestes edwardsi*) are schedule –II animals and Nilgai (*Boselaphus tragocamelus*) are protected as Schedule-III animal, five stripped palm squirrel and all Hares are included in schedule IV of Wild Life Protection act 1972.

3.2.9.12 Basis for selection of proposed area

The proposed area is mineral specific and Lease document is allotted by DMG, Udaipur to the said mining project. Cultural map of the area is shown below:



FIGURE No. 3.12: CULTURAL MAP OF RAJASTHAN DULY SHOWING JHUNJHUNU DISTRICT

3.2.9.13 Secondary Data Collection

The secondary data for proposed project has been collected from District Forest department of

Jhunjhunu and detail working plan for flora fauna has been studied.

Livestock: The study area includes mostly non-urban area where cattle wealth is of great importance to the economy of the study region especially in agriculture. Farmer residing in the study area usually have at least a cow, sheep, goat or buffalo and a pair of bullocks, which perform a variety of functions, chief among them being ploughing, harrowing and carrying Bullock-carts, agricultural implements etc. Agriculture is up to an appreciable extent. Goats are used mainly for milking and meat purpose.

- Livestock rising is an economic activity persuaded by certain sections of community, who have made grazing and breeding of livestock as their traditional occupation. Livestock has proved to be a very valuable asset to the farmers. It provides them with the draught power required for cultivation and an additional means of supplementing their income. Population of small animal and large animal in Jhunjhunu

TABLE 3.25 POPULATIONS OF SMALL ANIMALS IN JHUNJHUNU DISTRICT

District	Poultry	Pigs	Goats	Sheep	Donkey
Jhunjhunu	14622975	2979	442134	152990	23374
Total	**14622975**	**2979**	**442134**	**152990**	**23374**

Source: Department of Animal Husbandry, Government of Rajasthan

http://animalhusbandry.rajasthan.gov.in/livestock_census.aspx

TABLE 3.26 POPULATIONS OF LARGE ANIMALS IN JHUNJHUNU DISTRICT

District	Buffalo	Horses & Ponies	Camel	Mules
Jhunjhunu	347110	33679	212739	1339
Total	**347110**	**33679**	**212739**	**1339**

Source: Department of Animal Husbandry, Government of Rajasthan

http://animalhusbandry.rajasthan.gov.in/livestock census.aspx

Aquatic Ecology: Aquatic ecosystem harbors a variety of plants and animals from primary producers to large consumers and the aquatic biological diversity depends on the environmental quality of that ecosystem. Aquatic ecosystem has got various limitations because of fluctuating physicochemical environmental conditions and limiting nutrients. The most characteristic criterion to assess the tropic structure of a aquatic body remains to be primary productivity studies. The food chain lake ecosystem is very simple comprising phytoplankton and aquatic vegetation as primary producers. Phytoplankton constitutes the basic components of the aquatic food chain. They act as primary producers and represent themselves as a direct food source for other aquatic animals. The community composition of phytoplankton is largely influenced by the interaction of a number of physico-chemical factors. Zooplankton constitute as primary

consumers, small fishes as secondary consumers and large fishes as tertiary consumers. Plankton is the most sensitive community which is being the first effected by the water pollution, thus any unfavorable change in aquatic environment affects diversity and biomass of the aquatic life.

3.2.9.14 Status of crop species in the study area:

Status of agriculture crops was assessed only in the buffer zone. The list of species was prepared based on the field observation and view of local personnel while collecting data in and around the agriculture habitat. Based on the survey a total of 3 grain crop species viz wheat, cow peas and sugarcane, tobacco was observed in the said study area. List of cash crops is given below in **Table-3.27.**

TABLE-3.27 LIST OF MAJOR FIELD CROPS CULTIVATED IN THE STUDY AREA

S. No.	Local Name	Botanical Name	Family
Grain Crops			
1.	Bajra (Spiked Millet)	*Pennisetum glaucum*	Poaceae
2.	Barley	*Hordeum vulgare*	Poaceae
3.	Jowar (Great Millet)	*Sorghum bicolor (L.) Moench.*	Poaceae
4.	Maize	*Zea mays*	Poaceae
5.	Arhar (Tur)	*Cajanus cajan*	Fabaceae
6.	Cowpea (Lobia)	*Vigna unguiculata*	Fabaceae
8.	Wheat	T. aestivum	Poaceae
Cash/Commercial Crops			
1.	Sugarcane	*Saccharum officinarum*	Poaceae
2.	Tobacco	*Nicotiana tabacum*	Solanaceae

Source: https://www.districtsofindia.com/rajasthan/jhunjhunu/agriculture/agriculturalproduction/oilseeds/index.aspx

3.2.10 SOCIO-ECONOMIC ENVIRONMENT

3.2.10.1 Introduction

An essential part of environmental study is socio-economic environment incorporating various facts related to socio-economic conditions in the area, which deals with the total environment. Socio economic study includes demographic structure of the area, provision of basic amenities viz., housing, education, health and medical services, occupation, water supply, sanitation, communication, transportation, prevailing diseases pattern as well as feature of aesthetic significance such as temples, historical monuments etc. at the baseline level. This would help in visualizing and predicting the possible impact depending upon the nature and magnitude of the project. Socio-economic study of an area provides a good opportunity to assess the socio-economic conditions of an area. This study will possibly make a change in living and social standards of the particular area benefitted due to the Projects. The gross economic production of the area will be increased substantially due to the existence of this project. It can undoubtedly be said that this mine will provide direct and indirect employment and improve the infrastructural facilities and standards of living of the area.

The fabrics of socio-economic changes are so complicated that this study would seem to be extremely limited, almost superficial and at time subjective in nature. More thorough and quantified socio-economic study will undoubtedly require vastly longer time and resources, and is, therefore, beyond the scope of the present EIA study. The EIA will give a reasonably clear picture of the socio-economic conditions prevailing in the study area.

3.2.10 .2 Objectives of the study

The objectives of socio-economic study of the area are:

- To conduct socio-economic assessment study of 10 km radius of the lease area as per the ToR letter issued by SEAC, Rajasthan.
- To know the current socio-economic condition in the region to cover the sub sectors of education, health, sanitation, and water and food security.
- To help in providing better living standards.
- To create employment opportunities.
- To access possible impact on socio economic statues on the area due to coming up of said mining project

3.2.10.3 Methodology adopted for the study

The methodology adopted for the study is based on the following points:

- Review of secondary data, such as CENSUS data of Jhunjhunu district, 2011 within the study area around the Iron ore Mining project.
- Conducting Focus Group discussions in the villages for eliciting the general information of the study area, to support or supplement the information collected through secondary and primary surveys.
- Socio economic aspects including human settlements, demography and infrastructural aspects for education, health, drinking water, power supply, communication and the land use aspects are collected compiled and analyzed with the help of census data 2011 and district census handbook 2011 of Rajasthan state. The details of the study area as follows:

- Demography details
- Employment details
- Infrastructure facilities
- Land use details
- Survey observations
- Opinion and awareness regarding project
- Quality of life

3.2.10.4 Background of the study area:

The Iron Ore mining project area (M/s. Nilkanth Concast Pvt. Ltd.) is bounded by Latitude 27°45' 19.94" to 27°45' 31.74" N and Longitude 75°41'30.24" to 75°41'45.01" E near village- Bhagoli, Tehsil Udaipurwati, District Jhunjhunu Rajasthan. Jhunjhunu district is located in the extreme north eastern part (bordering Haryana state) of Rajasthan State and lies between 27°38′ & 28°31′ north latitudes and 75°02′ &76°06′ east longitudes. It covers 5928 sq.km. of geographical area. Jhunjhunu district is covered under mainly Sekhawati basin and north western part falls under the outside the basin i.e. having inland drainage.

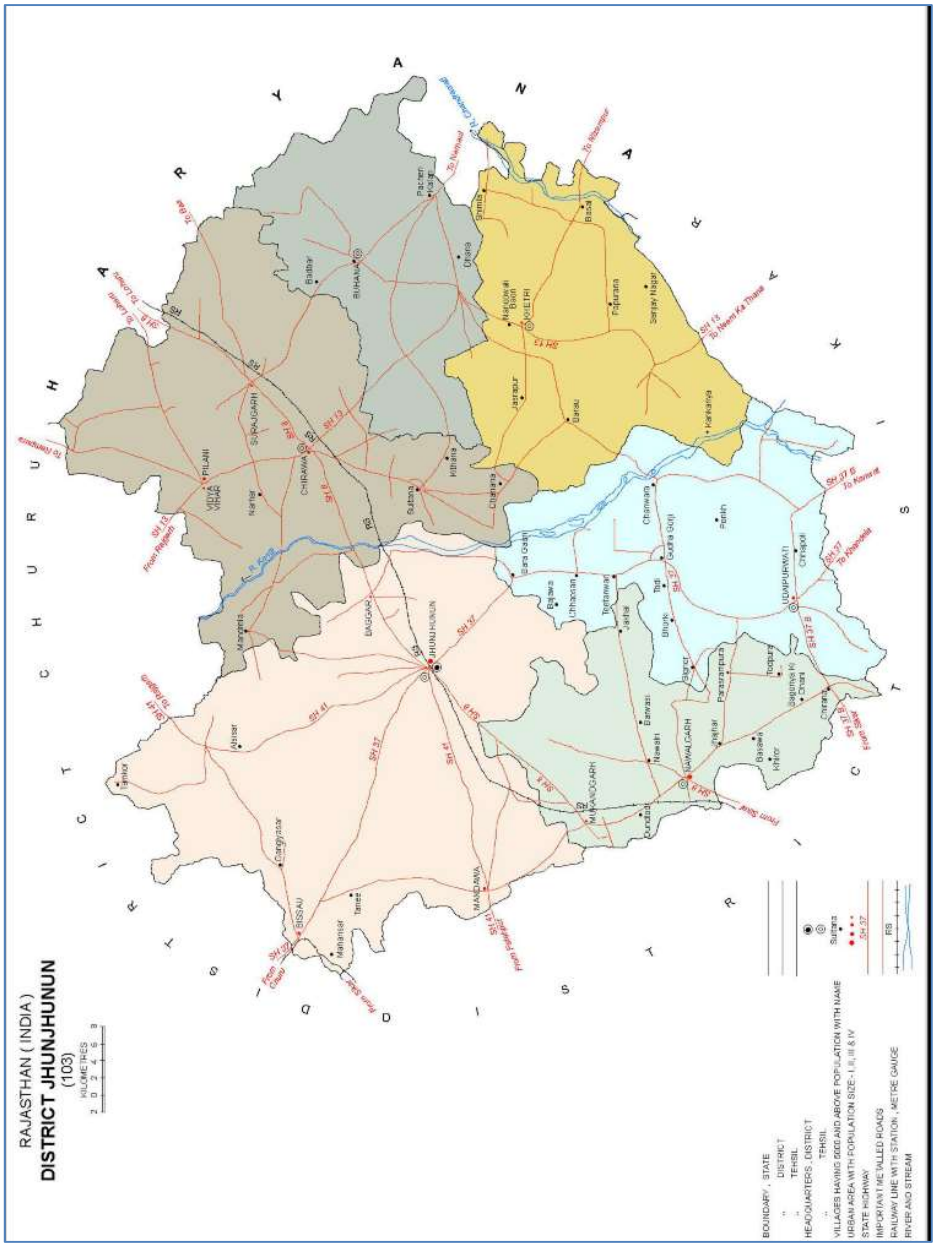


FIGURE 3.13: MAP OF JHUNJHUNU DISTRICT AT A GLANCE

TABLE -3.28: DEMOGRAPHIC PROFILE OF STUDY AREA

PARTICULAR	RAJASTHAN STATE	JHUNJHUNU DISTRICT	STUDY AREA
Area (in sq. km.)	3,42,239	5,928	315.69
No. of Households	1,26,51,423	3,82,756	8889
Total Population	6,85,48,437	21,37,045	50,148
Male	3,55,50,997	10,95,896	25,878
Female	3,29,97,440	10,41,149	24,270
Scheduled Tribes	92,38,534	41,629	2684
Scheduled Castes	1,22,21,593	3,60,709	6299
Literacy	55.83	74.13	59.95
Sex Ratio (Females per 1000 Males)	928	950	937

Source: Census of India, 2011

3.2.10.5 Demography

Total 36 villages fall in the study area of the Iron Ore mining project. As per Census 2011 the total population is 50,148 and total household in the study area is 8889 comprises of primary zone is 1656 secondary zone is 4192 and in the outer zone area is 3041 average household/family size is about 5 in the region. The Sex Ratio females per 1000 males were in the primary zone 820 in the secondary zone 945 and in the outer zone 945 respectively. Details are mentioned in the table no. 3.29. Detailed profile of the study area is given in table below**:**

TABLE-3.29: SOCIO-ECONOMIC PROFILE OF THE STUDY AREA

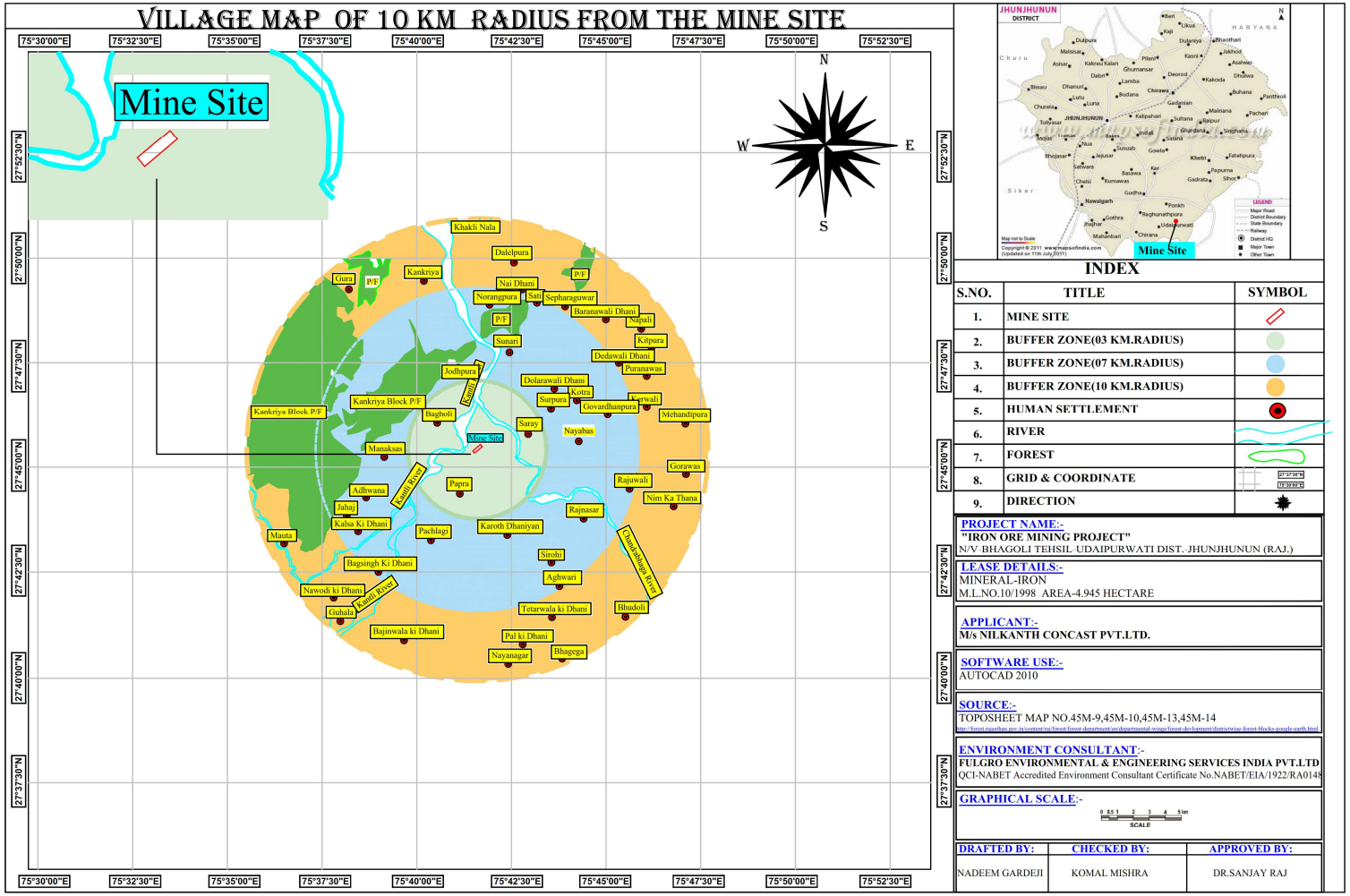
(Source: Census 2011)

S. No.	Village Name	Number of Household	Total Population	Total Male	Total Female	Sex Ratio	SC Population	ST population	Total Literate	Literate		Total Worker	Total Worker		
										Male	Female		Main Worker	Marginal Worker	Non-Worker
Primary Zone (0-3 km)															
1	Bagoli	795	4695	2466	2229	903	539	124	2614	1666	948	1164	819	345	3531
2	Sarai	332	1878	969	909	938	535	48	1225	739	486	798	534	264	1080
3	Papra Kalan	529	3354	1771	1583	893	538	96	2099	1367	732	1421	902	519	1933
	Sub Total	**1656**	**9927**	**5206**	**4721**	**820**	**1612**	**268**	**5938**	**3772**	**2166**	**3383**	**2255**	**1128**	**6544**
Secondary Zone (4-7 km)															
9	Ranasar	89	466	236	230	974	103	0	259	167	92	314	216	98	152
10	Naya bas	64	310	149	161	1080	27	0	207	113	94	136	130	6	174
11	Gordhanpura	61	304	155	149	961	0	0	187	116	71	179	70	109	125
12	Sunari	322	1792	956	836	874	52	249	1088	715	373	700	539	161	1092
13	Khoh	456	2515	1281	1234	963	163	42	1251	749	502	886	543	343	1629
14	Jahaz	502	3105	1586	1519	957	221	169	1781	1118	663	1212	668	544	1893
15	Manaksas	837	4692	2370	2322	979	655	176	2777	1688	1089	1641	1033	608	3051
16	Rajivpura	90	566	285	281	985	0	0	306	184	122	239	126	113	327
17	Jodhpura	391	2135	1132	1003	886	242	380	1278	793	485	1189	555	634	946

18	Surpura	227	1336	678	658	970	298	124	874	519	355	345	318	27	991
19	Jagdishpura	150	876	484	392	809	0	50	518	344	174	411	229	182	465
20	Keroth	177	1025	516	509	986	1	30	597	366	231	591	274	317	434
21	Pachlangi	826	4458	2291	2167	945	805	528	2902	1779	1123	1920	1048	872	2538
Sub Total		**4192**	**23580**	**12119**	**11461**	**945**	**2567**	**1748**	**14025**	**8651**	**5374**	**9763**	**5749**	**4014**	**13817**
Outer Zone (8-10km)															
31	Bhopalpura	119	698	371	327	881	585	1	451	290	161	348	183	165	350
32	Kankariya	980	5347	2791	2556	915	279	182	2966	1879	1087	1610	1088	522	3737
33	Narangpura	206	987	504	483	958	30	0	580	334	246	582	242	340	405
34	Gura	873	4952	2542	2410	948	552	269	3207	1883	1324	1488	1124	364	3464
35	Mawta	455	2448	1223	1225	1001	324	59	1459	865	594	663	638	25	1785
36	Dalelpura	408	2209	1122	1087	968	350	157	1438	889	549	1012	505	507	1197
Sub Total		**3041**	**16641**	**8553**	**8088**	**945**	**2120**	**668**	**10101**	**6140**	**3961**	**5703**	**3780**	**1923**	**10938**
Grand Total		**8889**	**50148**	**25878**	**24270**	**937**	**6299**	**2684**	**30064**	**18563**	**11501**	**18849**	**11784**	**7065**	**31299**

Source: Census of India, 2011

FIGURE 3.14: VILLAGE MAP OF 10 KM RADIUS FROM THE MINE SITE



3.2.10.6 Baseline data

Data collection technique used for Socio-Economic Survey: The sample frame of this study consists of communities close to mining sites. A blend of quantitative and qualitative data collection techniques namely Participatory Rural Appraisal (PRA) tools, direct observations through questionnaire-based survey and focus group discussions through stakeholder meetings were employed.

Participatory Rural Appraisal: Face-to-face interview conducted with the villagers to obtain information regarding household heads, live stocks, income, dependency on forest, impacts of mining, choice of species for reclamation from nearby communities in the study area.

Direct Observation: Direct observation was used throughout the pre-structured questionnaire-based survey.

Focus Group Discussion: Focus Group Discussions were held in district through organization of Brainstorming Session with Stakeholders. The purpose of this was to validate some of the pertinent responses given during the questionnaire-based survey and to discuss issues relevant to the study like Sanction of Mining Lease, Disputes related to Land, Mine Workers & Wages etc., Mining Policy, Rules & Regulation related issues, Social & Ecological Issues and Other issues specified by stake holders it was also to gather unbiased and balanced views from all stakeholders jointly. To ensure the accuracy of the primary data collected from the study areas, all village specific information was verified from the data of census 2011 and the secondary information collected from various government departments like health department, agriculture department etc.

TABLE -3.31: SOCIO-ECONOMIC PROFILE OF THE SURVEYED VILLAGES

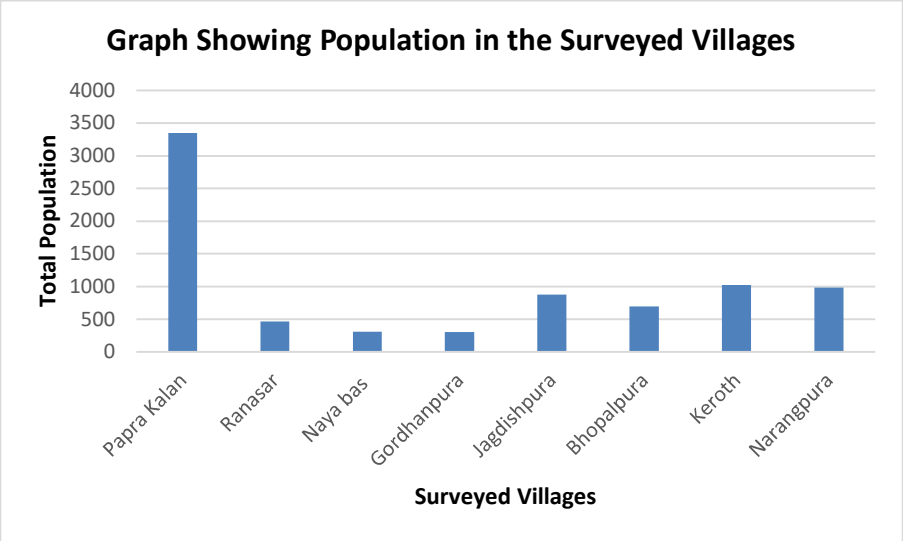
S. No.	Village Name	Number of Household	Total Population	Total Male	Total Female	Sex Ratio	SC Population	ST population	Total Literate	Literate		Total Worker	Total Worker		
										Male	Female		Main Worker	Marginal Worker	Non-Worker
Primary Zone + Secondary Zone (0-6 km)															
1.	Papra Kalan	529	3354	1771	1583	893	538	96	2099	1367	732	1421	902	519	1933
2.	Ranasar	89	466	236	230	974	103	0	259	167	92	314	216	98	152
3.	Naya bas	64	310	149	161	1080	27	0	207	113	94	136	130	6	174
4.	Gordhanpura	61	304	155	149	961	0	0	187	116	71	179	70	109	125
5.	Jagdishpura	150	876	484	392	809	0	50	518	344	174	411	229	182	465
Total		**893**	**5310**	**2795**	**2515**	**899**	**668**	**146**	**3270**	**2107**	**1163**	**2461**	**1547**	**914**	**2849**
Outer Zone(7-10km)															
6.	Bhopalpura	119	698	371	327	881	585	1	451	290	161	348	183	165	350
7.	Keroth	177	1025	516	509	986	1	30	597	366	231	591	274	317	434
8.	Narangpura	206	987	504	483	958	30	0	580	334	246	582	242	340	405
Total		**502**	**2710**	**1391**	**1319**	**948**	**616**	**31**	**1628**	**990**	**638**	**1521**	**699**	**822**	**1189**
Grand Total		**1395**	**8020**	**4186**	**3834**	**915**	**1284**	**177**	**4898**	**3097**	**1801**	**3982**	**2246**	**1736**	**4038**

Source: Socio-Economic Survey

3.2.10.7 Secondary data Collection through Census

Population Distribution: On the basis of secondary data, the total population of 8 surveyed villages is 8020 and comprises of 1395 households (Table: 3.31). The population distribution varies from place to place (shown in figure 3.15).

FIGURE 3.15: GRAPH SHOWING POPULATION IN THE SURVEYED VILLAGE



Vulnerable Group: While developing a CER plan, it is very important to identify the population who fall under the Marginalized, vulnerable groups and weaker section of the nearby area and special provision and attention has to be given towards these groups while making plans. In the surveyed villages, Schedule Caste (SC) population is 1,284 (16.00% of total population) and Schedule Tribe (ST) population is 177 (2.20 % of the total population) in study area (Table: 3.28). (81.79 %) population observed as others. SC & ST population varies from village to village. The village in which ST population is most dominant is Papra Kalan and SC population is most dominant is Bhopalpura village (Fig: 3.16 and 3.17).

FIGURE 3.16: CHART SHOWING ST/SC AND POPULATION IN THE SURVEYED VILLAGE

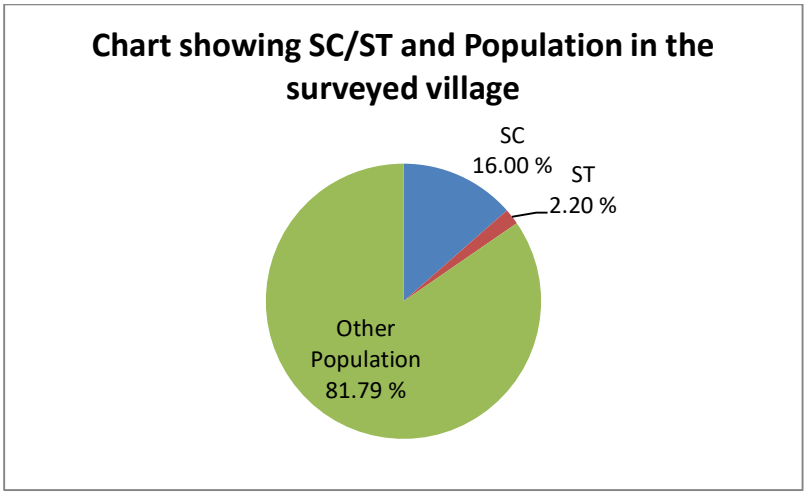
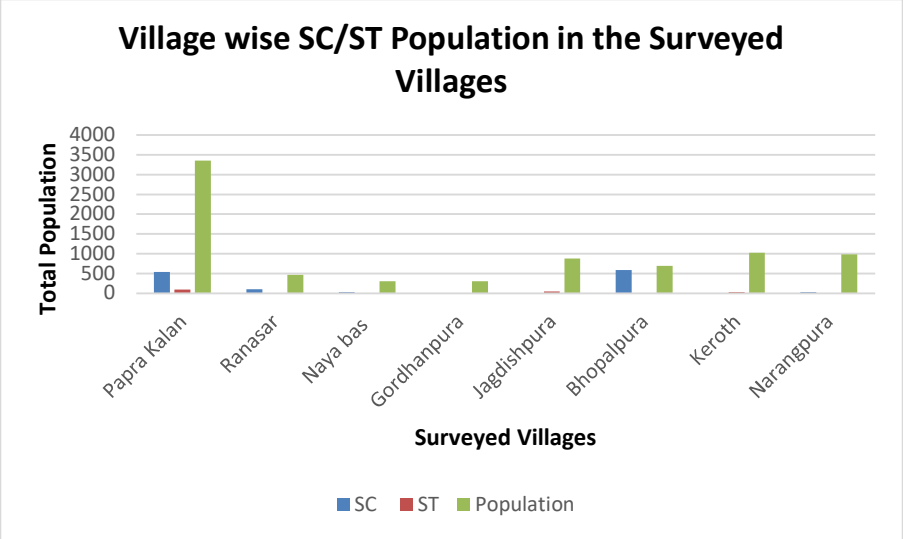


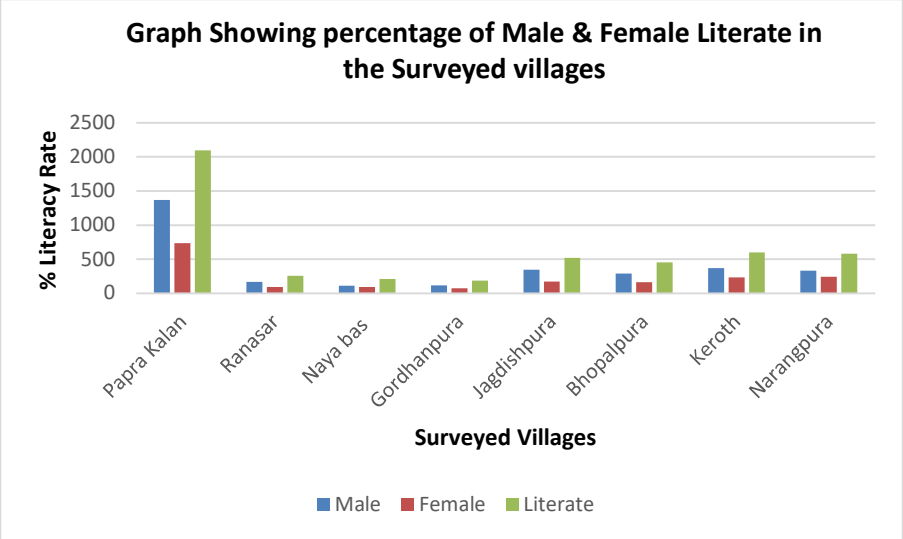
FIGURE 3.17: GRAPH SHOWING VILLAGE WISE SC / ST POPULATION IN THE SURVEYED VILLAGES



Religion: The religion of the majority of the population in the surveyed villages is Hindu & Muslims.

Literacy rate: Literacy Rate of a place is the percentage of people in a place with the ability to read and write to the total population in the village. The analysis of the literacy levels is done in the study area. The 10 km radius study area demonstrate literacy rate of 61.07 % as per survey data. The male literacy rate in the study area is 63.22% whereas the female literacy rate is 36.77 %, it indicates that there is a need to focus on sociological aspect in the region and enhance further development. The distribution of literacy rates in the surveyed villages is given in Table 3.29 and 3.40. Male and Female literacy rate of villages are varying place to place. In the present study, the male literacy rate is quiet moderate but female literacy rate is less than moderate, there is ~33% difference in the literacy rate between male and female in the study area which suggest that special attention will be given on female education to improve female literate in the study area.

FIGURE 3.18: GRAPH SHOWING PERCENTAGE OF MALE AND FEMALE LITERATE IN THE SURVEYED VILLAGES



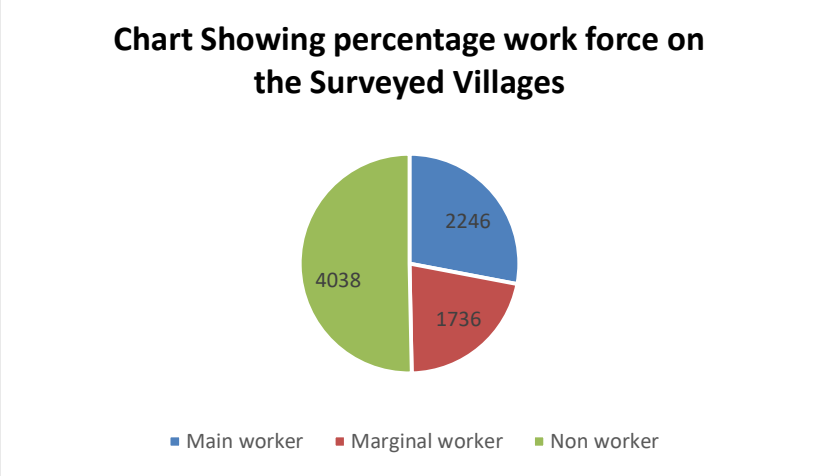
Economic activities: The economy of an area is defined by the occupational pattern and income level of the people in the area. The occupational structure of residents in the study area is studied with reference to work category. The population is divided occupation wise into three categories, viz., main workers, marginal workers and non-workers. The main workers include cultivators, agricultural laborers, those engaged in household industry and other services. The marginal workers are those engaged in some work for a period of less than 180 days during the reference year. The non-workers include those engaged in unpaid household duties like, students, retired persons, dependents, beggars, vagrants etc. besides institutional inmates or all other non-workers who do not fall under the above categories. The wearing sense of the surveyed village for male is Dhoti-Kurta and for female is Gagra-Chauli. Details of working population are given in Table: 3.32.

TABLE – 3.32 WORK FORCES OF THE SURVEYED VILLAGE

S. No.	Village Name	Worker's Classification			
		Total worker	Main worker	Marginal worker	Non worker
Primary Zone + Secondary Zone (0-6 km)					
1.	Papra Kalan	1421	902	519	1933
2.	Ranasar	314	216	98	152
3.	Naya bas	136	130	6	174
4.	Gordhanpura	179	70	109	125
5.	Jagdishpura	411	229	182	465
Outer Zone(7-10km)					
6.	Bhopalpura	348	183	165	350
7.	Keroth	591	274	317	434
8.	Narangpura	582	242	340	405
Total		**3982**	**2246**	**1736**	**4038**

Source: Socio-Economic Survey

FIGURE NO 3.19: CHART SHOWING WORK FORCE OF THE SURVEYED VILLAGE



Occupational profile: Mostly the people in the study area are engaged in direct, indirect and induced employment from the nearby mining activity, people in the study area are dependent on Agriculture/ Farming for their livelihood apart from mining industry people goes for employment and business to Udaipurwati Tehsil and Jhunjhunu district.

Educational facilities: According to survey conducted, the study area facilitates with education up to primary level.

Primary School available in nearby village Papra kalan, Middle school and Secondary Schools are also available in some villages. For Senior Secondary school student goes to nearby Village Bhagoli & Tehsil Udaipurwati. For higher educational facilities like colleges etc. students of the study area goes to Udaipurwati & Jhunjhunu district. Details of the educational facility within study area shown in Table: 3.33.

TABLE: 3.33: EDUCATIONAL FACILITIES IN THE SURVEYED VILLAGES

S. No.	Village Name	Primary School	Middle School	Sec. school	Sr. Sec school	College	Training School	Adult Literacy Center	Anganbadi
Primary Zone + Secondary Zone (0-7 km)									
1	Papra Kalan	1	-	1	-	-	-	-	1
2	Ranasar	-	1	-	1	-	-	-	1
3	Nayabas	-	-	-	-	-	-	-	1
4	Gordhanpura	-	-	-	-	-	-	-	1
5	Jagdishpura	-	-	-	-	-	-	-	1
Outer Zone(8-10km)									
6	Bhopalpura	-	1	1	1	-	-	-	1
7	Keroth	-	-	-	-	-	-	-	1
8	Narangpura	-	-	-	-	-	-	-	1
Total		**1**	**2**	**2**	**2**	**-**	**-**	**-**	**8**

Health Facilities: In the surveyed villages, health facilities are not satisfactory. People have to go to about 4-5 km from their place to avail medical facility. There are 1 Primary Health Centers, 2 Health Centers, and 2 Nursing Home in the surveyed villages. The available health facilities are given in following Table: 3.34.

TABLE: 3.34 HEALTH FACILITIES IN THE SURVEYED VILLAGES

S. No.	Village Name	Maternity & child care center	Maternity Home	Child welfare center	Health Center	Primary Health Center	Primary Health sub - Center	Family Welfare Center	TB clinic	Nursing Home
Primary Zone + Secondary Zone (0-7 km)										
1	Papra Kalan	-	-	-	1	-	-	-	-	1
2	Ranasar	-	-	-	-	-	-	-	-	-
3	Nayabas	-	-	-	-	1	-	-	-	-
4	Gordhanpura	-	-	-	-	-	-	-	-	-
5	Jagdishpura	-	-	-	-	-	-	-	-	-
Outer Zone(8-10km)										
6	Bhopalpura	-	-	-	1	-	-	-	-	1
7	Keroth	-	-	-	-	-	-	-	-	-
8	Narangpura	-	-	-	-	-	-	-	-	-
Total		-	-	-	**2**	**1**	-	-	-	**2**

Nature of diseases and its consequences in the area in the last five years

No any epidemic was there in the study area in last five years as per discussion held with the locals, however recently COVID-19 pandemic was seen.

Water resources and facilities

Water resources and facilities i.e., Tap water, Well, Tube well, Hand Pump, River etc. availability within surveyed villages are given in **Table 3.35.**

TABLE 3.35: **WATER RESOURCES AND FACILITIES IN THE SURVEYED VILLAGES**

S.NO	Village Name	Tap water	Well / Tube Well	Hand Pump	River/Lake/Pond
Primary Zone + Secondary Zone (0-7 km)					
1	Papra Kalan	A	A	A	NA
2	Ranasar	A	A	A	NA
3	Nayabas	A	A	A	NA
4	Gordhanpura	A	A	A	NA
5	Jagdishpura	A	A	A	NA
Outer Zone(8-10km)					
6	Bhopalpura	A	A	A	A
7	Keroth	A	A	A	NA
8	Narangpura	A	A	A	NA

Source: *Socio-Economic Survey* *A: Available; NA: Not Available*

Infrastructure Facilities: A better network of physical infrastructure facilities (well-built roads, rail links, bus links, local transportation link, irrigation/water facility, community toilet complex, power supply and telecommunication) is essential for the development of the rural economy. A review of infrastructure facilities available in the area has been done based on the information from base line survey of the study area. The data on various aspects are given village wise in Table no: 3.36. Telephone & Electric Facilities are available in almost all of the surveyed villages.

TABLE – 3.36 INFRASTRUCTURE FACILITIES IN THE SURVEYED VILLAGES

S. No.	Village Name	Sub Post And Telegraph Office	Telephone Facilities	Bus Service	Railway Station	Commercial Bank	Co-operative Bank	Electricity facility	Community Hall Centre
Primary Zone + Secondary Zone (0-7 km)									
1	Papra Kalan	A	A	A	NA	NA	A	A	A
2	Ranasar	A	A	A	NA	NA	NA	A	A
3	Nayabas	A	A	A	NA	NA	NA	A	A
4	Gordhanpura	NA	A	NA	NA	NA	NA	A	NA
5	Jagdishpura	NA	A	NA	NA	NA	NA	A	NA
Outer Zone(8-10km)									
6	Bhopalpura	A	A	A	NA	NA		A	A
7	Keroth	NA	A	NA	NA	NA	NA	A	NA
8	Narangpura	NA	A	NA	NA	NA	NA	A	NA

Source: *Socio-Economic Survey*
A: Available; NA: Not Available

3.2.10. 8 Awareness and Opinion

Awareness is the state or ability to perceive, to feel, or to be conscious of events, objects or sensory patterns. In this, level of consciousness, sense data can be confirmed by an observer without necessarily implying understanding. In general, an opinion is a subjective belief, and is the result of emotion or interpretation of facts. An opinion may be supported by an argument, although people may draw opposing opinions from the same set of facts. For assessing the awareness and opinion about the project activity, socio-economic survey was conducted in the sampling villages.

Public opinion is the aggregate of individual attitudes or beliefs. It is very important to take opinion of the villagers about the project. The awareness will only not promote community participation but also enable them to understand the importance of the project and encourage them to express their views. To know the awareness and opinion of the villagers about the project, group discussion, meeting with school teachers / village leaders were carried out in the study area.

The salient observations drawn through survey are given below:

- The respondents from almost all the villages were aware about the project activity.
- Twenty-four hours Power supply facility is available in almost villages in the study area.
- Some of the respondents have very good opinion about the project and they opined that due to project activity, quality of life of the villages will improve.
- Most of the respondents were opined that they will get employment during the operation of mining activities in the form of skilled as well as unskilled labourers.
- There is a need for strengthening of local facilities such as hospitals; schools for higher education as there will influx of the people.
- Water is easily available for agriculture purpose & quality of soil is good for irrigation purpose. Therefore, the economic condition of the people is good.
- Major People reported water scarcity problem for agriculture in the summer season or when rainfall is low. People of the villages want the Government to provide water to them for cultivation.
- Tube well are main source for agriculture purpose in study area & for drinking purpose water will be taken from Kantli river & nearby ponds.
- Agriculture & Animal Husbandry (Goat, Cow & Buffalo) is the main source in this area. Therefore, most of the people are dependent on farming & animal.

3.2.10.9 People's Expectations

As per the socioeconomic survey carried out by FAE (SE) of FEES India Pvt. Ltd. on dated after having discussions with the locals of the surveyed villages following points were raised:

i) The govt. schools of village require special attention.

ii) The villages roads are disturbed due to transportation of minerals form the mines.

iii) Employment opportunities shall be given to the locals.

iv) Plantation to be carried out in the schools.

3.2.10.10 Technology Support for Local Occupation

As such no technology support for local's occupation is being proposed as after having discussion with the locals it was observed that they require main focus towards the development of the schools.

3.2.11 DETAILS OF TRANSPORTATION OF MINED OUT MATERIALS AS PER THE INDIAN ROAD CONGRESS FOR BOTH THE WAYS (LOADED AS WELL AS UNLOADED TRUCKS) AND ITS IMPACT ON ENVIRONMENT

Traffic analysis is carried out by understanding the existing carrying capacity of the roads near to the project site and the connecting main roads in the area. The major road near mine site is **SH-37-B** connects from the mine site**.** Depending on the capacity of the mine, the number of dumpers that will be added to the present scenario will be compared to the carrying capacity. Traffic impact study can be used to help evaluate whether the development is appropriate for a site and what type of transportation improvements may be necessary. It will help: -

- To establish the existing trips/ day without the project activity;
- To understand the increment on the traffic load due to the project activity;
- To know the existing road will sustain or not after the commission of the project.

TABLE NO. 3.37 LEVEL OF SERVICE (LOS)

V/C	LOS	Performance
0.0 - 0.2	**A**	Excellent
0.2 - 0.4	**B**	Very Good
0.4 - 0.6	**C**	Good / Average / Fair
0.6 - 0.8	**D**	Poor
0.8 – 0.9	**E**	Very Poor
1.0	**F**	Worst

Capacity standards are fixed normally in relation to the Level of Service (LOS) adopted for design. Five levels of service are recognized commonly designated from A to E. Considering the need for smooth traffic flow; it is recommended that normally LOS-C be adopted for design of urban roads. At this level volume of traffic will be around 0.70 times the maximum capacity. Capacity or Design Service volume is the maximum hourly volume at which vehicle can reasonably be expected to transfers a point or uniform section of a lane or road way during a given time period. As per IRC 64: 1990 guidelines, ratio of existing volume of PCU on roads (V) and its capacity (C) with corresponding level of services (LOS) and their performance is given below Table No. 3.37.

Highway Capacity Manual (HCM) use travel speed and volume by capacity ratio (v/c ratio) to distinguish between various levels of service. The value of v/c ratio can vary between 0 and 1. Depending upon the travel speed and v/c ratio, HCM has defined six levels of service, level A to level F based on a graph between operating speed and v/c ratio as shown in the figure above. Level of service A represents the zone of free flow. Here the traffic volume will be less; traffic

will be experiencing free flow also. The effect of minor incidents and point breakdowns are easily aborted at this level. Level of service B represents zone of reasonably free flow. At level of service C, the presence of other vehicles begins to restrict the maneuverability within the traffic stream. At level of service D, the average speeds begin to decline with increasing flows. Level of service E defines operation at capacity. At this level, the stream reaches its maximum density limit. Level of service F represents the region of forced owe, having low speed, and complete breakdown of the system.

Indian Road Congress (IRC) Guidelines: Factors for conversion of different type of vehicle into equivalent passenger car unit (PCU) based on their relative interference value as per Indian Road Congress Guidelines i.e. IRC 64: 1990 & IRC 106: 1990 is given below in Table No: - 3.38.

TABLE NO 3.38 RECOMMENDED PCU FACTORS FOR VARIOUS TYPES OF VEHICLES ON ROAD

Vehicle Type	Rural Road
	Equivalency factor for PCU
Fast Vehicles	
Motor Scooter (Two wheelers)	0.50
Passenger Car, Pickup Van, Auto Rickshaw	1.00
Agricultural Tractor, Light Commercial Vehicle	1.50
Bus or Trucks	3.00
Truck Trailer, Agricultural Tractor – Trailer	4.50

***(Source: -** IRC 64-1990 & IRC 106-1990)*

3.2.11.1 Presentation of results

The present level of traffic has been converted to Passenger Car Units (PCU) at all the locations as per the conversion factors stipulated by Indian Road Congress (IRC). The traffic volume at each location is summarized below in Table No. 3.39.

TABLE: 3.39 TRAFFIC VOLUME COUNT ON SH-37B, 6.30 KM SE DIRECTION

Traffic Vehicle category	PCU Factor	No. of vehicle/day	No. of PCU/day
2 Wheelers	0.5	154	77
Mini Bus/ Tractor Trolly	1.5	84	126
Car	1.0	170	170
Tempo/LCV	1.5	120	180
Truck	3.0	180	540
Bus	3.0	105	315
Total		**813**	**1408**
PCU/hr.=(PCU/day)/24			**1408/24=58.66 PCU/hr**

TABLE NO 3.40: IMPACT DURING MINE OPERATION

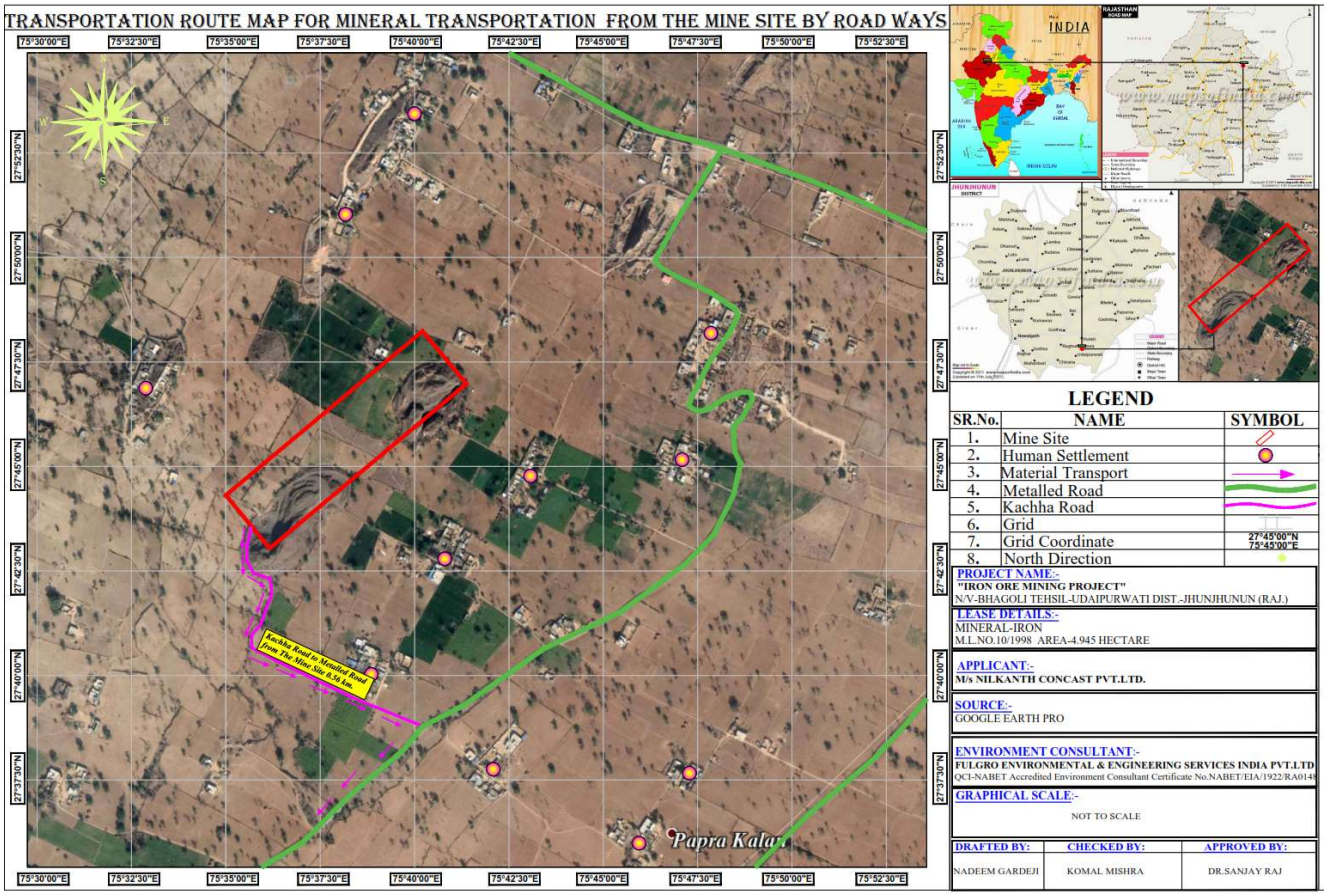
Total Capacity of mine	1,50,700 TPA (ROM)
Production per day	502 Ton
No. of working days	300
Truck Capacity	20 ton
No. of Trucks deployed per day	25
PCU/Day	75

PCU/hr	3
Working Hours per day	24
Design Service Volume for Two Lane Roads as per IRC :64:1990	15000 PCU/Day 625 PCU/hr
Recommended Design Service for Intermediate Lane Roads as per IRC :64:1990	6000 PCU/Day 250 PCU/hr

TABLE NO 3.41: INCREMENTAL RISE AT SH-37-B DUE TO MINING PROJECT

Design Service Volume PCU/day	Existing Daily Traffic Data		Envisaged Traffic due to Mining		Cumulative Movement at Post Project Scenario		Design service volume tentative to be utilized in post project scenario	Incremental rise in PCU due to envisaged traffic movement owing to mining activity	LOS in post project scenario
15000	**PCU/day**	**PCU/hr**	**PCU/day**	**PCU/hr**	**PCU/day**	**PCU/hr**			
	1408	59	75	3	1483	62	0.0988	0.01	A

FIGURE No. 3.20: TRANSPORTATION ROUTE MAP FOR IRON ORE MINING PROJECT



Conclusion: There is no much impact on local transport as 25 numbers of trucks/day will be required for transport of mineral from mine. The LOS value for the SH-37-B will be "Good" after post mining. So, the additional load on the carrying capacity of the concerned roads is not likely to have any significant adverse effect.

3.3 MONITORING LOCATION WITH SELECTION CRITERIA OF ALL ENVIRONMENTAL COMPONENTS

TABLE NO. 3.42 LOCATIONS OF AMBIENT AIR QUALITY MONITORING STATIONS

Station	Location	Location		Approx. Aerial Distance (in km)	Direction with respect to mine site	Site Selection criterion
		Latitude	Longitude			
AQ1	Near Mine Site	27°45' 23.1" N	75°41'36.3" E	--	--	Core Zone
AQ2	Near to Mine Site: Dhani (180 Mtr downwind)	27°45' 20.3" N	75°41'43.8" E	0.18	SE	Falls in downwind to predominant wind direction
AQ3	Near Road Junction (Neem Ka Thana Road)	27°45' 47.4" N	75°41'42.4" E	0.49	North	Near Road Junction
AQ4	Bhagoli	27°46' 03.8" N	75°40'56.6" E	1.56	NW	Falls in upwind of predominant wind direction
AQ5	Papra	27°44' 46.09" N	75°41'00.66" E	1.38	SW	Nearest Habitation in buffer zone
AQ6	Sarai	27°45' 44.9" N	75°43'04.4" E	2.24	NE	Falls in downwind of second dominant wind direction
AQ7	Neem Ka Thana	27°44' 30.96" N	75°46'37.89" E	8.00	ESE	Densely Populated Area with mixed traffic density

TABLE 3.43: LOCATIONS OF NOISE MONITORING STATIONS

Location Code	Location	Location		Aerial Distance (km)	Direction	Site Selection Criteria
		Latitude	Longitude	with respect to mine lease area		
NQ1	Mine Site	27°45' 22.4" N	75°41'34.7" E	Core zone		Project Site
NQ2	Dhani	27°45' 20.2" N	75°41'44.2" E	0.18	SE	Rural Settlement
NQ3	Near Road Junction	27°45' 48.8" N	75°41'44.0" E	0.49	North	Near Road Junction (Neem Ka Thana Road)
NQ4	Bhagoli	27°46' 03.5" N	75°40'56.4" E	1.56	NW	Neem Ka Thana Road
NQ5	Papra	27°44' 44.7" N	75°41'00.1" E	1.38	SW	Near Village Road in Rural Settlement
NQ6	Sarai	27°45' 44.8" N	75°43'02.8" E	2.24	NE	Rural Settlement

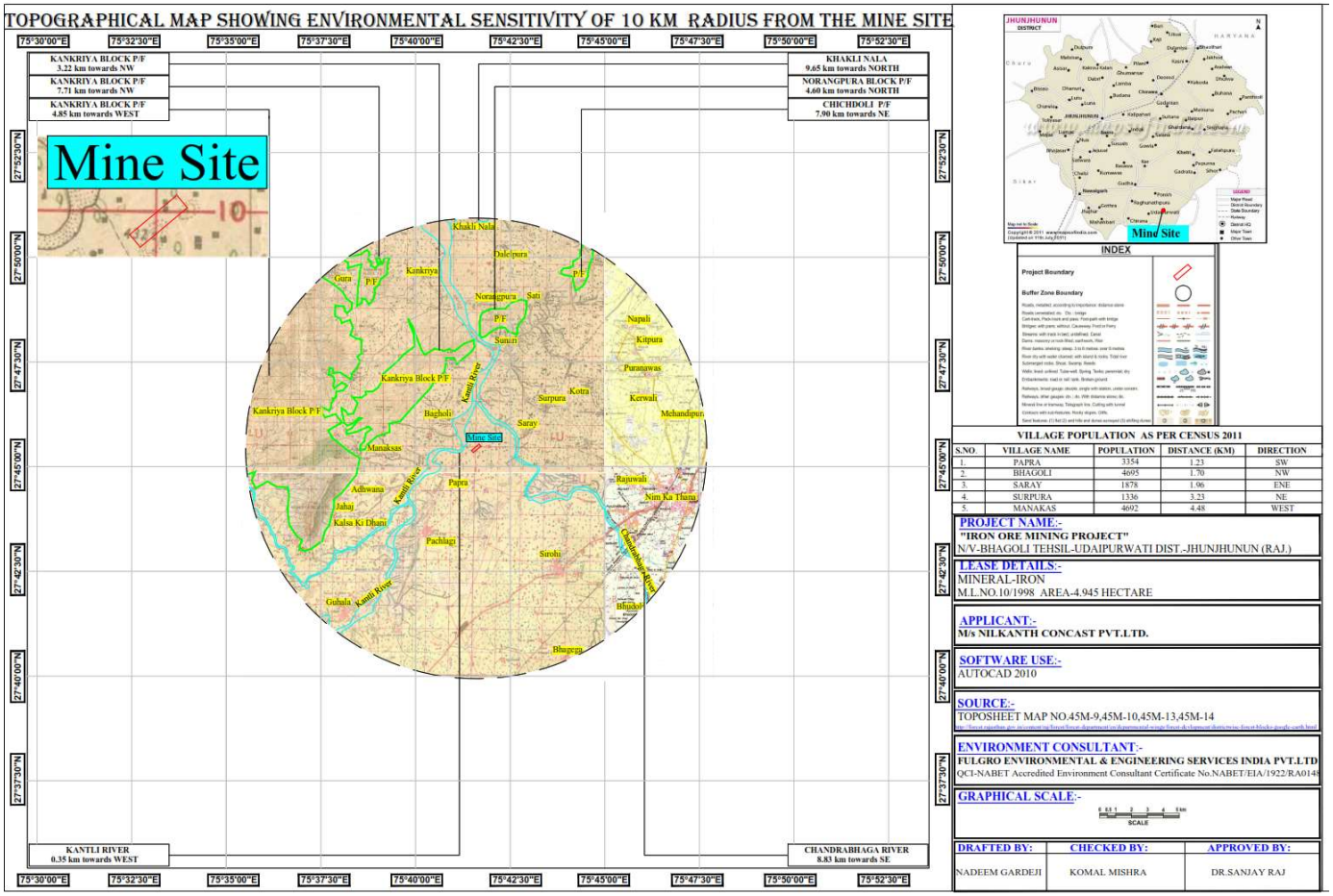
TABLE 3.44 WATER SAMPLING LOCATIONS

Code	Location	Location		Aerial Distance (km)	Direction
		Latitude	Longitude	with respect to mine lease area	
Ground Water					
GW1	Dhani	27°45' 11.4" N	75°41'39.3" E	0.18	SE
GW2	Bhagoli	27°45' 58.9" N	75°41'02.1" E	1.56	NW
GW3	Near Road Junction	27°45' 48.0" N	75°41'41.9" E	0.49	North
GW4	Papra	27°44' 48.9" N	75°41'03.8" E	1.38	SW
GW5	Sarai	27°45' 45.1" N	75°43'03.1" E	2.24	NE
GW6	Pachlangi	27°43' 30.15" N	75°40'26.80" E	4.00	SSW

TABLE 3.45: SOIL SAMPLING LOCATIONS

Station Code	Station name	Location		Approx. Aerial Distance with respect to mine lease area (in km)	Direction with respect to mine lease area	Site Selection Criteria
		Latitude	Longitude			
SQ1	Mine Site	27°45' 24.10" N	75°41'36.80" E	--	--	Core Zone
SQ2	Dhani	27°45' 21.6" N	75°41'44.6" E	0.18	SE	Agriculture
SQ3	Near Road Junction	27°45' 49.2" N	75°41'41.8" E	0.49	North	Agriculture
SQ4	Bhagoli	27°45' 58.2" N	75°41'03.8" E	1.56	NW	Agriculture
SQ5	Papra	27°44' 46.7" N	75°41'01.2" E	1.38	SW	Agriculture
SQ6	Sarai	27°45' 34.5" N	75°42'45.9" E	2.24	NE	Agriculture

FIGURE No. 3.25 TOPOGRAPHICAL MAP SHOWING FOREST AREA, SENSITIVE AREA, HABITATION WITHIN 10 KM RADIUS FROM THE STUDY AREA



4.1 INVESTIGATED ENVIRONMENTAL IMPACT, DATA ANALYSIS AND INTERPRETATION & ASSESSMENT OF SIGNIFICANCE OF IMPACT

4.1.1 Introduction

This chapter details with anticipated environmental impacts, data analysis of baseline environmental conditions, interpretation, assessment and significance of impacts during construction and operational phase. Accordingly suggesting mitigation measures for minimizing/offsetting adverse impacts during construction and operational phase. Following things will be discussed in this chapter:

- Identifying project activities that could beneficially or adversely impact the environment.
- Predict and assess the environmental impacts of the activities.
- Examine each environmental aspect-impact relationship in detail and identify its degree of significance.
- Identifying possible mitigation measures for these project activities and select the most appropriate mitigation measure, based on the reduction in significance achieved and practicality in implementation.

4.1.2 Impact Assessment Methodology

The environment includes surroundings under which a project operates such as air, water, land, natural resources, flora, fauna, humans and their interrelation. The environmental indices (or parts of the receiving environment on which impacts are being assessed) include: Land use/land cover, air quality, noise quality, surface water environment, ground water environment, soil, ecology and bio diversity, socio economics, occupational health, community health and occupational safety. After the identification of impacting activities, impacts require to be assessed based on subjective /objective criteria to assess the impacting activities. This is done in the following steps:

4.1.2.1 Identification of Impacts

This entails employing a simple checklist method requiring:

- Listing of environmental aspects (i.e. activities or parts thereof that can cause environmental impacts).
- Identifying applicable components of the environment on which the environmental aspects can cause an environmental impact.
- Listing the environmental components likely to receive impacts, along with the key impacting activities on each component.

4.1.2.2 Ranking the severity of impact

Consequences on various environmental receptors have been ranked into 5 levels ranging from no significant to catastrophic consequence and are given in **Table 4-1.**

TABLE No. 4.1 IMPACT RANKING SYSTEM

Sr. No.	Environmental Component Impacted	Zero Impact/No Significant Impact	Minor Impact	Moderate Impact	Major Impact	Catastrophic Impact/Significant Impact
1	Land Use/Land Cover	**Duration**				
		Very short term	Short term (>1 - 3 years)	Medium term (3-5 Years)	Long term (> 5-10 years)	Very long term (>10 Years)
		Extent				
		Very limited (within the core zone)	Limited (<1 km around core zone)	Medium (>1-5 km around core zone)	Long Range (> 5 - 10 kms around core zone)	Extensive (>10 kms around core zone)
		Effect on land use classes				
		Non-agricultural land	Scrub land	Water body	Agricultural land & Open and Close Vegetation	Forest Area
2	Air Quality	Temporary nuisance due to controlled / uncontrolled release of air emissions, odor / dust or greenhouse gases.	Minor environmental impact due to controlled / uncontrolled release of air emissions, odor / dust or greenhouse gases with no lasting detrimental effects.	Moderate environmental impact due to controlled / uncontrolled release of air emissions, odor / dust or greenhouse gases leading to visual impacts, at significant nuisance levels.	Significant environmental impact due to release of air emissions, odor / dust or greenhouse gases leading to exceedance of limits specified by NAAQS.	Unacceptable environmental impact due to release of air emissions, odor / dust leading to possibility of chronic / acute health issues, injuries or fatalities.
3	Ambient Noise	**Background Noise Levels, with respect to Applicable Limit as per The Noise Pollution (Regulation and Control) Rules, 2000, as Measured at**				

		Boundary of Relevant Noise Generating Unit				
		<10% or more	Between <10 to <5%	Between <5% or the limit	Upto 5% above the limit	>5% above the limit
		Incremental Noise Levels, as Predicted at Boundary of Relevant Noise Generating Unit				
		1 dB(A) or less		2 dB(A) - 3 dB(A)		4 dB(A) or more
		Incremental Noise Levels, as Predicted at Boundary of Nearest Human Settlement / Sensitive Receptor from Boundary of Relevant Noise Generating Unit				
		0.5 dB(A) or less	0.5 dB(A) - 1 dB(A)	1 dB(A) - 1.5 dB(A)	1.5 dB(A) - 2 dB(A)	2 dB(A) or more
4	Surface Water	**Water Consumption (KL/D)**				
		< 50	51 - 100	101 - 250	250 - 500	501 and more
		Water Consumption, Duration				
		< 1 year	1 - 3 years	3 - 5 years	5 - 10 years	10 years or more
		Wastewater Discharge Quality				
		No wastewater generation	Zero Discharge	Discharge to an authorized, functional CETP	Other discharge within limits Specified by the CPCB.	Other discharge, outside limits specified by the CPCB.
5	Ground Water	**Location of Drawl, as per CGWA / CGWB Regulations**				
		Safe	Semi-critical	Critical	Over-exploited	Notified
		Water Drawl (KL/D)				
		< 50	51 - 100	101 - 250	250 - 500	501 and more
		Water Drawl, Duration				
		< 1 year	1 - 3 years	3 - 5 years	5 - 10 years	10 years or more
		Wastewater Discharge Quality				
		No wastewater generation	Zero Discharge	Discharge to an authorized, functional CETP	Other discharge within limits Specified by the CPCB.	Other discharge, outside limits specified by the CPCB.
6	Soil Quality	Loss of upto 20% topsoil, or minor contamination of soil that can be easily restored close to original condition	Loss of upto 40% topsoil, or actual or possible contamination of soil volume	Loss of upto 60% topsoil, or actual or possible contamination Intervention Values	Loss of upto 80% topsoil, or actual or possible contamination of soil.	Loss of upto 100% topsoil, or actual or possible contamination of soil and requires remediation.
7	Socio-Economic	**Possible Temporary or Permanent Migration, Persons as a % of Population of Study Area**				
		<0.5%	<1%	<1.5%	<2%	2.5%

	Environment	No of Jobs Gained or Lost				
		Land Losers				
8	Socio-economic Aspects: Cultural	Minor repairable damage to common place structures.	Minor repairable damage to structures / items of cultural significance, or minor infringements of cultural values.	Moderate damage to structures/ items of cultural significance, or significant, infringement of cultural values/ sacred location.	Major damage to structures / items of cultural significance, or major infringement of cultural values/ sacred locations.	Irreparable damage to highly valued structures / items / locations of cultural significance or sacred value.
9	Occupational / Community Health and Safety: Community Health and Safety	Insignificant impact on surrounding communities.	Minor complaints or exposure to community. Maximum occurrence limited to two times per year.	Ongoing complaints from community. Significant emission or discharge that impacts on surrounding Population.	Major ongoing long term health effects likely to surrounding communities and workers.	Extreme health risk potential for death in community.

4.1.3 Environmental Impacts during construction Phase

As it is a small scale mining project involving no major construction activities, except a mobile office, rest shelter and toilet will be used, so that **there will be no or insignificant impact** on ambient environment is envisaged during construction phase.

4.1.4 Environmental Impacts during operational Phase

The mining activities cause environmental problems such as degradation of land, deteriorating air, water, noise and soil quality, affecting the biological and socio-economic environment of the area. The impacts of mining on various environmental parameters have been assessed and are detailed in below sections.

4.1.4.1 Air Environment

Source and Investigated Air quality impact predictions: The major sources of air pollution from the mine are dust generation due to mining process, loading, transportation of mineral and wind erosion of exposed material. The air pollution impact of iron ore mine depends on the intensity of mineral extraction operations, mode of transport and mode of screening of mineral. The intensity of operation is directly related to the rate of production of mineral from mining. Excavators and dumpers will be engaged mainly for extracting and transporting the mineral from the mining areas. The details of the equipment have been discussed in Chapter 2 of this report. The mining is proposed to be carried out by opencast semi-mechanized method. The air borne particulate matter ($PM_{10,}$ PM 2.5) generated by excavation of mineral, transportation is the main respirable air pollutant. The emissions of sulphur dioxide (SO_2), nitrogen oxides (NO_2) contributed by vehicles plying on haul roads will be marginal. Due to low sulphur content in diesel and petrol, the SO_2 emission due to vehicular movements is not considered. Prediction of impacts on air environment has been carried out taking into consideration proposed production and net increase in emissions. The effects of air pollutants on receptors are influenced by concentrations of pollutants and their dispersion in the atmosphere. Air quality modeling is an important tool for prediction, planning and evaluation of air pollution control activities besides identifying the requirements for emission control to meet the regulatory standards. The efficient management of air quality requires the use of modeling techniques to analyze the patterns of pollutant concentrations from many individual sources of air pollutants operating simultaneously. The main impacts of air pollutants on the health of human and others are given below in Table 4.2.

TABLE No. 4-2: MAIN IMPACTS OF AIR POLLUTANTS ON HEALTH OF HUMAN, ANIMALS AND PLANTS

S. No.	Air Pollutant	Impact on human health, habitats and species
1	Particulate matter	The size of particles is directly linked to their potential for causing health problems. Small particles less than 10

		micrometers in diameter pose the greatest problems, because they can get deep into lungs, and some may even get into bloodstream. Exposure to such particles can affect both lungs and heart. Like premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing. Heavier particles, above 1um diameter size, tend to settle while finer and lighter particles remain airborne for days together and travel to hundreds of kilometers over wind currents. Chemical dusts are more injurious and under humid conditions, their phyto-toxicity increases further. Finer particles clog stomatal apertures and prevent gaseous exchange by leaves. Physical weight on foliage and a film of dust causing rise in leaf surface temperature are other hazardous situations for plants. Dust particles deposit on stigmatic surfaces of flowers reduces effective pollination and hence fruit yields. Dust is captured by leaves of plants, leaf epidermal outgrowths like hairs and scales, hairy axils of stems and leaf bases, etc.
2	Nitrogen dioxide (NO_2) and NO_X	High levels of nitrogen dioxide are also harmful to vegetation damaging foliage, decreasing growth or reducing crop yields. Nitrogen dioxide can fade and discolour furnishings and fabrics, reduce visibility, and react with surfaces.
3	Sulphur dioxide (SO_2)	When sulfur dioxide combines with water and air, it forms sulfuric acid, which is the main component of acid rain. Acid rain can cause deforestation, acidify waterways to the detriment of aquatic life.
4	Carbon monoxide (CO)	When inhaled by people and animals, CO bonds to the hemoglobin in the blood, and reduces the oxygen carrying capacity of the red blood cells. The resulting lack of oxygen in the body causes cells to die.

Air Pollution due to Proposed Mining Project: Iron ore mining project, excavation, material handling, storage and transportation of mineral are prone to generation of high level of fugitive dust that may increase the levels of PM_{10} and $PM_{2.5}$. The probable sources of pollution due to mining activities are shown in Table 4.3.

TABLE 4-3: PREDOMINANT SOURCES OF AIR POLLUTION

Sr. No.	Source	Type of Pollutant
1	Mining activity (Excavation)	PM
2	Operation of diesel driven equipment	Gaseous Emissions
2	Transportation of product	PM

Base line data reveals that ambient air quality in the study area for the parameters PM, SO_2 NO_2 and CO are well within the permissible limits as prescribed by the National Ambient Air Quality

Standards (NAAQS) for Industrial Area, Residential, Rural & Other areas. Emissions were analyzed for their impact on the ground level concentration for various distances using the dispersion modeling guidelines given by the Central Pollution Control Board, New Delhi and the AERMOD. Following activities has been considered for dispersion modeling for the mine:

- Mining Activity
- Movement of vehicles

Source strength estimation: An emissions factor is a representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant. The general equation for emissions estimation is:

$$E = A \times EF \times (1 - ER/100)$$

Where;

E = emissions in (gm/sec);

A = activity rate (Tonnes/Hr);

EF = emission factor (Lb/Tonn), and

ER = Overall emission reduction efficiency, %

The proposed mining activity, include various activities like ground preparation, excavation, handling and transport of mineral. Hence for the predictions of impacts, the emissions due to material handling of the said mineral have been considered. These activities have been analyzed systematically based on USEPA-Emission Estimation Technique Manual, for Mining AP-42, to arrive at possible emissions to the atmosphere.

Details of Emissions: Mining of iron ore will result in formation of pits. Dust within the pits is carried over and adds to the particulate matter in the ambient air. The emission rates for the different sources in the mining area were calculated primarily based on emission factor equation given in latest USEPA's AP-42 guidelines as mentioned in Table 4.4.

A) Point Source Emissions:

Emissions from the drilling are a relatively minor component of the overall emission from an open-cast mine and the emission factor were taken as per AP 42 Sec 11.9.2.

Drill-Dust Emissions = 4.00×10^{-5} kg/ton = 0.00069 g/sec

B) Area Source- Excavation of Quartz & Feldspar

TABLE No. 4.4: INPUT PARAMETERS FOR PIT SOURCE MODELING

Parameter	Value	
Maximum Working Pit Dimensions DEPOSIT 1		
Length (M)	155	
Width (M)	75	
Area (m^2)	11625	
Depth (m)	30	
Volume (m3)	348750	
Max. Quantity to be mined, ROM (TPA)	1,50,700	
Max. Quantity to be Mined, ROM, (300 day working) (TPD)	502	
Max. Quantity Mined, ROM, (8-hr working) (TPH) i.e: Activity Rate to be handled per hour	63	
Emission Factor as Per USEPA Fire Model in Lb per Tons Material Throughput	PM10	PM2.5
	0.001	0.000013
gm/sec	0.007	0.0001
gm/sec/m2	6.80E-07	8.84E-09

TABLE No. 4.5: INPUT PARAMETERS FOR PIT SOURCE MODELING

Parameter	Value	
Maximum Working Pit Dimensions DEPOSIT 2		
Length (M)	90	
Width (M)	70	
Area (m^2)	6300	
Depth (m)	50	
Volume (m3)	315000	
Max. Quantity to be mined, ROM (TPA)	1,50,700	
Max. Quantity to be Mined, ROM, (300 day working) (TPD)	502	
Max. Quantity Mined, ROM, (8-hr working) (TPH) i.e: Activity Rate to be handled per hour	63	
Emission Factor as Per USEPA Fire Model in Lb per Tons Material Throughput	PM10	PM2.5
	0.001	0.000013
gm/sec	0.007	0.0001
gm/sec/m2	1.25E-06	1.63E-08

Impact identification through Mathematical Modeling: The model uses rural dispersion and regulatory defaults options as per guidelines on air quality models. The options used for short-term computations are;

- Hourly meteorological data
- Source data
- Receptor data
- Program control parameters
- Wind profile exponents is used by default,

Assumptions: The dispersion modeling assumptions considered were as follows:

- The impacts of the pollutants were identified upto 10 km.
- Polar grid at interval of 10 degrees has been considered at intervals of 250,500 and 1500 m with increasing distances from the source.
- Stability class was evaluated based on solar isolation and cloud cover.
- The mathematical equations used for the dispersion modeling assumes that the earth surface acts as a perfect reflector of plume and 127ones127-chemical processes such as dry and wet deposition and chemical transformation of pollutants are negligible.
- Washout by rain is not considered.

Meteorological inputs required are hourly wind speed, wind direction, ambient temperature, rainfall, stability class, cloud cover and mixing height.

Stability Classification: Hourly stability as determined by wind direction fluctuation method as suggested by Slade (1965) and recommended by CPCB (PROBES/70/1997-1998).

$$\Sigma_a = Wdr/6$$

σa, is standard deviation of wind direction fluctuation, Wdr is the overall wind direction fluctuation or width of the wind direction in degrees. The table for stability classes is given in Table 4.6.

TABLE NO. 4.6: STABILITY CLASSIFICATION

Stability Class	Frequency of Occurrence
A	> 22.5
B	22.4 – 17.5
C	17.4 – 12.5
D	12.4 – 7.5
E	7.4 – 3.5
F	< 3.5

Dispersion Parameters: Dispersion parameters σy and σz for open country conditions (Briggs, 1974) are used. Atmospheric dispersion coefficients vary with downwind distance (x) from emission sources for different atmospheric stability conditions. (CPCB –PROBES/70/1997-98)

TABLE No. 4-7: RURAL CONDITIONS

Stability Class	σy	σz
A	$0.22x(1+0.0001x)^{-.5}$	0.20x
B	$0.16x(1+0.0001x)^{-.5}$	0.12x
C	$0.11x(1+0.0001x)-^{.5}$	$0.08x(1+0.0002x)^{.5}$
D	$0.08x(1+0.0001x)^{-.5}$	$0.06(1+0.0015x)^{.5}$
E	$0.06x(1+0.0001x)^{-.5}$	$0.03x(1+0.0003x)^{-1}$
F	$0.04x(1+0.0001x)^{-.5}$	$0.16x(1+0.0003x)^{-1}$

Mixing Height: As site specific mixing heights were not available, mixing heights based on CPCB publication, "Spatial Distribution of Hourly Mixing Depth over Indian Region", PROBES/88/2002-03 has been considered for model to establish the worst-case scenario. The details of mixing height are given in below Table 4.8.

TABLE No. 4-8: MIXING HEIGHT FOR WINTER SEASON

Hour of the Day	Mixing Height (m)
7	20-40
8	40-60
9	75-100
10	150-200
11	300-350
12	500-800
13	600-800
14	800-900
15	900-1000
16	900-1050
17	800-950
18	550-650
19	350-450

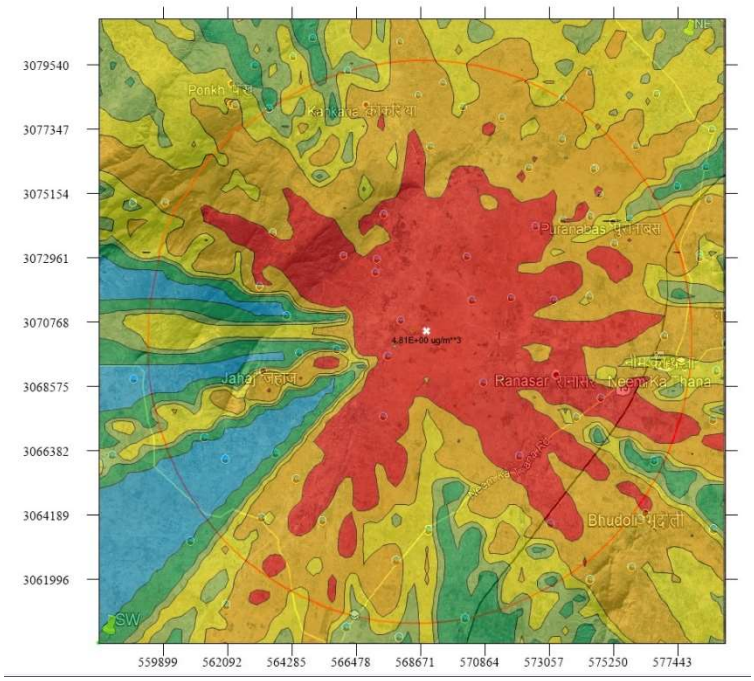
Source: *IMD publication, "Atlas of Hourly Mixing Height and Assimilative Capacity of Atmosphere in India"*

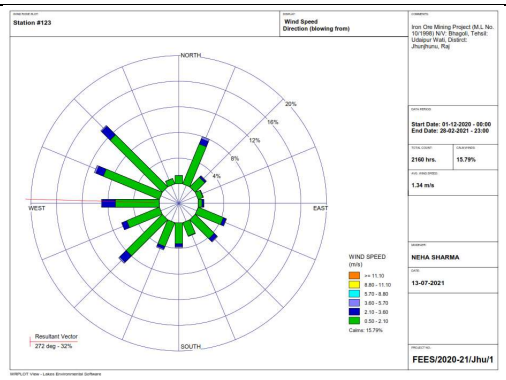
Meteorological Data: Micrometeorological data recorded at the continuous weather monitoring stations on wind speed, wind direction, temperature and rainfall at one hour interval for the monitoring period from 1st December 2020 to 28th February 2021 (Winter Season) was used as meteorological input.

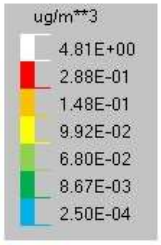
Presentations of results: In the present case short term model simulations were carried to estimate concentrations at the receptors to obtain an optimum description of variations in concentrations over the site in 10 km radius covering 16 directions. The incremental concentrations are estimated for the winter season. For each time scale, i.e. for 24 hr (short term) the model computes the highest concentrations observed periodically over all the measurement points.

Mining operation and associated activities is potentially air polluting and the major air pollutants are PM. Most of the air pollution problems are due to fugitive dust emission, which is mineral prominent in open cast mines in comparison to underground mines. The values of resultant GLC at different locations are given in Table 4.8. Isopleths were drawn for the distribution of PM_{10} in the area and shown in Figure 4.1 (A), 4.1 (B) & 4.2 (A), (B).

FIGURE 4.1 (A): ISOPLETH SHOWING SPATIAL DISTRIBUTION OF PM_{10} (DEPOSIT 1) DUE TO EMISSION FROM PIT SOURCE



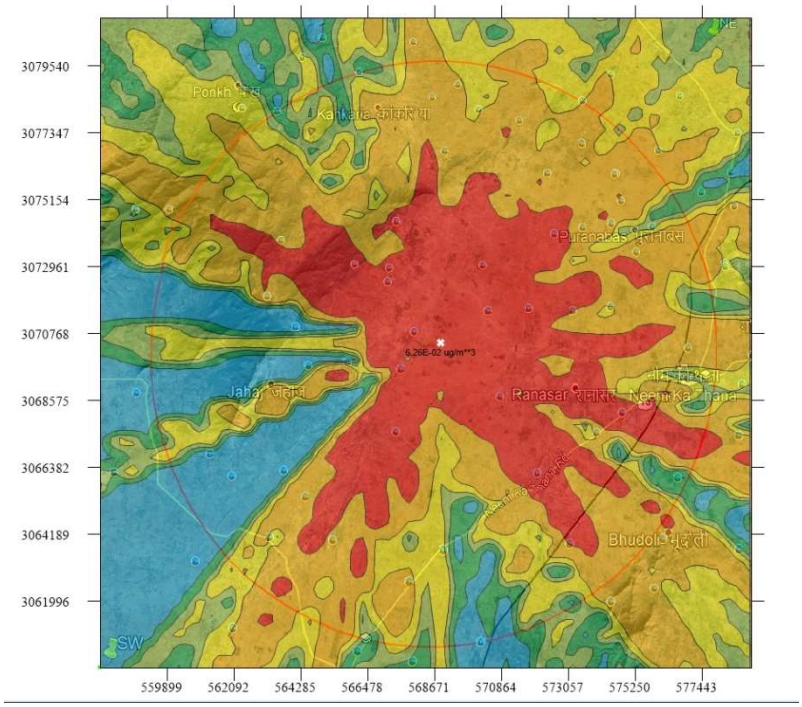




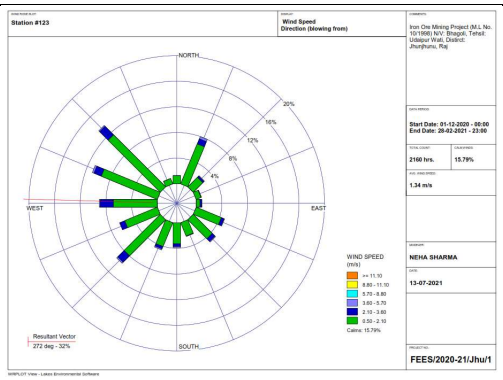
PLOT FILE OF PM10 1st HIGHEST 24 HOURS VALUE

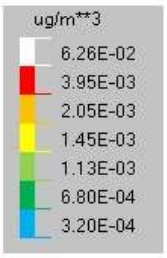
Project Name: IRON ORE MINING PROJECT (M.L NO. 10/98)
Source: Open Pit Source (PM10)
Output Type (Concentration in µg/m³): 4.81E+00
Modeler: Neha Sharma

FIGURE 4.1 (B): ISOPLETH SHOWING CONCENTRATION OF $PM_{2.5}$ (DEPOSIT 1) DUE TO EMISSION FROM PIT SOURCE



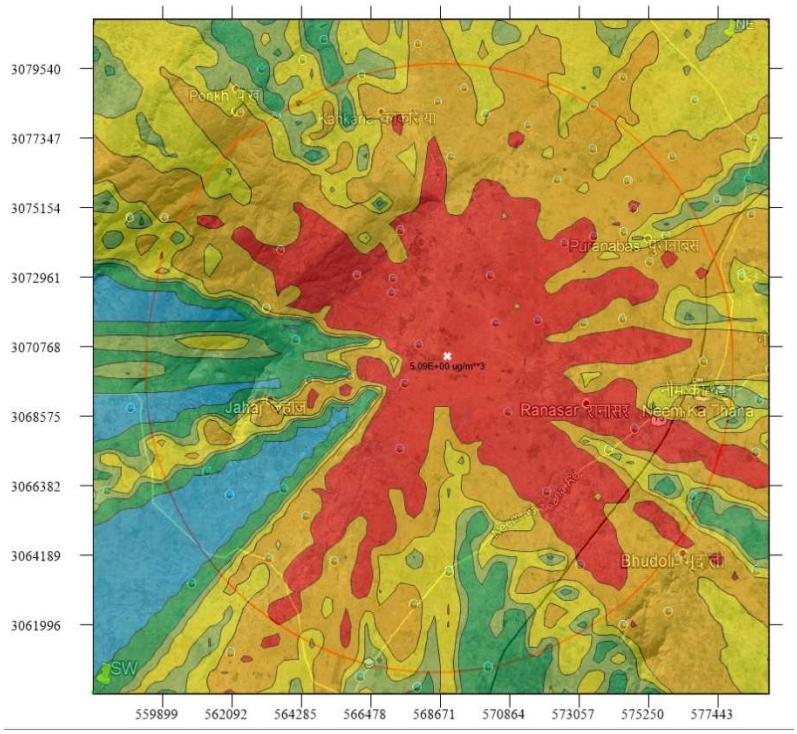
PLOT FILE OF PM10 1st HIGHEST 24 HOURS VALUE



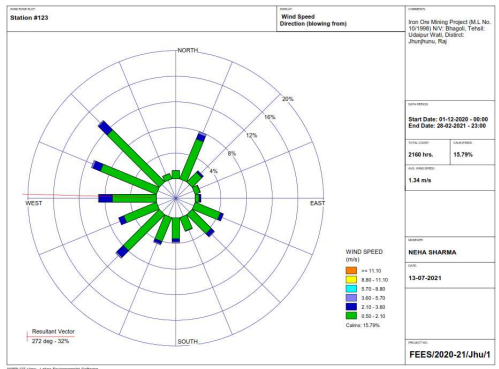


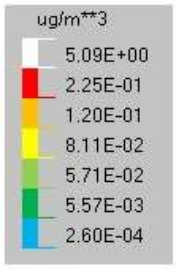
Project Name: IRON ORE MINING PROJECT (M.L NO. 10/98)
Source: Open Pit Source (PM10)
Output Type (Concentration in µg/m^3): 6.26E-02
Modeler: Neha Sharma

FIGURE 4.2 (A): ISOPLETH SHOWING SPATIAL DISTRIBUTION OF PM_{10} (DEPOSIT 2) DUE TO EMISSION FROM PIT SOURCE



PLOT FILE OF PM10 1st HIGHEST 24 HOURS VALUE





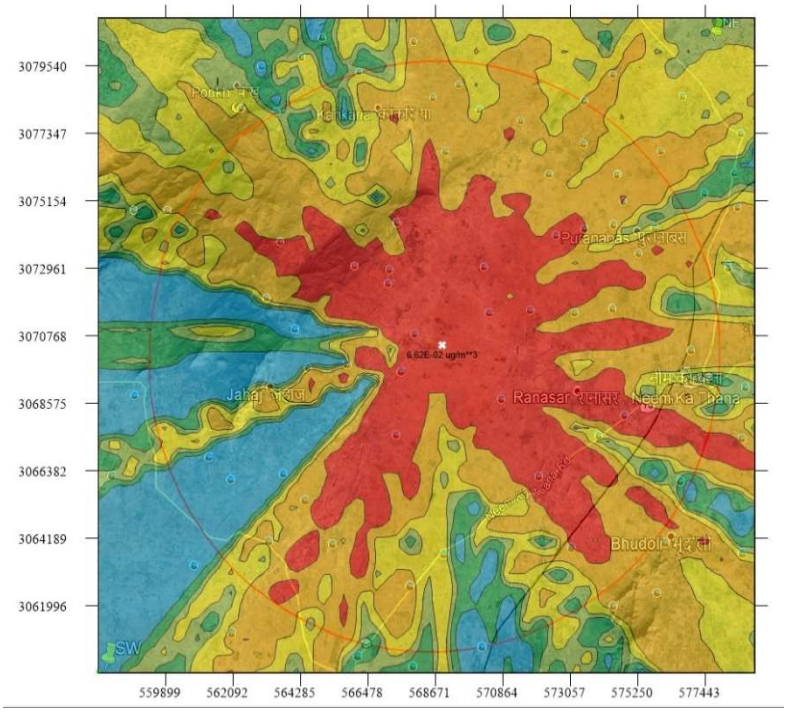
Project Name: IRON ORE MINING PROJECT (M.L NO. 10/98)

Source: Open Pit Source (PM10)

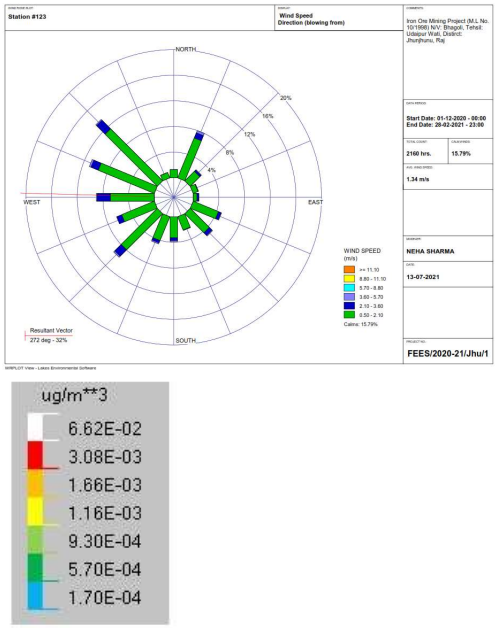
Output Type (Concentration in µg/m^3): 5.09E+00

Modeler: Neha Sharma

FIGURE 4.2 (B): ISOPLETH SHOWING CONCENTRATION OF $PM_{2.5}$ (DEPOSIT 2) DUE TO EMISSION FROM PIT SOURCE



PLOT FILE OF PM10 1st HIGHEST 24 HOURS VALUE



Project Name: IRON ORE MINING PROJECT (M.L NO. 10/98)

Source: Open Pit Source (PM10)

Output Type (Concentration in µg/m^3): 6.62E-02

Modeler: Neha Sharma

TABLE NO. 4.9: PREDICTED HIGHEST GLCs of PM_{10} WITHIN 10 KM RADIUS OF THE STUDY AREA

Sr. No.	UTM Coordinates		Incremental Conc. ($\mu g/m^3$)	Incremental Conc. ($\mu g/m^3$)	Distance from Centre of sources (Km)	Name of the Location	Direction from source center
	E	N	PM_{10}	$PM_{2.5}$			
DEPOSIT 1							
1	568877.3	3070453	4.81	0.06	--	Project Site	Project Site
DEPOSIT 2							
2	568911.9	3070449	5.09	0.066	--	Project Site	Project Site

Source:-Modeling result done by FEES India Pvt. Ltd.

From the above table it can be seen that the maximum incremental ground level concentration of PM_{10} is seen at ML Area. This shows that the adverse impact of mining outside the ML area will be marginal and will not have any adverse effect on health of human and animals and also on the flora of the area.

TABLE NO. 4.10: HAULAGE EMISSIONS (UNPAVED) – TRANSPORT OF MINERAL FROM MINE PIT TO METALLED ROAD

Particulars	PM_{10}	$PM_{2.5}$
Quantity, TPA	1,50,700.00	
Capacity of each dumper in Tonnes	20	
Total number of dumpers per year	7535	
Lead length per trip, km	1.12 km (Two way)	1.12 km
USEPA Emission Equation, lb/VMT (Concentration of the fugitive dust was calculated using the empirical equations for unpaved roads published by USEPA- AP42)	E= [(k) x [(s/12)^0.9] x [(W/3)^0.45]](365-p)/365)) E = Emission Rate (kg/VKT) k= Particle size multiplier = (0.23) for PM2.5 and for PM10: 1.5 s = Silt Content of the Road surface material (%) = 10% S = Mean Vehicle Speed (km/hr) = 20 km/hr W=Mean Vehicle Weight (tonnes) = 10 tonne p = Number of days with at least 0.254 mm of precipitation per year = 65 Source: *AP42Compilation of Air emission factors EPA*	
Emissions in lb/VMT	2.45	0.375
Uncontrolled Emissions ($g/s/m^2$)	0.00014	0.00002
Controlled Emissions ($g/s/m^2$)	0.00007	0.00001

Impacts Significance/Ranking: As per table 4.1 detailing about impacts ranking on various environmental parameters. Impacts on air quality will be **ranking in minor impact list** i.e.: Minor environmental impact due to release of air emissions particularly PM with no lasting detrimental effects. It is also important that proposed mining activity does not involve any blasting and drilling technology.

4.1.4.2 Noise Environment

Source: Main noise generating sources are operation of mining equipment's such as excavator and movements of vehicles. Transportation activities are the main source of noise production. The project related activities will lead to emission of noise that may have minor impact on the surrounding communities in terms of minor increase in noise levels. The potential impacts on noise level may arise out of the following:

Sources and Investigated Impact prediction: Operation of earth moving machines such as excavators and allied mining operations like mineral transportation will lead to noise pollution in the mining area unless appropriate abatement measures are planned and effectively carried out. The noise and vibrations mainly generated by mining machineries. Following sources were identified due to the proposed mining project:

- earth moving machines
- vehicular movement

Ground Vibration: As mining will be carried out by Opencast mechanized method of mining by adopting a system of small hole/deep hole blasting and /or working with the help of machinery for digging, excavation and removal of ore, overburden etc. Sharp drill bits will be used for drilling and they will be maintained periodically to reduce the generation of dust & Blasting with down the hole initiation technique will be adopted which produces less vibration, less noise and better fragmentation. So, there will be less impact due to mining activities.

Operation of machineries, movement of trucks & dumpers & rolling down of boulders along the slope are likely by cause vibration in the air & ultimately ground vibration but it will be lessas mining will be done in most scientific manner with the use of latest technology.

Identification of Impact Activities for the Proposed Project: As discussed earlier, environmental impacts have been identified based on an assessment of environmental aspects associated with the project. The symbol '●' indicates a negative impact and 'o' indicates a beneficial (positive) impact. Impact indicates (Normal: N, Abnormal: AN, Emergency: E), summary of these activities and significant aspect due to such activities are listed in Table 4-11.

TABLE 4-11: IMPACT IDENTIFICATION ON NOISE ENVIRONMENT AND IMPACTS SIGNIFICANCE

Sr. No.	Project Activity	Identified Aspect	Identified Aspect Type Normal/Abnormal/Emergency	Potential Impacts	Significance
1	Project Construction				
1.1	Clearance of vegetation at site and preparation of approach roads	Generation of Noise	**N**	●	***No Impact***
2	Mining Operation				
2.1	Mining, Excavation of Mine Pit	Generation of Noise	**N**	●	***Moderate Severe***
2.2	Drilling & Blasting	Generation of Noise	**N**	●	***Less Severe***
2.3	Stacking of Mineral and its Handling	Generation of Noise	**N**	●	***Less Severe***
2.4	Vehicular movement for transportation of mineral	Generation of Noise	**N**	●	***Less Severe***

Based on this above identification of impacts, environmental indices that are likely to be impacted due to the project are:

- Adverse impact on noise quality will be due to vehicle movements within site during site preparation, during operation phase and transportation of mineral will lead to noise pollution.

Impacts Significance/Ranking: As per table 4.1 detailing about consequences ranking on various environmental parameters. Impacts on Noise quality during construction phase will be falling in No or less severe (Minor) and during operational phase as discussed above in Table 4.11 will be ranking in less severe category. Therefore, overall **ranking will be in less severe**. Drilling & Blasting will be done in a most scientific manner. Sharp drill bits will be used for drilling and they will be maintained periodically to reduce the generation of dust & Blasting with down the hole initiation technique will be adopted which produces less vibration, less noise and better fragmentation. So, there will be less impact due to mining activities.

4.1.4.3 Geology

TABLE NO. 4.12 IMPACT IDENTIFICATION ON GEOLOGY OF AREA

Sr. No.	Project Activity	Identified Aspect
1	Mining	Resource depletion (Iron Ore)

4.1.4.4 Hydrogeology

Mining activity plays a important role in hydrogeology of the area at local or regional level depending upon the area of mining, reclamation of mine lease area during operation and close of mine, depth of mining, mining method (open cast and underground), possible change in natural course of nallah/river, if interception of water table: than its impact on local hydrogeology, quality of water and its reaction with mineral, desalination of water, effect on groundwater movement, utilization of pit as water reservoir and its impact on local ground water level and water quality. Further, it is also important to use of groundwater (extraction in KLD) at the time of construction and operational phase.

The depth of the proposed mining will not intersect the water table and excavated pit will be use as water reservoir. Further, mining will be done in such a way not to change any natural course of nallah. In the area there is no river flowing in the lease area. Also, mineral is not reacted to water.

TABLE NO. 4.13: IMPACT IDENTIFICATION ON HYDROGEOLOGY OF AREA

Sr. No.	Project Activity	Identified Aspect	Remarks	*Impacts Significance/Ranking*
1	Mining	Formation of pit	pond for storage of rainwater will recharge the groundwater	**Positive**
2		Utilization of rainwater	For plantation and dust suppression, if available	
		Utilization of groundwater for mining operation	No groundwater is being extracted for the mining operation	

4.1.4.5 Impact on water environment

Sources of water pollution: (a) Mining can affect the surface water quality by liberation of sediment, loosened by excavation process resulting in sediment transportation.
(b) Wash out from mineral stack yard and (c) due to soil erosion.

Investigated impacts on Water Quality: Mining and its associated activities may affect the water quality of the area depending upon the nature and chemical composition of the mineral and its solubility with water, trade effluent discharge, oil & grease discharge through washing of vehicle and machineries and interception of water table.

Based on this preliminary identification, environmental indices that are likely to be impacted on

ground and surface water quality during the operation phase are discussed below in further detail:

TABLE No. 4-14: IMPACT IDENTIFICATION ON WATER ENVIRONMENT AND ITS SIGNIFICANCE FROM PROPOSED PROJECT

Sr. No.	Project Activity	Identified Aspect/Impact	Potential Impacts on SW/GW and due to Effluent generation and impacts Significance			
			Surface Water (SW)	Ground Water (GW)	Effluent Generation	Impact Significance No Impact, Minor, Moderate, Major, Catastrophic Impact (Duration) Temporary, Permanent
1	Mining Operation					
1.1	Solubility/reaction of mineral with water	use of water for dust suppression, domestic purpose and Greenbelt development. Also, mine pit water will also be utilized for green belt and dust suppression.	No contact with surface water	No contact with sub surface water	No generation of trade effluent	***No Impact (Mine Pit)***
1.2	Sewage Generation from domestic use	Sewage generation and disposal via septic tank followed by soak pit.	--	No or negligible Impacts as around 77 person will work in mining operation	No impacts	***No Impacts***

Impacts Significance/Ranking: As per table 4.1 detailing about consequences ranking on various environmental parameters, there will be no impact on surface and sub surface water quality, however there might be some negligible impacts on ground water quality due to sewage disposal. Hence, **water quality in ranking is in No Impact category**.

4.1.4.6 Impact on soil

Impact on Soil Environment: Soil quality may be affected by mining activity due to removal of top soil or due to windblown mine dust deposition in nearby areas. The impacts would be

degradation of soil or change in composition, grain size and soil erosion etc.

Loss of top soil during mining: The separate soil is not observed on the site of proposed working. However, if any soil comes across during mining it will be scraped and stacked separately to be used for plantation on dumps and on upper benches when required. The waste generated will be upper part of overburden and side burden i.e. quartzite etc. Further the waste generated which include low grade mineral and dust will be sold in the market to cement industries so there will be no impact on soil envisaged due to mining activities.

TABLE NO. 4-15: IMPACT IDENTIFICATION ON SOIL AND IMPACTS SIGNIFICANCE

Sr. No.	Project Activity	Impact (Type) No Impact, Minor, Moderate, Major, Catastrophic Impact (Duration) Temporary, Permanent	Significance of Impact
1	Site Preparation		
1.1	Clearance of soil at site	***Less impact* on soil**	***soil will be remove from the active mine area only***
2.0	Mining Operation		
2.1	Excavation of Mine Pit	***No Impact***	No inter-bedded soil is available
2.2	Transportation of mining material	***Minor***	Dusting on road side crops may reduce crop yields resulting in minor impacts.
2.3	Land Reclamation	***Positive Impact***	Mined pits will be used as water reservoir.

Impacts Significance/Ranking: As per table 4.1 detailing about consequences ranking on various environmental parameters, there will be moderate impact on soil due to change in topography. **Minor impact will be there** due to dusting on road side might have impact on crop yields.

4.1.4.7 Landscape and land use pattern

*Type of Land use Change in Mine Area***:** Mining activity changes the land use of the lease area in nature by temporarily and permanently depending upon the land utilization. *Temporally land use changes* are those like construction of temporary office, rest shelter, Weigh Bridge, parking area, stack and sorting yard etc, and these structures remove from the mine lease area after closure of mine. *Permanent land use change* in mine area is those from where mineral is excavated (formation of pit), permanent road construction after closure of mine utilize by villagers, waste land converted in to grazing or plantation land after afforestation plan, permanent stacking of waste dump yard and stabilized them through plantation or shrubs, and utilization of agriculture land for mining activity.

Site Preparation: The project site covers total 4.945 ha of land. There will be change in land

use/cover pattern typically from scrub, open and agricultural land to mining areas as given in Table 4-14.

Land use Change in Post Mining Phase**:** After the designated mining area activity is completed, the area under pits and quarries would increase. Also there will be generation of other land use categories like office site, plantation area etc.

The mining activity will affect the present landscape of the ML area. The original topography of the mine lease area will be affected mainly due to mining operations. At the conceptual stage, out of the total mining lease area (i.e. 4.945 ha), total mined-out area will be 1.860 ha which will be converted into water reservoir. Greenbelt/plantation will be developed on 1.632 ha of undisturbed area.

TABLE NO. 4.16: STAGE WISE LAND USE CHANGE

S. No.	Land use Category	Present (Ha)	End of 5th year (Ha)	End of mine (Ha)
1.	Pit & Quarries	0.600	1.500	1.860
	i. Water Reservoir	--	--	1.860
	ii. Backfilling	--	--	--
2.	O.B. Dump	0.050	0.150	0.150
3.	Waste Dumps	--	--	--
4.	Backfilled Area	--	--	--
5.	Storage of Top Soil	--	0.010	--
6.	Mineral Stack Yard	--	--	--
7.	Infrastructure (Work shop, administrative Building)	0.010	0.010	0.010
8.	Roads	0.180	0.200	0.200
9.	Green Belt	0.100	1.632	1.632
10.	Undisturbed/Non Utilized	4.005	1.443	1.093
Total		**4.945**	**4.945**	**4.945**

Source: *Approved Mining Plan with Progressive Mine Closure Plan*

Investigated Impacts of change of land use: Considering the above impact as well as the operating and other conditions mentioned above, the likely impact scores on land environment are mentioned in Table 4-17.

TABLE NO. 4.17: IMPACT IDENTIFICATION ON SOIL AND IMPACTS SIGNIFICANCE

Sr. No.	Project Activity	Identified aspect	Significance of Impact
1.0	**Land Acquisition**		
1.1	Land lease or purchase	Potential change in land use/cover.	Very Long term i.e.: ***catastrophic*** in terms of duration.
2.0	**Preparation of Site**		Very Long term i.e.: ***catastrophic*** in terms of duration.
2.1	Clearance of vegetation and preparation of approach road	➢ Change in land use/cover from land without scrub to mining area. The change in land cover is very long term to mining area. ➢ There will be change in land cover from agricultural and open vegetation to mining area.	Long term i.e.: ***catastrophic*** in terms of duration.
3.0	**Mining Activity**		
3.1	Excavation of mineral	Formation of Pit	Very Long term i.e.: ***catastrophic*** in terms of duration
3.2	Transportation within lease area	Construction oh haulage road	***Minor/major I***mpact

Impacts Significance/Ranking: As per table 4.1 detailing about consequences ranking on various environmental parameters, there will be **catastrophic impact** on land use as can be seen in above table No. 4.17.

4.1.4.8 Socio-Economic Environment

The mining activities in the area will definitely help in the improvement of socio-economic status of the people around the mine area by generating direct or indirect employment opportunities. The project will also attract ancillary and related small-scale industries in the adjoining areas. Similarly, people shall get variety of businesses opportunities like beetle/ pan shops, grocery shops, milk vending and daily house services etc. The sources of earning will help in improving the quality of life of the inhabitants of the region. Continued mining activities will benefit the local people due to provision of more infrastructural facilities provided by local industry as mining industry will boost up the local market.

Investigated Positive Impacts

- There will be generation of employment opportunities directly or indirectly for the skilled or unskilled worker.
- The economic level and living standard of the people is gradually increasing due to outcome of mining industries.
- The additional facilities of educational and infrastructural development will take place.
- The rain water logged in the mining field can be used by the farmers for the purpose of irrigation.
- The villagers can even deploy their agricultural vehicles (Tractor Trolley, bull dozers) for the company work which generates a source of income.
- The goodwill of the project proponent has also been strong in the past which makes it easy to win the trust of the beneficiaries.

Investigated Negative Impacts

- There may be frequently wear and tear of the main roads connecting to the villages specially during raining season because of running of heavy vehicles i.e. truck, tractors and bull dozers, jeeps etc.
- The mining dust may have negative impact on the health of local people living in the surrounding areas by the way of certain diseases as asthma and bronchitis/diseases related to lungs.
- It was also apprehended that mining activity would also encourage increased transportation and use of local infrastructures which would damage the already existing roads of the locality.

Measures to improve socio-economic condition of local populations

With mining activities, local people will have a lot of direct and indirect employment avenues opened up. There will be direct employment opportunities due to the proposed mining project. Thus, the local people will enjoy the economic upliftment. Thus, the socio-economic status of the area will be improved.

4.1.4.9 Occupational Health and Safety

Occupational health and safety (OHS) is a cross-disciplinary area concerned with protecting the safety, health and welfare of people engaged in work or employment.

Occupational Health Hazards at mine site

Dust and noise are the main health hazards for the miners. Some examples of such hazards are:

- ❖ Noise and vibration exposure
- ❖ Exposure to dust
- ❖ Physical Hazards

I. *Noise and Vibration Exposure:* HEMM operation and transportation will be the main sources of noise and vibrations. Control of noise emissions includes the use of silencers, noise barriers, and personal hearing protection (ear plugs/muffs).

II. *Exposure to dust:* Exposure to fine particulates is associated with work in most of the dust generating stages notably from mineral excavation, handling and transportation. Workers with long term exposure to fine particulate matters (i.e. dust) are at risk of pneumoconiosis, emphysema, bronchitis, and fibrosis**.** Methods will be adopted to prevent and control exposure to dust include the following:

- Control of dust through water spraying
- Compulsory to use PPEs by Labours and Staff members during mining activity, as appropriate equipments (e.g. masks and respirators) will be provided to labors on regular basis to address residual exposures.

III. Physical hazards: Injuries during Project operation are typically related to slips and falls. Other injuries may occur due to contact with, or capture in, moving machinery (e.g. dump trucks, front loaders).

The category of hazardous jobs assigned to various workers in the said mine is mentioned in Table 4-18.

TABLE NO. 4-18: LIST OF WORKERS AND HAZARDOUS TASK ASSIGNED WITH DURATION

Sr. No.	Number of workers to be employed, by category	Maximum No. of Workers	Occupational Health Issue
1	Drivers and Heavy Earth Moving Machinery (HEMM) Operators	Hire when required	Exposure to Dust &Noise

Medical Facilities and Detail of Occupational Health Check up

Details of medical facilities & details of occupational health check up are given in Table 4-19.

TABLE NO. 4-19: MEDICAL FACILITIES AND HEALTH CHECK UP DETAILS

Sr. No.	Type of health check up	Details of Medical Examination	Medical Facilities available

1	Initial occupational health check up	Blood pressure, Blood & Urine Sugar, Chest Radiography, Lung Function Test, Vision Test, and audiometry.	Medical facilities available at Neem Ka Thana Tehsil which is located at a distance of 9.00 km towards ESE from the project site.
2	Periodical medical examination	Blood pressure, Blood & Urine Sugar, Chest Radiography, Lung Function Test, Vision Test, and audiometry.	

Implementation of Occupational Health and Safety Measures

Occupational health and safety measures result in improving the conditions under which workers are employed and work. It improves not only their physical efficiency, but also provides protection to their life and limb. Management will consider the following safety measures:

- Safety clauses in contract order
- Inspection and maintenance of equipments and accessories
- Pre placement and periodic health check up
- Removal of unsafe conditions and prevention of unsafe acts
- Detailed analysis of each and every incident
- To provide standard PPEs and ensure its uses
- Periodic inspection by internal and external safety experts
- Celebrations of various safety events for awareness
- Medical facilities and first aid boxes will be developed in the mine premises.
- Pits, sumps, openings in floor etc. which may be a source of danger, will be either securely covered or securely fenced. Securely fencing a pit means covering or fencing it in such a way that it ceases to be a source of danger.
- Health Awareness Programmes and camps will be organized on regularly.

Occupational health and safety

The steps will be taken to minimize the impacts of mining activities and to ensure occupational health and safety during commissioning, operations and maintenance.

Occupational health: The occupational health problems envisaged can mainly be due to accident and noise. To overcome these hazards, in addition to arrangements to reduce it necessary protective equipment will be supplied to workers.

Operation and maintenance: The problem of occupational health, in the operation and maintenance phase is primarily due to noise which could affect hearing. The necessary personal

protective equipment's will be given to all the workers. The working personnel will be given the following appropriate personnel protective equipment.

- Industrial Safety helmet;
- Zero power plain goggles;
- Welders equipment for eye and face protection;
- Cylindrical type earplug;
- Hand gloves; and
- Industrial safety shoes with steel toe.

All working personnel will be medically examined as per mines rules for PME (pre-employment medical examination) of employees. This is in addition to the pre-employment medical examination.

Safety plan: Safety of both men and materials during operation phase is of concern. Safety plan is prepared and will be implemented in the mine. The preparedness of an industry for the occurrence of possible disasters is known as emergency plan. The disaster in may be possible due to collapse of structures and fire/explosion etc. Keeping in view the safety requirement during operation and maintenance phases, the proponent formulates safety policy with the following regulations;

- To allocate sufficient resources to maintain safe and healthy conditions of work;
- To take steps to ensure that all known safety factors are taken into account in the operation and maintenance of machinery and equipment;
- To ensure that adequate safety instructions are given to all employees;
- To provide wherever necessary protective equipment or processes used in their work which are known to be potentially hazardous to health or safety;
- To keep all operations and methods of work under regular review for making necessary changes from the point of view of safety in the light of experience and up to date knowledge;
- To provide appropriate facilities for first aid and prompt treatment of injuries and illness at work;
- To provide appropriate instruction, training, retraining and supervision to employees in health and safety, first aid and to ensure that adequate publicity is given to these matters;
- To ensure proper implementation of fire prevention methods in the areas where explosive magazines are stored;

- To organize collection, analysis and presentation of data on accident, sickness and incident involving people injury or injury to health with a view to talking corrective, remedial and preventive action;
- To promote through the established machinery, joint consultation in health and safety matters to ensure effective participation by all employees;
- To publish/notify regulations, instructions and notices in the common language of employees;
- To prepare separate safety rules for each type of occupation/processes involved in mine; and to ensure regular safety inspection by a competent person at suitable intervals of all buildings, equipment, work places and operations.

Safety Organization: The responsibilities of the safety officer include identification of the hazardous conditions and unsafe acts of workers and advice on corrective actions, conduct safety audit, organize training programs and provide professional expert advice on various issues related to occupational safety and health. He is also responsible to ensure compliance of Safety Rules/Statutory Provisions. The posting of safety officer will be in accordance with the requirement of Mines Act and their duties and responsibilities shall be as defined thereof.

Safety circle: In order to fully develop the capabilities of the employees in identification of hazardous processes and improving safety and health, safety circles are constituted in each area of work. The circle consists of 5-6 employees from that area. The circle normally will meet for about an hour every week.

Safety training: Safety training will be provided by the Safety Officers with the assistance of faculty members called from Professional Safety Institutions and Universities. In addition to regular employees, limited contractor labors will also be provided safety training. To create safety awareness safety films are being shown to workers and leaflets distributed.

Health and safety monitoring plan: The health of all employees is monitored as per mines rules for early detection of any ailment due to exposure to dust and noise. To minimize the health impacts PPE like dust masks, ear plugs/ muffs and other equipments will be provided for use by the work personnel. All workers will be subjected to Initial Medical Examination as per Mines Rule 1955 at the time of appointment. Periodical Medical Examination will be conducted at least once in five years. Medical camps will be organized. The detail of health check up and periodical medical examination schedule is given below in Table 4.20.

TABLE NO. 4.20: DETAIL OF HEALTH CHECK UP AND PERIODICAL MEDICAL EXAMINATION SCHEDULE

S. No.	Activities	1st Year	2nd Year	3rd Year	4th Year	5th Year
1.	**Initial Medical Examination (Mine Workers)**					
a.	Physical Check - up	✓	--	--	--	--
b.	Psychological Test	✓	--	--	--	--
c.	Audiometric Test	✓	--	--	--	--
d.	Respiratory Test	✓	--	--	--	--
2.	**Periodical Medical Examination (Mine Workers)**					
a.	Physical Check - up	--	✓	✓	✓	✓
b.	Audiometric Test	--	✓	✓	✓	✓
c.	Eye Check - up	--	✓	✓	✓	✓
d.	Respiratory Test	--	✓	✓	✓	✓
3.	**Medical Camp (Mine Workers & Nearby Villagers)**	--	✓	✓	✓	✓
4.	**Training (Mine Workers)**	✓	✓	✓	✓	✓

Medical Follow ups:- Work force will be divided into three targeted groups age wise as follows:-		
Age Group	**PME as per Mines Rules' 1955**	**Special Examination**
Less than 25 years	Once in a Three Years	In case of emergencies
Between 25 to 40 Years	Once in a Three Years	In case of emergencies
Above 40 Years	Once in a Three Years	In case of emergencies
Medical help on top priority	Immediately after diagnosis/ accident is the essence of preventive aspects.	

The mine workers will be provided with all necessary PPEs, especially dust masks for their safe guard from dust, ear plugs/ear muffs for noise, shoes etc. and measures for other hazards. The employees when taken will be thoroughly examined medically. After initial medical examination, the employees will continue to be examined periodically. The examination includes apart from the general observation, the Chest X-ray, Lung Function Test, Spirometry, Audiometry and the medical records of the employees will be maintained in a separate health record file. Under initial vocational training, the workers will be given training related to all safety and health aspects pertaining to their vocation and thereafter every quarter, special training courses/awareness programme for malaria eradication, HIV and health effects on exposure to mineral dust will be organized for employed persons.

Occupational safety of workers in mining area will be achieved by the following dust masks and other PPE's (Personal protective equipments) for their occupational safety. Break-up and budgetary provision for the mine workers is given below in **Table 4.21**

TABLE No. 4.21 BUDGETARY BREAK UP FOR LABOUR WELFARE

S. No.	Facility Provided for Laborers	Capital Cost in Rs.	Recurring Cost in Rs.
1.	Shelters, Safe drinking water, Sanitation facility	1,00,000	Maintenance Cost: 20,000
2.	Periodical medical Examination per year @1000 per labor		77,000
3.	Fuel for cooking (LPG Cylinder) @ 950 Per month		9,500
4.	Books/Uniform for children of labour@ 2,400 per labor		1,84,800
5.	Group Insurance @ Rs.1500 per worker	1,15,500	-
6.	Provision for personal protection equipment (PPEs) like ear plug, dust mask, Helmet, shoes etc., for 77 workers • Safety shoes@350 Rs (2 times/year) • Hand Gloves @300 Rs (2 times/year) • Dust mask@25 Rs (2 times in 10 month) • Ear plugs@25 Rs (2 times in 10 month) • Helmets @450 Rs(1 time in three years)		53,900 46,200 38,500 38,500 34,650
7.	First Aid Box		10,000
8.	Fire Safety	30,000	20,000
Total		**2,45,500**	**5,33,050**

4.1.4.10 Public Health Implication

As per the socio-economic study, no measure heath implications were observed during field survey. All the employees when inducted will be medically examined. Further, they will also be medically examined at periodical interval.

Impact on Human Settlement: Mostly local inhabitants are reported to be economically poor. People in the study area are dependent on Agriculture/ Farming for their livelihood along with it people goes for employment and business to Udaipurwati Tehsil and Jnunjhunu District. The mining operations will provide employment opportunity to the local inhabitants. In overall, the impact of mining project on socio-economic condition of the area will be positive. Maximum effort has been given to uplift the socio-economic condition of the nearby village. As such no adverse impact was recorded due to iron ore mining in the area.

4.1.4.11 Impact on civic amenities

The impact of mining on the civic amenities also not observed in the area and so also during conversations with the local peoples.

4.1.4.12 Impact on historical monuments

There are no historical monuments located within 10 km study area.

4.1.4.13 Impact on local transport infrastructure

The site is well connected with SH-37 B at a distance of 6.30 Km and with communication facilities like telephone, fax and wireless. The iron ore produced from the mine will be transported by tippers/dumper from mine to the end user. Number of trips will be about 25 trips/day depending on the capacity of tippers @ 20 Ton per tipper/trucks.

4.1.4.14 Impact on biological environment

Identification of Impact Zone: As per discussion with local villager's 500-meter surrounding area has been considered as impact zone from the proposed project site.

TABLE NO. 4.22: ACTIVITY-ASPECT BASED DETERMINATION OF IMPACTING ECOLOGICAL COMPONENTS

Sr. no.	Project Activities	Aspect	Ecological Components					
			TFL	TFA	AFL	AFA	MFL	MFA
1.	**Site Preparation Phase**							
	Site clearance (within lease area) / removal of top soil	Uprooting of vegetation	✓	✓	--	--	--	--
	Movement of earth mover equipment's for site preparation	Generation of noise and vibration	--	✓	--	--	--	--
2.	**Operation Phase**							
	Excavation of mineral using machine and labors	Generation of noise and vibration	--	✓	--	--	--	--
	Vehicular movement for transportation of material	Generation of Dust and emission of CO	✓	✓	--	--	--	--
	Storm water run-off from mine lease area during monsoon	Release / runoff of Contaminated water	✓	✓	✓	✓	✓	✓

Likely Impacts on Ecological Components: As discussed earlier, environmental aspects and impacts have been identified based on the activities associated with the project. Likely impacts on Ecology and Biodiversity due to above said aspects are given in Table 4.23.

TABLE No. 4.23: LIKELY IMPACTS IDENTIFICATION

Sr. No.	Aspect Description	Likely Impacts on Ecology and Biodiversity (EB)	Significance of Impacts
1.	**Site Preparation**		
1.1	Uprooting of vegetation of lease area	➢ Site specific loss of common floral diversity ➢ Site specific loss of associated faunal diversity ➢ Site specific loss of habitat / habitat diversity	*Less Severe*
1.2	Movement of earth movers equipment's for site preparation will generate noise and vibration	➢ Site-specific disturbance to normal faunal movements at the site due to noise and vibration.	*Less Severe*
2	**Operation Phase**		
2.1	Excavation of mineral using machine and labors, transportation activities will generate noise.	➢ Site-specific disturbance to normal faunal movements at the site due to noise.	*Less Severe*
2.2	Vehicular movement for transportation of materials will result in generation of dust (SPM) due to haul roads and emission of CO.	➢ Impact on surrounding agriculture and associated fauna due to deposition of dust and emission of CO.	*Less Severe*
2.3	Storm water run-off from mine lease area during monsoon will contaminate water bodies.	➢ Contamination of water bodies	*Less Severe*

4.1.4.15 Data analysis/interpretation and assessment of significance of impacts

The concept of significance of impact is fundamental to environmental impact assessment (EIA). For determining significance of impacts first of all impacts classification is being done as detailed above in table 4.1 and based on that impacts were identified on each environmental receptor and accordingly impacts were classified as No impact/Minor/Moderate/Major/Catastrophic. During classification of impacts base line data was also kept in mind and classification of impacts is being done considering base line data also. According to the impacts classification mitigation measures are suggested as discussed in subsequent section.

TABLE NO. 4.24 POTENTIAL ENVIRONMENTAL IMPACTS AND DATA ANALYSIS/INTERPRETATION

Sr. no.	Project Activities/ Aspects	Potential Environmental Impacts and data analysis/interpretation									Significance of Impact
		Landuse/Landcover (LU/LC)	Air Quality (AQ)	Surface Water (SW)	Ground Water (GW)	Noise and Vibration (NV)	Soil Conservation	Ecology & Biodiversity (EB)	Socio-Economic (SE)	Occupational Health/Community	
1.	**Site Selection**										
1.1	Land/Lease	Potential change in land cover	--	--	--	--	--	--	--	--	LU/LC *Catastrophic* in terms of potential change in *land cover.*
2.0	**Preparation of Site**										
2.1	Clearance of vegetation at site	Change in land cover from vegetation cover to barren (since landuse change will be long term / permanent being development operations)	Dust emissions during clearing operations. As per the base line data generated, Refer Chapter 3 Table 3.13, 3.14, 3.15 it can be very well seen that PM_{10}, $PM_{2.5}$, NO_2, SO_2, CO concentrations are well within the permissible limits of NAAQS and during site preparation there will be minor	--	--	Noise from vehicles.	--	Possible loss of vegetation cover.	short time employment	Risk of occupational injuries.	LU/LC Long term i.e: catastrophic in terms of duration. AQ Minor Impacts NV Minor Impacts EB Minor Impacts SE Minor Impacts OHS Minor Impacts

			impact on the air environment.								
3.0	**Mining Operations**										
3.1	Excavation	LU: Creation of pit and excavated pit will be converted to the reservoir.	Dust emission due to mining activities, use of excavator, vehicular movement and use of dewatering pump. As per the base line data generated, Refer Chapter 3 Table 3.9 and 3.10 it can be very well seen that PM_{10}, $PM_{2.5}$, NO_2, SO_2, CO concentrations are well within the permissible limits of NAAQS and during site preparation there will be some impact on the air environme	use of water for dust suppression, domestic purpose and Greenbelt development.	Due to mining activities, use of compressor and use of machineries for mining. As per the base line data generated, Refer Chapter 3 Table 3.14, Noise levels at the mine site during day are 48.5 dB, due to operation of excavator during mining operation there will be increase in noise level creating moderat	--	dust emission, Removal of vegetation and generation of noise.	Employment generation. (Positive Impact)	--	LU/LC Long term i.e: catastrophic in terms of duration. AQ Minor Impacts NV Moderately severe EB Minor Impacts SE Minor Impacts OHS Minor Impacts

			nt due to release of dust which will further increase the PM10 level to some extent.			e impact on the surroun ding.					
3.2	Stacking of Mineral and Handling	--	Dust generation	--	--	Noise generati on	--	Noise generatio n and dust Emission	--	--	AQ Minor Impacts NV Moderately severe EB Minor Impacts
3.3	Transportat ion of mining material	--	Dust generation	--	--	Noise generati on	--	Noise generatio n	Employm ent Generatio n (Positive Impact)		AQ Minor Impacts NV Moderately severe EB Minor Impacts
3.4	Land Reclamatio n	LU: Excavated area will be converted to water reservoir.	Dust emission due to leveling	--	--	--	--	Excavate d area will be converte d to water reservoir.	Generatio n of water reservoir. (Positive Impact)		LU Catastrophic Impact in terms of change in land use. AQ Minor Impacts

4.2 MINIMIZING/OFF SETTING ADVERSE IMPACTS

This section deals with the measures to offset/avoid and minimizing the adverse impacts arising on various environmental receptors due to proposed project, First preference is being given to avoid the impact and in case impact can't be avoided then details about minimizing the impacts is being discussed in below table No. 4.25.

TABLE NO. 4.25: MINIMIZING AND OFFSETTING THE VARIOUS ENVIRONMENTAL IMPACTS ON ENVIRONMENTAL RECEPTORS

Sr. No.	Environmental Receptor	Impacts Identified	Measures for offset/avoid, control and minimizing impacts		
			Offset/Avoid	Control	Minimize
1	Air Environment	Impacts identified on air	--	To minimize and control the dusting it	

		environment will be due to dust emissions during excavation process and loading of the mineral.		will be ensured regular water sprinkling is being done on haul roads and near the loading area. Plantation will also help in reducing propagating dust.	
2	Noise Environment	Noise problem may result due to use of Excavator for mining activities and due to transportation vehicles to be used for mineral transport.	***Due to use of excavator:*** Excavator shall be maintained in good condition and also proper silencers shall be installed. Use of warring signs and hearing protection devices. Altering the work schedule, moving the personnel further from the noise source. ***Due to transportation vehicles:*** The only mitigation possible for this source is to do regular maintenance of the trucks. It will be ensured that PUC certified vehicles are used for transportation. In case any kind of Loading/Unloading is involved, the loading/unloading should not be done during the night time, during which it may cause more disturbance to the surrounding.		
3	Water Environment	No impact identified	--	No effluent of trade discharge, No water is reaction with mineral, No process activity is involve	For domestic purpose soak pit toilet will be constructed.
4	Soil Environment	A very limited soil cover will be removed from the mine active area. During transportation of mineral (iron ore) dusting on road side crops may reduce crop yields.	Removed soil will be use for plantation purpose.	During transportation vehicle's will be covered by tarpaulin to avoid dusting.	
5	Land Use	Formation of mine pit	--	--	Will be utilized for water reservoir and will be fenced for safety reasons and on undisturbed land plantation will be done.
6	Socio Economic	Generation of	Mine workers will be	Local labors will be deploy along	

		Employment and in associated activities	provided with PPE's.	with a labor well fare fund is incorporated.
7	Ecology and Biodiversity	No major impact of Biological environment envisaged. Details discussed in next section 4.3.		33% area will planted of native plants will increase the green belt in the area.
8	Occupational Health and Safety	Drivers and Heavy Earth Moving Machinery (HEMM) Operators are under risk hazards.	Use of ear plug and dust masks.	➢ The regular medical checkup needs will be carried out for the nearby villagers by the project proponent's falling in this mine lease area.

4.3 MITIGATION MEASURES DURING CONSTRUCTION AND OPERATION PHASE

A mitigation measure on various environmental receptors is briefly described below in the table:

TABLE NO. 4.26 PROPOSED MITIGATION MEASURES ON VARIOUS ENVIRONMENTAL RECEPTORS

Sr. No.	Environmental Receptor	Impacts Identified and Corresponding Mitigation measures			
		Pre-operational Phase		Operational Phase	
		Impacts	Mitigation Measures	Impacts	Mitigation Measures
1	Air Environment	No impact envisaged during construction phase as there is no major construction involved.	--	Dust generation leading to increase in PM_{10} during excavation process During loading of mineral there will be dust generation	➢ Water sprinkling for dust suppression. ➢ Plantation of trees having large canopy to reduce dust emission
2	Noise Environment	During site preparation there will be generation of some noise.	Noise generating during site preparation will be less severe and it will be ensured that noise limits as prescribed by CPCB are not exceeded.	Excavator (< 95 dB)	Excavator shall be maintained in good condition and also proper silencers shall be installed. Use of warring signs and hearing protection devices. Altering the work schedule, moving the personnel further from the noise source
				Trucks Movement (< 85 dB)	Trucks can get noisy and generate SPL up to 85 dB. The only mitigation possible for this source is to do regular maintenance of the trucks. In case any kind of Loading/Unloading is involved, the loading/unloading should not be done during the night time, during which it may cause more disturbance to the surrounding.
3	Water Environment	No impact envisaged during construction phase as there is no major construction involved.	--	Impact on groundwater regime/streams / lake/pond due to mining.	➢ Rain water harvesting shall be done to recharge ground water. ➢ Mine water shall be used for dust suppression, plantation to reduce the fresh water demand

					and conserve the natural resource. ➢ The overall drainage planning should be done in such a manner that the existing drainage conditions shall be maintained to the extent possible so that runoff distribution is not affected.
				Impact on surface and groundwater quality due to domestic activities etc.	Domestic sewage will be disposed off via septic tank followed by soak pit.
4	Soil Environment	Clearance of vegetation at site	Native species will be planted in the undisturbed area.	During transportation of mineral (iron ore) dusting on road side crops may reduce crop yields.	During transportation vehicle's will be covered by tarpaulin to avoid dusting. Water sprinkling on roads to avoid dusting.
5	Land Use	During pre-operational phase there will be no change in the land use pattern of the core zone.	--	Clearance of vegetation and preparation of approach road during site preparation.	To compensate the loss of vegetation during site preparation some native species will be planted within the mine lease area in the undisturbed area.
				As transportation would increase this would affect scrub and agricultural crops on the way, which can decrease the yield of the crop.	It will be ensured that vehicles used for transportation such as trucks/tippers are covered with tarpaulin to minimize dusting.
				Top soil in form of overburden will be dumped within the lease area might change the topography of the area.	Topsoil will be stacked properly in the undisturbed area and will be used for plantation purpose.
				A permanent change in the land use post mining activity.	Post mining activity excavated pit will be used as water reservoir and proper fencing will be done around it. Further it will aid in ground water recharge in the area.

6	Socio Economic	As it is a small scale mining project not involving major construction so no impacts are envisaged during construction phase.	--	There may be frequently wear and tear of the main roads connecting to the villages specially during raining season because of running of heavy vehicles i.e. truck, bull dozers, office vehicles etc.	The roads connecting to the villages will be repaired at regular interval by the project proponent. Also a fund in the EMP is marked towards the contribution of fund to Gram Panchayat for maintenance of local roads.
				The mining dust may have negative impact on the health of local people living in the surrounding areas by the way of certain diseases as asthma and bronchitis/diseases related to lungs.	The regular medical checkup needs will be carried out for the nearby villagers by the project proponent's falling in the mine lease area.
				It was also apprehended that mining activity would also encourage increased transportation and use of local infrastructures which would damage the already existing roads of the locality.	A fund in the EMP is marked towards the contribution of fund to Gram Panchayat for maintenance of local roads and the project proponents will contribute towards same.
7	Ecology and Biodiversity	i) Site possesses common floral (not trees) species. Clearance of these species will not result in loss of flora in true sense.	No immediate action required. However, Greenbelt / plantation will be developed in project site and in periphery of the project boundary, which will improve floral and faunal diversity of the project area.	i) Site-specific disturbance to normal faunal movements at the site due to noise.	No immediate action required because all species reported from project site are common and well adapted to the routine urban activities, so they will not face significant impact on their normal movements.
		ii) Site supports only generalist/common species, which use wide variety of habitats of the buffer zone area. So, there is no threat of faunal diversity.		ii) Impact on surrounding agriculture and associated fauna due to deposition of dust and emission of CO.	Appropriate measures will be implemented for dust suppression (e.g. Water sprinkling). PUC certified vehicles will be used. Development of green belt to the extent possible.
		iii) Site does not form unique/critical		iii) Storm water run-off from mine lease area during	Mine pit water collected during monsoon will be used for

		habitat structure for unique flora or fauna.		monsoon will contaminate water bodies.	plantation and dust suppression.
		iv) All faunal species reported from site are common which are well adapted to the routine human activities, so they will not face any significant impact.	No immediate action required because all species reported from project site are common and well adapted to the routine urban activities. However, greenbelt development will help to recall these temporary displaced species.		
8	Occupational and Community Health and Safety	As there are no major construction activity envisaged so no impact anticipated.	--	Drivers and Heavy Earth Moving Machinery (HEMM) Operators are under risk hazards.	➢ Vehicle and Machinery Maintenance ➢ Use of ear plug and dust masks. ➢ Water sprinkling for dust suppression.

5.0 ANALYSIS OF ALTERNATE - TECHNOLOGY AND SITE

5.1 Analysis of Alternate Technology

A semi mechanized method by using excavator, long hole drill, Rock breaker, L & T Poklean, JCBs will be used as an established technology for mineral Iron ore mining. Blasting is not a regular practice because excavation of mineral will be done by rock breakers and if required the the controlled blasting will be done by short holes of 1.5 meters effective length. Slurry explosives (AN based) explosive will be used. Blasting will be conducted under the supervision of competent blaster at the mines. Explosive storage and records will be maintained as per rules. Also, there is a negligible or no soil covers lying in the area, waste will not be come across during mining only OB/SB of quartzite will come across mining and will be sale after taking short term, permit from dept. as per state Govt. Policy. The lessee may install the processing plant of 300 TPD in the lease area if required, otherwise ROM will be dispatched. The plant includes a Jaw crusher, a disintegrator and vibrating screens. The plant will be operated by Generators. Further, no requirement of beneficiation/sorting. Seeing the above facts, no alternate technology is suggested. Further, open-cast method of mining known as surface mining is most effective when the mineral deposit is close to the surface. The techniques involve with (or) without blasting depending on the hardness of the rock and removing surface layers of soil and other rocks to reach the deposit.

5.2 Analysis of Alternate Site

No alternate site was selected as it is a mineral specific site. Although mineral Iron Ore economic viability was assessed and found economical. The availability of local labors and other infrastructure facilities made it more viable for mining.

6.1 INTRODUCTION

Regular monitoring of environmental parameters is of immense importance to assess the status of environment conditions during project operation and to check the effectiveness of the mitigation measures adopted. With the knowledge of baseline conditions, the monitoring programmes will serve as an indicator for any deterioration in environmental conditions due to operation of the project and to enable taking up suitable mitigatory steps in time to safeguard the environment. Monitoring is as important as that of control of pollution since the efficiency of control measures can only be determined by monitoring.

An impact assessment study is carried over short period of time and the data cannot bring out all variations induced by the natural or human activities. Therefore, regular monitoring programmes of the environmental parameters is essential to take into account the changes in the environmental quality. Hence monitoring of various environmental parameters will be carried out on a regular basis to ascertain the following:

- Status of pollution within the mine site and in its vicinity.
- Generate data for predictive or corrective purpose in respect of pollution.
- Examine the efficiency of pollution control system adopted at site.
- Verify effectiveness of planning decisions
- To assess environmental impacts of the surrounding and identify unexpected changes.

6.1.1 Objective of Monitoring

The objectives of monitoring are: -

- To verify effectiveness of planning decisions;
- Measure effectiveness of operational procedures;
- Confirm statutory compliance;
- Categorize unforeseen changes

6.1.2 Environmental Monitoring Program

On the basis of operation environmental monitoring program need to be decide – (i) During construction phase (ii) during operational phase.

6.1.2.1 Monitoring Program during Construction Phase

The said project is a proposed mining project and there is no major construction envisaged so no monitoring schedule is proposed during construction phase.

6.1.2.2 Monitoring Program during Operational Phase

During operational phase, dust will be the main pollutant expected which will arise from different mining activities. The following attributes which merit regular monitoring based on the

environmental setting and nature of project activities are listed below:

- Source emissions and ambient air quality;
- Water quality
- Groundwater levels
- Soil quality analysis;
- Noise levels (equipment and machinery noise levels, occupational exposures and ambient noise levels);
- Ecological preservation and afforestation.

Environmental monitoring schedule will be prepared covering various phases of project advancement, such as constructional and regular operational phase.

TABLE No. 6.1: ENVIRONMENTAL MONITORING DURING OPERATIONAL PHASE

S. No.	Activity	Parameters for Monitoring	Frequency of Monitoring	Location
Air Pollution Monitoring				
1	Ambient air quality monitoring of parameters specified by CPCB within and outside the mining lease area.	Ambient air monitoring of parameters as specified by CPCB preferably PM_{10}, $PM_{2.5}$, SO_2 and NO_X within the mining lease area and outside the mine lease area.	Once in every season at each station except monsoon	Near Mine Pit, Loading area, Nearest Habitation (downwind and upwind) as per granted EC letter
Water Pollution Monitoring				
1	Monitoring of surface and ground water samples at nearby area. Parameters are essential parameters as per IS standards.	As per drinking water standards	Two times in a Year (Pre & Post monsoon)	One sample of surface water and one sample of ground water/ As per granted EC letter.
Noise Quality Monitoring				
1	Noise in the ambient atmosphere in mining lease area.	Spot Noise level recording Leq (day), Leq (night), Leq (dn)	Once in every season except monsoon	Near mine pit area, near loading area
2	Maintenance and service of mechanized equipment and vehicles.		Regularly	--
Soil Quality Monitoring				
1	Soil Quality Monitoring at mine		Once in every year	Within the mine lease area, nearby

	site			agricultural area
Hydrogeology				
1	Well Inventory	Water analysis as per drinking water standards, Water level fluctuation in post and pre monsoon period (open well)	Pre and post monsoon	Within 5 km of mine lease area

Green belt Development Program

Year	Un-worked Area		Outside the mine site		Backfilled Area		Total	
	Area (Ha)	No. of Trees	Area (Ha)	No. of Trees	Area (Ha)	No. of Trees	Area (Ha)	No. of Trees
Existing	0.100	60	--	--	--	--	0.100	60
I	0.511	530	--	--	--	--	0.511	530
II	0.511	522	--	--	--	--	0.511	522
III	0.510	520	--	--	--	--	0.510	520
IV	MAINTENANCE TO BE DONE							
V								
End of life of mine	--	--	--	--	--	--	--	--
Total	**1.632**	**1632**	--	--	--	--	**1.632**	**1632**

Total 1632 saplings will be planted over an area of 1.632 hectare (i.e., 33 % of the mine lease area) out of which 50 saplings area existing over an area of 0.10 ha. and remaining 1572 saplings will be planted over the undisturbed area of 1.532 ha. ***It will be ensured that after ceasing mining operations re-grassing of the mining area and any other area which may have been disturbed due to the mining activities will be done and will restore the land to a condition which is fit for growth of fodder, flora, fauna etc. as per the MoEF & CC O.M vide No. 22-34/2018-IA.III dated 16th Jan 2020.***

Native species which are more suitable to the local environment are preferred to be planted such as Khejari, Neem, Pipal, Sheesham etc.

Species Recommended for Greenbelt Development

S. No.	Local Name	Botanical Name	Status			
			Tree	Shrubs	Herbs	
1	Gulmohar	*Delonixregia*	✓	--	--	Dust Control
2	Neem	*Azadirachtaindica*	✓	--	--	Noise Control, Dust Control, Absorption of gases
3	Ashok	*Polyalthialongifolia*	✓	--	--	
4	Sheesham	*Dalbergiasissoo*	✓	--	--	Dust Control, Fire Resistance
5	Ashwagandh	*Withaniasomnifera*	--	✓	--	Enhance

	6	Chandni	*Tabernaemontanadivaricata*	--	✓	--	aesthetic beauty and dust control
	7	Rose	*Rosa indica*	--	--	--	
	8	Genda	*Tageteseminuta*	--	--	--	

Source: Anon 2007, Saxena 1991, Anon 2006, Hocking, 1993, Phytoremediation of particulate matter from ambient environment through dust capturing plant species, CPCB 2007

6.1.3 Methodology

Project monitoring will be carried out as per conditions stipulated in Environmental Clearance Letter issued by SEIAA Rajasthan, Consent issued by RSPCB as well as according to CPCB guidelines. The mine site is considered as core zone and the area lying within 10 km radius from the mine site is considered to be the buffer zone where associated impacts will be observed on physical and biological environment. The following table is showing details of post project monitoring programmes:

TABLE No. 6.2: METHODOLOGY TO BE ADOPTED DURING OPERATIONAL PHASE

S. No.	Attributes	Sampling		Measurement Method	Test Procedure
1.	**Air Environment**	**Network**	**Frequency**		
	Pollutants PM_{10}	4-6 locations in the project impact area (Minimum 2 locations in upwind side, more locations in downwind side / impact zone)	As per Revised National Ambient Air Quality Standards (NAAQS) vide MoEF circular, dated 18.11.2009	Gravimetric method	-
	$PM_{2.5}$			Gravimetric method	-
	SO_2			EPA Modified West & Gaeke method	Absorption in Potassium Tetra Chloromercurate followed by Colorimetric Estimation using Prosaniline hydrochloride and Formaldehyde (IS: 5182 Part - II).
	NO_2			Arsenite modified Jacob & Hochheiser	Absorption in dill NaOH and then estimated colorimetrically with

					sulphanilamide and (INepthyle) Ethylene diamine Dihydrochlorideand Hydrogen Peroxide (CPCB Method).
	CO			Non-Dispersive Infra Red (NDIR) Spectroscopy	-
*** Rest of the parameters as per NAAQS, 2009 will be monitored, if required as per EC/Consent conditions.**					
2.	**Water Environment**				
	Drinking water parameters	Set of grab samples during pre and post-monsoon for ground and surface water in 10 km from project boundary.	Season wise	As per IS 10500-2012	Samples for water quality should be collected and analyzed as per: IS: 2488 (Part 1-5) methods for sampling.
3.	**Noise**				
	Noise levels at Day & night time -Leq dB (A)	Mine Boundary, High noise generating areas within the lease	Quarterly / Half yearly	As per CPCB norms /As per circular no. Tech. 18 of 1975 and 5 of 1990	As per CPCB norms / As per DGMS norms
4.	**Soil**				
	pH, Bulk Density, Soil texture, Nitrogen, Available Phosphorus, Potassium, Calcium, Magnesium, Sodium, Electrical Conductivity, Organic Matter	At various location in the project impact area	Yearly	As per USDA Method	As per USDA Method
5	**Hydrogeology**				
	Well Inventory	Water analysis as per drinking water standards,	Pre and post monsoon	Water Level meter	

		Water level fluctuation in post and pre monsoon period (open well)			

6.1.3.1 Instrument to be used

The following instrument to be used for data collection work in the monitoring schedule:

(i) Respirable Dust Sampler (RDS)
(ii) Fine particulate sampler (FPS)
(iii) Sound Level Meter
(iv) Water level Indicator

In addition to the above instruments the data on land use (satellite data), fauna and flora studies will be done, if desired as per the granted EC letter.

6.1.4 Reporting schedules of the reporting data

It is proposed that voluntary reporting of environmental performance with reference to the EMP will be undertaken. The Environmental Monitoring Cell will co-ordinate all monitoring program at site and data thus generated will be regularly furnished to the State regulatory agencies. The frequency of reporting will be on six monthly basis to the local state SPCB officials and to the Regional Office of MoEF&CC. The Environmental Audit reports will be prepared for the entire year of operations and will be regularly submitted to regulatory authorities concerned.

6.1.5 Data analysis of performance parameters of control measures

Mitigation measures adopted for various environmental receptors such as Air, Water, Soil, Land-Use, Noise, Biological Environment, Socio-economic Environment will be ranked in terms of their effectiveness and will be made part of the half year EC Compliance to be submitted to the regulatory authority concerned in the following format:

TABLE NO. 6.3: DATA ANALYSIS OF PERFORMANCE PARAMETERS OF CONTROL MEASURES

Sr. No.	Environmental receptor	Impact Identified	Mitigation Measures	Effectiveness of the mitigation measure
1	Air	Impacts and mitigation measures as discussed in Chapter 4		Effectiveness of the mitigation measure will be governed by the Ambient
2	Noise			
3	Water			
4	Soil			

		Impacts and mitigation measures as discussed in Chapter 4	Air/Noise/Water/Soil quality Monitoring report as carried out by NABL/MoEF &CC approved lab.
5	Biological Environment		

6.1.6 Emergency Procedures

6.1.6.1 Risk Analysis and Disaster Management Plan

Any type of mining activities requires stringent safety measures to avoid unwanted incidences which may damage life and machineries. It may cause widespread harm to assets and serious disruption at site as well as outside. Such situation requires quick action and emergency response plans which can be executed without the loss of time. Time factor is the essence in dealing emergencies to minimize the loss of human life and disruption of work. Any accident may develop into a major emergency even with the best safety measures and programs in mining. Disaster management plan is formulated with an aim of taking precautionary steps to avert disaster and also to take such action after the disaster which limits the damage to the minimum. Hence, an emergency preparedness plan will be planned properly and documented for ease of implementation at the time of need without losing time and avoiding delays. Any mines have dangers or risk like fires, inundation, failure of machinery, which need to be investigated, addressed and mitigated. Disaster management formulated with an aim of taking precautionary steps to avert disaster and also to take such action after the disaster which limits the damage to the minimum. Preliminary Risk assessment is based on the philosophy that **"Prevention is better than cure".** Mining operations may be carried to the utmost safety but there is always some element of danger or risk in it. No disaster is envisaged. Only minor accidents may take place. The mining operations will be carried out under supervision of statutory personnel's as per provisions of MCR 1960, MCDR 1988, Mines Rules 1955, Mines Act 1952 and strictly following safety aspects as per MMR 1961 monitored by Directorate General of Mines safety. The lease area does not come under active seismic zone. Land slide, subsidence is not expected in view of opencast mining. No river is near the applied area and hence flood is not expected. In case of eventuality, first aid will be given by the competent authority initially to the injured person. The competent person Mines manager or Mining Engineer will give notice of accident as per Rule-23 of Mines Act-1952. The persons/competent authorities named above will be responsible for co-ordinations between Management and District Authorities/DGMS etc. Regarding general safety as per Rule-181 of MMR 1961, "No person shall negligently or willfully do anything likely to endanger life in the mine, or negligently or will fully omit to do anything necessary for the safety of the mine or of the persons employed there in". The workers will be provided with protective foot wear and safety helmets. The complete mining operation will be carried out under the management control and direction of a qualified Mine Manager

holding a First-Class Manager's Certificate of competency to manage a metalliferous mine granted by the DGMS. The DGMS have been regularly issuing standing orders, model standing orders and circulars to be followed by the mine management in case of disaster, if any. Moreover, mining staff will be sent to refresher courses from time to time to keep them alert. However, following natural/industrial hazards may occur during normal operation.

- Any mines have dangers or risk like fires, inundation, failure of machinery, which need to be investigated, addressed and mitigated. Disaster management formulated with an aim of taking precautionary steps to avert disaster and also to take such action after the disaster which limits the damage to the minimum.
- Preliminary Risk assessment is based on the philosophy that **"Prevention is better than cure".** Mining operations may be carried to the utmost safety but there is always some element of danger or risk in it.
- No disaster is envisaged. Only minor accidents may take place.
- The mining operations will be carried out under supervision of statutory personnel's as per provisions of MCR 1960, MCDR 1988, Mines Rules 1955, Mines Act 1952 & strictly following safety aspects as per MMR 1961 monitored by Directorate General of Mines safety.
- Land slide, subsidence is not expected in view of opencast mining. No river is near the applied area and hence flood is not expected. In case of eventuality, first aid will be given by the competent authority initially to the injured person.
- In order to take care of above hazard/disaster, the following control measures will be adopted;
- All safety precautions and provisions of Mine Act, 1952, Metalliferrous Mines Regulation, 1961 and Mines Rules, 1955 will be strictly followed during all mining operations;
- Entry of unauthorized persons will be prohibited;
- Firefighting and first aid provisions in the mines office complex and mining area;
- Provisions of all the safety appliances such as safety boot, helmets, goggles etc. will be made available to the employees and regular check for their use;
- Training and refresher courses for all the employees working in hazardous premises; Under Mines vocational training rules all employees of mines shall have to undergo the training at a regular interval;
- Working of mine, as per approved mine plan and regularly updating the mine plans;
- Cleaning of mine faces will be regularly done;
- Provisions of magazine at a safe place with fencing and necessary security arrangement;
- Regular maintenance and testing of all mining equipment as per manufacturer's guidelines;
- Suppression of dust on the haulage roads;

- Adequate safety equipment will be provided at explosive magazine; and
- Increasing the awareness of safety and disaster through competitions, posters and other similar drivers
- For any type of above disaster, a rescue team will be formed by training the mining staff with specialized training.

6.1.6.2 Possible hazards in open-cast mine

There are various factors, which can cause disaster in the mine. The mining activity has several disaster-prone areas. The identification of various hazards is shown in **Figure 6.1** and the hazards are discussed below:

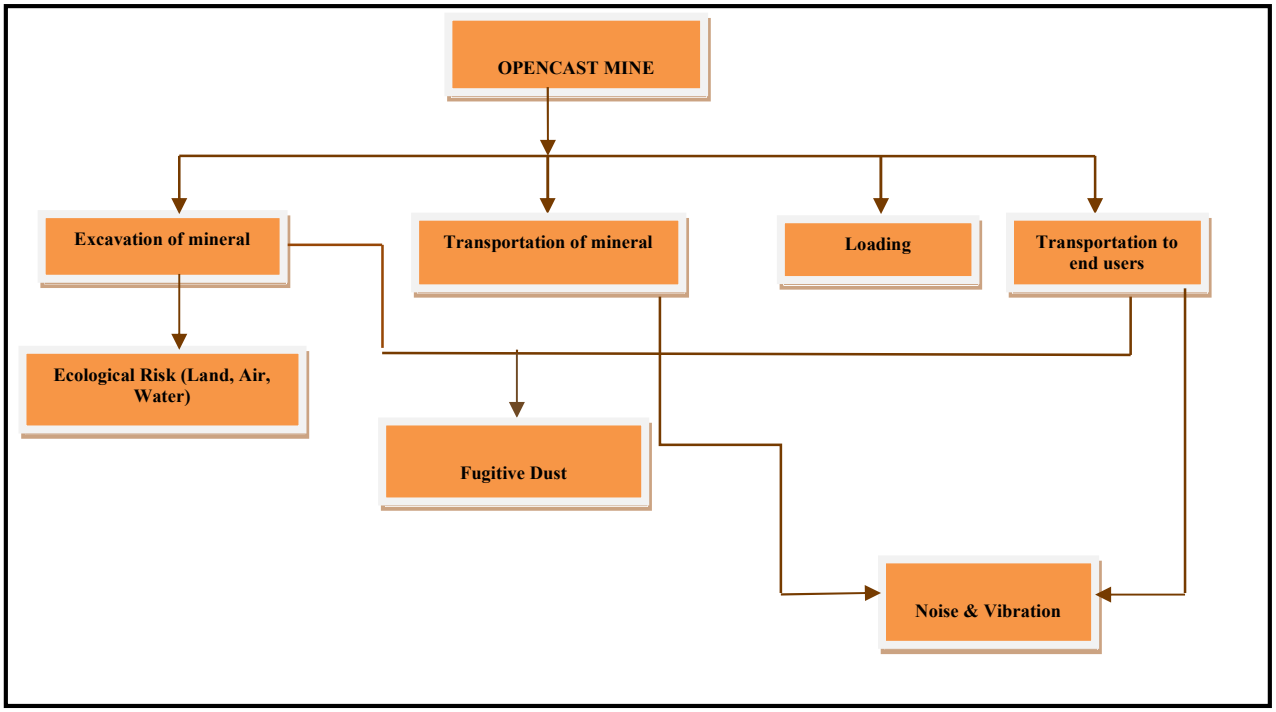


FIGURE No. 6.1 POSSIBLE HAZARDS IN THE PROPOSED PROJECT

6.1.6.3 Fuel Storage

Most of the HEMM will operate on diesel. However, no major storage is envisaged at the mine lease area.

6.1.6.4 Water Logging

Water logging in the mine site have been avoided by adopting following measures;

- Correct marking of position of water bodies with their highest flood level and keeping the mine protected by suitable bunds;
- Water from the surface water bodies shall not enter in the mines;

- Draining of mine water by suitable capacity pumps; and

6.1.6.5 Safety Measures

The safety measures are given below:

- The opencast mine has been planned for working with shovel dumper system which requires proper benching not only for slope stability but also for movement of dumpers and other heavy machinery.
- The inclination of the quarry sides at the final stage i.e. at the dip most point will not exceed 45^0 to the horizontal. (This angle is measured between the line joining the toe of the bottom most bench to the crest of the top most bench and the horizontal line).
- The quarries will be protected by garland drains around the periphery for storm water drainage;
- A minimum safe distance of 50 m will be kept between the surface edge of the quarry and the nearest public building, roads etc.

Measures to Prevent Accidents due to trucks and Dumpers:

- All transportation within the main working area should be carried out under the direct supervision and control of the management;
- The vehicles must be maintained in good repairs and checked thoroughly at least once a week by a competent person authorized for this purpose by the management;
- Broad signs should be provided at each and every turning point specially for the guidance of the drivers at night;
- To avoid dangers while reversing the trackless vehicles, especially at the embankment and tripping points, all areas for reversing of lorries should, as for as possible, be made man free, and there should be a light and sound device to indicate reversing of trucks; and
- A statuary provision of the fence, constant education, training etc. will go a long way in reducing the incidence of such accidents.

6.1.6.6 Disaster Management Plan

Objectives of disaster management plan: Even with all precautions taken, disasters may happen. It is very essential to develop and follow a Disaster Management Plan to handle disasters when they occur. The DMP will be circulated to all employees to avoid chaos and confusion during disaster. The disaster management plan is aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage operations in this same order of priorities. For effective implementation of the Disaster Management Plan, it should be widely circulated and personnel training through rehearsals/drills.

The objective of the Disaster Management Plan is to make up of the combined resources of the mine and the outside services to achieve the following;

- The objective of onsite disaster management plan for the mine is to be a stage of perceptual readiness through training, development to immediately control and arrest any emergency situations, so as to avert a full-fledged disaster and the consequence of human and property damage. In the event of a disaster still occurring & to manage the same so that the risk of the damage to life and property is minimized.

- Proponent has a demented procedure for Emergency Preparedness & Responses. The emergency situations arising out of the situations as defined in the clause shall be addressed in the documents.

The salient features are elaborated as below: -

- Effect the rescue and medical treatment of casualties;
- Safeguard other peoples;
- Minimize damage to property and the environment;
- Identify and dead;
- Initially contain and ultimately bring the incident under control;
- Provide for the needs of relatives;
- Secure the safe rehabilitation of affected area; and
- Preserve relevant records and equipment for the subsequent inquiry into the cause and circumstances of the emergency.

In effect, it is to optimize operational efficiency to rescues rehabilitation and render medical help and to restore normalcy.

Formation of Emergency Cell: It is recommended to setup an emergency Cell, a senior executive (Mine Manager) who has control over the affairs of the mine would be heading the emergency organization. He would be designated as Site Controller. As per the General Organization chart, in the mines, the Mines Manager would be designated as the Incident Controller. The incident controller would be reporting to the site controller. Each Incident Controller, for himself, organize a team responsible for controlling the incidence with the personnel under his control. Shift In-charge would be the reporting officer, who would bring the incidence to the notice of the Incidence Controller and Site Controller.

Emergency Co-coordinators would be appointed who would undertake the responsibilities like firefighting, rescue, rehabilitation, transport and provide essential and support services. For this purposes, Security In charge, Personnel Department, Essential services personnel would be engaged. All these personnel would be designated as key personnel. In each shift, electrical supervisor, electrical filters, pump house in-charge and other maintenance staff would be drafted for emergency operations. In the event of power or communication system failure, some of staff members in the mine officers would be drafted and their services would be utilized as

messengers for quick passing of communications. All these personnel would be declared as essential personnel. Following officers of the mines will be responsible for co-ordination in case of emergency situated in any section of the mine. Emergency responses are given in below **Table 6.4**

TABLE No. 6.4: EMERGENCY RESPONSES

Person	Responsibility
Head of the department/Mine Agent	Site Controller
Section In-charge/Mine Manager	Accident Controller/Communication officer
Employee who gives the first information about the incident/accident	Primary Controller
P and A Department (HOD)	Liaison officer

Emergency Communication: Whoever notices an emergency situation such as fire, growth of fire etc. would inform his immediate superior and Emergency Control Center. The person on duty in the Emergency Center would appraise the Site Controller. Site Controller verifies the situation from the Incident Controller of that area or the Shift In-charge and takes a decision about an impending On Site Emergency. This would be communicated to all the Incident Controllers, Emergency coordinators. Simultaneously, the emergency warning would be activated on the instructions of the Site Controller.

Key Personnel and their Responsibility:

Site Controller: - The head of the department/mine agent shall have an overall responsibility for controlling the incident/accident and directing the personnel.

- To inform statutory bodies of the State and Central Government;
- To inform communication officer about the emergency, control center and assembly point;
- To provide all assistance and call for Fire Squad, Security Officer and other services required for removing/control of danger;
- To ensure that all necessary personnel assemble at assembly point; and
- To make arrangements for medical treatment to the personnel got injured seriously.

Accident Controller/Mine Manager:-

- Mock rehearsal of management plan prepared for accident;
- To withdraw men/machines from the affected area with priority for safety of personnel, minimize damage to the machines, environment and loss of material;
- To act as an accident controller to all the later arrived;
- To make a report based on the facts and figure and submit to the Site Controller; and
- To communicate to the site in-charge and make arrangement for transportation of the injured personnel.

Primary Controller: -

- To inform the Accident Controller/Mine Manager from the nearest means of communication about the location and the nature of accident;
- To assist in clearing any obstruction in relief of accident;
- To carry out all instructions of accident controller; and
- To provide first and treatment and communicate to the shift in charge.

Emergency Facilities: Emergency Control Center (ECC):- For the time being, Mine Office Block is identified as Emergency Control Center. It would have external Telephone, Fax, and Telex facility. All the Site Controller/Incident Controller Officers, Senior Personnel would be located here. Also, it would be an elevated place. The following information and equipment are to be provided at the Emergency Control Center (ECC):

- Telephone;
- Safe contained breathing apparatus;
- Hand tools, wind direction/velocities indications;
- Public address megaphone, hand bell, telephone directories;
- Plan indicating locations of hazard inventories, sources of safety equipment, work road plan, assembly points, rescue location vulnerable zones, escape routes;
- Hazard chart;
- Emergency shut-down procedures;
- Nominal roll of employees;
- List of key personnel, list of essential employees, list of Emergency Coordinators;
- Duties of key personnel;
- Address with telephone numbers and key personnel, emergency coordinator, essential employees; and important address and telephone numbers including Government agencies, neighboring industries and sources of help, outside experts, population details around the Mine.

Assembly point:

- Number of assemblies depending upon the mine location would be identified wherein employees who are not directly connected with the disaster management would be assembled for safety and rescue. Emergency breathing apparatus, minimum facilities like water etc. would be organized.
- In view of the size of mine, different locations should be ear marked as assembly points. Depending upon the location of hazard, the assembly points are to be used.

Emergency Power Supply: There is electric line within the applied area. In the event of any supply failure, Diesel Generator will be provided, which is operated as soon as any power failure occurs. Thus water pumps, mine lighting and emergency control, administrative building and

other auxiliary services are connected to emergency power supply. In all the blocks flame proof type emergency lamps would be provided.

Fire Fighting Facilities: First Aid Fire-fighting equipment suitable for emergency should be maintained in each operation areas of the mine as per statutory requirements.

Location of Weather Monitor Wind Sock: On the top of the Administration block, Weather Monitor would be installed to indicate direction of wind for emergency escape.

Emergency Medical Facilities: Stretchers, gas masks and general first aid materials for dealing with chemical burns, fire burns etc. would be maintained in the medical center as well as in the emergency control room. Private medical practitioners help would be sought. Government hospital would be approached for emergency help.

First aid facilities would be augmented. Names of Medical Personnel, Medical facilities in the area would be prepared and updated. Necessary specific medicines for emergency treatment of Burns Patients and for those affected by toxicity would be maintained. Breathing apparatus and other emergency medical equipment would be provided and maintained. The help of nearby industrial management's in this regard would be taken on mutual support basis.

Ambulance: An ambulance with driver availability in all the shifts, emergency shift vehicle would be ensured and maintained to transport injured or affected persons. Number of persons would be trained in first aid so that, in every shift first aid personnel would be available.

Emergency Warning: Communication of emergency would be made familiar to the personnel inside the mine and people outside. An emergency warning system would be established.

Evacuation of Personnel: In the event of an emergency, unconnected personnel have to escape to assembly point. Operations a copy of deployment of employees in each shift. If necessary, persons can be evacuated by rescue teams.

All Clear Signal: Also, at the end of an emergency, after discussing with Incident Controllers and Emergency Co-ordinator, the Site Controller orders an all-clear signal. When it becomes essential, the Site Controller communicates to the District Emergency Authority, Police and Fire Service personnel regarding help required or development of the situation into an Off-Site Emergency.

Employee Information: During an emergency, employees would be warned by raising siren in specific pattern. Employees would be provided with information related to fire hazards, antidotes and first aid measures. Those who would designate as key personnel and essential employees

should be given training to emergency response.

Co-ordination with Local Authorities: Keeping in view of the nature of emergency, two levels of coordination are proposed. In the case of an Onsite Emergency, resources within the organization would be mobilized and in the event extreme emergency local authorities help should be sought. In the event of an emergency developing into an offsite emergency, local authority and District emergency Authority (normally the collector) would be appraised and under his supervision, the Offsite Disaster management Plan would be exercised. For this purpose, the facilities that are available locally, i.e. medical, transport, personnel, rescue accommodation, voluntary organization etc. would be mustered. Necessary rehearsals and training in the form of mock drills should be organized.

Mutual Aid: Mutual aid in the form of technical personnel, runners, helpers, special protective equipment, transport vehicles, communication facility etc. should be sought from the neighboring industrial management's.

Mock Drills: Emergency preparedness is an important aspect of planning in Industrial Disaster management. Personnel would be trained suitable and prepared mentally and physically in emergency response through carefully planned, simulated procedures. Similarly, the key personnel and essential personnel should be trained in the operations.

Important Information: Important information such names and address of key personnel, essential employees, medical personnel, transporters address, address of those connected with Offsite Emergency such as Police, local Authorities, Fire Services, District Emergency Authority should be prepared and maintained. The onsite emergency organization chart for various emergencies is shown in below Figure 6.2. The task of preparing the Offsite Emergency Plan lies with the district collector. However, the offsite plan will be prepared with the help of the local district authorities.

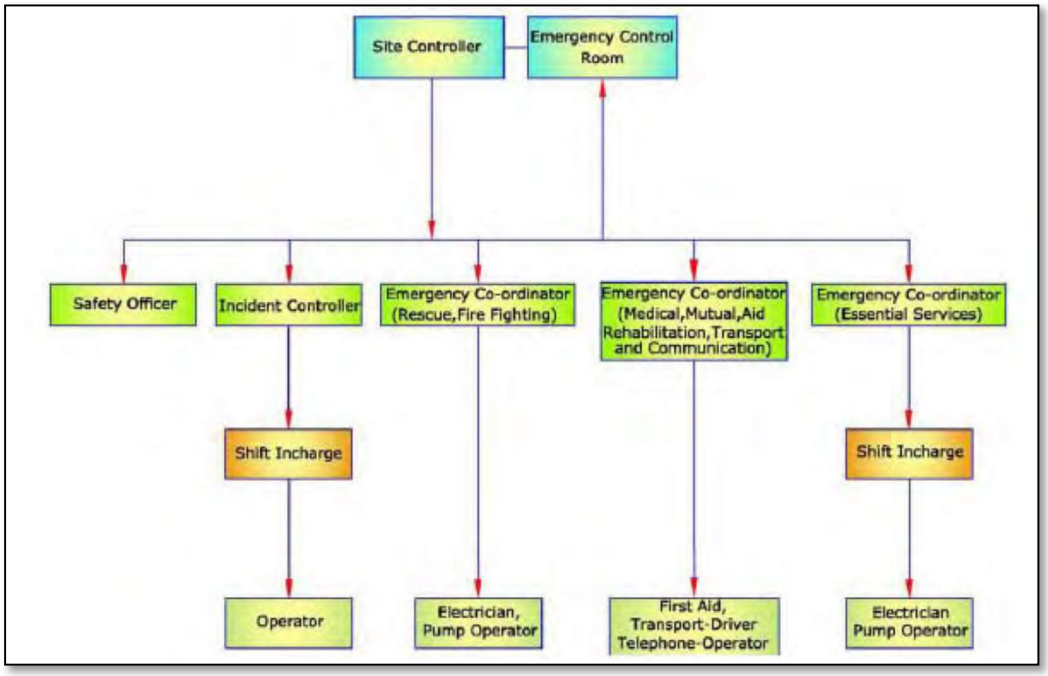


FIGURE No. 6.2: - ONSITE EMERGENCY PLAN

Aspects Proposed to be considered in the Offsite Emergency Plan

The main aspects which would be included in the emergency plan are: -

- Organization: - Details of command structure, warning systems, implementation procedures, emergency control centers, names and appointments of incident controller, site main controller, their deputies and other key personnel.
- Communications: - Identification of personnel involved, communication center, call signs, network, lists of telephone numbers.

Offsite Emergency Preparedness Plan

- Specialized Knowledge: - Details of specialist bodies, firms and people upon whom it may be necessary to call e.g. those with specialized knowledge of fire control;
- Voluntary Organizations: - Details of organizers, telephone numbers, resources etc;
- Chemical Information: - Details of the hazardous substances stored or procedure on each site and a summary of the risk associated with them;
- Meteorological Information: - Arrangements for obtaining details of whether conditions prevailing at the time and whether forecasts;
- Humanitarian Arrangements: - Transport, evacuation centers, emergency feeding treatment of injured, first aid, ambulances, temporary mortuaries;
- Public Information: -Arrangements for dealing with the media press office and informing relatives, etc;
- Assessment: - Arrangements for (a) collecting information on the causes of the emergency; (b) reviewing the efficiency and effectiveness of all aspects of the emergency plan.

Role of the Emergency Coordinating Officer: The various emergency services should be coordinated by an emergency coordinating officer (ECO), who will be designated by the district collector. The ECO should liaise closely with the site main controller. The ECO should inform the DGMS authorities in case of accidents as per the statutory requirement. Again depending on local arrangements, for very serve incidents/accidents with major or prolonged off-site consequences, the external control should be passed to a senior local authority administrator or even an administrator appointed by the central or state government.

Role of the Local Authority: The duty to prepare the off-site plan lies with the local authorities. The emergency planning officer (EPO) appointed should carry out his duty in preparing for a whole range of different emergencies within the local authority area. The EPO should liaise with the works, to obtain the information to provide the basis for the plan. This liaison should ensure that the plan is continually kept up to date.

It will be the responsibility of the EPO to ensure that all those organizations which will be involved off site in handling the emergency, know of their role and are able to accept it by having for example, sufficient staff and appropriate equipment to cover their particular responsibilities. Rehearsals for off-site plans should be organized by the EPO.

Role of Police: Formal duties of the police during an emergency include protecting life and property and controlling traffic movements. Their functions should include controlling bystanders evacuating the public, identifying the dead and dealing with casualties, and informing relatives of death or injury.

Role of Fire Authorities: The control of a fire should be normally the responsibility of the senior fire brigade officer who would take over the handling of the fire from the site incident controller responsibility for other events, such as explosions. Fire authorities in the region should be apprised about the location of all stores of flammable materials, water supply points and fire-fighting equipment. They should be involved in on-site emergency rehearsals both as participants and, on occasion, as observers of exercises involving only site personnel.

Role of Health Authorities: Health authorities, including doctors, surgeons, hospitals, ambulances, and so on, should have a vital part to play following a major accident, and they should form an internal part of the emergency plan. For major fires, injuries should be the result of the effects of thermal radiation to a varying degree, and knowledge and experience to handle this in all but extreme cases may be generally available in most hospitals. Major off-site incidents are likely to require medical equipment and facilities additional to those available locally, and a medical "mutual aid" scheme should exist to enable the assistance of neighboring authorities to be obtained in the event of an emergency.

Role of Government Safety Authority: This will be the factory inspectorate available in the region. Inspectors are likely to want to satisfy themselves that the organization responsible for producing the off-site plan has made adequate arrangements for handling emergencies of all types including major emergencies. They may wish to see well documented procedures and evidence of exercise undertaken to test the plan. In the event of an accident, local arrangements regarding the role of the factory inspector will apply. These may vary from keeping a watching brief to a close involvement in advising on operations.

Care and Maintenance during Temporary Discontinuance: If the mine will be discontinued temporarily for more than 120 days, notice will be given 30 days before the date of such discontinuance to the concerned authorities. During discontinuance period safety arrangement and fencing will be provided to avoid the entry of unauthorized persons and accessibility to the mine from the surface. The mine will be properly guarded by employing security guards. When the mine is temporarily discontinued due to any unforeseen circumstances the following care and maintenance shall be carried out: -

- Notice to be served to all the concerned authority;
- The mining pit area shall be covered by temporary fencing;
- All access roads/openings to the pit/face shall be closed by parapet wall as per rule;
- Warning shall be displayed on the "Notice Board" at appropriate places;
- Security personnel shall be posted at every danger point;
- No unauthorized person shall be allowed to enter into the mine without prior permission of the management;
- Mine benches shall be dressed and properly sloped for its stability;
- Garland drain shall be made all around the mine and dumps to prevent water flow towards mine for prevention of land slide/side fall and siltation etc.;
- All men and machinery shall be withdrawn from the mine and shall be kept in a compact and safe place; and
- All safety precautions shall be taken care of as per rule.

6.2 BUDGET AND PROCUREMENT SCHEDULE

The Project Proponent is quite conscious of its responsibility for maintaining clean and a healthy environment. The management is also keen to make efficient measures towards suppression of pollution sources. Adequate fund for pollution control measures are provided as a part of overall project financing to ensure the availability of proper treatment facilities. The recurring cost towards EMP for the project is assumed to be Rs 5.00 Lac as detail given below. The protection measures will be dynamic and subject to periodic review so that measures remain effective and appropriate. Table 6.5 gives the expenditure to be incurred by M/s Nilkanth Concast Pvt. Ltd on

environmental matters. The expenditure on environmental matters has been included in the total project cost.

TABLE NO. 6.5: EXPENDITURE ON ENVIRONMENTAL MANAGEMENT

<table>
<tr><th>Sr. No.</th><th>Description</th><th>Capital Cost (in Lac)</th><th>Recurring Cost per annum (Lac)</th><th>Basis for cost estimation</th></tr>
<tr><td>1</td><td>Air pollution monitoring</td><td>--</td><td>1.20</td><td>Ambient Air monitoring within lease area in pre- and post-monsoon season.</td></tr>
<tr><td>2</td><td>Water Quality analysis</td><td>-</td><td>0.40</td><td>Surface and sub-surface water @3000 per sample</td></tr>
<tr><td>3</td><td>Water requirement</td><td>--</td><td>1.00</td><td>Tanker water</td></tr>
<tr><td>4</td><td>Noise pollution control</td><td>--</td><td>0.40</td><td>Recurring cost includes monitoring cost of noise measurement at different locations.</td></tr>
<tr><td>5</td><td>Water conservation and management</td><td>1.00</td><td>0.60</td><td>Construction of garland drains around the mine pits.</td></tr>
<tr><td>6</td><td>Green belt</td><td>--</td><td>1.00</td><td>Cost Calculation
<table><tr><th>Greenbelt and Afforestation</th><th>Cost per sapling (Rs)</th></tr><tr><td>Digging pits and filling up of pit with nutrients</td><td>50</td></tr><tr><td>Saplings</td><td>25</td></tr><tr><td>Tree guard</td><td>150</td></tr><tr><td>Total</td><td>225</td></tr></table></td></tr>
<tr><td>7</td><td>Contribution towards construction and maintenance of the kachha roads after consultation with the concerned gram Panchayat and local people</td><td>--</td><td>0.40</td><td>--</td></tr>
<tr><td colspan="2">Total</td><td>1.00</td><td>5.00</td><td>--</td></tr>
</table>

7.1 INTRODUCTION

As per the Terms of Reference (ToRs) granted for the preparation of the Environmental Impact Assessment (EIA) report vide letter no. F1 (4)/SEIAA/SEAC-Raj/Sectt/Project / Cat. B1(15503)/ 2019-20, desired to carried out as additional study is Public Consultation.

7.1.1 Public Consultation

The said draft EIA/EMP is being submitted for conduction of Public hearing as per the ToR issued by SEAC (Rajasthan) vide letter no. F1 (4)/SEIAA/SEAC-Raj/Sectt/Project / Cat. B1(15503)/ 2019-20. The issues which will be raised during public hearing will be submitted along with the time bound action plan for the compliance with the final EIA/EMP report.

8.0 PROJECT BENEFITS

8.1. Introduction

Various benefits are envisaged due to the proposed mining project and after analysis of the existing socio-economic profile of the area vis-à-vis its scenario with proposed project activities following benefits are envisaged:

- As far as possible local person shall be employed. About 77 persons will be employed at the mine.
- Beside it, a significant contribution to government revenue. Few people would be engaged in providing support services to the mining operation including transportation of iron ore. Further the additional benefits from the downstream units such as building construction material for constructing houses, bridges and roads also will add value to the society.
- Strengthening of nearby Govt. schools by providing required things for social infrastructure buildup.
- Creation of community assets (infrastructure) like provision for drinking water, village roads/linked roads, market place etc.

8.2 EMPLOYMENT POTENTIAL

The main occupational activities in the area are agriculture, cattle rearing. Some villagers are also engaged in mining activity. Due to lack of local employment opportunity local people migrates to nearby cities. The proposed mining activity will help in providing employment to local people, resultantly will improve socio-economic status of the mining lease surrounding area. The local labors shall be engaged for mining of iron ore and loading and handling of mineral, besides watch & ward and plantation activity with proper maintenance. More employment also will generate as other associate activities like small shop of grocery, tea shop, bike and vehicle repair shop etc. Total manpower required for mining, material handling and loading works will be 77. Beside this, proponent shall engage skilled and managerial staff to meet the statutory requirement under MMR 1961 and MCDR 1988.

8.3 SOCIO- ECONOMIC BENEFITS

The propose mining will directly generate new employment (77 in number) and associate activity will also give an employment opportunity, which will have beneficial impact. The initiation of this mine will become a source of livelihood to the households of nearby villages namely Papra Kalan, Bhagoli, Sarai, Surpura etc., and will contribute towards improvement in living standards of the local people. Further, local people will be taken into confidence in all activities to redress their grievances, if any, and to meet their aspirations. The lessee will provide social welfare activities in and around the lease area. The social welfare activities will be planned in the following areas: -

- Medical Assistance
- Education
- Environmental Awareness Program

Beside this, the lessee will provide CER funds to Govt. Secondary School Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, for the required facilities. CER budget was prepared after consultation of local authority and their requirement.

9.1 ENVIRONMENTAL COST BENEFIT ANALYSIS

The importance of **environment** in our daily life is well known. The **cost benefit analysis** is a basic tool to understand the **mining** and **environment** phenomenon, it provides suitable development and stability in terms of economy.

Environmental cost benefit analysis is not recommended at the Scoping Stage ToR issued vide letter no. F1 (4)/SEIAA/SEAC-Raj/Sectt/Project / Cat. B1(15503)/ 2019-20 by the SEAC, hence it is not discussed in this chapter, although project benefits discussed in the chapter 8.

10.0 GENERAL

A project specific Environmental Management Plan has been formulated subsequent to a EIA study as per the requisite Terms of Reference to ensure that the appropriate environmental management practices are followed in compliance with the environmental legislation. The Environmental Management Plan (EMP) is a site-specific plan developed based on the base line environmental status, mining methodology and environmental impact assessment. Environmental Management for the mining activity is discussed for environmental impact pertains to the operational phase. After formulation EMP will be implemented throughout the project life cycle. An EMS (Environment Management System) provides a systematic framework and approach to minimize risk and manage environmental aspects (i.e. activities that cause impact) and impacts (i.e. affect change to the environment from activities). Environmental management plan details the environmental quality control measures which are proposed for this project.

The Environment Management Plan (EMP) aims to mitigate measures to restore and conserve the ecosystem of the possible adverse impacts due to said project. The mitigation steps are used to minimize negative impacts on environment due to project of Iron ore mining. The EMP contains planned improvements with adopting some control measures *viz.* fugitive dust reduction on roads, measures to alleviate the problems in affected villages near project area, planning for the sustainable development of the area/region etc.

Objectives of Environment Management Plan

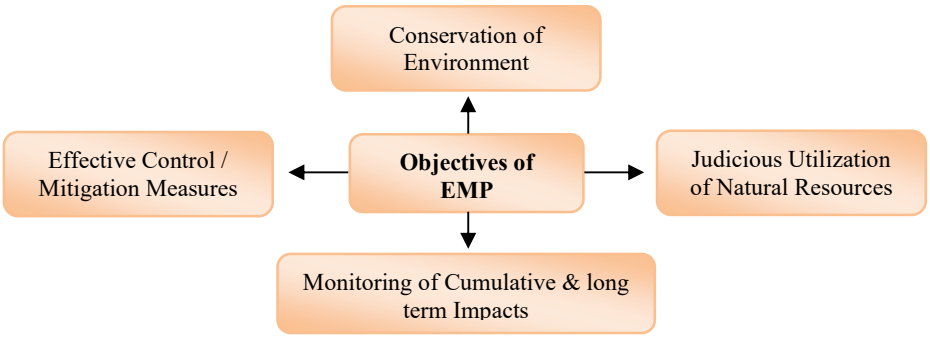


FIGURE 10.1: OBJECTIVE OF ENVIRONMENT MANAGEMENT PLAN (EMP)

10.1 ENVIRONMENTAL MONITORING CELL (EMC)

Keeping the utility of monitoring results in the implementation of the environment management programmes in view an organizational set up has been proposed as shown in **Figure 10.2**. Responsibilities will be assigned to specific person preferable Environmental Officer to co-ordinate the activities concerned with management and implementation of environment control measures. A centralized Environmental Monitoring Cell will be established for monitoring of

important and crucial environmental parameters which are of immense importance to assess the status of environment during mine operation. With the knowledge of initial parameters, deviations in environmental conditions due to operation of the mine will be assessed and suitable mitigation steps will be taken to safeguard the environment. The routine monitoring program will be implemented under the project monitoring as per CPCB guidelines. The core responsibilities of the Environmental Monitoring Cell will be: -

- To implement the environmental management plan,
- To assure regulatory compliance with all relevant rules and regulations,
- The organization and interpretation of the environmental monitoring data to establish a record of change associated with the implementation of a project or the operation of an organization.
- The process of verification that all or selected parameters measured by Environmental Monitoring Programmes are in compliance with regulatory requirements, internal policies and standards, and established environmental quality performance limits.
- The comparison of project impact predictions with actual impacts for the purpose of assessing the accuracy of predictions.
- The assessment of the effectiveness of the environmental management system, practices and procedures.
- The environmental monitoring and audit work will be carried out by qualified personnel.
- A summary of non-compliance of the environmental quality performance limits.
- To implement and monitor the control and protective measures based on the EMP.
- To coordinate the environment related activities to the top management within as well as with outside concerned agencies.
- To provide of health checkup of workers and the people living in nearby villages.
- To develop greenbelt around the mine lease area.
- Maintain documentation of good environmental practices and applicable environmental laws as ready reference.
- Maintain environmental related records.
- Coordination with regulatory agencies, external consultants, monitoring laboratories.

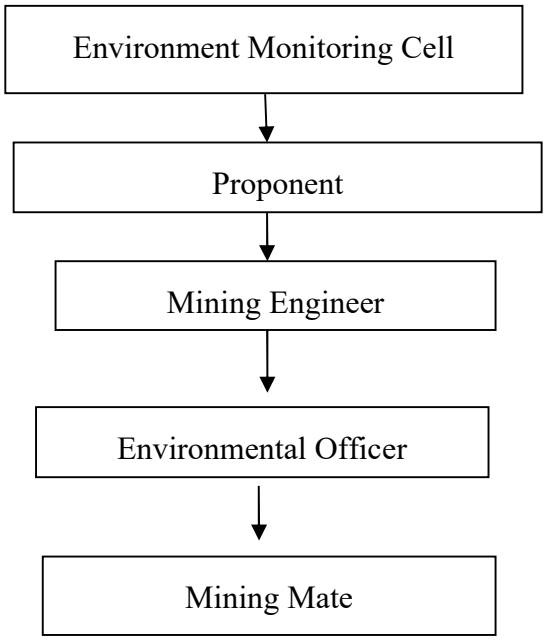


FIGURE 10.2 ORGANOGRAM

10.1.1 Environmental Monitoring and reporting procedure

Monitoring will conform that commitments are being met. This may take the form of direct measurement and recording of quantitative information, such as amount and concentrations of discharges. The objectives of the monitoring are: -

- Checking the effectiveness of planning decisions;
- Measure effectiveness of operational procedures;
- Conform statutory and corporate compliance; and
- Identify unexpected changes.

Critical activities for EMP Implementation

- Training and Environmental Awareness;
- Documentation and record keeping;
- Reporting Procedures;
- Stakeholder/ Project Proponent engagement;
- Auditing;
- Responding to Non-compliance

10.2 ROLES & RESPONSIBILITIES

10.2.1 Proponent:

The proponent will be over all responsible to implement all necessary environmental laws as per applicable and to comply EC/CTO conditions. Beside this, any changes made by the MOEF &CC/SPCB/CPCB/State DMG or any other concern authority through Gazette Notification, Office Memorandum, Circular will comply them time to time as per given specific time frame and will coordinate and ensure to comply EMP through Environment Monitoring Cell. Proponent is supposed to monitor his "Environmental Monitoring Cell" closely to prevent any risk and disaster during mining activity. Proponent will also check regularly all environmental related data/information/record and will keep as per QMS.

10.2.2 Mining Engineer (ME)

He will work as Environmental Head on behalf of Proponent and will carried out and fulfill all EC conditions and will comply them timely. He will be responsible to keep environmental record, timely environmental monitoring and baseline data generation. He will keep all environmental data/information/record on behalf of PP. He will instruct to Environmental officer to generate environmental baseline data, finalize the monitoring locations, health, security, safety and sanitation of workers in consultation. Where ever, he feels any risk hazard prone area will put sign board and wire fence the area. He will be over all incharge during any disaster and rescue the all labor from the site with utmost care and same time will inform to PP and local concern govt. bodies. In case of any disaster, will follow the Disaster Management Plan.

10.2.3 Environmental Officer

He will strictly work under the ME and will generate environmental baseline data. He will be in constant touch with the local people and mine workers in respect to health (occupational dieses). He will also take care of Environmental awareness program, supply of drinking water to mine labor and sanitation. He will also take care of plantation, timely watering and replacement of dead plants. He will regularly update himself by changing environmental laws and will inform to ME.

10.2.4 Mining Mate

Mining Mate as he is always at site during mining activity, if any risk hazard occurred due to any reason will inform directly to ME and Environmental Officer. In case of any mishappening or disaster will help in vacate the area.

10.3 DOCUMENTS AND RECORD KEEPING

Every Organization has to follow certain guidelines and accordingly need to prepare QMS in which Quality procedure (QP), Standard Operative Procedures (SOPs) are the major components. It is necessary to keep record, their documenting, activity, in-out going documents, proper filing numbering with nomenclature including an environmental compliance file. Indexing of file should be done in such a manner that easily available in case of any emergency. The responsibility of proper documentation of files will be done by concern officer and over responsibility will be of Mining Engineer on behalf of Proponent.

==========

11.1 SUMMARY OF THE PROJECT

11.1.1 Justification of the Project

Location of the Project: Iron Ore mining project of M/s. Nilkanth Concast Pvt. Ltd. having mine lease number 10/98 falling in Survey of India toposheet no. 45M/9 having area of 4.945 Hectare with proposed annual production capacity 1,50,700 TPA (ROM) located at Khasra No. 1583, 1601, 1582, 1602, 1604, 1606, 1566, 1567, 1568, 1569, 1570, 1571 near village- Bhagoli, Tehsil: Udaipurwati & District: Jhunjhunu, Rajasthan.

Latitude & Longitude	**Pillar No.**	**Latitude (N)**	**Longitude (E)**
	A.	27°45' 28.86" N	75°41'45.01" E
	B.	27°45' 19.94" N	75°41'32.92" E
	C.	27°45' 22.82" N	75°41'30.24" E
	D.	27°45' 31.74" N	75°41'42.33" E
Toposheet No.	45M/9, 45M/10, 45M/13 & 45M/14		

***Project Proponent and Mine Lease details*:** Initially the lease was granted in favor Sh. Bajrang Kumar Bansal S/o Sh. Mahaveer Prasad Agrawal vide government order P-17(32) Khan/Group-1/2002 on dated 10/05/2002 and registered on 31/10/2002 for 30 years i.e: 30/10/2032.
Further lease was transferred in favor of M/s. Nilkanth Concast Pvt. Ltd. vide order no. P 17(32)/Khan/Group-2/2000-Part on dated 10/10/2013 and executed on 22/11/2013 and registered on 04/12/2013. Later on, Lease period was extended for 50 years i.e: **31/10/2052** vide letter dated 20/02/2015. Copy of Lease Documents is enclosed as '***Annexure –II(A)***' with this Draft EIA/EMP report. Review Mining Plan for period 2017-18 to 2021-22 was approved by Regional Controller of Mines, Indian Bureau of Mines Ajmer vide letter no 584(4)(3)(1731)/2018 RCM-AJM on dated 27/04/2018.

Requirement of EIA: As per EIA Notification, dated 14th September, 2006 Environmental Clearance (EC) for mining activity is required from the Ministry of Environment & Forests, Government of India MoEF&CC/SEIAA and further as per the MoEF & CC Gazette vide S.O.3977 (E) dated 14th August 2018 falls under Category "B1" Schedule 1 (a).

Mineral Reserves and Production Capacity: The mineable (proved & probable) reserves are 8,05,810 MT with the targeted production of 1,50,700 TPA (ROM) production capacities for period of 5 year duration. On the basis of production capacity, life of mine is 6.62 years.

Project Capital and other Cost: (i) Project Cost – Rs. 1.00 Crore (ii) Environmental Protection Measure Cost – Rs. 5.00 lac

Mining Method and relevant details:

TABLE No. 11.1: MINING METHOD AND RELEVANT DETAILS

Sr. No.	Details	
i	Method of Mining	Open cast Semi Mechanized
ii	Depth of Mining	Deposit 1 mining will take place from elevation of 410 mRL depth of mining will be 30 m bgl (380 mRL) Deposit 2 mining will take place from elevation of 428 mRL depth of mining will be 48 m bgl (380 mRL)
iii	Over all Pit Slope	45^{o}
iv	Elevation Range	430-410 mRL
v	Ground Water Table	Pre-Monsoon season - 45 m bgl Post-Monsoon season - 40 m bgl
vi	Interception of Water Table	No
vii	Water Requirement	7.50 KLD (2.70 KLD for domestic use 1.00 KLD for dust suppression and 3.80 KLD for green belt development)
viii	No. of Working days	300
ix	Total Employment	77
x	Nature of Employment	Local labor
xi	Number of shifts per day	01 (8 hours)
xii	Waste Generation	At the end of fifth year as per the approved review of mining plan 77,870 MT of the waste will be generated which will be dumped in the lease area.

Environmental Settings (with respect to lease boundary)

TABLE No. 11.2: ENVIRONMENTAL SETTINGS

Environmental Settings Details (with aerial distance & direction from the mining lease boundary)		
1.	Nearest Village	Papra Village is at a distance of 1.23 Km towards SW direction from M.L. area. Bhagoli Village is at a distance of 1.70 Km towards NW direction from M.L. area.
2.	Nearest Town	Neem Ka Thana is at a distance of 7.85 Km towards ESE direction from M.L. area.
3.	Nearest Highway	• SH-37 B which is at a distance of 6.30 Km towards SE direction from M.L. area. • SH-13 which is at a distance of 9.60 Km towards East direction from M.L. area.
4.	Nearest Railway Station	Neem Ka Thana Railway Station at a distance of 8.40 Km towards ESE direction from M.L. area.

5.	Nearest Airport	Jaipur International Airport at a distance of 103.25 Km towards South direction from M.L. area.
6.	National Parks, Wild Life Sanctuaries, Biosphere Reserves etc.), Reserved /Protected Forest within 10 Km radius study area.	No, National Parks, Wildlife Sanctuaries, Biosphere Reserves etc.), within 10 Km radius study area. Kankriya Block Protected Forest — At a distance of 3.22 Km towards NW direction from M.L. area Kankriya Block Protected Forest — At a distance of 4.85 Km towards West direction from M.L. area Norangpura Block Protected Forest — At a distance of 4.60 Km towards North direction from M.L. area Kankriya Block Protected Forest — At a distance of 7.71 Km towards NW direction from M.L. area Chichdoli Protected Forest — At a distance of 7.90 Km towards NE direction from M.L. area Few Reserve & Protected Forest fall within 15 km radius of the mine lease area: -
7.	Water Bodies within 10 km radius	**Water bodies:** Kantli River — At a distance of 0.35 Km towards West direction from M.L. area Water Body Near Village Mavanda Tarla — At a distance of 7.90 Km towards NE direction from M.L. area Chandrabhaga River — At a distance of 8.83 Km towards SE direction from M.L. area Khakli Nala — At a distance of 9.65 Km towards North direction from M.L. area Kantli River — At a distance of 0.35 Km towards West direction from M.L. area
8.	Places of Archaeological importance	No archaeological importance place fall within 10 km radius of the said mining lease boundary.
9.	Seismic Zone	Seismic Zone- II (as per IS 1893 (Part-I): 2002) ***(Source: National Disaster Management Authority www.ndma.gov.in/en/zone-map.html)***

11.1.2 Local Geology: Reconnaissance of geological aspect was done in the area and following geological sequence has been observed as follows: (i) Thin Soil Cover or no soil cover (ii) Red Ochre

Land use pattern (end of life of mine):

TABLE NO. 11.3: LAND USE PATTERN AT END OF LIFE

S. No.	Description	Land Use (In Ha.)				
		Plantation	Water Body	Public Use	Undisturbed	Total
1.	Top Soil Dump	--	--	--	--	--
2.	Overburden Dump	0.1500	--	--	--	0.1500
3.	(a) Excavation (Voids)	--	1.8600	--	--	1.8600

	(b) Excavation (backfilled)	--	--	--	--	--
4.	Road	--	--	0.2000	--	0.2000
5.	Infrastructure	--	--	0.0100	--	0.0100
6.	Township Area	--	--	--	--	--
7.	Greenbelt	1.632	--	--	--	1.6320
8.	Crusher Plant	--	--	--	--	--
9.	Undisturbed Area	--	--	-	1.0930	1.0930
	Total	**1.782**	**1.8600**	**0.2100**	**1.0930**	**4.9450**

Source: *Approved Mining Plan with Mine Closure Plan*

11.1.3 Description of the Environment

For monitoring the environmental parameters like meteorology, air, water, soil and noise quality, the monitoring stations have been established at six locations in the study area. Additionally, one station was selected for surface water sampling. The baseline data has been collected in the winter season (December 2020 to February 2021). The detail of the sampling locations is given in below Table: -

TABLE NO. 11.4: DETAILS OF SAMPLING LOCATIONS WITHIN 10 KM RADIUS OF THE STUDY AREA

Location	Direction	Ambient Air	Surface Water	Ground Water	Noise	Soil
Near Mine Site	Core Zone	AAQ1	--	--	NQ1	SQ1
Near to Mine Site: Dhani (180 Mtr downwind)	SE	AAQ2	--	GW1	NQ2	SQ2
Near Road Junction (Neem Ka Thana Road)	North	AAQ3	--	GW2	NQ3	SQ3
Bhagoli	NW	AAQ4	--	GW3	NQ4	SQ4
Papra	SW	AAQ5	--	GW4	NQ5	SQ5
Sarai	NE	AAQ6	--	GW5	NQ6	SQ6
Neem Ka Thana	ESE	AAQ7	--	--	--	--
Pachlangi	SSW	--	--	GW6	--	--

Land Environment: The land use pattern of the study area based on the latest satellite imagery is given below: -

TABLE NO. 11.5: LAND USE BREAKUP OF THE STUDY AREA

Sr. No	Class	Area in Sq.m.	(Area)%
1.	Urban	53,26,674	1.61
2.	Rural	65,04,027	1.97
3.	Water Bodies	1,47,539	0.04
4.	Mining/Mine Dump	2,22,310	0.07

5.	River	1,76,91,766	5.36
6.	Flood Plain	2,45,74,901	7.44
7.	Irrigation	91,12,250	2.76
8.	Wastelands/Scrubs Land	21,11,33,128	63.91
9.	Moderately Dissected Hills	32,68,665	0.99
10.	Highly Dissected Hills	5,23,66,396	15.85
Total		**33,03,47,657**	**100**

Source: *Resource Sat-2 Satellite Imagery*

Soil Quality: Soil samples were collected from six representative sampling locations. The samples collected are analyzed at NABL / MoEF&CC accredited laboratory and analysis results are given in '***Annexure X'.***

The soil analysis results are given below: - Monitoring data shows that the texture of soil at the locations is Yellowish Brown. The monitoring sites have moisture ranging between 3.1 % to 7.2 %.

- The data shows that value of pH ranges from 7.9 to 8.2.
- Nitrogen, Phosphorous & Potassium (NPK) level of soil ranges from 105 to 141 kg/ha, 28 to 73 mg/100gm and 121 and 380 mg/100gm respectively.

Water Environment: Six ground water samples have been considered in the study area. The analysis results are presented below: -

TABLE No. 11.6: GROUND WATER ANALYSIS, STUDY PERIOD WINTER SEASON (DECEMBER 2020 TO FEBRUARY 2021)

S. No.	Parameters	Unit	Date of Sampling	GW1	GW2	GW3	GW4	GW5	GW6	Acceptable Limits as per IS 10500 :2012	Permissible Limits as per IS 10500 :2012
1	pH	-	24/02/2021	7.6	7.7	7.6	7.8	7.8	7.7	6.5-8.5	NR
2	Colour	Hazen Unit		<5	<5	<5	<5	<5	<5	5	15
3	Odour	-		Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU		<1	<1	<1	<1	<1	<1	1	5
5	Conductivity	mS/cm		1411	1385	1285	1413	1389	1419	--	--
6	Total Dissolved solids (TDS)	mg/l		901	793	758	910	884	893	500	2000
7	Total Alkalinity	mg/l		375	289	215	382	341	389	200	600
8	Total Hardness (as CaCo3)	mg/l		470	368	303	472	425	482	300	600
9	Nitrate	mg/l		4.2	2.5	3.2	5.8	3.4	4.4	45	NR
10	Chloride (as Cl)	mg/l		210	195	159	214	190	215	250	1000
11	Potassium (as K)	mg/l		3.2	3.6	4.0	3.5	4.1	3.8	45	NR
12	Sulphate	mg/l		70	65	49	75	68	70	200	400
13	Fluoride (as F)	mg/l		0.1	0.1	0.1	0.2	0.1	0.1	1	1.5
14	Sodium (as Na)	mg/l		106	103	95	108	98	105	-	-
15	Magnesium (as Mg)	mg/l		39.05	40.08	38.6	31.5	40.1	36.8	30	100
16	Calcium (as Ca)	mg/l		125	136	121	128	120	127	75	200
17	Phenolic Compounds	mg/l		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.002
18	Iron as Fe	mg/l		<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	1.0	NR

Air Environment: To assess the baseline status of the air quality in the study area systematic ambient air quality monitoring has been carried out for criteria pollutants (PM_{10}, $PM_{2.5}$, NO_X, SO_2,) at seven representative ambient air quality monitoring stations.

Meteorology: The recorded meteorological data for the study period at mine site is given below:-

TABLE NO. 11.7: METEOROLOGY AT SITE (WINTER SEASON- DECEMBER 2020 TO FEBRUARY 2021)

Month	Temperature (^{0}C)		Relative Humidity (%)		Wind Speed (m/sec)	
	Max.	Min.	Max.	Min.	Max.	Min.
December	24.06	5.85	89.41	20.3	6.89	0.45
January	24.18	7.51	86.71	27.29	4.8	0.40
February	31.79	9.52	82.05	15.13	8.25	0.40

Ambient Air Quality: Ambient air quality monitoring has been carried out with a frequency of two days per week at seven locations covering one complete season i.e. December 2020 to February 2021 (Winter Season). The summary of these results for all the locations is given below. These are compared with the standards prescribed by Central Pollution Control board (CPCB) for rural and residential zone.

TABLE NO. 11.8: AMBIENT AIR QUALITY MONITORING RESULTS STUDY PERIOD – WINTER SEASON (DECEMBER 2020 TO FEBRUARY 2021)

Station Name	Sampling Location	PM_{10} (µg/m^3)				$PM_{2.5}$ (µg/m^3)				NAAQS Ind., Res, Rural & Other
		Min	Max	Avg.	98%	Min	Max	Avg.	98%	
AAQ1	Near Mine Site	41.3	50.1	45.16	49.47	22.5	30.2	25.77	29.91	**100 µg/m^3 (PM_{10}) 60 µg/m^3 ($PM_{2.5}$**
AAQ2	Near to Mine Site: Dhani (180 m downwind)	41.6	51.4	45.30	51.11	21.8	30.4	25.45	30.26	
AAQ3	Near Road Junction (Neem Ka Thana Road)	46.8	55.8	50.12	54.52	24.3	32.9	28.23	32.49	
AAQ4	Bhagoli	42.6	52.4	46.42	52.07	23.6	31.6	28.10	31.51	
AAQ5	Papra	43.9	54.8	48.93	54.49	25.7	35.6	30.43	35.33	
AAQ6	Sarai	47.4	58.6	52.96	58.60	27.4	38.7	33.69	38.36	
AAQ7	Neem Ka Thana	65.6	78.9	71.48	78.63	35.8	45.6	40.91	45.49	
Range		**41.3 – 78.9**				**21.8 – 45.6**				

All values are expressed in µg/m^3

Station Name	Sampling Location	SO_2 (µg/m^3)				NO_2 (µg/m^3)				NAAQS Ind., Res, Rural & Other
		Min	Max	Avg.	98%	Min	Max	Avg.	98%	
AAQ1	Near Mine Site	4.78	5.2	4.91	5.14	9.17	12.4	10.68	12.35	**80µg/m^3 ($SO_2$and NO_2)**
AAQ2	Near to Mine Site: Dhani (180 m downwind)	4.9	5.4	5.16	5.39	9.5	12.8	10.66	12.41	
AAQ3	Near Road Junction (Neem Ka Thana Road)	5.6	6.9	6.01	6.78	11.7	14.5	12.78	14.32	
AAQ4	Bhagoli	5.00	6.3	5.73	6.29	10.5	13.7	11.92	13.49	
AAQ5	Papra	5.3	6.6	5.76	6.46	11.08	14.2	12.29	14.10	
AAQ6	Sarai	5.7	7.5	6.62	7.50	12.1	16.8	14.28	16.58	
AAQ7	Neem Ka Thana	7.6	9.8	8.46	9.71	15.4	20.2	17.49	20.06	
Range		**4.78 -9.8**				**9.17– 20.2**				
All values are expressed in µg/m^3										

Noise Environment: The noise monitoring has been conducted for determination of noise levels at six locations in the study area. The noise levels at each location were recorded for 24 hrs. The results obtained were compared with the national standards and were found to be within the standards. The collected data are: -

TABLE NO. 11.9: NOISE LEVELS IN THE STUDY AREA

Code	Date of Monitoring	Location	L_{day}	L_{night}
NQ1	22/2/2021	Mine Site	48.5	38.7
NQ2	23/2/2021	Dhani	47.1	38.3
NQ3	24/2/2021	Near Road Junction (Neem Ka Thana Road)	51.2	42.3
NQ4	25/2/2021	Bhagoli	51.8	43.4
NQ5	26/2/2021	Papra	49.4	40.7
NQ6	27/2/2021	Sarai	50.3	41.4
Range			**47.1 – 51.8**	**38.3 – 43.4**

Socio-Economic Environment: The study area includes the 8 surveyed villages of Tehsil – Udaipurwati, District – Jhunjhunu within 10.0 km radius of the study area.

TABLE NO. 11.10: SOCIO-ECONOMIC PROFILE OF THE SURVEYED VILLAGES

S. No.	Village Name	Number of Household	Total Population	Total Male	Total Female	Sex Ratio	SC Population	ST population	Total Literate	Literate		Total Worker	Total Worker		
										Male	Female		Main Worker	Marginal Worker	Non-Worker
Primary Zone + Secondary Zone (0-6 km)															
1.	Papra Kalan	529	3354	1771	1583	893	538	96	2099	1367	732	1421	902	519	1933
2.	Ranasar	89	466	236	230	974	103	0	259	167	92	314	216	98	152
3.	Naya bas	64	310	149	161	1080	27	0	207	113	94	136	130	6	174
4.	Gordhanpura	61	304	155	149	961	0	0	187	116	71	179	70	109	125
5.	Jagdishpura	150	876	484	392	809	0	50	518	344	174	411	229	182	465
Total		**893**	**5310**	**2795**	**2515**	**899**	**668**	**146**	**3270**	**2107**	**1163**	**2461**	**1547**	**914**	**2849**
Outer Zone(7-10km)															
6.	Bhopalpura	119	698	371	327	881	585	1	451	290	161	348	183	165	350
7.	Keroth	177	1025	516	509	986	1	30	597	366	231	591	274	317	434
8.	Narangpura	206	987	504	483	958	30	0	580	334	246	582	242	340	405
Total		**502**	**2710**	**1391**	**1319**	**948**	**616**	**31**	**1628**	**990**	**638**	**1521**	**699**	**822**	**1189**
Grand Total		**1395**	**8020**	**4186**	**3834**	**915**	**1284**	**177**	**4898**	**3097**	**1801**	**3982**	**2246**	**1736**	**4038**

Source: Socio-Economic Survey

Biological Environment:

TABLE NO. 11.11 LIST OF FLORA IN CORE ZONE

S. No.	Vernacular Name	Scientific name	Family
Trees			
1	Neem	*Azadirachtaindica*	Meliaceae
2	Khejari	*Prosopis cineraria*	Fabaceae
3	Ker	*Capparis deciduas*	Capparidaceae
4	Babool	*Acacia Nilotica*	Fabaceae
5	Vilayati Babool	*Prosopis juliflora*	Fabaceae
6	Ardu	*Ailanthus excelsa*	Simaroubaceae
7	Sisam	*Dalbergia Sisoo*	Fabaceae
8	Sainjna	*Moringa oleifera*	Moringaceae
Shrubs & Herbs			
1.	Datura	*Datura innoxia*	Solanaceae
2.	Gokhru	*Tribulusterrestris Linn*	Fabaceae (Papilionaceae)
3.	Thor	*Euphorbia nivulia ham*	Euphorbiaceae
4.	Ber	*Ziziphus mauritiana*	Rhamnaceae
5	Satyanashi	*Argemone mexicana*	Papaveraceae
6	Arand	*Ricinus communis*	Euphorbiaceae
7	Jhar Beri	*Ziziphus nummularia*	Rhamnaceae
8	Aak	*Calotropisgigantea R. Br.*	Asclepiadaceae
9	Guwar Patha	*Aloe vera*	Asphodelaceae
Grasses			
1.	Dab	*Desmostachyabipinnata*	Poaceae
2.	Bhurut	*CechrusBarbatus*	Poaceae
3	Doab	*Cynodon dactylon*	Poaceae

TABLE NO. 11.12 LIST OF FLORA IN THE STUDY AREA

S. No.	Vernacular Name	Scientific Name	Family
Trees/ Plants			
1	Aritha	*Sapindus*	Sapindaceae
2	Dhak	*Butea monosperma*	Fabaceae
3	Karanja	*Millettiapinnata*	Fabaceae
4	Aranda	*Ricinus communislinn*	Euphorbiaceae
5	Gum Arabic, Kumta	*Acacia Senagal*	Fabaceae
6	Ardu	*Ailanthus excels Roxb.*	Simaroubaceae
7	Jungal Jalebi	*Pithecellobiumdulce*	Fabaceae
8	Babul	*Aacia-nilotica*	Mimosaceae
9	Bargad	*Ficusbengalensislinn*	Moraceae

10	Khejari	*Prosopis cineraria*	Mimosaceae
11	Pipal	*Ficusreligiosalinn*	Moraceae
12	Vilayati Babool	*Prosopis juliflora*	Mimosaceae
13	Neem	*Azadirachtaindica a. Juss*	Meliaceae
14	Amaltas	*Cassia fistula Acacia*	Fabaceae
15	Ker	*Capparis deciduas*	Capparidaceae
16	Avla	*Emblica officianalis*	Euphorbiaceae
17	Kala Siras	*Albiziaprocera*	Fabaceae
18	Shesham	*Dalbergia sissoo*	FabaceaePapilionaceae
19	Gulmohar	*Delonix regia*	Caesalpiniaceae
20	Shahtoot	*Morus alba*	Moraceae
21	Imli	*Tamarindusindica*	Fabaceae (Leguminosae)
22	Karanj	*Pongamiapinnata*	FabaceaePapilionaceae
23	Ashok	*Polyalthialongifolia*	Annonaceae
24	Khajoor	*Phoenix sylvestris*	Arecaceae (Palmae)
25	Lasoda	*Cordia dichotoma*	Boraginaceae
26	Sainjna	*Moringa oleifera*	Moringaceae
27	Jamun	*Syzygium cumini*	Myrtaceae
28	Mahua	*Madhuca longifolia*	Sapotaceae
29	Aam	*Mangifera indica*	Anacardiaceae
30	Chandan/Sandalwood	*Santalum album*	Santalaceae
31	Lemon	*Citrus limon*	Rutaceae
32	Guava	*Psidium guajava*	Myrtaceae
33	Khajur / Date Palm	*Phoenix dactylifera*	Arecaceae
34	Desi Babool	*Indigeneous Acacia*	Fabaceae
Shrubs & Herbs			
1.	Ashwagandha	*Withaniasomnifera*	Solaniaceae
2.	Nagpahani	*Opuntia dillenii*	Cactaceae
3.	Kaner	*Nerium oleander*	Apocynaceae
4.	Satyanasi	*Argemone mexicana Linn*	Papervaceeae
5.	Badi Dudhi	*Euphorbia hirta Linn*	Euphorbiaceae
6.	Arand	*Ricinus communis*	Euphorbiaceae
7.	Jhar Beri	*Ziziphus nummularia*	Rhamnaceae
8.	Aakra	*Calotropis gigantea R. Br.*	Asclepiadaceae
9.	Gokhru	*Tribulus terrestris Linn*	Zygophyllaceae
10.	Ber	*Ziziphus mauritiana*	Rhamnaceae
11.	Nimbu	*Citrus aurantiifolia*	Rutaceae
12.	Kanti	*Acanthospermumhispidum*	Asteraceae
13.	Kali Musli	*Curculigo orchioides*	Hypoxidaceae
14.	Jungle Begun	*Solanum viarum*	Solanaceae

15.	Gwarpatha	*Aloe barbadensis*	Liliaceae
Grasses			
1.	Kans	*Saccharum spontaneum*	Poaceae
2.	Dab	*Desmostachya bipinnata*	Poaceae
3.	Doab	*Cynodondactylon*	Poaceae
4.	Gehusa	*Phalaris minor*	Poaceae
5.	Bhurut	*Cechrus barbatus*	Poaceae
Climbers			
1.	Amarbel	*Cuscuta approximata*	Convolvulaceae
2.	Giloy	*Tinospora cordifolia*	Manispermanceae

TABLE NO. 11.13 LIST OF FAUNA IN THE CORE ZONE

S. No.	Vernacular Name	Scientific name	Family	Status (IWPA 1972)
Aves				
1.	Baya Weaver	*Ploceus philippinus*	Ploceidae	Schedule IV
2.	Bank Myna	*Acridotheres ginginianus*	Sturnidae	Schedule IV
3.	Jungle Babbler	*Turdoidesstriatus*	Timaliinae	Schedule IV
4.	Rose-ringed Parakeet / Parrot	*Psittacula krameri*	Psittaculidae	Schedule IV
5.	House Sparrow	*Passer domesticus*	Passeridae	Schedule IV
6.	House Crow	*Corvussplendens*	Corvidae	Schedule - V
7.	Common Hoope	*Upupa epops*	Upupidae	--
8	Cattle egret	*Bubulcus ibis*	Ardeidae	Schedule IV
9	Common Myna	*Acridotherestristis*	Sturnidae	Schedule IV
10	Pigeon	*Columba livia*	Columbidae	Schedule IV
11.	Asian Koel	*Eudynamys scolopaceus*	Cuculidae	Schedule IV
Mammals				
1.	Striped squirrels	*Funambulus spp.*	Sciuridae	Schedule IV
2.	Common House Rat	*Rattus rattus*	Muridae	Schedule IV
3.	Indian Field Mouse	*Mus booduga*	Muridae	Schedule V
4.	Indian Hare	*Lepus nigricollis*	Leporidae	Schedule IV
Reptiles				
1.	Common garden lizard / Girgit	*Calotes versicolor*	Agamidae	Schedule V
2.	Dhaman	Ptyas mucosa	Colubridae	Schedule II

TABLE NO. 11.14 LIST OF FAUNA IN THE STUDY AREA

S. No.	Vernacular Name	Scientific name	Family	Status (IWPA 1972)
Avifauna				
1.	Bank Myna	*Acridotheres ginginianus*	Sturnidae	Schedule IV
2.	Red-vented bulbul	*Pycnonotidae*	Pycnonotidae	Schedule IV
3.	Large grey babbler	*Turdoidesmalcolmi*	Timaliinae	Schedule IV
4.	Indian Roller	*Coracias benghalensis*	Coraciidae	Schedule IV
5.	Intermediate egret	*Mesophoyx intermedia*	Ardeidae	Schedule IV
6	Red whiskered Bulbul	*Pycnonotusjocosus*	Pycnonotidae	Schedule IV
7	Red-wattled Lapwing	*Vanellusc indicus*	Charadriidae	Schedule V
8	House Crow	*Corvussplendens*	Corvidae	Schedule - V
9	Baya weaver	*Ploceusphilippinus*	Ploceidae	Schedule IV
10	Common Myna	*Acridotherestristis*	Sturnidae	Schedule IV
11	Pigeon	*Columba livia*	Columbidae	Schedule IV
12	Cattle egret	*Bubulcus ibis*	Ardeidae	Schedule IV
13	Jungle Babbler	*Turdoidesstriatus*	Timaliinae	Schedule IV
14	Grey Francolin	*Francolinus pondicerianus*	Phasianidae	Schedule IV
15	Common Indian Parrot	*Psittaculakrameri*	Psittaculidae	-
16	Common Hoopoe	*Upupa epops*	Upupidae	-
17	White throated Kingfisher	*Halcynosmyrnensis*	Alcedinidae	Schedule IV
18	Green bee-eater	*Merops orientalis*	Meropidae	-
19	House swift	*Apus affinis*	Apodidae	-
20	White eared Bulbul	*Pycnonotusleucotis*	Pycnonotidae	Schedule IV
21	Wire tailed swallow	*Hirundosmithii*	Hirundinidae	-
22	Laughing Dove	*Streptopelia senegalensis*	Columbidae	Schedule IV
23	House Sparrow	*Passer domesticus*	Passeridae	Schedule IV
24	Rose-ringed parakeet, Parrot	*Psittacula krameri*	Psittaculidae	Schedule IV
Mammals				
1	Striped squirrels	*Funambulus spp.*	Sciuridae	Schedule IV
2	Common House Rat	*Rattus rattus*	Muridae	Schedule IV
3	Indian Field Mouse	*Mus booduga*	Muridae	Schedule V
4	Nilgai	*Boselaphustragocamelus*	Bovidae	Schedule III
5	Indian Porcupine	*Hystrixleucura*	Hystricidae	Schedule IV
6	Common mongoose	*Herpestesedwardsii*	Herpestidae	Schedule II
7	Sheep	*Ovis aries*	Bovidae	LC

S. No.	Vernacular Name	Scientific name	Family	Status (IWPA 1972)
8	Goat	*Capra aegagrushircus*	Bovidae	LC
9	Common Gray Langur	*Presbytis entellus*	Cercopithecidae	Schedule II
10	Buffalo	*Bubalusbubalis*	Bovidae	LC
Reptiles				
1.	Common garden lizard / Girgit	*Calotes versicolor*	Agamidae	Schedule V
2.	Dhaman	Ptyas mucosa	Colubridae	Schedule II
3.	Indian Sand Boa	*Eryxjohnii*	Boidae	Schedule IV
4.	Indian Krait	*Bungarus Cacrulcus*	Elapidae	Schedule IV
5.	Indian Chameleon	*Chamaeleozeylanicus*	Chamaeleonidae	Schedule II
Amphibians				
1.	Indian Pond Frog	*Rana hexadactyla*	Dicroglossidae	Schedule IV
2.	Common Frog	*Rana tigrina*	Dicroglossidae	Schedule IV
3.	Common Indian toad	*Bufomelanostictus*	Bufoniade	Schedule IV
Butterflies				
1.	Common Grass Yellow	*Euremahecabe*	Pieridae	-
2.	Lime Butterfly	*Papilio demoleus*	Papilionidae	-
3.	Plain Orange Tip	*Colotis eucharis*	Pieridae	-

Source – Field observation

11.1.4 Anticipated Environmental Measures and Mitigation Measures

The summary of anticipated adverse environmental impacts due to the said project and mitigation measures are given below: -

TABLE NO. 11.15 ANTICIPATED ENVIRONMENTAL MEASURES AND MITIGATION MEASURES

Impact	Mitigation Measures
Land Environment	
Various components of land environment have been identified for study of impact of the mine operations. The impact of mining on land and soil can be assessed in following ways: - ➢ Change in landscape ➢ Soil and Land-use pattern ➢ Impact due to mining activities	➢ The landscape of the ML area will be disturbed by the proposed excavation. The topography will be characterized by excavated depressions/voids. The proposed mining will affect the mine active area only and would not affect the buffer zone.
Water Environment	

Surface Water: There is no seasonal water courses/nalla passing through the mine lease area. Water treatment is not expected as there will be no trade effluent to be discharged. Further, there is no river or any perennial water course in the applied area, diversion will not be required. Ground Water The ground water table in the mine lease area is at 40 - 45 m below general ground level. Mining will be done 10 m above ground water table. Hence ground water table will not be intersected due to mining activities. The water required for mining activities will be 7.50 KLD which will be sourced from nearby village Bhagoli through private water tanker. Thus, no impact on ground water quality is envisaged due to the said mining activity.	The rain collected in the pits after spell of rain will be used for plantation and dust suppression. At the end of life, excavated area will be used as a rain water pit. The following mitigation measures are suggested for water management and water pollution control. However, priority relevance depends on the location and type of mining and minerals. ➢ All the garland drains will be routed through adequately sized settling pits to remove suspended solids from flowing into storm water drains. The design of settling pits would be calculated on the basis of silt loading, slope and detention time required. ➢ Although no activities such as vehicle washing and maintenance is envisaged in the mines area.
Air Environment	
➢ Dust will be generated mainly during excavation, loading and unloading activities. ➢ Gaseous pollutants will be generated mostly by the traffic.	➢ It will be ensured that all the vehicles plying in the working zone are properly tuned and maintained to keep emissions within the permissible limits. ➢ At loading & unloading points and transportation routes, arrangement for water sprinkling will be made to minimize dust generation. ➢ In order to predict changes in the air quality, AERMOD model was used. The maximum incremental ground level concentrations of particulate matter PM_{10} from the different mining activities for the study period (winter season) were observed to be (Deposit 1- 4.81 $\mu g/m^3$) (Deposit 2- 5.09 $\mu g/m^3$) respectively. ➢ The resultant will remain within the National Ambient Air Quality Standards

	for industrial/ residential areas.
Noise Environment	
➢ Noise due to mining activities. ➢ Noise due to vehicular movement.	The noise levels from all these sources are periodical and restricted to particular operation. ➢ The noise measurement data indicated that present noise levels in the study area is within the permissible limits of National Ambient Noise Quality Standards. ➢ Thus, due to natural attenuation effects by proper green belt/ maintenance of machines etc., the impact of noise levels will be minimal.
Biological Environment	
➢ Impact on biodiversity ➢ Impact on threatened species	The core zone does not encompass any threatened flora or fauna species. No Schedule I species are present in study area. ➢ Only some common herbs, shrubs and grass will be cleared. So, there will be no impact on the biodiversity. ➢ About 1632 local and native species will be planted at the end of life of mine. ➢ Green belt development with suitable species will enhance the biodiversity of the project area.
Socio-Economic Environment	
➢ Employment generation ➢ Health impacts ➢ Education Facilities	➢ The mining activity puts negligible change in the socio-economic profile. ➢ No displacement (0) is proposed due to the masonry stone mine. ➢ Approx. 77 local workers will get employment opportunities along with periodical training to generate local skills. ➢ New patterns of indirect employment/ income will generate. ➢ Regular health checkup camp. ➢ Assistance to schools and scholarship to children will be provided.

11.1.5 Environmental Monitoring Programme

Air Environment: Air quality monitoring will be carried out as per norms of RSPCB and CPCB.

*Water Environment: R*egular monitoring of water quality will be carried out at suitable locations. Water samples will be collected two times in a year i.e. Pre - Monsoon, Post - Monsoon.

Noise Environment: Noise level will be recorded periodically at mine site near operating machines during day and night time.

Health and Sanitation: Periodical medical checkup of workers is being done and medical facility provided. Toilets and urinals will be provided near the mine site. Drinking water will be made available to the workers.

11.1.6 Additional Studies

Public Hearing: Public hearing will be conducted as per the ToR issued by SEAC (Rajasthan) vide letter no. F1 (4)/SEIAA/SEAC-Raj/Sectt/Project / Cat. B1(15503)/ 2019-20. The issues which will be raised during public hearing will be submitted along with the time bound action plan for the compliance with the final EIA/EMP report.

11.1.7 Risk assessment and management

Risk assessment and management: Risk analysis is the systematic study of uncertainties and risks encountered in various areas. Risk analysts seek to identify the risks involved in mining operations, to understand how and when they arise, and estimate the impact (financial or otherwise) of adverse outcomes. It also defines and analyzes the dangers to individuals, businesses and government agencies posed by potential natural and human-caused adverse events. However, there are various factors, which can create unsafe working conditions / hazards in mining. The components associated with risk and hazard in a masonry stone mining case include blasting, overburden, heavy machinery and explosive storage. Measures to reduce and avoid any incidents occurring from the above mentioned components are already planned and will be implemented as soon as the mine starts commissioning. This includes measures to avoid accidents during mining activity (excavation) and due to trucks and dumpers. The project does not involve storage of any chemicals or explosives and therefore risk associated with storage is not considered. Following procedure will be followed for effective management of any disaster in the mine.

Step 1: Identification of Disaster risk.

Step 2: Identification of persons at risk

Step 3: Removal of Hazard

Step 4: Evaluation of the risk
Step 5: Control measures to be taken
Step 6: Maintain Assessment records
Step – 7: Review

11.1.8 Project Benefits

- Improvement in physical infrastructure
- Improvement in Social Infrastructure
- Employment Potential
- Lessee will undertake community activities like health, camps, providing medical aids etc.
- Plantation is proposed to mitigate the ill-effects of mining and to improve the vicinity and environment of mine and its surrounding area.

11.1.9 Environmental Management Plan

Environmental Management Plan (EMP) aims at the reservation of ecological system by considering in built pollution abatement facilities at the mine site. Some of the major criteria governing the environmental measures will be adopted. The mine will be supervised and controlled by an independent Mines Manager supported by adequate team of technically and statutorily qualified personnel apart from the operating staff of skilled, semi-skilled, unskilled and other categories. This Environment Cell is responsible for the management and implementation of the environmental control measures. Basically, this department shall supervise the monitoring of environmental pollution levels viz. ambient air quality, water and effluent quality, noise level either departmentally or by appointing external agencies wherever necessary.
The working conditions in the mines are governed by the enactments of the Director General of Mines Safety (DGMS). As per the guidelines of the Mines Act, the management will take all necessary precautions. Normal sanitary facilities will be provided within the lease area. The management will carry out periodic health check-up of workers. As per the MoEF& CC Notification vide S.O 2269 (E) dated 1/7/2016 Point No. 4 page no. 5 the implementation of the Environment Management Plan shall be monitored at the interval of six months by the concerned State Environment Impact Assessment Authority.

11.2 CONCLUSION

Seeing the above facts and data reveals that there will no adverse impact on water quality, hydrogeology, soil, geology, biodiversity, air quality, risk hazards, Socio –economic status, noise & vibration and solid waste generation. There will be a visible change in the land use pattern in the mine lease area.

Positive impact is anticipated in terms of employment of local labor, 33% of plantation of native plants within and outside the lease area, utilization of excavated pit as water reservoir will recharge the ground water and so also will provide moisture to the lower lying agriculture land near to pits, no interception of water table, easily availability of mineral as raw material to the industries – a cost benefit.

A sustainable development of mining will be done by reducing dust at source from water sprinkling; labour will be provided with face mask, shoes and ear plugs at noisy place. Transportation mineral will be done through covered tarpaulin. PUC certified vehicle's will be allowed in the mine lease area, speed of vehicle will be restricted in the mine lease area and no over loading of vehicles will be practiced. Working will be done only in day time and there is no involvement of drilling and blasting. Air quality modeling was done for the area also does not predict higher concentration considering air quality parameters like PM_{10}, $PM_{2.5}$, traffic emission factors.

Seeing the very low or negligible adverse impact on ambient environment whereas as the positive impact due to this mining activity are more and is sustainable to the environment. Further, by suggesting various mitigation measures, possible adverse impact can be minimized, hence, we recommend the masonry stone mining project for Environment Clearance.

12.0 DISCLOSURE OF CONSULTANTS

The profile of the Consultant is given below:

12.1 About Fulgro Environmental & Engineering Services India Pvt. Ltd.

Fulgro Environmental & Engineering Services (I) Pvt. Ltd. (FEES) is one of the leading Environmental and Engineering Consultancy in India accredited and approved in 16 sectors by QCI-NABET. FULGRO works in the field of environmental engineering, natural resource management, earth sciences, waste water management, land-use, topographical surveys etc. with a vision of supporting clean and green environment with a sustainable development. We believe it is a privilege to work in the field of environmental consulting so as to help achieving sustainable environment. We aim to fulfil client expectations and excellent service delivery with quality.

12.1.1 Quality Policy

Fulgro Environmental & Engineering Services India Pvt. Ltd. to provide technically feasible and economically viable environmental services which will satisfy customer's requirement as well as statutory and regulatory requirements with the team of qualified & competent personnel. We shall also improve continually in all processes of QMS by providing training to all employees, reviewing performance regularly. We shall communicate our policy with our customers and vendors to achieve our objectives."

Quality Council of India

National Accreditation Board for Education & Training

CERTIFICATE OF ACCREDITATION

Fulgro Environmental & Engineering Services, Jaipur

27, Ashok Vatika, Khatipura Road, Jhotwara, Jaipur

Accredited as Category - A organization under the QCI-NABET Scheme for Accreditation of EIA Consultant Organizations: Version 3 for preparing EIA-EMP reports in the following Sectors:

Sl. No.	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1	Mining of minerals including open cast/ underground mining	1	1 (a) (i)	A
2	River Valley projects	3	1 (c)	B
3	Thermal power plants	4	1 (d)	A
4	Metallurgical industries (ferrous & non-ferrous)	8	3 (a)	B
5	Cement plants	9	3 (b)	A
6	Pesticides industry and pesticide specific intermediates (excluding formulations)	17	5 (b)	A
7	Petrochemical based processing (processes other than cracking & reformation and not covered under the complexes)	20	5 (e)	A
8	Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemical and chemical intermediates)	21	5 (f)	A
9	Oil & gas transportation pipeline (crude and refinery/ petrochemical products), passing through national parks/ sanctuaries/coral reefs / ecologically sensitive areas including LNG terminal	27	6 (a)	A
10	Isolated storage & handling of hazardous chemicals (As per threshold planning quantity indicated in column 3 of Schedule 2 & 3 of MSIHC Rules 1989 amended 2000)	28	6 (b)	B
11	Highway	34	7 (f)	A
12	Aerial Ropeways	35	7 (g)	B
13	Common Effluent Treatment Plants (CETPs)	36	7 (h)	B
14	Common Municipal Solid Waste Management Facility (CMSWMF)	37	7 (i)	B
15	Building and construction projects	38	8 (a)	B
16	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RA AC minutes dated Dec 12, 2019 posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/20/1189 dated Jan 22, 2020. The accreditation needs to be renewed before the expiry date by Fulgro Environmental & Engineering Services, Jaipur following due process of assessment.

Sr. Director, NABET
Dated: January 22, 2020

Certificate No.
NABET/ EIA/1922/ RA 0148

Valid till
Feb 09, 2022

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.

DETAILS OF THE PERSONNEL INVOLVED IN THE PRESENT EIA STUD

Sr. No.	Name	Qualification	Position	Contribution	Experience
1	Dr. Sanjay Raj	BSc Honours, MSc Geology, MSc Applied Petroleum Geology, PhD. Environmental Geology on Sanu Limestone, Jaisalmer	Director	Coordination (EIA Coordinator-Mining) FAE (Geo,LU,HG)	About 35 years of experience in the field of Environmental management.
2	Ms Neha Sharma	B.Tech Biotechnology, M.Tech (Env. Engg.)	Director (Projects)	Expert (FAE-AP,AQ, WP)	About 8 years of experience in the field of Environmental Management and Engineering
3	Ms. Prerna Sharma	B Sc.Biotechnology, MSc Environmental Technology	Manager	FAE (SW, EB)	About 7 years of experience in the field of Environmental Management.
4	Mr. Laxman Singh	B.A (Sociology) M.A (Geography)	Manager	Expert FAE (Socioeconomics)	About 6 years of experience in the field of Environmental Impact Assessment Studies.
5	Mr. Hanish Paniker	B Sc. Chemistry, MSc Environmental Technology	Emp. Expert	FAE (NV)	About 13 years of experience in the field of Environmental Impact Assessment Studies.
6	Ms. Komal Mishra	B Sc. Botany (Hons.), MSc Environmental Science	Junior Environmental officer	Project in-charge	About 1.5 years of experience in the field of Environmental Management.
7	Mr. Lovnish Thakur	B Sc., MSc (Botany)	Manager	Expert FAE (EB)	About 7 years of experience in the field of Environmental Management.
9	Awadesh Kumar	M.Tech (Env. Engg.)	Emp. Expert	FAE (SHW)	Around nine years of experience in the field of EIA report writing.

भारतीय गैर न्यायिक

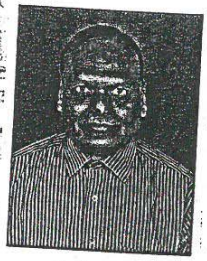
एक सौ रुपये

Rs. 100

ONE

रु. 100







भारत

INDIA NON

राजस्थान RAJASTHAN

T 566795



अनुमोदित
APPROVED

खअ/सीकर/रि/प्र/खप–10/1998

पूरक संविदा

यह नॉनज्युडिशियल स्टाम्प पेपर रूपये 100/– का श्री बजरंग कुमार बंसल **पुत्र श्री महावीर** प्रसार अग्रवाल निवासी मावण्डा आर.एस. तहसील नीमकाथाना जिला **सीकर के पक्ष** में खनन पट्टा वास्ते खनिज आयरनओर निकट ग्राम बागोली तहसील **उदयपुरवाटी** जिला झुन्झुनूं में क्षेत्र 4.945 (5.00 हैक्टर) का शासन के आदेश कमांक **प–17(32)**खान/ग्रुप–1/2002 दिनांक 10.05.02 एवं सम संख्या आदेश दिनांक 28.10.02 से अवधि संविदा पंजियन तिथि से 30 वर्ष हेतु स्वीकृत हुआ। जिसका संविदा निष्पादन दिनांक 19.10.02 को होकर पंजीयन दिनांक 01.11.02 को होकर खनन पट्टा 30 वर्ष हेतु प्रभाव में आया।

पट्टाधारी श्री बजरंग कुमार बंसल के पक्ष में संविदा निष्पादित क्षेत्र एवं आवंटित/स्वीकृत क्षेत्र के मूल सीमांकन दिनांक 01.08.2002 में भिन्नता पायी गई. कि स्थाई बिन्दु बालाजी की छतरी एवं इन्टर मिडियेट पॉईंट मदन सिंह के कुंऐ का सही कनेक्शन नहीं होना पाया गया तथा श्री बजरंग कुमार बंसल का सीमांकन करते वक्त बालाजी की छतरी से श्री मदन सिंह के कुंऐ तक का सीमांकन सही नहीं होना पाया गया। जिसकी मौके पर पुनः सीमांकन कर बालाजी की छतरी से कुंऐ की बियरिंग 234° दूरी 341 मीटर के अनुसार किया जाने पर शासन के पत्र कमांक प. 17(32)खान/ग्रुप–2/2000 दिनांक 30.11.2012 द्वारा मूल सीमांकन में एफ.आर. पी. से लीज पिलर की विवरण सूची में इन्टरमिडियेट स्टेशन स्थाई व निर्विवादित प्रकृति का होने पर एफ.आर.पी. से ऐसे स्थाई व निर्विवादित इन्टरमिडियेट स्टेशन को सीधा जी.पी.एस. से जोड़ने की अनुमती इस शर्त पर दी गई है कि क्षेत्र किन्ही अन्य

SUSHIL KUMAR
NOTARY
Regd. No.-
GOVT. OF IN

ATTESTED
11 JAN 2013
Notary Public, Sikar (Raj.)

अधीक्षण खान अभियन्ता
जयपुर वृत, जयपुर

ATTESTED

7166
1/08

बजरंग कुमार बंसल S/o महावीर
प्रसाद बंसल नि- माण्डा

M. L. SAINI
STAMP VENDOR
L. No. 14/01
NEEMKATHANA

R-S

14-12-12

14-12-12

क्षेत्रों से विरोधित होना नहीं पाया जाने पर बालाजी की छतरी से श्री मदन सिंह के कुंऐ की बियरिंग 234 व दूरी 341 मीटर लेकर क्षेत्र का पुनः सीमांकन हेतु निदेशालय के पत्रांक निखाभू/सीकर/सी.सी. 11/एम.एल. 10/98/1193 दिनांक 05.12.2012 से पुनः सीमांकन के आदेश दिये जने पर क्षेत्र का पुनः सीमांकन दिनांक 19.12.2012 को बालाजी की छतरी से श्री मदन सिंह के कुंऐ की बियरिंग छतरी से एक्स 280°–85', एक्स से वाई 195°–55', वाई से वैल 233°–225 मीटर के स्थान पर सीधे इन्टरमिडियेट कनेक्शन 234° व दूरी 341 मीटर से सही किया गया है।

अन्य शर्ते मूल संविद व प्रधान खनिज रियायत नियमावली 1960 व एम.एम. आर.डी. एक्ट 1957 व उनमें समय–समय पर होने वाले संशोधनानुसार मान्य होगी, तथा पट्टाधारी राज्य सरकार /भारत सरकार को देय होने वाले समस्त करों का एवं अधिक रॉयल्टी का नियमानुसार भुगतान करेगा।

आज दिनांक 10-1-2013 को मेरे द्वारा नीचे अंकित गवाहान के समक्ष पूरक संविदा का निष्पादन किया गया ।

प्रमाणित

हस्ताक्षर पट्टाधारी

खनि अभियन्ता, सीकर

अधीक्षण खनि अभियन्ता
जयपुर वृत जयपुर

राजस्थान के राष्ट्रपति की ओर से
अधीक्षण खनि अभियन्ता,
जयपुर वृत जयपुर

गवाहान–

1. SANDEP GUPTA S/O Shri Mahendra Gupta
Bunar Nainagar Bihar

2. GAJRAJ SINGH S/O SH. TARA SINGH
A-24, JAGDAMBA COLONY
AMBABARI JAIPUR

ATTESTED
11 JAN 2013
Notary (Raj.)

SUSHIL KUMAR NOTARY Regd. No. 3622 GOVT. OF INDIA

177 ANNEXURE-2

अनुमोदित
APPROVED

खा/सीकर प्र0/एप-10/98/

संविदा

यह नोट्र्ड प्रुडिशियल स्टाम्प पेपर रू0 1400/- अक्षरे रूपये एक हजार चार सो मात्र के किता नग एक रूपये एक हजार, नग तीन रूपये एक सो, के तथा एक रूपये तीस का व एक रूपये बीस का कुल नग सात खनन पटटा वास्ते खनिज आपरन ओर निकट ग्राम बागोली तह0 उदयपुरवाटी जिला झुन्झुनू मे क्षेत्र 4.9455 हैक्टर्स। सलग्न नक्शा व सीमांकन रिपोर्ट अनुसार अवधि संविदा पंजीयन की तिथी से बीस वर्ष के लिए स्थिर भाटक एम.एम.डी.आर एक्ट, 1957 की तृतीय अनुसूची के अनुसार एंव समय 2 पर संशोधन हो उसके अनुसार देय होगा तथा अधिशुल्क एक्ट की अनुसूची द्वितीय के अनुसार एंव उसमें होने वाले संशोधन के अनुसार देय होगी की शर्त पर शासन के आदेश क्रमांक प-17132 खान/ग्रुप-1/2000 दिनांक 10.5.02 से श्री बजरंग कुमार बंसल पुत्र श्री महावीर प्रसाद अग्रवाल निवासी ,मावन्डा (रेल्वे स्टेशन) तह0 नीमकाथाना जिला सीकर के पक्ष में स्वीकृत हुआ है, के साथ है।

अन्य शर्तें सलग्न संविदा व प्रधान खनिज रियायत नियमावली 1960 व एम0एम0आर0डी0एक्ट, 1957 व उनमें समय समय पर होने वाले संशोधनानुसार मान्य होगी । पटटाधारी राज्य सरकार/भारत सरकार को देय होने वाले समस्त करो का अधिक रोयल्टी का नियमानुसार भुगतान करेगा ।

हस्ताक्षर पटटाधारी

प्रमाणित

खनि अभियन्ता, सीकर

साक्षी:-

1. (B.S. Poonia S/o Sh. N.R. Poonia)
2.

M.L. 10/98 (1)

PORM K

MODEL FORM OF MINING LEASE

(See Rule 31)

THIS INDENTURE made this _____ day of _____

Years _____ between the Governor of RAJASTHAN/the President of India (hereinafter referred to as the "State Government" which expression shall where the context so admits be deemed to include the successors and assigns) of the one part and:-

(When the lessee is an individual)

Mr. श्री भंवरलाल कुमार वंसल पुत्र श्री मघराज अग्रवाल R/o सावजा (R.S.) तह० नीमकाथाना जिला सीकर

(Name of person with address & occupation) (Hereinafter referred to as "the lessee" which expression shall where the context so admits be deemed to include his heirs, executors, administrators, representatives and premitted assigns).

(When the Lessees are more than one individual)

Mr.----------

Mr.----------

(Name of person with address and occupation) (hereinafter referred to as "the lessee" which expression shall where the context so admits be deemed to include their respective heirs, executors, administrators, representatives and their permitted assigns).

(When the Lessee is a registered firm)

Mr.----------

Mr.----------

Mr.----------

खनि अभियन्ता
सीकर

Contd....2

Name and addresses of all the partners all carrying on business in partnership under the firm and name and style of M/S _____(name of firm) registered under the Indian Partnership Act, 1932 (9 of 1932) and having their registered Office at ----- ---------- in the town of (hereinafter referred to as "the licensee" which expression where the context so admits be deemed to include all the said partners their respective heirs, executors, legal representatives and permitted assigns).

(When the Lessee is a registered Company)

Mr.---------- ---------- (Name of Company) a company registered under---------- ---------- (Act under which incorporated) and having its registered Office at ---------- ---------- (Address)(here in after referred to as "the lessee" which expression shall where the context so admits be deemed to include its successors and permitted assigns) of the other part.

-a-

WHEREAS THE lessee/lessees has/have applied to the State Government in accordance with the Mineral Concession Rules, 1960 (herein after referred to as the said rules) for a mining lease for ---------- in respect of the lands described in Part 1 of the Schedule here under written and has/have/deposited with the State Government the sum of Rs. 10,000/- as security and the sum of Rs. 1000/- for meeting the preliminary expenses for a mining lease (and WHEREAS the Central Government has approved the grant of lease).

Contd...3

खनि अभियन्ता

WITNESSETH that in consideration of the rents and royalties, convenants and agreements by and in these presents and the Schedule hereunder written reserved and contained and on the part of the lessee/lessees to be paid observed and performed, the State Government (with the approval of the Central Government) here by grants and demises into lessee/lessees.

भारत सरकार-भारतीय खान ब्यूरो
सत्यमेव जयते
Govt.of India-Indian Bureau of Mines
अनुमोदित
APPROVED

All those the mines beds/veins seams of- ढाबापत्थर उत्तर

---(here state the mineral or minerals) (herein after and in the Schedule referred to as the said minerals) situated lying and being in or under the lands which are referred to in Part I of the said schedule, together with the liberties, powers and privileges to be exercised or enjoyed in connection here with which are mentioned in Part II of the said schedule subject to the restrictions and conditions as to the exercise and enjoyment of such liberties, powers and privileges which are mentioned in Part III of the said Schedule EXCEPT and reserving out of this demise into the State Government the liberties, powers and privileges mentioned in Part IV of the said Schedule TO HOLD the premises hereby granted and demised unto the lessee/ lessees from the date of registration/execution of this

lease deed or from _____ day _____ year _____

_____ for the term of सोलह (पंद्रह) वर्ष (years (सिर्फ) 2048.

hence next ensuring YIELDING AND PAYING therefore into the State Government the several rents and royalties mentioned in Part V of the said Schedule at the respective times therein specified subject to the provisions contained in Part VI of the said Schedule and the lessee/lessees hereby convenants/convenant with the State Government as in Part VII of the said Schedule is expressed and the State Government hereby convenants with the lessee/lessees as in Part VIII of the said Schedule as expressed AND it is hereby mutually agreed between the parties here to as in Part IX of the said Schedule is expressed.

IN WITNESS WHEREOF these presents have been executed in manner here under appearing the day and year first above written.

The Schedule above referred to :

PART I

THE AREA OF THIS LEASE

Location and area of the lease:-

All that tract of lands situated at ...पाटोली.... (Description of area or areas, ...4.945 (S.E.R.) in (Jurgna) in...उमरेठ.... the Registration District of ...खेड़ा.... sub-District..... and Thana...उमरेठ..... being Central survey Nos.45/P.9/10 .....containing an area 4.945 (S.E.R.) or thereabouts delineated in the plan hereto annexed and thereon coloured ....and bounded as follows:-

पश्चिम में सीमांकन पिलर उपलब्ध

खनि अधिकारी

Contd..:4

On the North by
On the South by
On the East by
and
On the West by
herein after referred to as "the said lands".

As per plan and description Report Attached herewith

PART II

Liberties, powers and privileges to be exercised and enjoyed by the lessee/lessees subject to the restrictions and conditions in Part III.

To enter upon land and search for, win, work etc.

1. Liberty and power at all times during the term hereby demised to enter upon the said lands and to search for mine, bore, dig, drill for, win, work, dress, process, convert, carry away and dispose of the said mineral/minerals.

To sink, drive and make pits, shafts and inclines etc.

2. Liberty and power for or in connection with any of the purposes mentioned in this part to sink drive make maintain and use in the said lands and pits shafts, inclines, drifts levels water-ways airways and other works (and to use maintain deepen or extent any existing works of the like nature in the said lands).

To bring and use machinery equipment etc.:-

3. Liberty and power for or in connection with any of the purposes mentioned in this part to erect, construct, maintain and use on or under the said lands any engines, machinery, plant, dressing floors, furnaces, coke ovens, brick-kilns, work-shops, store-houses, bungalows, godowns, sheds and other buildings and other works and conveni-ences of the like nature on or under the said lands.

To make roads and ways and use existing roads and ways:-

4. Liberty and power for or in connection with any of the purposes mentioned in this part to make any tramways, railways, roads, aircraft landing grounds and other ways in or over the said lands and to use maintain and go and repass with or without horses, cattle, wagons, aircrafts, locomotives or other vehicles over the same (or any existing tramways roads and other ways in or over the said lands) on such conditions as may be agreed to.

खनि अभियन्ता
सीकर

Contd...5

To get building and road materials etc.:-

5. Liberty and power for or in connection with any of the purposes mentioned in this part to quarry and get stone gravel and other buildings and road materials and clay and to use and employ the same and to manufacture such clay into bricks or tiles and to use such bricks or tiles but not to sell any such material bricks or tiles.



अनुमोदित
APPROVED

To use water from streams etc.:-

6. Liberty and power for or in connection with any of the purposes mentioned in this part but subject to the right of any existing or future lessees and with the written permission of Deputy Commissioner/Collector to appropriate and use water from any streams water-courses, springs or other sources in or upon the said lands and to divert step up or dam any such stream or water-course and collect or impound any such water and to make construct and maintain any water-course culverts, drains or reservoirs but not as so to deprive any cultivated lands, villages, buildings or watering places for livestock of a reasonable supply of water as before accustomed nor in any way to foul or pollute any stream or springs, Provided that the lessee/lessees shall not interfere with the navigation in any navigable stream nor shall divert such stream without the previous written permission of the State Government.

To use land for stacking, heaping, depositing purposes:-

7. Liberty and power to enter upon and use a sufficient part of the surface of the said lands for the purpose of stacking, heaping, storing or depositing there in any produce of the mines or works carried on and any tools, equipment, earth and materials and substances dug or raised under the liberties and powers mentioned in this part.

Beneficiation and conveying away of production :-

8. (a) Liberty and power to enter upon and use a sufficient part of the said lands to beneficiate any ore produced from the said lands and to carry away such beneficiated ore.

To make coke (to be used in case of coal only):-

(b) Liberty and power upon the said lands to convert into coke any coal or dust produced from the said lands and to carry away such coke.

खान अभियन्ता
सीकर

Contd....6

To clear brushwood and to fell and utilise trees, etc.:-

9. Liberty and power for or in connection with any of the purposes mentioned in this part and subject to the existing rights of others and save as provided in clause 3 of Part III of this Schedule to clear undergrowth and brushwood and to fell and utilise any trees or timber standing or found on the said lands provided that the State Government may ask the lessee/lessees to pay for any trees or timber felled and utilised by him/her at the rates specified by the Deputy Commissioner/Collector or the State Government.

PART III

Restrictions and Conditions as to the Liberties, Powers and Privileges in Part - II.

No building etc. upon certain places :-

1. No building or thing shall be erected, set up or placed and no surface operations shall be carried on in or upon any public pleasure ground, burning or burial ground or place held sacred by any class of persons or any house or village site, public road or other place which the State Government may determine as public ground nor in such a manner as to injure or prejudicially effect any buildings works property or rights of other persons and no land shall be used for surface operations which is already occupied by persons other than the State Government for works or purposes not included in this lease. The lessee/ lessees shall not also interfere with any right of way, well or tank.

Permission for surface operations in a land not already in use :-

2. Before using for surface operations any land which has not already been used for such operations, the lessee/lessees shall give to Deputy Commissioner/Collector of the District two calendar months previous notice in writing specifying the name or other description of the situations and the extent of the land proposed to be so used and the purpose for which the same is required and the said land shall not be so used if objection is issued by the Deputy Commissioner/Collector within two months after the receipt by him of such notice unless the objections so stated shall on reference to the State Government be annulled or waived.

To cut trees in unreserved lands :-

3. The lessee/lessees shall not without the express sanction of the Deputy Commissioner/ Collector cut down or injure any timber or trees on the said lands but may without such sanction

Cont....7

clear away any brushwood or undergrowth which interfere with any operations authorised by these presents. The Deputy Commissioner/Collector or the State Government may require the lessee/lessees to pay for any trees of timber felled and utilised by him/them at the rates specified by the Deputy Commissioner/Collector of the District/[illegible]

To enter upon reserved forests:-

4. Not withstanding anything in this schedule contained the lessee/lessees shall not enter upon any reserved forest included in the said lands without previous sanction in writing of the District Forest Officer nor fell, cut and use any timber or trees without obtaining the sanction in writing of that officer nor otherwise than in accordance with such conditions as the State Government may prescribe.

No mining operations within 50 meters of public works etc.:-

5. The lessee/lessees shall not work or carry on or allow to be worked or carried on any mining operations at or to any point within a distance of 50 metres from any railway line except with the previous written permission of the Railway Administration concerned (or under or beneath any ropeway or any ropeway [illegible]tion, except under and in accordance with the written permission of the authority owning the ropeway) or from any reservoir, canal or other public works such as public roads and buildings or inhabited site except with the previous written permission of the Deputy Commissioner/Collector or any other officer authorised by the State Government in this behalf and otherwise than in accordance with such instructions, restrictions and conditions wither general or special which may be attached to such permission. The said distance of 50 metres shall be measured in the case of railway, reservior or canal horizontally from the outer toe of the bank or the outer edge of the cutting as the case may be and in case of a building horizontally from the plinth thereof. In the case of village roads no working shall be carried on within a distance of 10 meters of the outer edge of the cutting except with the previous permission of the Deputy Commissioner/ Collector or any other officer duly authorised by the State Government in this behalf and otherwise than in accordance with such directions restrictions and additions, either general or special, which may be attached to such permission.

Explanation :- For the purposes of this clause the expression "Railway Administration" shall have the same meaning as it is defined to have in the Indian Railways Act, 1890 by clause (6) of section 3 of that Act. "Public Road" shall mean a road which has been constructed by artificially surfaced as distinct from a track resulting from repeated use. Village road will include any track shown in the Revenue record as village road.

Contd...8

खनि अभियन्ता

सीकर

भारत सरकार-भारतीय खान ब्यूरो • Govt. of India-Indian Bureau of Mines • सत्यमेव जयते

अनुमोदित
APPROVED

Facilities for adjoining Government licences and leases :-

6. The lessee/lessees shall allow existing and future holders of Government licences or leases over any land which is comprised in or adjoins or is reached by the land held by the lessee/lessees reasonable facilities of access thereto :

PROVIDED THAT no substantial hindrance or interference shall be caused by such holders of licences or leases to the operations of the lessee/lessees under these presents and fair compensation (as may be mutually agreed upon or in the event of disagreement as may be decided by the State Government) shall be made to the lessee/lessees for loss or damage sustained by the lessee/lessees by reason of the exercise of this liberty.

PART IV

LIBERTIES, POWERS AND PRIVILEGES RESERVED TO THE STATE GOVERNMENT

To work other minerals :-

1. Liberty and power for the State Government, or to any lessee or persons authorised by it in that behalf to enter into and upon the said lands and to search for, win, work, dig, get, raise, dress, process, convert and carry away minerals other than the said minerals and any other substances and for those purposes to sink, drive, make erect, construct maintain and use such pits, shafts, inclines, drifts, levels and other lines, waterways, water courses, drains, reservoirs, engines, machinery, plant, building, canals, tramways, railways, roadways and other works and conveniences as may be deemed necessary or convenient.

PROVIDED THAT in the exercise of such liberty and power no substantial hindrance or interference shall be caused to or with the liberties, powers and privileges of the lessee/lessees under these presents and that fair compensation (as may be mutually agreed upon or in the event of disagreement as may be decided by the State Government) shall be made to the lessee/lessees for all loss or damage sustained by the lessee/lessees by reason or in consequence of the exercise of such liberty and power.

To make railways and roads :-

2. Liberty and power for the State Government, or any lessee or person authorised by it in that behalf to enter into and upon the said lands and to make upon over or through the same any railways, roadways or pipelines for any purpose other than those mentioned in Part II of these presents and to get from the said lands stones, gravel, earth and other materials for making

Contd.....9

सीकर

maintaining and repairing such railways, tramways, and roads or any existing railways and roads and to and repass at all times with or without horses, cattle or other animals, carts, wagons, carriages, locomotives or other vehicles over or along any such railways, roadlines and other ways for all purposes and as occasion may require, provided that in the exercise of such liberty and power by such other lessee or person no substantial hindrance or interference shall be causes to or with the liberties, powers and privileges of the lessee/lessees under these presents and that fair compensation, as may be mutually agreed upon or in the event of disagreement as may be decided by the State Government shall be made to the lessee/ lessees for all loss or damage substantial hindrance or interference shall be caused to or with the exercise by such lessee or person of such liberty and power

भारत सरकार-भारतीय खान ब्यूरो
Govt.of India-Indian Bureau of Mines
सत्यमेव जयते
अनुमोदित
APPROVED

PART V

RENTS AND ROYALTIES RESERVES BY THIS LEASE

To pay dead rent or royalty whichever is higher

1. The lessee shall pay, for every year except the first year of the lease, dead rent as specified in clauses 2 of this part :-

Provided that, where the holder of such mining lease becomes liable under section 9 of the Act, to pay royalty for any mineral removed or consumed by him or by his agent, manager employee, contractor or sub-lessee from the leased area, he shall be liable to pay either such royalty or the dead rent in respect of that area, whichever is higher.

Rate and mode of payment of dead rent :-

2. Subject to the provisions of clause 1 of this part, during the subsistance of the lease, the lessee/lessees shall pay to the State Government annual dead rent for the lands demised and described in Part I of this schedule at the rate of the time being specified in the Third Schedule to the Act, in such manner as may be specified in this behalf by the State Government.

खनि अभियन्ता
ब्यूरो

Contd..10

Rate and mode of the payment of royalty :-

3. Subject to the provision of clause I of this Part, the lessee/lessees shall during the subsistence of this lease pay to the State Government at such times and in such manner as the State Government may prescribe royalty in respect of any mineral/minerals removed by him/them from the leased area at the rate for the time being specified in the Second Schedule to the Mines and Minerals (Regulations and Development) Act, 1957.

Payment of surface rent, and water rate :-

4. The lessee/lessees shall pay rent and water rate to the State Government in respect of all parts of the surface of the said lands which shall from time to time be occupied or used by the lessee/lessees under the authority of these presents at the rate of Rs. [illegible] @70/- and Rs. [illegible] @200/- per hectare respectively per annum per hectare of the area so occupied or used and so in proporation for an area less than a hectare during the period from the commencement of such occupations or used until the area shall cease to be so occupied or used and shall as far as possible restore the surface land so used to its original conditions Surface rent and water rate shall be paid as here in before detailed in clause 2: PROVIDED THAT no such rent/water rate shall be payable in respect of the occupation and use of the area comprised in any roads or ways to which the public have full right of access.

PART VI

PROVISIONS RELATING TO THE RENTS AND ROYALTIES

Rent and royalties to be free from deduction etc. :-

1. The rent, water rate and royalties mentioned in Part V of this Schedule shall be paid free from any deductions to the State Government at [illegible] and such manner as the State Government may prescribed PROVIDED Always and it is hereby agree that Rs. [illegible] the balance standing to the credit of the lessee/lessees on account of the deposit made by him/them as licensee/licensees over an area which is included the said lands shall be retained and accepted by the State Government in satisfaction of the rents and royalties mentioned in Part V until they reach that amount.

Mode of Computation of Royalty :-

2. For the purposes of computing the said royalties the lessee/lessees shall keep a correct account of the mineral/minerals produced and despatched. The accounts as

Contd....11

खान अधिकारी
सीकर

well as the weight of the mineral/minerals in stock or in the process of export may be checked by an officer authorised by the Central or State Government.

Here specify the mode of arriving at the sale price/prices at pits mouths of mineral/minerals.

Course of action if rents and royalties are not paid in time.

3. Should any rent, royalty or other sums due to the State Government under the terms and conditions of these presents be not paid by the lessee/lessees within the prescribed time. The same together with simple interest due thereon at the rate of twenty four percent per annum may be recovered on a certificate of such officer as may be specified by the State Government by general or special order, in the same manner as an arrear of land revenue.

भारत सरकार-भारतीय खान ब्यूरो • Govt.of India-Indian Bureau of Mines • सत्यमेव जयते
अनुमोदित
APPROVED

PART VII

THE CONVENANTS OF THE LESSEE/LESSEES

Lessee to pay rents and royalties, taxes, etc.:-

1. The lessee/lessees shall pay the rent, water rate and royalties reserved by this lease at such times and in the manner provided in Parts V and VI of these presents and shall also pay and discharge all taxes, rates assessments and impositions whatsoever being in the nature of public demands which shall from time to time be charged, assessed or imposed by the authority of the Central and State Government upon or in respect of the premises and works of the lessee/lessees in common with other premises and works of a like nature except demands for land revenues.

To maintain and keep boundary marks in good order:-

2. The lessee/lessees shall at his/their own expense erect and at all times maintain and keep in repair boundary marks and pillars according to the demarcation to be shown in the plan annexed to this lease. Such marks and pillars shall be sufficiently clear of the shrubs and other obstructions as to allow easy identification.

To commence operations within a year and work in a workman like manner :-

3. The lessee/lessees shall commence operation within one year from the date of execution of the lease and shall thereafter at all times during the continuance of his lease search for, win, work and develop, the said minerals without voluntary intermission in a skilful and workman like manner and as prescribed under clause 12 herein after without doing or permitting to be done any unnecessary or avoidable damage to the surface of the said lands or the crops buildings structures or other property thereon. For the purposes

Contd....12

खनि अभियंता
सीकर

of this clause operations shall include the erections of machinery, laying of a tramway or construction of a road in connection with the mine.

To indemnify Government against all claims :-

4. The lessee/lessees shall make and pay such reasonable satisfaction and compensation as may be assessed by lawful authority in accordance with the law in force on the subject for all damage, injury or disturbance which may be done by him/them in exercise of the powers granted by this lease and shall indemnify and keep indemnified fully and completely the State Government against all claims which may be made by any person in respect of any such damage, injury or disturbance and all costs and expenses in connection therewith.

To secure and keep in good condition pits, shafts etc. :-

5. The lessee/lessees shall during the subsistence of this lease well and sufficiently secure and keep open with timber or other durable means all pits, shafts and workings that may be made or used in the said lands and make and maintain sufficients fences to the satisfaction of the State Government round every such pit, shaft or working whether the same is abandoned or not and shall during the same period keep all workings in the said lands except such as may be abandoned accessible free from water and foul air as far as possible.

To strengthen and support the mine to necessary extent :-

6. The lessee/lessees shall strengthen and support to the satisfaction of the Railway Administration concerned or the State Government, as the case may be any part of the mine which in its opinion requires such strengthening or support for the safety of any railway, reservoir, canal road and any other public works or structures.

To allow inspections of workings :-

7. The lessee/lessees shall allow any officer authorised by the Central Government or the State Govt. in that behalf to enter upon the premises including any building, excavation or land comprised in the lease for the purpose of inspecting, examining, surveying (Prospecting) and making plans their of sampling and collecting any data and the lessee/lessees shall with proper person employed by the lessee/lessees and acquainted with the mines and work effectually assist such officer, agents, servants and workmen in conducting every such inspections and shall afford them all facilities, information connected with the working of the mines which they may reasonably require and also shall and will conform to and observe all order and regulations which the Central and State Governments as the result of such inspection or otherwise may, from time to time see fit to impose.

To report accident :-

8. The lessee/lessees shall without delay send to the

खनि अभियन्ता

Contd....13 सीकर

Deputy Commissioner/Collector a report of any accident causing death or serious bodily injury or serious injury to property orseriously affecting or endangering life or property which may occur in the course of the operations under this lease.

To report discovery of other minerals :-

9. The lessee/lessees shall report to the State Government the discovery in the leased area of any mineral not specified in the lease within sixty days of such discovery alongwith full particulars of the nature and position of each such find. If any mineral not specified in the lease is discovered in the leased area, the lessee/ lessees shall not win and dispose of such mineral unless such mineral is included in the lease or a separate lease is obtained therefore.

To keep records and accounts regarding production and employees etc :-

10. The lessee/lessees shall at all time during the said term keep or cause to be kept at an office to be situated upon or near the said lands correct and intelligible books of accounts which shall contain accurate entries showing from time to time :-

1. Quantity and quality of the said mineral/ minerals realised from the said lands.

2. Quantity of the various qualities of ores beneficiated or converted (for example coal converted into coke).

3. Quantities of the various qualities of the said mineral/minerals sold and exported separately.

4. Quantities of the various qualities of the said mineral/minerals otherwise disposed of and the manner and purpose of such disposal.

5. The prices and all other particulars of all sales of said mineral/minerals.

6. The number of persons employed in the mines or works or upon the said lands specifying nationality, qualifications and pay of the technical personnel.

7. Such other facts particulars and circumstances as the Central or the State Governments may from time to time require and shall also furnish free of charge to such officers and such time as the Central and State Government may appointed true and correct abstract of all or any such books of accounts and such information and returns to all or any of the matters aforesaid as the State Government may prescribe and shall at all reasonable times allow such officers as the Central Government or State Government shall in that behalf appoint to enter into and have free access to the said officers for the purposes of examining and inspecting the said books of accounts, plans and recordsand to make copies thereof and make extracts therefrom.

Contd.....14

भारत सरकार-भारतीय खान ब्यूरो
Govt.of India-Indian Bureau of Mines
सत्यमेव जयते
अनुमोदित
APPROVED

खनि अभियन्ता

To maintain, plans, etc.:-

11. The lessee/lessees shall at all time during the said term maintain at the mine office correct intelligible up-to-date and complete plans and section of the mines in the said lands. They shall show all the operations and workings and all the trenches, pits and drillings made by him/them in the course of operations carried on by him/them under the lease, faults and other disturbance encountered and geological data and all such plans and sections shall be amended and filled up by and from actual surveys to be made for that purpose at the end of twelve months or any period specified from time to time and the lessee/lessees shall furnish free of charge to the Central and State Government ture and correct copies of such plans and sections whenever required. Accurate records of all trenches, pits and drillings shall show :.

(a) The subsoil and straight through which they pass.
(b) Any mineral encountered.

Any other matter of interest and all data required by the Central and State Government, from time to time.

The lessee/lessees shall allow any officer or the Central · the State Government, authorised in this behalf by the Central Government, to inspect the same at all reasonable times. He/they shall also supply when asked for by the State Government/the coal controller (The Director General Geological Survey of India,) (The Controller General, Indian Bureau of Mines) a composite plan of the area showing thickness, dip, inclination, etc. of all the seems as also the quantity of reserves quality wise.

11 A. The lessee shall pay a wage not less than the minimum wage prescribed by the Central or State Government from time to time.

11 B. The lessee shall comply with provisions of the (Mines Act 1952 and the rules made there under);

11 C. The lessee shall take measures for the protection of environment like planting of trees, reclamation of land, use of pollutions control devices and such other measures as may be prescribed by t the Central or State Government, from time to time, at his own expense.

11 D. The lessee shall pay compensation to the occupier of the land on the date and in the manner laid down in these rules.

11 E. The lessee shall, in the matter of employment, give preference to the tribals and to the persons who become displaced because of the taking up of mining operations.

खनि अभियन्ता
सीकर

Contd....15

105

Act 67 of 1957 :-

12. The lessee/lessees shall be bounded by such rules as may be issued from time to time by the Government of India under sections 18 of the Mines and Mineral (Regulation & Development) Act, 1957 (Act 67 of 1957) and shall not carry on mining or other operations under the said lease in any way other than as prescribed under these rules.

To providing weighing machine :-

13. Unless specifically exempted by the State Government the lessee/lessees shall provide and at all times keep at or near the pit head or each of the pit heads at which the said minerals shall be brought to bank a properly constructed and efficient weighing machine and shall weigh or cause to be weighed thereon all the said minerals, from time to time brought to bank sold, exported and converted and also the converted products and shall at the close of each day cause the total weights, ascertained by such means of the said minerals, ores products raised, sold, exported and converted during the previous twenty four hours to be entered in the aforesaid books of accounts. The lessee/lessees shall permit the State Government at all times during the said term to employ any person or persons to be present at the weighing of the said minerals as aforesaid and to keep accounts thereof and to check the accounts kept by lessee/lessees. The lessee/lessees shall give [illegible] days previous notice in writing to the Deputy Commissioner/Collector of every such measuring or weighing in order that he or some officer on his behalf may be present thereat.

भारत सरकार-भारतीय खान ब्यूरो • Govt. of India-Indian Bureau of Mines • सत्यमेव जयते

अनुमोदित APPROVED

To allow test of weighing machine :-

14. The lessee/lessees shall allow any person or persons appointed in that behalf by the State Government at any time or times during the said term to examine and test every weighing machine to be provided and kept as aforesaid and the weights used there with in order to ascertain whether the same respectively are correct and in good repair and order and if upon any such examination or testing any such weighing machine or weights shall be found incorrect or out of repair or order the State Govt. may require that the same is adjusted, repaired and put in order by and at the expenses of the lessee/lessees and if such requisition be not complied with within fourteen days after the same shall have been made, the State Government may cause such, weighing machine or weights to be adjusted, repaired, and put in order and the expenses of so doing shall be paid by the lessee/lessees to the State Government on demand and if upon any such examination or testing as aforesaid any error shall be regarded as having existed for three calendar months previous to the discovery thereof from the last occasion off so examining and testing the same weighing machine and weights in case such occasion shall be within such period of three months and the said rent and royalty shall be paid and accounted for accordingly.

Contd....16

खनि [illegible]

सीकर

To pay compensation for injury of third parties :-

15. The lessee/lessees shall make and pay reasonable satisfaction and compensation for all damage, injury or disturbance or person or property which may be done by or on the part of lessee/lessees in exercise of the liberties and power granted by these presents and shall at all time save harmless and keep indemnified the State Government from and against all suits, claims and demands which may be brought or made by any person in respect of any such damage, injury or disturbance.

Not to obstract working of other minerals :-

16. The lessee/lessees will exercise the liberties and powers hereby granted in such a manner as to offer no unnecessary or reasonably avoidable obstruction or interruption to the development and working within the said lands of any minerals not included in this lease and shall at all times afford to the Central and State Govt. and to the holders of prospecting licences or mining leases in respect of any such minerals or any minerals within any land adjacent to the said lands as the case may be reasonable means of access and safe and convenient passage upon and across the said lands to such minerals for the purpose of getting working, developing and carrying away the same provided that the lessee/lessees shall receive reasonable compensation for any damage or injury which he/ they may sustain by reason or in consequence of the use of such passage by such lessees or holders of prospecting licenses.

Transfer of lease :-

17 (1) The lessee/lessees shall not, without the previous consent in writing of the State Government,

(a) assign, sublet, mortgage or in any other manner, transfer the mining lease, or any right, title or interest therein, or

(b) enter into or make any arrangement contract or understanding whereby the lessee/lessees will or may be directly or indirectly financed to a substantial extent by, or under which the lessees operations or undertakings will or may be substantially controlled by any person or body of persons other than the "lessee/lessees".

Provided that the State Government shall not give its written consent unless :-

(a) the lessee has furnished an affidavit alongwith his application for transfer of the mining lease specifying therein the amount that he has already taken or proposes to take as consideration from the transferee;

(b) the transfer of the mining lease is to be made to a person or body directly undertaking mining operations.

खान अधिकारी
सीकर

Contd....17

2. Without prejudice to the above provisions, the lessee/lessees may, subject to the conditions specified in the proviso to Rule 35 of said Rules, transfer this lease or any right, title or interest therein, to a person, (who has filed an affidavit stating that he has filed up-to-date income tax returns, paid income tax assessed on him and paid the income tax on the basis of self assessment as provided in the income tax Act, 1961 (43 of 1961), on payment of five hundred rupees) to the State Government;

Provided that the lessee/lessees shall make available to the transferee the original or certified copies of all plans of abandoned workings in the area and in a belt 65 metres wide surrounding it.

(Provided further that where the mortgage is an Institution or a Bank or a Corporation specified in Schedule V, it shall not be necessary for any such Institution or Bank or Corporation to meet with the requirement relating to income tax and the said valid clearance certificate.)

3. The State Government, may, by order in writing, de determine the lease at any time if the lessee/lessees has/have in the opinion of the State Government, committed a breach of any of the above provisions or has/have transfered the lease or any right, title or interest therein otherwise than in accordance with clause (2) ;

Provided that no such order shall be made without giving the lessee/lessees a reasonable opportunity of stating his/their case.

Not to be financed or controlled by a Trust, Corporation, Firm or person :-

10. The lease shall not be controlled and the lessee/lessees shall not allow themselves to be controlled by any Trust, Syndicate, Corporation Firm or person except with the written consent of the Central Government, The lessee/lessees shall not entered into for make any arrangement compact or understanding where by the lessee/lessees will or may be directly or indirectly by or for the benefit of or subject to the control of any Trust, Syndicate, Corporation, Firm or person unless with the written sanction given prior to such arrangement compact or understanding being entered into or made of the Central Govt. and any or every such arrangement compact or understanding being entered into or made of the Central Government and any or every such arrangement compact or understanding as aforesaid (entered into or made with such sanction as aforesaid) shall only be entered into or made and shall always be subject to an express condition binding upon the other party or parties there to that on the occasion of the state of emergency of which the President of India in his discretion shall be the sole judge it shall be terminable if so required in writing by the State Government and shall in the event of any such requisition being made be forthwith thereafter determined by the lessee/lessees accordingly.

खनि अभियन्ता
बीकर

Contd....18

अनुमोदित
APPROVED

Lessee shall deposit any additional amount necessary:

19. Whenever the security deposit of Rs. ~~2000/1000~~ 10000/-as(8; or any further sum hereafter deposited with the State Government in replenishment thereof shall be forfeited or applied by the Central or State Government pursuant to the power in hereinafter declared in that behalf the lessee/ lessees shall deposit with the State Government such further sum as may be sufficient with the unappropriated part thereof to bring the amount in deposit with the State Government up to sum of Rs. 1000/-500.

Delivery of workings in good order to State Government after determination of lease :-

20. The lessee/lessees shall at the expiration or sooner determination of the said term or any renewal thereof deliver upto the State Government all mines, pits, shafts, inclines, drifts, levels, waterways, airways and other works now existing or hereafter to be sunk or made on or under the said lands except such as have been abandoned with the sanction of the State Government and in any ordinary and fair course of working all engines, machinery plant, buildings, structures, otherworks and conveniences which at the commencement of the said term were upon or under the said lands and all such machinery set up by the lessee/lessees below ground which cannot be removed without causing injury to the mines or works under the said lands (except such of the same as may with the sanction of the State Government have become discussed) and all buildings and structures of bricks or stone erected by the lessee/lessees above ground level in good repair order and condition and fit in all respects for further working of the said mines and the said minerals.

Right of pre-emption :-

21. (a) The State Government shall from time to time and all times during the said term have the right (to be exercised by notice in writing to the lessee/lessees) of pre-emption of the said minerals (and all products thereof) lying in or upon the said lands hereby demised or elsewhere under the control of the lessee/lessees and the lessee/ lessees shall with all possible expendition deliver all minerals or products or minerals purchased by the State Government under the power conferred by this provision in the quantities at the times in manner and at the place specified in the notice exercising the said right.

(b) Should be the right of pre-emption conferred by this present provision be exercised and a vessel chartered to carry the minerals of products thereof procured on behalf of the State Government or the Central Government be detained or demurrage at the port of loading the lessee/lessees shall pay the amount due for demurrage according to the terms of the charter party of such vessel unless the State Government shall be satisfied that the delay is due to causes beyond the control of the lessee/lessees.

(c) The price to be paid for all minerals or products or minerals taken in pre-emption by the State Government in exercise of the right hereby conferred shall be the fair market price prevailing at the time of pre-emption PROVIDED

खनि अभियन्ता
सीकर

Contd....19

अनुमोदित
APPROVED

THAT in order to assist in arriving at the said fair market price the lessee/lesses shall if so required, furnish to the State Government for the confidential information of the Government, particulars of the quantities, descriptions and prices of the said minerals or products thereof sald to other customers and of charters entered into for freight, for carriage of the same and shall produce to such officer or officers as may be directed by the State Government original or authenticated copies of contracts and charter parties entered into for the sale or freightage of such minerals or products.

(d) In the event of the existence of a state of war or emergency (of which existence and President of India shall be the sole judge and a notification to this effect inthe Gazette of India shall be conclusive proof.), the State Government with the consent of the Central Government shall from time to time and all times during the said term have the right (to be exercised by a notice in writing tothe lessee/lesses forthwith take possession and control of the works, plant/machinery and premises of the lessee/lessees on or in connection with the said lands or operations under this lease and during such possession or control the lessee/lessees shall conform to the obey all directions given by or on behalf of the Central Government or State Government regarding the use of employment of such works, plants, premises and minerals; PROVIDED THAT fair compensation which shallbe determined in default of agreement by the State Government shall be paid to the lessee/lessees for all loss or damage sustained by him/them by reason or in consequence of the exercise of the powers conferred by this clause and PROVIDED ALSO that the exercise of such powers shall not determine the said term hereby granted or affect the terms and provision of these presents further than may be necessary to give effect to the provisions of this clause.

Employment of foreign national:-

22. The lessee/lessees shall not employ in connection with the mining operations any person who is not an Indian national except with the previous approval of the Central Government.

Recovery of expenses incurred by the State Government:-

23. If any of the works or matters which in accordance with the covenants in that behalf hereinbefore contained are to be carried or performed by the lessee/lessees be not so carried out or performed with inthe time specified in the behalf, the State Government may cause the same to be carried out or performed and the lessee/lessees shall pay the State Government on demand all expenses which shall be incurred in such carrying out or performance of the same and the decision of the State Government as to such expenses shall be final.

Furnishing of geophysical data:-

24. The lessee/lessees shall furnish:

(a) all geophysical data relating to mining fields, or engineering and ground water surveys, such as anomaly maps, sections, plans, structures, contour maps, logging, collected by him/them during the course of mining operations to the 1(Director-General, Geological Survey of India, Calcutta)

खनि अभियन्ता
जोधपुर

1. Substituted by G.S.R. 365 dated 4.3.1967

(b) all informations pertaining to investigations of radioactive minerals collected by him/them during course of mining operations to the Secretary Department of Atomic Energy, New Delhi.

Data or information referred to above shall be furnished every year reckoned from the date of commencement of the period of the mining lease.

PART VIII

THE COVENANTS OF THE STATE GOVERNMENT

Lessee/Lessees may hold and enjoy rights quietly :-

1. The lessee/lessees paying the rents, water rate and royalties hereby reserved and observing and performing all the convenants and agreements herein contained and on the lessee/lessees to be observed and performed shall may quietly hold and enjoy the right and premises hereby demised for and during the term hereby granted without any unlawful interruption from or by the State Government, or any person rightfully claiming under it.

Acquisition of land of third parties and compensation thereof :-

2. If in accordance with the provision of clause 4 of Part VII of this Schedule the lessee/lessees shall offer to pay to an occupier of the surface of any part of the said lands compensation for any damage or injury which may arise from the proposed operations of the lessee/lessees and the said occupier shall refuse his consent to the exercise of the right and powers reserved to the State Government and demised to the lessee/lessees by these presents and the lessee/lessees shall report the matter to the State Government and shall deposit with it the amount offered as compensation and if the Central/State Government is satisfied that the amount of compensation offered is fair and reasonable or if it is not so satisfied and the lessee/lessees shall have deposited with it such further amount as the State and Central Government shall consider fair and reasonable the State Government shall order the occupier to allow the lessee/lessees to enter the land and to carry out such operations as may be necessary for the purpose of this lease. In assessing the amount of such compensation the State Government shall be guided by the principles of the Land Acquisition Act.

To renew :-

3. (The mining-lease is renewable in terms of the provisions of the Act and the rules made thereund

भारत सरकार-भारतीय खान ब्यूरो • Govt. of India-Indian Bureau of Mines • सत्यमेव जयते

अनुमोदित APPROVED

Provided that the State Government may for reasons to be recorded in writing reduce the area applied for.

If the lease is in respect of minerals specified in the First Schedule to the Act, renewal will be subject to the prior approval of the Central Government.

If the lessee/lessees be desirous of taking a renewed lease of the premises hereby demised or of any parts of them for a further therm from the expiration of the term hereby granted and is other wise eligible, he/they shall prior to expiration of the last mentioned term give to the State Government (Twelve calendar months) previous notice in writing and shall pay the rent, rates and royalties hereby reserved and shall observed and perform the several convenants and agreements herein contained and on the part of the lessee/ lessees to be observed and performed up to the expiration of the term hereby granted. The State Government on receipt of application for renewal, shall consider it (in accordance with the provisions of the Act and the rules made thereunder) and shall pass orders as it deems fit. If renewal is granted, the State Government will at the expense of the lessee/ lessees and upon his executing and delivering to the State Government if required a counterpart thereof execute and deliver to the lessee/lessees a renewed lease of the said premises or part thereof for the further term of ~~xxxx~~ years at such rents, rates and royalties and on such terms and subject to such convenants and agreements, including this present convenant to renew as shall be in accordance with the Mineral Concession Rules, 1960, applicable to _____

_____ (Name of minerals) on

the day next following the expiration of the terms hereby granted.

Liberty to determine the lease :-

4. The lessee/lessees may at any time determine this lease by giving not less than 12 calendar months notice in writing to the State Government or to such officer, or authority as the State Government may specify in this behalf and upon the expiration of such notice provided that the lessee/lessees shall upon such expiration render and pay all rents, water rates, royalties, compensation for damages and other moneys which may then be due and payable under these presents to the lessor or any other person or persons and shall deliver these presents to the State Government then this lease and the said term and the liberties, powers and privileges hereby granted shall absolutely cease and determine but without prejudice to any right of remedy of the lessor in respect of any breach of any of the convenants or agreements contained in these presents.

4 A. The State Government may on an application made by the lessee permit him to surrender one or more minerals from his lease which is for a group of minerals on the ground that deposits of that mineral have since exhausted or depleted to such an extent that it is no longer possible to work the mineral economically, subject to the condition that the lessee :-

(a) Make an application for such surrender of mineral at least six months before the intended date of surrender; and

खान अधिकारी
सीकर

(h) Gives an understanding that he will not cause any hindrance in the working of the mineral so surrendered by any other person who is subsiquen-tly granted a mining lease for that mineral.

Refund of security deposits :-

5. On such date as the State Government may elect within 12 calendar months after the determination of this lease of any renewal thereof, the amount of the security deposit paid in respect of this lease and then remaining in deposit with the State Government and not required to be applied to any of the purposed mentioned in this lease shall be refunded to the lessee/lessees. No interest shall run on the security deposit.

PART IX

GENERAL PROVISIONS

Obstructions to inspection :-

1. In case the lessee/lessees or his/their transferee/ assignee does/do not allow entry or inspection by the officers authorised by the Central or State Government under clauses (i), (j), or (l) of sub-rule (1) of rule 27 of said rules, the State Government shall give notice in writing to the lessee/ lessees requiring him/them to show cause within such time as may be specified in the notice why the lease should not be determined and his/their security deposit forfeited and if the lessee/lessees fails/fail to show cause within the foresaid time to the satisfaction of the State Government, the State Government may determine the lease and forfeit the whole or part of the security deposit.

PENALTY IN CASE of default in payment of royalty and breach of convenants :-

2. If the lessee/lessees or his/their transferee or assignee makes/make any default in payment of rent or water rate or royalty as required by section 9 of the Act or commits a breach of any of the conditions and convenants other than those referred to in convenant I above, the State Government shall give notice to the lessee/lessees requiring him/them to pay the rent, water rate, royalty or remedy the breach, as the case may be, within sixty days from the date of receipt of the notice and if the rent, water rate and royalty are not paid or the breach is not remedied within such period, the State Government without prejudice to any proceedings that may be taken against him/them determine the lease and forfeit the whole or part of the security deposit.

खनि अभियन्ता

गोवा

Contd....23

Penalty for repeated breaches of convenants :-

3. In cases of repeated breaches of convenants and agreements by the lessee/lessees for which notice has been given by the State Government in accordance with clauses (1) and (2) a forementioned on earlier occasion, the State Government without giving any further notice, may impose such penalty not exceeding twice the amount of annual deed rent specified in clause 2 Part V.

Failure to fulfil the terms of leases due to "Force Majeure" :-

4. Failure on the part of lessee/lessees to fulfil any of the terms and conditions of this lease shall not give the Central or State Government any claim against the lessee/lessees or be deemed a breach of this lease, in so far as such failure is considered by the said Government to arise from force majeure, and if through force majeure the fulfilment by the lessee/lessees of any of the terms and conditions of this lease be delayed, the period of such delay shall be added to the period fixed by this lease. In this clause the expression "Force Majeure" means act of God, war, insurrection riot, civil commotion, strike, earth quake, tide storm, tidal wave, flood lightening, explcration, fire earthquake and any other happening which lessee/lessees could not reasonably present on control.

Lessee/lessees to remove his/their properties on the expiry of lease :-

5. The lessee/lessees having first paid discharged rents, rates and royalties payable by virtue of these present may at the expiration or sooner determination of the said term or within six calendar months thereafter (unless the lease shall be determined under claused 1 and 2 of this Part and in that case at any time not less than three calendar months nor more than six calendar months after such determination) take down and remove for his/their own benefit all or any engines, machinery, plant, buildings, structures, tramways, railways and other works, erections and conveniences which may have been erected, set up or placed by the lessee/lessees in or upon the said lands and which the lessee/lessees is/are to not bound to deliver to the State Government under clause 20 of Part VII of this Schedule and which the State Government shall not desire to purchase.

Forfeiture of property left more than six months after determination of lease :-

6. If at the end of the six calendar months after the expiration or sooner determination of the said term under the pvorision contained in clause in Part VIII of this schedule become effective there shall remain in or upon the said land any engines, machinery, plant, buildings structure, tramways, railways and other work, erections and conveniences or other property which are not required by the lessee/lessees in connection with operations in any other lands held by him/them under prospecting licence or mining lease the same shall if not be removed by the lessee/lessees within one calendar month after notice in writing requiring their removal has given to lessee/lessees by the State Government be deemed to become the property of the State Government and may be sold or disposed of in such manner as the State Government shall deem fit without liability to pay any

अनुमोदित
APPROVED

खनि अभियन्ता

compensation or to account to the lessee/lessees in respect thereof.

Notices :-

7. Every notice by these presents required to be given to the lessee/lessees shall be given in writing to such person resident on the said lands as the lessee/ lessees may appoint for the purpose of receiving such notices and if there shall have been no such appointment then every such notice shall be sent to the lessee/ lessees by registered post addressed to the lessee/ lessees at the address recorded in this lease or at such other address in India as the lessee/lessees may from time to time in writing to the State Government designate for the receipt of notices and every such service shall be deemed to be proper and valid service upon the lessee/ lessees and shall not be questioned or challenged by him/ them.

Immunity of State Government from liability to pay compensation :-

8. If any event the order of the State Government are revised, revewed or cancelled by the Central Government, in pursuance of proceedings under chapter-VII of Mineral Concession Rules 1960, the lessee/lessees shall not be entitled to compensation for any loss sustained by the lessee/lessees in exercise of the powers and privileges conferred upon him/them by these presents.

8 A. The lease is executed at ~~[illegible]~~ श्रीगंगानगर District ~~[illegible]~~ of Rajasthan State and subject to the provision of Article 226 of the constitution of India, it is hereby agreed upon by the lessee and the lessor that in the event of any dispute in relation to the area under lease, condition of lease, the dues realisable under the lease and in respect of all matters touching the relationship of the lessee and the lessor, the suits (or appeals) shall be filed in the civil courts at ~~[illegible]~~ (name of the city and it is hereby expressly agreed that neither party shall be competent to file a suit or bring any action or file any petition at any place other than the courts named above.

9. For the purpose of stamp duty the anticipated royalty from the demised land is Rs. ~~[illegible]~~ Per year.

Contd....25

खनि अभियन्ता
सीकर

150

भारत सरकार-भारतीय खान ब्यूरो
Govt of India-Indian Bureau of Mines

अनुमोदित
APPROVED

IN WITNESS WHEREOF these presents have been executed in the manner here under appearing the day and year first above written.

Signed by

(for and on behalf of the Governor/President of India)

Signature attested

खनि अभियन्ता
सीकर

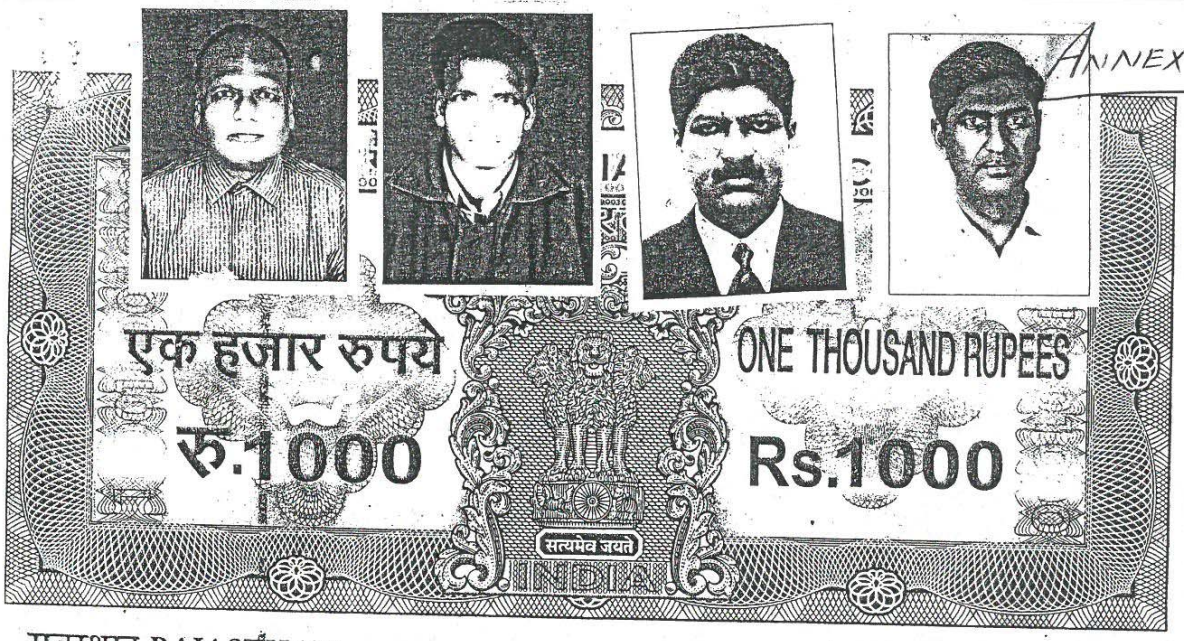
Signed by
(for and on behalf of lessee/licensee)

(In the presence of witness)

1. Witness by _____
   Address B.S. Poonia S/o Sh. N.R. Poonia
   R/o Neemrana
   _____

2. Witness by _____
   Address Arjun Lal S/o Shyamlal Chaudhary
   (Neemrana)

ANNEXURE-3



राजस्थान RAJASTHAN

C 545305

हस्तानान्तरण संविदा

खअ/सीकर/प्र./खप–10/98

यह नॉन ज्यूडिशियल स्टाम्प पेपर रूपयें 2000/– के किता नग 2 रूपयें 2000/– खनन पट्टा वास्ते खनिज आयरनओर क्षेत्र 4.945 हैक्टर निकट ग्राम बागोली तहसील उदयपुरवाटी जिला झुन्झुनूं में अवधि संविदा पंजियन तिथि से 30 वर्ष के लिए इस शर्त पर कि स्थिर भाटक एम.एम.आर.डी. एक्ट 1957 की तृतीय अनुसूची के अनुसार तथा अधिशुल्क द्वितीय अनुसूचि के अनुसार एवं उसमें समय–समय पर होने वाले संशोधनानुसार देय होगा, की शर्त पर शासन के आदेश कमांक प. 17(32)खान/गुप–1/2002 दिनांक 10.05.02 एवं सम संख्या आदेश दिनांक 28.10.02 द्वारा श्री बजरंग कुमार बंसल पुत्र श्री महावीर प्रसाद अग्रवाल निवासी मावण्डा आर.एस. तहसील नीमकाथाना जिला सीकर (राज.) के पक्ष में स्वीकृत हुआ। जिसका संविदा पंजियन दिनांक 01.11.02 को होकर खनन पट्टा 30 वर्ष के लिए प्रभाव में आया।

भारत सरकार-भारतीय खान ब्यूरो • Govt. of India-Indian Bureau of Mines • सत्यमेव जयते

अनुमोदित
APPROVED

श्री बजरंग कुमार बंसल के पक्ष में संविदा निष्पादित क्षेत्र आवेदित/स्वीकृत क्षेत्र के मूल सीमांकन दिनांक 01.08.02 में भिन्नता पायी गई कि स्थाई बिन्दु बालाजी की छतरी एवं इण्टर मिडियेटेड पॉईंट मदन सिंह के कुंऐ का सही कनेक्शन नहीं होना पाया जाने पर शासन के पत्र कमांक प. 17(32)खान/ग्रुप–2/2000 दिनांक 30.11.2012 द्वारा मूल सीमांकन में एफ.आर.पी. से लीज पीलर की विवरण सूची में इण्टरमिडियेट स्टेशन स्थाई व निर्विवादित प्रकृति का होने पर एफ.आर.पी. से ऐसे स्थाई व निर्विवादित इण्टरमिडियेट स्टेशन को सीधा जी.पी.एस. से जोड़ने की अनुमती दी जाने पर निदेशालय के आदेश कमांक निखाभू/सीकर/सी.सी. 11/एम.एल. 10/98/193 दिनांक 05.12.2012 से पुनः सीमांकन के आदेश दिये जाने पर क्षेत्र का पुनः सीमांकन दिनांक 19.12.2012 को बालाजी की छतरी से श्री मदन सिंह के कुंऐ की बियरिंग छतरी से एक्स 280°–85 मिनट, एक्स से वाई 195°–55 मिनट, वाई से वैल 233°–225 मीटर के स्थान पर सीधे इण्टरमिडियेटेड कनेक्शन 234° व दूरी 341 मीटर से सही किया गया है, का पूरक संविदा का निष्पादन दिनांक 10.01.2013 को किया जाकर नोटरी से तस्दीक दिनांक 11.01.2013 को हुआ है।

ATTESTED
MINING ENGINEER
SIKAR

Attorney Holder For Nilkanth Concast Pvt. Ltd.

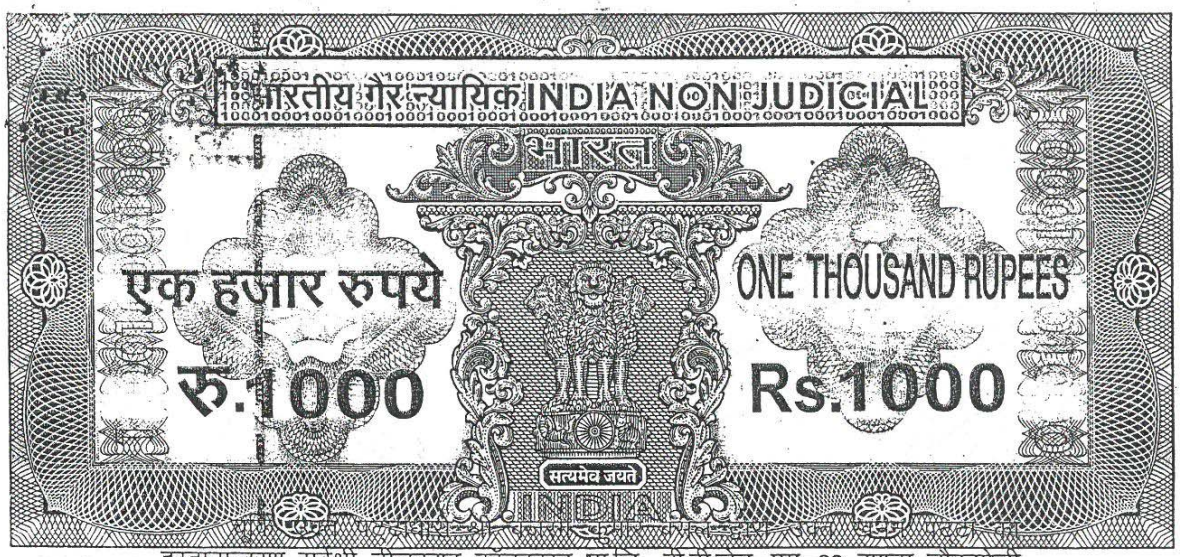
Director/Attorney Holder

अधीक्षण खनि अभियन्ता
जयपुर वृत, जयपुर

2335 मी/म कार्य कोड पु०ए०- गाँ चा/चालू वर्ष मानसिंह

8-10-13

मुरारी लाल शर्मा
उदयपुरवाटी (झुन्झुनू)



राजस्थान RAJASTHAN 545306

हस्तानान्तरण सर्वश्री नीलकण्ठ कॉनकास्ट प्रा.लि., बी.बी.जेड–एम–66 झण्डा चौकमोजी [illegible] गांधी धाम जिला कच्छ (गुजरात) के पक्ष में करवाने हेतु आवेदन पत्र दिनांक 11.11.2011 को प्रस्तुत किया जाने पर खनन पट्टा का हस्तानान्तरण खनिज रियायत नियमावली 1960 के नियम 37 में उल्लेखित शर्तो पर शासन के आदेश कमांक प. 17(32)खान/ग्रुप–2/2000–पार्ट दिनांक 10.10.2013 द्वारा सर्वश्री नीलकण्ठ कॉनकास्ट प्रा.लि., बी.बी.जेड–एम–66 झण्डा चौकमोजी फर्नीचर के सामने, गांधी धाम जिला कच्छ (गुजरात) के पक्ष में स्वीकृत हुआ है, के साथ है।

अन्य शर्ते संलग्न मूल संविदा व प्रधान खनिज रियायत नियमावली 1960 व एम. एम.आर.डी. एक्ट 1957 तथा एम.सी.डी.आर. 1988 व उसमें समय – समय पर होने वाले संशोधनानुसार मान्य होगी एवं पट्टाधारी राज्य सरकार/भारत सरकार को देय होने वाले समस्त करो का तथा अधिक रॉयल्टी का नियमानुसार भुगतान करेगा।

आज दिनांक 22/11/13 को मरे द्वारा हस्तानान्तरण संविदा का निष्पादन किया गया है।

भारत सरकार-भारतीय खान ब्यूरो • Govt. of India-Indian Bureau of Mines • सत्यमेव जयते

अनुमोदित
APPROVED

हस्तानान्तरणकर्ता

For Nilkanth Concast Pvt. Ltd.

हस्तानान्तरी

Director/Attorney Holder

प्रमाणित

खनि अभियन्ता, श्रीकर

22/11/13

सहायक खनि अभियन्ता
जयपुर वृत, जयपुर

राजस्थान राज्यपाल की ओर से
अधीक्षण खनि अभियन्ता,
जयपुर वृत जयपुर

गवाहन:–

1. .....
.....

2. .....
.....

M.L No. 10/98

अनुमोदित
APPROVED

FORM- O

Model form for transfer of mining lease
(See rule 37 A)

When the transferor is an individual श्री बजरंग कुमार बंसल पुत्र श्री महावीर प्रसाद अग्रवाल निवासी मावण्डा आरएस. तहसील नीमकाथाना जिला सीकर (राज.)

The indenture made this day of 22/11/13 20 .....

between

.....

.....

..... (Name of the person with address and occupation) (Herein after referred to as the " transferor" which expression shall where the context so admits be deemed to include his heirs, executors, administrator, representatives and permitted assigns)

When the transferors are more than won individual .....

.....

(Name of person with address and occupation) and .....

.....

..... (Name of person with address and occupation) (herein after referred to as the " transferor" which expression shall where the context so admits be deemed to include his heirs, executors, administrator, representatives and permitted assigns)

When the transferor is a registered firm .....

.....

..... (Name of the person with address of all the partners) all carrying on business in partnership under the firm name and style of .....

.....

..... (Name of the firm) registered under the Indian Partnership Act, 1932 (9 of 1932) and having their registered office at .....

..... (hereinafter referred to as the "transferor" which expression where the context so admits be deemed to include all the said partners, their respective heirs, executors, legal representatives and permitted assigns)

For Nilkanth Concast Pvt. Ltd.

Director/Attorney Holder

MINING ENGINEER

When the transferor is a registered company .....

..... a company registered under Company Act. 1956 (Act. under which incorporated) and having its registered office at ---------- (hereinafter referred to as the "Transferor" which expression shall where the context so admits be deemed to include its successors and permitted assigns) of the first part.

And

When the transferees are more than one individual .....

..... (Name of person with address and occupation)(hereinafter referred to as the "transferee" which expression shall where the context so admits be deemed to include his heirs, executors, administrators, representatives and permitted assigns.)

When the transferees are more than one individual ..... (Name of the person with address and occupation) and ..... (Name of person with address and occupation)(hereinafter referred to as the "transferee" which expression shall where the context so admits be deemed to include their respective heirs, executors, administrators, representatives and permitted assigns.)

When the transferee is a registered firm ----------

----------(Name and address of all the partners all carrying on business in partnership under the firm name and style of) ..... (Name of the firm) registered under the Indian Partnership Act, 1932(9 of 1932) and having their registered office at ----------(hereinafter referred to as the "transferee" which expression where the context so admits be deemed to include all the said partners, their respective heirs, executors, legal representatives and permitted assigns).

When the transferee is a registered company सर्वश्री नीलकण्ठ कॉनकास्ट प्रा. लि., बी.बी.जेड–एम–66 झण्डा चौकमोजी फर्नीचर के सामने, गांधी धाम जिला कच्छ (गुजरात) a company registered under Company Act. 1956 (Act. under which incorporated) and having its registered office at **Gujarat Dadra & Nagar Haveli** (hereinafter referred to as the "transferee" which expression shall where the context so admits be deemed to include its successors and permitted assigns) of the second part.

MINING ENGINEER
SIKAR

For Nilkanth Concast Pvt. Ltd.

Director/Attorney Holder

And

The Governor of **Rajasthan** (hereinafter referred to as the 'State Government' which expression shall where the context so admits be deemed to include the successors and assigns) of the third part.

Whereas be virtues of an indenture of lease dated the **19.10.02** and registered as date **01.11.02** in the office of the Sub-registrar of (hereinafter referred to as lessee) the original where of is attached here to and marked 'A' entered into between the State Government (therein called the lessor) and the transferor (hereinafter referred to as lessee) the transferor is entitled to search for, win and work mines and minerals in respect of आयरनओर in the lands described in Schedule there to and also in Schedule annexed hereto for the term and subject to the payment of the rents and royalties and observance and performance of the lessee's covenant and conditions in the said deed of lease reserved and contained including a covenant not to assign the lease or any interest there under without the previous sanction of the State Government.

And

whereas the transferor is now desirous of transferring and assigning the lease to the transferee and the State Government has, at the request of the transferor, granted (with the prior approval of the Central Government) permission to the transferor vide order No प. 17(32)खान/ग्रुप–2/2000–पार्ट dated **10.10.2013** to such a transfer and assignment of the lease upon the condition of the transferees entering into an agreement is and containing the terms and conditions hereinafter set forth.

Now this Deed Witness the follows:

1. Omitted.
2. The transferee hereby covenants with the State Government that from and after the transfer and assignment of the lease the transferee shall be bound by, and be liable to perform, observe and conform and be subject to all the provisions of all the covenants, stipulations and conditions contained in said hereinbefore recited lease in the same manner in all respects as if the lease had been granted to the transferee as the lessee there under and he had originally executed it as such.
3. It is further hereby agreed and declared by the transferor of the one part and the transferee of the other part that

For Nikarish Concast Pvt. Ltd.

Director/Attorney Holder

अनुमोदित
APPROVED

(i) The transferor and the transferee declare that they have ensured that the mineral rights over the area for which the mining lease is being transferred, vest in the State Government.

(ii) The transferor hereby declares that he has not assigned, sublet, mortgaged or in any other manner transferred the mining lease now being transferred and that no other person or persons has any right, title or interest where under in the present mining lease being transferred.

(iii) The Transferor further declares that he has not entered into or made any Agreements, contract or understanding whereby he had been or is being Directly or indirectly financed to a substantial extent by or under which the Transferor's operation or understandings were or are being substantially controlled by any person or body of persons other than the transferor.

(iv) The transferee hereby declares that he/she has accepted all the conditions and liabilities which the transferor was having in respect of such mining licence.

(v) The transferee further declares that he is financially capable of and will directly undertake mining operations.

(vi) The transferee further declares that he has filed an affidavit stating that he has filed up-to-date income tax returns, paid the income tax assessed on him and paid the income tax on the basis of self- assessment as provided in the Income Tax Act. 1961, (43 of 1961).

(vii) The transferor has supplied to the transferee the original or certified Copies of all plans of abandoned workings in the area and in a belt 65 Metres wide surrounding it.

(viii) The transferee hereby further declares that as a consequence of this Transfer, the total area while held by him under mineral concessions are not in contravention of Section 6 of the Mines and Minerals (Development and Regulation) Act, 1957 or rule 35 of the Mineral Concession Rules, 1960.

(ix) The transferor has paid all the rent, royalties, and other dues towards Government till the date, in respect of this lease.

For Nilkanth Concast Pvt. Ltd.

Director/Attorney Holder

In witness where of the parties here to have signed on the date and year first above written.

SCHEDULE

Location and area of the lease

All that tract of lands Situated at निकट ग्राम बागोली तहसील उदयपुरवाटी जिला झुन्झुनूं (Description of area or areas) 4.945 Hector in (Pargana) in **Udaipurwati** the Registration Distt **Jhunjhunu** Sub District **Udaipurwati** and Thana **Udaipurwati** bearing Cadastral Survey Nos 45M9 conssining an area of 4.945or there about delineated on the plan here to annexed and thereon colored encore and bounded as follows:-

ON THE NORTH BY
ON THE SOUTH BY — As per Plan
ON THE EAST BY — AND
ON THE WEST BY

ATTESTED
Mining Engineer, Sikar
SIKAR

Signed by 22/11/13
सहायक खनि अभियन्ता
जयपुर वृत, जयपुर
for and on behalf of the
State Government in the presence of

Signature of transferor
Attorney Holder

For Nilkanth Concast Pvt. Ltd.
Signature of transferee
Director/Attorney Holder

Witness

1. .....
.....

2. .....
Suresh Sarbatiya.
S/o Shri Ghanti Swarup.
D-40, Sapna Nagar
Gandhidham-Kachh.

ANNEXURE - 4

1688

दिनांक 20.02.2015

श्री/श्रीमती/स्वश्री [illegible]

[illegible]

विषय :- एम.एम.डी.आर. अधिनियम, 1957 की धारा 8 ए में किये गये संशोधन अनुसार खनन पट्टों की अवधि वृद्धि के संबंध में।

प्रसंग :- आपके पक्ष में धारित खनन पट्टा वास्ते खनिज आमलेन (ओर) निकट ग्राम बागोली तहसील उदयपुरवाटी जिला झुन्झुनूं के संबंध में।

अनुमोदित
APPROVED

महोदय,

उपरोक्त विषयान्तर्गत आपको सूचित किया जाता है कि हाल में एम.एम.डी.आर. (संशोधन) अध्यादेश 2015 की धारा 8 ए का समावेश किया गया है, जो कि खनन पट्टों की समयावधि से संबंधित है।

आपके पक्ष में धारित प्रासांगिक खनन पट्टे की अवधि दिनांक 31-10-2032 तक वैध थी, उक्त अध्यादेश जारी होने की दिनांक को खनन पट्टे का प्रथम/द्वितीय/तृतीय नवीनीकरण आवेदन पत्र लम्बित था। एम.एम.डी.आर. संशोधन अध्यादेश 2015 की धारा 8ए(3)/8ए(4) (जो लागू हो) के अनुसार उक्त खनन पट्टे की अवधि दिनांक 31-10-2032 तक स्वत: बढ़ गई है।

अत: संवर्धित खनन पट्टे की सनिदा स्वत: ही उक्तानुसार संवर्धित हुई मानी जाती है।

भवदीय

खनि अभियन्ता, झुन्झुनूं

दिनांक 20.02.2015

क्रमांक खनि/1689-92

प्रतिलिपि निम्न को सूचनार्थ प्रेषित है।

1. संयुक्त शासन सचिव, जयपुर को उनकी पत्रावली संख्या प.17(32) खा.वि./उप.1/2011 केक्रम में सूचनार्थ।
2. श्रीमान् निदेशक महोदय खान एवं भू विज्ञान विभाग, उदयपुर को उनकी पत्रावली संख्या निरस्त्र/खनिज/cc-3/प-1(1)10/98 केक्रम में सूचनार्थ।
3. श्रीमान् अतिरिक्त निदेशक (खनि) जयपुर क्षेत्र जयपुर को उनकी पत्रावली संख्या [illegible] केक्रम में सूचनार्थ।
4. श्रीमान् अधीक्षण खनि अभियन्ता जयपुर वृत जयपुर को उनकी पत्रावली संख्या खा.वि./प-31/98 केक्रम में सूचनार्थ।

खनि अभियन्ता, झुन्झुनूं

D:\ricky\Unit\performa.doc

फार्म संख्या ए-26 (देखिये नियम 153)

राजस्थान सरकार, जयपुर-13

नकल जमाबन्दी (खतौनी) ग्राम [illegible] पटवार हल्का [illegible] इन्सपेक्टर लैण्ड रिकार्ड हल्का [illegible] तहसील [illegible] जिला [illegible] (राज.)

संवत् २०५३ से संवत् २०५९ तक

खेवट खतौनी संख्या	भूमि धारक (Land holder) का नाम	काश्तकार का नाम, उसके पिता का नाम, जाति तथा निवास स्थान का पता एवं (टेन्योर) का प्रकार	खसरा संख्या	क्षेत्रफल	भूमि का प्रकार	काश्तकार द्वारा भुगतान किया गया लगान (Rent)एवं अन्य कर(Charges)			संवत् .....के लिए		संवत् .....के लिए		संवत् .....के लिए		विशेष विवरण
						सिंचाई का साधन	कर सहित तफसील	रकम	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के	हस्तांतरण की तफसील जिस के पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के	हस्तांतरण की तफसील जिस के पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तांतरण के प्रकार के	हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

अनुमोदित APPROVED

Land Revenue Department Government of Rajasthan

भारत सरकार-भारतीय खान ब्यूरो Govt. of India-Indian Bureau of Mines

मिलान किया गया

अन्य जानकारी

तहसीलदार [भू. प्र.] उदयपुर वाटी

ANNEXURE-13

राज. पंचायत (कानून) जयपुर-3 — कार्म संख्या ए-28 (देखिये नियम 153)

जमाबन्दी (खतौनी) ग्राम ..... पटवार हल्का ..... इन्सपेक्टर लैण्ड रिकार्ड हल्का ..... तहसील ..... जिला ..... (राज.)

सम्वत् २० ..... से सम्वत् २० ..... तक

खेवट खतौनी संख्या		भूमि धारक (Land holder) का नाम	कास्तकार का नाम, उसके पिता का नाम, जाति तथा निवास स्थान का पता एवं (टेन्योर) का प्रकार	खसरा संख्या	क्षेत्रफल	भूमि का प्रकार	कास्तकार द्वारा भुगतान किया गया लगान (Rent) एवं अन्य कर (Charges)			विशेष विवरण
नई	पुरानी						लिखाई का साधन	कर सहित तफसील	रकम	
1	2	3	4	5	6	7	8	9	10	17
269	305			7x87	0.15					
				9460	0.20					
				9462	0x1					
392	304			9805	0-96				0.10	
									392	
396	399			7206	0.2.0					

1. लाटरल हल्का	437	
2. तारीख कायमवर	18-8	98
3. तारीख तैयारी	18-8	98
4. तारीख सुपुर्दगी	18-8	98
5. रकम		
6. दस्तूरी		
योग रुपया		

मिलान किया गया

पक्का ..... कच्चा .....

अन्य प्रतिलिपियां

हल्का पटवार [इ. प.] अलवर/भरतपुर

25-8-98

फार्म संख्या ए-28 (देखिये नियम 153)

जमाबन्दी (खतौनी) ग्राम ..... पटवार हल्का ..... इन्सपेक्टर लैण्ड रिकार्ड हल्का ..... तहसील ..... जिला ..... (राज.)

सम्वत् २०५२ से सम्वत् २०५९ तक

खेवट खतौनी संख्या 1	भूमि धारक (Land holder) का नाम 3	कास्तकार का नाम, उसके पिता का नाम, जाति तथा निवास स्थान का पता एवं (टेन्योर) का प्रकार 4	क्षेत्रफल 5	लगान 6	भूमि का प्रकार 7	कास्तकार द्वारा भुगतान किया गया लगान (Rent)एवं अन्य कर(Charges)			संवत् ..... के लिए		संवत् ..... के लिए		संवत् ..... के लिए		
						रिकार्ड का प्रकार 8	कर सहित तफसील 9	रकम 10	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के 11	हस्तांतरण की तफसील जिस के पक्ष में भूमि का हस्तांतरित किया गया है मय भूमि के विवरण (तफसील) के 12	अनुप्रमाणित किए गए नामान्तरण(Mutation)के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के 13	हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के 14	अनुप्रमाणित किए गए नामान्तरण (Mutation)के आदेश की संख्या एवं तारीख मय हस्तांतरण के प्रकार के 15	हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरित किया गया है मय भूमि के विवरण (तफसील) के 16	विशेष विवरण 17
२८६	०.४१			१४०८	०.१४											
	०.०१															
९४०	१३०५			१४०२	०.२६											
	३०६५															
				१४६२	०.२४											
				१४६२	०.२४											
				१४०३	०.२४											
३१८	३०६			१४७१	०.३१											
	१२०५															
				१४८१	०.०६											
२८	२०१			१४८२	०.६२											
				१४८३	०.६८											

1. आवदन संख्या 437
2. तारीख आवेदन 15-6-98
3. तारीख तैयारी 15-6-98
4. तारीख तसदीक 15-6-98
5. स्टाम्प 1/-
6. प्रयोजन 2007
7. तैयारकर्ता

कुल प्रतिलिपियाँ 2

2/1/98 रघुपुर पाठी

तहसीलदार

मिलान किया पाया पढ़ा सुना।

भारत सरकार-भारतीय मुद्रण प्रेस, देवास (म.प्र.) — सरकार द्वारा मुद्रित

अनुमोदित APPROVED

फार्म संख्या ए-28 (देखिये नियम 153)

जमाबन्दी (खतौनी) ग्राम ... पटवार हल्का ... इन्सपेक्टर लैण्ड रिकार्ड हल्का ... तहसील ... जिला ... (राज.)

सम्वत् २०४३ से सम्वत् २०४८ तक

खेवट खतौनी संख्या	भूमि धारक (Land holder) का नाम	काश्तकार का नाम, उसके पिता का नाम, जाति तथा निवास स्थान का पता एवं (टेन्योर) का प्रकार	क्षेत्रफल		भूमि का प्रकार	काश्तकार द्वारा भुगतान किया गया लगान (Rent) एवं अन्य कर (Charges)			संवत् ... के लिए		संवत् ... के लिए		संवत् ... के लिए		विशेष विवरण
						निर्धारण का साधन	कर सहित तफसील	रकम	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के	हस्तांतरण की तफसील जिस के पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के	हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तांतरण के प्रकार के	हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

जिलाधीश APPROVED

Geological Survey of India • Government of India • Bureau of Mines

जिलाधीश

नीलाम किया जाना

मद्द ... सूचना ...

अन्य प्रतिलिपी

तहसीलदार [नु. प.] उदयपुर वाटी

राजस्थान सरकार प्रकाशन, जयपुर-3

फार्म संख्या ए-20 (देखिये नियम 153)

जमाबन्दी (खतौनी) ग्राम ... पटवार हल्का ... इन्स्पेक्टर लैण्ड रिकार्ड हल्का ... तहसील ... जिला ... (राज.)

सम्वत् २०४३ से सम्वत् २०४६ तक

खेवट खतौनी संख्या	भूमि धारक (Land holder) का नाम	कारतकार का नाम, उसके पिता का नाम, जाति तथा निवास स्थान का पता एवं (टेन्योर) का प्रकार	खसरा संख्या	क्षेत्रफल	भूमि का प्रकार	कारतकार द्वारा भुगतान किया गया लगान (Rent) एवं अन्य कर (Charges)			संवत् ..... के लिए		संवत् ..... के लिए		संवत् ..... के लिए		विशेष विवरण
						सिंचाई का साधन	कर सहित तफसील	रकम	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के	हस्तांतरण की तफसील जिस के पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के	हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तांतरण के प्रकार के	हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

फार्म संख्या ए-26 (देखिये नियम 153)

पटवार हल्का ... इन्सपेक्टर लैण्ड रिकार्ड हल्का ... तहसील ... जिला ... (राज.)

सम्वत् २० से सम्वत् २० तक

खसरा नम्बर		भूमि भारक (धारक) का नाम	कास्तकार का नाम, उसके पिता का नाम, जाति तथा निवास स्थान का पता एवं (टेन्योर) का प्रकार				कास्तकार द्वारा भुगतान किया गया लगान (Rent) एवं अन्य कर (Charges)		
								कर सहित तफसील	रकम
नया 1	पुराना 2	3	4	5	6	7	8	9	10
2	10								
347	345								
376	377								

1. पटवार हल्का ... 437
2. तारीख कार्यवाही ... 18-5-98
3. तारीख तैयारी ... 18-5-98
4. तारीख तुमारी ... 18-5-98
5. [illegible]
6. दस्तखत ... [illegible]

नीलाम किया जाना

पक्का ... कच्चा ...

अन्य प्रतिलिपियों

[illegible] 1954

कर्तव्यवहार [illegible] अलवर हल्का ...

ONE RUPEE

COURT FEE INDIA FOR COMMUTEES ONLY ONE RUPEE

अनुमोदित APPROVED

भारत सरकार-भारतीय खान ब्यूरो Government of India Indian Bureau of Mines

खण्ड रिकार्ड पत्रक

तहसील ..... जिला ..... (राज.)

वर्ष ..... से वर्ष .....

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

राज. एवं पंचायत प्रकाशन, जयपुर-3 फार्म संख्या ए-26 (देखिये नियम 153)

आदर्श जमाबन्दी (खतौनी) ग्राम ..... पटवार हल्का ..... इन्सपेक्टर लैण्ड रिकार्ड हल्का ..... तहसील ..... जिला ..... (राज.)

सम्वत् २० से सम्वत् २० तक

खेवट खतौनी संख्या		भूमि धारक (Land holder) का नाम	कास्तकार का नाम, उसके पिता का नाम, जाति तथा निवास स्थान का पता एवं (टेन्योर) का प्रकार	खसरा संख्या	बरकल	भूमि का प्रकार	कास्तकार द्वारा भुगतान किया गया लगान (Rent) एवं अन्य कर (Charges)			विशेष विवरण
नई	पुरानी						निर्धारण का साधन	कर सहित तफसील	रकम	
1	2	3	4	5	6	7	8	9	10	17
269	305			7x87	0.15					
				9x60	0.20					
				9x62	0x21					
392	307			7x05	0-9½					
396	399			7304	0.2-0					

कादर्व हल्का 437
१. तारीख आमेदन 98
२. तारीख तैयारी 98
३. तारीख सुपुर्दगी 98
४. [illegible]

तिलाल लिया गया
पक्षा

अन्य प्रतिलिपियाँ
१ १५१
तहसीलदार [illegible]

APPROVED अनुमोदित

COURT FEE ONE RUPEE FOR COMPULSORY FEES ONLY INDIA

राज. सरकार प्रकाशन, जयपुर-23

फार्म संख्या ९-20 (देखिये नियम 153)

जमाबन्दी (खतौनी) ग्राम ... पटवार हल्का ... इन्स्पेक्टर लैण्ड रिकार्ड हल्का ... तहसील ... जिला ... (राज.)

समत् २०२३ से समत् २०२९ तक

खेवट खतौनी संख्या	भूमि धारक (Land holder) का नाम	कास्तकार का नाम, उसके पिता का नाम, जाति तथा निवास स्थान का पता एवं (टेन्योर) का प्रकार	खसरा संख्या	क्षेत्रफल	भूमि का प्रकार	कास्तकार द्वारा भुगतान किया गया लगान (Rent) एवं अन्य कर (Charges)			संवत् ... के लिए		संवत् ... के लिए		संवत् ... के लिए		विशेष विवरण
						सिंचाई का साधन	कर सहित तफसील	रकम	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के	हस्तांतरण की तफसील जिस के पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के	हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तांतरण के प्रकार के	हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	
1	2 3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

फार्म संख्या ए-28 (देखिये नियम 153)

जमाबन्दी (खतौनी) ग्राम ..... पटवार हल्का ..... इन्स्पेक्टर लैण्ड रिकार्ड हल्का ..... तहसील ..... जिला ..... (राज.)

सम्वत् २०५२ से सम्वत् २०५९ तक

खेट खतौनी संख्या	भूमि धारक (Land holder) का नाम	काश्तकार का नाम, उसके पिता का नाम, ज्याति तथा निवास स्थान का पता एवं धारण (टेन्योर) का प्रकार	खसरा संख्या	क्षेत्रफल	भूमि का प्रकार	काश्तकार द्वारा भुगतान किया गया लगान (Rent) एवं अन्य कर (Charges)			सम्वत् ..... के लिए		सम्वत् ..... के लिए		सम्वत् ..... के लिए		विशेष विवरण
						रिकार्ड का प्रकार	कर सहित/ तफसील	रकम	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के	हस्तांतरण की तफसील जिस के पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के	हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तांतरण के प्रकार के	हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

राजस्थान सरकार
कार्यालय खनि अभियन्ता, सीकर
अधिशुल्क निर्धारण प्रपत्र

क्रमांक– ख.अ./सीकर/अ.नि./ख.प– 10/98/2012–2013/1154 दिनांक : 11-11-13

अधिशुल्क निर्धारण खनन पट्टा वास्ते खनिज आपरुऊ.... निकट ग्राम खागोली तहसील दांतारामगढ़ जिला सीकर

नाम पट्टाधारी श्री [illegible] पुत्र श्री भंवरलाल [illegible] निवासी [illegible] (R.S.)

अवधि 01-11-2002 से 2.4.07 तक ऐरिया 5 हैक्टर खनन पट्टा संख्या 10/98

ग्रा० नि० अवधि	पूर्व शेष (टनों में)	उत्पादन (टनों में)	योग (टनों में)	खनिज निर्गमन मात्रा (टनों में)	शेष (टनों में)	कुल बनी रॉयल्टी (रूपये)	स्थिर भाटक (रूपये)	अधि अधिशुल्क (रूपये)	वि. विवरण
01-11-12 से 31-3-13	000.150	Nil	000.150	Nil	000.150	Nil	Rs 2069/- 151/150	Nil	

हस्ताक्षर लेखाकार

खनि अभियन्ता, सीकर

क्रमांक– ख.अ./सीकर/अ.नि./ख.प– 10/98/2012–2013/1155-1156 दिनांक 11.11.13

प्रतिलिपि निम्न को वास्ते सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है :–

(1) मांग लिपिक कार्यालय हाजा ।

(2) श्री [illegible] पुत्र श्री [illegible] निवासी [illegible] (R.S.) [illegible] जिला सीकर

खनि अभियन्ता, सीकर

राजस्थान सरकार

कार्यालय खनि अभियन्ता, खान एवं भू-विज्ञान विभाग, झुन्झुनू

क्रमांक: खअ/झुन्झुनू/अ.नि./खप/10/98-324 दिनांक 18/8

अधिशुल्क निर्धारण

अधिशुल्क निर्धारण खनन पट्टा द्वारा से खनिज अभ्रक ढाँक/कुंकी निवास ग्राम पोलीपी तहसील झुन्झुनू

जिला झुन्झुनू नाम पट्टाधारी (1) श्री धर्मेन्द्रकुमार एस/ओ स्वर्गीय श्री नीलकण्ठ काल काल निवासी पुत्र स्व० नाथी राम

अवधि 1-11-02 से 20 वर्ष तक क्षेत्रफल 5 हैक्टर खनन पट्टा संख्या 10/98

वि.वर्ष	पूर्व शेष (टनों में)	उत्पादन (टनों में)	योग (टनों में)	खनिज निर्गमन मात्रा (टनों में)	शेष (टनों में)	कुल बनी रॉयल्टी (रुपये)	स्थिर भाटक (रुपये)	अधि अधिशुल्क (रुपये)	वि.
आयरन ओर									
2013-14	000-00	455-000	455-150	4368-250 / 4394-100	183-900	रु. 389463/-	5 वर्ष	389463/-	
वर्ष 2014-15	183-900	″	183-900	″	183-900	″	रु 13712/-	″	

नोट :- वर्ष 2014-15 के अधिशुल्क निर्धारण हेतु विभागीय कार्यवाही की जा रही है।

उपखण्ड अधिकारी झुन्झुनू

खनि अभियन्ता

क्रमांक: खअ/झुन्झुनू/अ.नि./खप/10/98/825-826 दिनांक 18-8

प्रतिलिपि निम्न को सादर सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है।

1. मांग लिपिक कार्यालय हाजा।
2. श्री धर्मेन्द्र (1) श्री नीलकण्ठ काल एस/ओ स्वर्गीय श्री [illegible] निवासी पोलीपी पुत्र स्व० नाथी राम व्यवसाय [illegible] जिला झुन्झुनू

खनि अभियन्ता

राजस्थान सरकार
कार्यालय खनि अभियन्ता, खान एवं भू-विज्ञान विभाग, झुन्झुनू

क्रमांक : खअ/झुन्झुनू/अ.नि./ख.प./10/98/1204 दिनांक 29-12-16

अधिशुल्क निर्धारण प्रपत्र

अधिशुल्क निर्धारण खनन पट्टा वास्ते खनिज रेत आयरन ओर निकट ग्राम बाडोली तहसील उदयपुरवाटी

जिला झुन्झुनू नाम पट्टाधारी स्वर्गीय श्री नील कमल पुत्र काले पुत्र निवासी गांधी धाम

अवधि 1-11-02 से 20 वर्ष तक क्षेत्रफल 5 हैक्टर खनन पट्टा संख्या 10/98

ने.अवधि	पूर्व शेष (टनों में)	उत्पादन (टनों में)	योग (टनों में)	खनिज निर्गमन मात्रा (टनों में)	शेष (टनों में)	कुल बनी रॉयल्टी (रूपये)	स्थिर भाटक (रूपये)	अधि अधिशुल्क (रूपये)	वि.विवरण
परफ्लेनोवर									
15-16	183-900 मात्र	183-900 मात्र		183-900 मात्र		कि 20,000/- मात्र			

नोट :- वर्ष 2013-14 वे वर्ष 2014-15 के उदर्थ RA से स्थानांतर सिकंड पत्रा करने पर आर्डिनेंस डेप्थ दिया गया। कार्यालय आदेश क्रमांक 325-326 दिनांक 18-8-16 द्वारा किये गये उदर्थ RA को उपयोग स्वीकृत।

नोट :- अवधि 12-1-15 से 31-3-2016 के D.M.F. आकी है।

क्रमांक: खअ/झुन्झुनू/अ.नि./ख.प./10/98/1205-1206 दि० 29-12-2016

प्रतिलिपि : निम्न को वास्ते सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है।

1. मांग लिपिक कार्यालय हाजा।
2. श्रीमती स्वर्गीय श्री नील कमल पुत्र काले पुत्र पी० सी० ओड सम-66 गढ़वा चौक मेरठी निवासी जनीचर के सामने गांधी धाम झुन्झुनू (राज०)

खनि अभियन्ता, झुन्झुनू
दिनांक 29.12.16

खनि अभियन्ता, झुन्झुनू

राजस्थान सरकार
कार्यालय खनि अभियन्ता, खान एवं भू–विज्ञान विभाग, झुंझुनू

दूरभाष व फैक्स : 01592–237660
e-mail:- me.jhunjhunu@rajasthan.gov.in

दिनांक: 19.07.2017

क्रमांक: खअ/झुन्झुनूं/अ.नि./ख.प./10/98/ 1932

अधिशुल्क निर्धारण प्रपत्र

अधिशुल्क निर्धारण खनन पट्टा वास्ते खनिज आयरनओर निकट ग्राम बागोली तहसील उदयपुरवाटी जिला झुंझुनूं मे मैसर्स नीलकण्ड कॉनकास्ट प्रा.लि जेएड एम 66 झण्डा चौक मोजी फर्निचर के सामने गांधी धाम जिला कच्छ गुजरात के पक्ष मे अवधि दिनांक 01.11.02 से 50 वर्ष तक क्षैत्रफल 4.9451 हैक्टर खनन पट्टा संख्या 10/98

अ.नि.अवधि	पूर्व शेष (टनो मे)	उत्पादन (टनो मे)	योग (टनो मे)	खनि निर्गमन मात्रा (टनो मे)	शेष (टनो मे)	कुल बनी रॉयल्टी (रूपये)	स्थिर भाटक (रूपये)	अधि.अधिशुल्क (रूपये)	वि.विवरण
01.04.16 से 31.03.17 तक	183.900	NIL	183.900	NIL	183.900	NIL	20000/–	NIL	
नोटः– अवधि दिनांक 01.04.14 से 31.03.17 तक कुल बनी रॉयल्टी शून्य है। अतः डी.एम.एफ.टी व एन.एम.ई.टी राशि भी शून्य है।									

खनि अभियन्ता, झुंझुनूं
दिनांक 19.07.2017

क्रमांक/सम/ 1933-1934
प्रतिलिपि :–निम्न को वास्ते सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है।

1. मांग शाखा कार्यालय हाजा।
2. मैसर्स नीलकण्ड कॉनकास्ट प्रा.लि जेएड एम 66 झण्डा चौक मोजी फर्निचर के सामने गांधी धाम जिला कच्छ गुजरात।

19/July/2017

खनि अभियन्ता, झुंझुनूं

राजस्थान सरकार
कार्यालय खनि अभियन्ता, खान एवं भू–विज्ञान विभाग, झुंझुनू

दूरभाष व फैक्स : 01592–237660 e-mail:- me.jhunjhunu@rajasthan.gov.in

क्रमांक: खअ/झुन्झुनूं/अ.नि./ख.प./10/98/ 1932 दिनांक: 19.07.2017

अधिशुल्क निर्धारण प्रपत्र

अधिशुल्क निर्धारण खनन पट्टा वास्ते खनिज आयरनओर निकट ग्राम बागोली तहसील उदयपुरवाटी जिला झुझुनूं मे मैसर्स नीलकण्ड कॉनकास्ट प्रा.लि जेएड एम 66 झण्डा चौक मोजी फर्निचर के सामने गांधी धाम जिला कच्छ गुजरात के पक्ष मे अवधि दिनांक 01.11.02 से 50 वर्ष तक क्षैत्रफल 4.9451 हैक्ट्र खनन पट्टा संख्या 10/98

अ.नि.अवधि	पूर्व शेष (टनो मे)	उत्पादन (टनो मे)	योग (टनो मे)	खनि निर्गमन मात्रा (टनो मे)	शेष (टनो मे)	कुल बनी रॉयल्टी (रूपये)	स्थिर भाटक (रूपये)	अधि.अधिशुल्क (रूपये)	वि.विवरण
01.04.16 से 31.03.17 तक	183.900	NIL	183.900	NIL	183.900	NIL	20000/–	NIL	
नोटः– अवधि दिनांक 01.04.14 से 31.03.17 तक कुल बनी रॉयल्टी शून्य है। अतः डी.एम.एफ.टी व एन.एम.ई.टी राशि भी शून्य है।									

खनि अभियन्ता, झुझुनूं
दिनांक 19.07.2017

क्रमांक/सम/ 1933-1934

प्रतिलिपि :–निम्न को वास्ते सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है।

1. मांग शाखा कार्यालय हाजा।
2. मैसर्स नीलकण्ड कॉनकास्ट प्रा.लि जेएड एम 66 झण्डा चौक मोजी फर्निचर के सामने गांधी धाम जिला कच्छ गुजरात।

खनि अभियन्ता, झुझुनूं

Fuji Env. & Engg. Services (P) Pvt. Ltd. Jaipur

Scanned with CamScanner

राजस्थान सरकार

कार्यालय खनि अभियन्ता, खान एवं भू–विज्ञान विभाग, झुंझुनू

क्रमांक: खअ/झुन्झुनूं/अ.नि./ख.प./10/98/162 दिनांक: 08.01.2020

अधिशुल्क निर्धारण प्रपत्र

अधिशुल्क निर्धारण खनन पट्टा वास्ते खनिज आयरनओर क्षेत्र 4.9451 हैक्टर निकट ग्राम बागोली तहसील उदयपुरवाटी जिला झुझुनूं मे अवधि दिनांक 01.11.02 से 50 वर्ष हेतु मैसर्स नीलकण्ठ कॉनकास्ट प्रा0 लि0 के पक्ष स्वीकृत खनन पट्टा संख्या 10/98

अ.नि.अवधि	पूर्व शेष (टनो मे)	उत्पादन (टनो मे)	योग (टनो मे)	खनिज निर्गमन मात्रा (टनो मे)	शेष (टनो मे)	कुल बनी रॉयल्टी (रूपये)	स्थिर भाटक (रूपये)	अधि.अधिशुल्क (रूपये)	वि.विवरण
2017–18	183.900	0	183.900	0	183.900	0	20,000	0	.....
2018–19	183.900	0	183.900	0	183.900	0	20,000	0	.....
वर्ष 2017–18 एंव वर्ष 2018–19 में खनिज निर्गमन शून्य होने के कारण डीएमएफटी एंव एनएमईटी की राशि वसूलनीय नही बनती है।									

खनि अभियन्ता, झुझुनूं
दिनांक 08.01.2020

कमांक/सम/163-164

प्रतिलिपि :–निम्न को वास्ते सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है।

1. मांग शाखा कार्यालय हाजा।
2. मैसर्स नीलकण्ठ कॉनकास्ट प्रा0 लि0, निवासी जेएडएम 66 झण्डा चौक मोजी फर्निचर के सामने गांधी धाम जिला कच्छ गुजरात।

खनि अभियन्ता, झुझुनूं।

Scanned with CamScanner

राजस्थान सरकार

कार्यालय खनि अभियन्ता, खान एवं भू–विज्ञान विभाग, झुंझुनू

क्रमांकः खअ/झुन्झुनूं/अ.नि./ख.प./10/98/ 985 दिनांकः 14.08.2020

तदर्थ अधिशुल्क निर्धारण प्रपत्र

अधिशुल्क निर्धारण खनन पट्टा वास्ते खनिज आयरनओर क्षेत्र 4.9451 हैक्टर निकट ग्राम बागोली तहसील उदयपुरवाटी जिला झुझुनूं मे अवधि दिनांक 01.11.02 से 50 वर्ष हेतु मैसर्स नीलकण्ठ कॉनकास्ट प्रा0 लि0 के पक्ष स्वीकृत खनन पट्टा संख्या 10/98

अ.नि.अवधि	पूर्व शेष (टनो मे)	उत्पादन (टनो मे)	योग (टनो मे)	खनिज निर्गमन मात्रा (टनो मे)	शेष (टनो मे)	कुल बनी रॉयल्टी (रूपये)	स्थिर भाटक (रूपये)	अधि.अधिशुल्क (रूपये)	वि.विवरण
2019–20	183.900	0	183.900	0	183.900	0	20000	0	.....
वर्ष 2019–20 में खनिज निर्गमन शून्य होने के कारण डीएमएफटी व एनएमईटी की राशि वसूलनीय नही बनती है।									

खनि अभियन्ता, झुझुनूं
दिनांक 14.08.2020

कमांक/सम/ 986–987

प्रतिलिपि :–निम्न को वास्ते सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है।

1. मांग शाखा कार्यालय हाजा।
2. मैसर्स नीलकण्ठ कॉनकास्ट प्रा0 लि0, जे0एम0 66, झण्डा चौक मोजी फर्नीचर के सामने गांधी चौक कच्छ गुजरात।

खनि अभियन्ता, झुझुनूं।

Scanned with CamScanner

Category A OFM

REVIEW OF MINING PLAN

WITH

PROGRESSIVE MINE CLOSURE PLAN

FOR

BHAGOLI IRON ORE MINE

(Submitted Under Rule 17(2) OF MCR 2016 AND RULE 23 OF MCDR 2017)

M.L.NO. 10/98

LEASE AREA – 4.945 HECTARE (NON FOREST)

NEAR VILLAGE- BHAGOLI

TEHSIL- UDAIPURWATI, DISTRICT- JHUNJHUNUN

RAJASTHAN

LEASE PERIOD- UPTO 30.10.2052

PERIOD OF REVIEW OF MINING PLAN – 2017-18 TO 2021-22

Lessee:-

M/S NILKANTH CONCAST PVT. LTD.

BBZ-M-66,
In front of Jhanda Chaukmoji Furniture Ghandi Dham
Kacha (Gujrat)
Pin Code: 370201
Telephone number: 2838283495
e-mail: info@nilkanthsteels.com
Mine Code: 30 RAJ 33001
IBM Registration number: IBM/9737/2012

PREPARED BY

GOVIND SINGH

MINING ENGINEER

(Involved in preparation of mining plan/ scheme since 1987)

Naruka.consultancy@gmail.com

This Mining Plan has been approved Vide letter No.584(4)(3)(1731)/2018 RCM-AJM Dt.27.04.18 under MCDR 1988/MCR 2016.

Category A OFM

REVIEW OF MINING PLAN

WITH

PROGRESSIVE MINE CLOSURE PLAN

FOR

BHAGOLI IRON ORE MINE

(Submitted Under Rule 17(2) OF MCR 2016 AND RULE 23 OF MCDR 2017)

M.L.NO. 10/98

LEASE AREA – 4.945 HECTARE (NON FOREST)

NEAR VILLAGE- BHAGOLI

TEHSIL- UDAIPURWATI, DISTRICT- JHUNJHUNUN

RAJASTHAN

LEASE PERIOD- UPTO 30.10.2052

PERIOD OF REVIEW OF MINING PLAN – 2017-18 TO 2021-22

भारत सरकार-भारतीय खान ब्यूरो • Govt of India-Indian Bureau of Mines • सत्यमेव जयते

अनुमोदित
APPROVED

Lessee:-

M/S NILKANTH CONCAST PVT. LTD.

BBZ-M-66,
In front of Jhanda Chaukmoji Furniture Ghandi Dham
Kacha (Gujrat)
Pin Code: 370201
Telephone number: 2838283495
e-mail: info@nilkanthsteels.com
Mine Code: 30 RAJ 33001
IBM Registration number: IBM/9737/2012

27/4/18

क्षेत्रीय खान नियन्त्रक
Regional Controller of Mines
भारतीय खान ब्यूरो
Indian Bureau of Mines
अजमेर AJMER

PREPARED BY

GOVIND SINGH

MINING ENGINEER

(Involved in preparation of mining plan/ scheme since 1987)

Naruka.consultancy@gmail.com

M/S NILKANTH CONCAST PVT. LTD.

BBZ- M-66
In front of Jhanda Chaukmoji Furniture
Ghandi Dham, Kachha (Gujrat)
Pin Code: 370201
Telephone number: 2838283495
e-mail: info@nilkanthsteels.com
Mine Code: 30 RAJ 33001
IBM Registration number: IBM/9737/2012

अनुमोदित
APPROVED

CONSENT LETTER/UNDERTAKING/CERTIFICATE FROM THE LESSEE

01. The Review of Mining Plan in respect of Bhagoli Iron Ore Mine, over an area of 4.945 ha, in village - Bhagoli, Post office Bhagoli, district- Jhunjhunun of Rajasthan State, under rule 17(2) of MCR 2016 with PMCP as per rule 23 of MCDR 2017 has been prepared by Govind Singh, Mining Engineer.

This is to request the Regional Controller of Mines, Indian Bureau of Mines, and Ajmer, to make any further correspondence regarding any correction of the Review of Mining Plan with the said person at his address below:

Govind Singh
Mining Engineer
Khachariyawas House
D-88, Meera Marg, Bani Park,
Jaipur-302016
e.mail:naruka.consultancy@gmail.com
mobile:9414071070

I hereby undertake that all modification/ updating as made in the said review of mining plan by the said person be deemed to have been made with our knowledge and consent and shall be acceptable on us and binding in all respects

***02** It is certified that the CCOM Circular no 2/2010 will be implemented and complied with when an authorized agency is approved by the State Government*

***03** It is certified that the progressive Mine Closure Plan of Bhagoli Iron Ore Mine of M/S Nilkanth Concast Pvt. Ltd. over an area of 4.945 ha complies with all statuary rules, regulations, Orders made by Central or State Government, Statuary organization, Court etc which have been taken into consideration and wherever any specific permission is required the lessee will approach the concerned authorities.*

The information furnished in the Progressive Mine Closure Plan is true and correct to the best of our kind knowledge and records.

04 "The provisions of Mines Act, Rules and Regulations made there under have been observed in the Review of Mining Plan over an area of 4.945 ha in Jhunjhunun district of Rajasthan State belonging to Bhagoli Iron Ore Mine and where specific permissions are required, the applicant will approach the DGMS. Further, standards prescribed by D.G.M.S. in respect of miner's health will be strictly implemented."

Place: Jaipur
Dated: 8-4-2018

Signature authority
8/4/18
Mr. Suresh Sarbaliya
Vice Pressident
M/S Nilkanth Concast Pvt. Ltd.
Lessee

Govind Singh

Mining Engineer
Khachariyawas House
D/88, Meera Marg, Bani Park
e-mail naruka.consultancy@gmail.com
Jaipur, Pin 302 016
Mobile: 94140 71070

भारत सरकार-भारतीय खान ब्यूरो • Govt.of India-Indian Bureau of Mines • सत्यमेव जयते

अनुमोदित
APPROVED

CERTIFICATE

The provisions of Mineral Conservation and Development Rules, 2017 have been observed in the preparation of the Review of Mining Plan for Bhagoli Iron Ore Mine, over an area of 4.945 ha of M/S Nilkanth Concast Pvt. Ltd. in village- Bhagoli, post office-Bhagoli, district- Jhunjhunun of State Rajasthan and whenever specific permission are required, the lessee will approach the concerned authorities of India Bureau of Mines.

The information furnished in the Review of Mining Plan is true and correct to the best of my knowledge.

Place- Jaipur
Dated- 08.04.2018

Govind Singh
Mining Engineer

भारत सरकार-भारतीय खान ब्यूरो
Govt of India-Indian Bureau of Mines
सत्यमेव जयते
अनुमोदित
APPROVED

List of Chapters

CHAPTER	TITLE OF TEXT	PAGE
	INTRODUCTION	1
1	GENERAL	2
2	LOCATION AND ACCESSIBILITY	3
3	DETAILS OF APPROVED MINING SCHEME	5
PART A		
1	GEOLOGY AND RESERVES	7
2	MINING	16
3	MINE DRAINAGE	22
4	STACKING OF MINERAL REJECTS/SUB GRADE MATERIAL AND DISPOSAL OF WASTE	23
5	USE OF MINERAL AND MINERAL REJECTS	24
6	PROCESSING OF ROM AND MINERAL REJECTS	25
7	OTHERS	26
8	PROGRESSIVE MINE CLOSURE PLAN	27-34

भारत सरकार-भारतीय खान ब्यूरो
Govt. of India-Indian Bureau of Mines
सत्यमेव जयते
अनुमोदित
APPROVED

List of Annexure

Annexure No	TITLE
1	Photo ID
2	Lease Agreement
3	Transfer agreement
4	Letter for extension of the lease period
5	Registration Certificate
6	List of Directors
7	Letter for Signature authority
8	Lease Plan of the Area
9	Demarcation Report
10	On Line Sheet
11	Mining Engineer's document
12	Analysis Report
13	Khasra Details
14	Feasibility Report
15	Copy of Bank Guarantee



List of Plates

Number	TITLE
1	Location Plan
2	Key Plan
3	Surface Plan
4	Surface Geological Plan & Sections
5	Year Wise Development Plan & Sections
6	Reclamation Plan
7	Environment Plan
8	Conceptual Plan
9	Financial Area Assurance Plan

This Mining Plan has been approved Vide letter No.584(4)(3)(1731)/2019 RCM-AJM Dt. 27.04.18. under MCDR 1988/MCR1960.

भारत सरकार-भारतीय खान ब्यूरो Govt. of India-Indian Bureau of Mines सत्यमेव जयते

अनुमोदित APPROVED

REVIEW OF MINING PLAN:

INTRODUCTION

Lessee:-

The lessee M/S Nilkanth Concast Pvt. Ltd. a private limited company engaged in mining of Iron Ore with this lease M.L. 10/98 area 4.945 ha, located near village- Bhagoli, tehsil- Udaipurwati of Jhunjhunun district (Rajasthan). Photo ID enclosed as annexure-1.

Lease details:-

The lease is for mineral Iron Ore M.L. 10/98

Original lessee	S/H. Bajrang Kumar Bansal
Original Lease area	4.945 hectares.
Present lessee	M/S Nilkanth Concast Pvt. Ltd.
Present lease area	4.945 hectarers.
Original lease period	31.10.2002 to 30.10.2032 i.e. for 30 years (Lease agreement- annexure-2)
Lease period extended	The lease period is extended for 50 years i.e. up to 30.10.2052. Annexure -4.
Original lessee	Shri Bajrang Kumar Bansal
Title of lease transfer	The title of the lease was transfer in favour of present lessee M/S Nilkanth Concast Pvt. Ltd. Vide order dated 10.10.2013. The transfer agreement was executed on 22.11.2013 and the registration of transfer agreement was executed on 04.12.2013 (annexure-3).
Details of the Mining Plan and Scheme	The approved mining scheme was up to 2012-13. The lessee submitted the Modified Mining Plan and it was not approved due to non submission of Financial assurance. The lessee again submitted the scheme and it was not approved.
Preparation of Review of Mining Plan	The lessee approached for preparation of review of mining plan during third week of December 2017. Thus after field survey this Review of Mining Plan has been prepared as per the guide lines provided. The lessee submitted this Review of Mining Plan including Progressive Mine Closure Plan under rule 17(2) of MCR 2016 & rule 23 of MCDR 2017.
Period of review of mining Plan :	The period of Review of Mining plan for period 2012-13 to 2016-17 is almost passed out. Thus this Review of Mining Plan is submitted for the period of 2017-18 to 2021-22.
The lease period is extended	Up to 30.10.2052.

No National Park, Forest Sanctuary etc located in 10 kilometres periphery of the lease area.

Not submission of Mining Plan/ Scheme for 2012-13 to 2016-17: The lease was transfer. The lessee submitted the plan/ scheme two times but the appointed staff not properly handled and not provided the requisite documents. Thus the plans rejected.

क्षेत्रीय खान नियन्त्रक
Regional Controller of Mines
भारतीय खान ब्यूरो
Indian Bureau of Mines
अजमेर AJMER

अनुमोदित
APPROVED

1.0 GENERAL

a) **Name of lessee rule 45 Registration Number**
Name:
M/S Nilkant Concast Pvt. Ltd.
BBZ-M-66,
In front of Jhanda Chaukmoji Furniture Ghandi Dham
Kacha (Gujrat)
Pin Code: 370201
Telephone number: 2838283495
e-mail: info@nilkanthsteels.com
Mine Code: 30 RAJ 33001
IBM Registration number: IBM/9737/2012

b) **Status of Lessee:**
Private Limited Company
Registration certificate enclosed annexure—5.
List of Board of Directors enclosed annexure-6.
Resolution for signature authority enclosed annexure- 7.

c) **Mineral which are included in prospecting license:**
Not applicable

d) **Mineral which are included in the letter of Intent/ lease deed**
Iron Ore in the lease deed

e) **Mineral which lessee intends to mine**
Iron Ore

f) **Name of the person who prepared the Review of Mining Plan under rule 17(2) of MCR 2016**

Name:
Govind Singh
Mining Engineer
Involved in preparation of mining plan / Scheme since 1987.
Address:
Khachariyawas House
D/88, Meera Marg, Bani Park
Jaipur-302016
Phone: 0141-4021611
Mobile: 9414071070
(refer annexure-11)

अनुमोदित
APPROVED

2.0 LOCATION AND ACCESSIBILITY

a) Lease details

Name of the mine:
Bhagoli Iron Ore Mine
N/V- Bhagoli, Tehsil- Udaipurwati, District- Jhunjhunun
Latitude and Longitude of Balaji Ki Chhatri
Latitude: 27°45'39.39850"N
Longitude:75°41'57.65231"E
Date of Grant of Lease:10.05.2002 and 28.10.2002
Lease pe]riod- up to 30.10.2052.

b) Name of Lessee:

M/S Nilkant Concast Pvt. Ltd.
BBZ-M-66,
In front of Jhanda Chaukmoji Furniture Ghandi Dham
Kuchha (Gujrat)
Pin Code: 370201
Telephone number: 2838283495
e-mail: info@nilkanthsteels.com
Mine Code: 30 RAJ 33001
IBM Registration number: IBM/9737/2012

c) Details of lease area with location plan
Location plan is enclosed as Plate-1.

Forest		Non Forest	
Not applicable		**Non forest land**	**Area in ha 4.945 ha.**
		Refer annexure-5	

The lease area of 4.945 hectares is a part of survey of Indian G.T.Sheet No.54 M/9.
District- Jhunjhunun, State- Rajasthan
Taluka- Udaipurwati, Village- Bhagoli
Weather the area falls under coastal Regulation Zone (CRZ)
No

c. Attach a general location map: Location map is enclosed as plate 1. Lease Plan is enclosed as annexure-8 and Demarcation report is enclosed as annexure-9. On line scrutiny as annexure-10.

Existence of public road/ railway line

Jhunjhunun to Udaipurwati	SH 37	51 kilometers
Udaipurwati to Chaa	SH-37B	30 Kilometers
Udaipurwati to Hanumanji temple	SH-37B	4 Kilometers
Hananuman Ji Temple to Bhagoli Mine Site	V TR +KR	10 Kilometer
SH- State Highway, VTR- Village Tar Road, KR – Kacha Rasta		

Nearest Railway Station is Neem Ka Thana around 21 kilometers. The station is located on Broad Gauge lines of northern western Railway.

d) The Location Plan (not to scale) is enclosed (plate-1) showing the access routes with a Key plan (Plate-2) on GT Sheet Map in 1 cm= 500 metres showing access up to the Mine Site.

Demarcation and Co-ordinates of the pillars
FRP—GTS 724

From	To	Bearing	Distance	Latitude	Longitude
FRP	Well	234°00'	341	27°45'32.94"	75°41'47.53"
Well	A	208°00'	143	27°45'26.86"	75°41'45.01"
A	B	230°00'	430	27°45'19.94"	75°41'32.92"
B	C	320°00'	115	27°45'22.82"	75°41'30.24"
C	D	050°00'	430	27°45'31.74"	75°41'42.33"
D	A	140°00'	115	27°45'28.88"	75°41'45.01"

Total Lease Area- 4.945 hect.

3.0 DETAILS OF APPROVED MINING PLAN/SCHEME OF MINING

3.1	**Date and reference of earlier approved mining plan/ scheme** The previous mining scheme for 4.945ha area, M.L.10/98 was approved by order number 584(6)(3)(290)07-RCM-AJM dated 20.09.2007. No scheme was approved after this. The period was up to 2011-12
3.2	**Details of last modification if any (for the previous approved period) of approved mining plan/ scheme indicating date of approval, reason for modification.** No modification carried out in the approved mining scheme.
3.3	**Give review of earlier approved proposals (if any) in respect of exploration, excavation and reclamation etc.** **1. Exploration** **Proposed:** Two pits of 3 x 3 x 3 meters in average length, width and depth were proposed for tracing the Iron Ore. **Compliance:** The lessee developed the pits which were converted to present workings. **2. Excavation:** **Proposed** The development work was proposed by forming benches of 6 meters height. Two benches were observed in the workings. Compliances: The production proposed and production achieved is as follows:

Year	Iron Ore in tonne (proposed)	Iron Ore in tone (production achieved)
2007-08	38,270	18681
2008-09	46960	12425.5
2009-10	46880	Nil
2010-11	50650	Nil
2011-12	56500	Nil
2012-13	No Scheme	Nil
2013-14	No Scheme	45.500
2014-15	No Scheme	Nil
2015-16	No Scheme	Nil
2016-17	No Scheme	Nil
2017-18	No Scheme	Nil



अनुमोदित
APPROVED

	Reclamation: **Proposed** Reclamations is not proposed **Compliances** In absence of proposals of reclamation no compliance is required. **Waste Dump:** Total25360 tonnes of waste was proposed to generate during the period of the mining scheme. The waste was proposed in 0.15 hectare area for 8 metre height. Compliance: The generation of waste were dumped at proposed site. No record is available about generated waste.
3.4	**Give Status of compliance of violations pointed out by IBM.** The IBM issued violation for rule 45(1), 45(5) (a) and 45 (5) (b) 0n 30.06.2011. The lessee replied the letter The violation issued by letter dated 6.01.2012 for suspension of the work. The suspension order revoke by letter dated 6.09.2012. The work again suspended by order dated 26.11.2014.
3.5	**Indicate and give details of any suspension / closure/ prohibitory order issued by any Government agency under any rule or court of law** The works again suspended by orders dated 26-11-2014
3.6	**In case the MP/SOM submitted under rules 9 and 10 of the MCDR 1988 or under rule 22(6) of MCR 1960 for approval of modification, specify reason and justification under these rules.** Not modified

भारत सरकार-भारतीय खान ब्यूरो • Govt. of India-Indian Bureau of Mines • सत्यमेव जयते

PART A--- CHAPTER---1
GEOLOGY AND RESERVES

a. Brief describe the topographic, drainage pattern, vegetation, climate , rainfall data of the area applied/ mining lease area

अनुमोदित APPROVED

The lease area covers two small mounds. The highest contour is of 430mRL and lowest is of 410mRL.

The Iron Ore and Quartzite exposed in the lease area. Except deposit and rocks the rest area is covered with soil.

Drainage in the lease area is along slope of the mounds i.e. northwesterly. General drainage in the area is north northwesterly with zig zag flow during peak rains. (refer plate-2).

The shrubs, bushes and local plants/ trees planted by lessee are observed in the lease area. No big tree etc observed in the lease area.

One high-tension electric line is passes through the lease area as shown on Surface Geological Plan. Climate of the area is semi arid zone type. The average rain fall remains around 300mm per year. The maximum, mean and lowest temperature remain around 44°C, 24°C and 4°C. Maximum precipitation takes place during month of July and August.

b) Regional Geology

REGIONAL STRATIGRAPHIC SUCCESSION

Table 1(A)

Recent		Soil, Sand dunes
Post Delhi		Pegmatite, Granite
Delhi Super Group	Ajabgarh Group	Biotite Schist, Amphibolite,Schist Ferrugineous quartzite, Feldspathic quartzite, Ortho quartzite, Phyllite, Carbonaceous phyllite, Impure Marble, Iron ore
	Alwar Group	Massive Quartzite, Garnetiferous Mica Schist, Quartzite, Micacious quartzite.

Succession of rocks in the lease area (Local Geology)

Table 1(B)

Recent to sub-recent		Alluvium, soil
Intrusive		Pegmatite
Delhi Super Group	Ajabgarh Group	Iron ore, quartzite

c. Detailed description of geology (not required for mining scheme)

भारत सरकार-भारतीय खान ब्यूरो
Govt. of India-Indian Bureau of Mines
सत्यमेव जयते

Lithology

Iron ore is exposed in the mound from top to bottom side as shown on Plate-4. The Quartzite also exposed in the area as wall rocks.
No other rock is exposed in the area. APPROVED

Trend of Mineralization (Structure)

No fault, fold or any other geological disturbance encountered in the lease area. Trend of mineralization is N45°W – S45°E. The dip is vertical.

Nature of mineralization

The iron ore is located as primary iron ore deposit, which is mainly consist of hematite with some magnetite. It occurs as lenses, bands and pods with pinching and swelling nature and confined to granitic gneisses. There are the prominent exposures of iron ore observed. The iron ore is exposed for 402mRL in deposit D-2 and up to 400mRL in deposit D-1.
The iron ore is hematite in nature. These existing working pits and exposures show good potentiality about the deposit. The iron ore has quartzite as wall rocks and the quartzite near iron ore deposit has market in cement industries. .

Weathering effect

Weathering effect is observed as scree on surface.

Nature of wall rocks

The wall rock is of quartzite of brownish in colour. The rock is medium hard in nature. The quartzite is light brownish in colour and medium hard in nature. Bulk density is 2.6 tones per cu. Meter.

Occurrence

Iron ore occurs in association with quartzite and quartzite in Ajabgarh Group of Delhi Super Group.

Recovery

Recovery of iron ore seems 90% in this deposit. The 10% is intrusive.
In 90% recovery of iron ore is fully saleable including ferruginous material. The bulk density of iron is 3.9 tones percu. Meters.

Physical and chemical characteristics

Physically the iron ore is blackish in colour. Hardness is around 6.8 on mohrs scale and bulk density is around 3.9 tonnes per cu. Metre. Chemical analysis is enclosed as annexure-12.

d. Name of prospecting agency
It is an existing mine for Iron Ore. The detail of lessee is as follows:

M/S Nilkant Concast Pvt. Ltd.
BBZ-M-66,
In front of Jhanda Chaukmoji Furniture Ghandi Dham
Kuchha (Gujrat)
Pin Code: 370201
Mobile number: 2838283495



e. Details of prospecting/ exploration already carried out:
Dimensions are in metres Table 1 (C)

Pit number	Length metres	width metres	Depth in metres	Remarks
Deposit-1	100	20 to 40	400mRL i.e. 22 meters	Iron Ore
2	150	30 to 60	402mRL i.e. 20 meters	Iron Ore

The grade is same in all the pits.

f. Surface plan is provided as plat-3.

g. Surface Geological Plan is provided as plate-4.

h. Geological sections are provided on plate-4.

i. Future program of exploration:
To know the continuity of Iron ore along and across the strike Bore holes are proposed in year 2018-19, The bore holes are proposed as follows:
Table 1(D)

Name of prospecting/ exploration agency	
i) Address	Lessee will do by his own staff M/s Nilkanth Concast Pvt. Ltd.
ii) E Mail	e-mail: info@nilkanthsteels.com
ii) Phone/ fax etc.	2838283495

Table 1(E)

Year	UNFC axis	Area covered	No of boreholes)Core/ RC/DTH)	Grid interval	Depth (mRL/Level)	Total meterage
2018	G1	100 meter interval	BH-1 BH-2 BH-3 BH-4 BH-5	00 NN'-100NN', 00EE'- 100EE' 100NN'-200NN' - 00EE'- 100EE' 100NN'-200NN' - 200EE'- 300EE' 200NN'-300NN' - 200EE'- 300EE' 300NN'- 300NN' - 300EE'-400EE'	300 meters or up to the continuity of mineral	1500
	G2		-			
	G3		-			
	G4		-			

j. Reserves and Resources as per UNFC
The mineral analysis is enclosed as annexure12.
Feasibility report is enclosed as annexure- 14.

(a) Reserves as per approved mining scheme
Table 1F

Category	Reserves in tonnes
Proved	4,45,850
Probable	2,43,165
Possible	1,62,110
Mineable reserves	6,20,110

Table 1G
Depletion is as follows from category 111

Year	Depletion of reserves in tones
2007-08	18681
2008-09	12425.5
2009-10	Nil
2010-11	Nil
2011-12	Nil
2012-13	Nil
2013-14	45.500
2014-15	Nil
2015-16	Nil
2016-17	Nil
2017-18	Nil
Total	18681

The lessee worked in the area after previous approved mining plan. There is lot of change in the pit workings. Thus the reserves are re- calculated.

Up dated reserves are as follows:

Table 1 H

A Total Mineral Reserves	UNFC Code	Quantity in tones Iron Lumps
Proved Mineral Reserves	111	4,72,970
Probable Mineral Reserves	121	3,32,840
B Total Remaining Resources		
Feasibility Mineral Resources	211	3,28,890
Pre-feasible Mineral resources	221	3,75,830
Measured mineral resources	331	-
Indicated Mineral resources	332	-
Inferred mineral resources	333	2,31,220
Reconnaissance mineral resources	334	-



The reserves are re-assesses as per the present situation of the area and deposit.

Subheading (j) Under the heading Reserves & Resources as per UNFC, the following information should be given.

Table 1(I)

Geological axis	Depth(mRL) Level	Area Sq.metey	Resources (million tones)	Grade
G1	Up to 400mRL	16,600	111-481400 tones 211-3,20,460 tones	As given in para physical and chemical characteristic
G2	Between 400mRL-385mRL	16,600	121- 3,32,840 tones 222- 3,75,830 tones	
G3	Between 385mRL-380mRL	16,600	333 - 2,31,220 tones	

Table 1(J)

Feasibility Axis:-	
Feasibility of Mining	
Area considered non mineable under various items	7.5 meters zone from the lease boundary and 50 meters from HT line
Mineral Reserves/ Resources Blocked/ Non Mineable Category	
G1-Iron Ore	111- 4,81,400 tones, 211- 3,20,460 tonnes
G2-Iron Ore	121, 122- 13,32,840, 221,222- 3,75,830 tonnes
G3-Iron Ore	333- 2,31,220 tonnes

Table 1 (K)

Economic Axis	
Cost of production per tones of mineral estimated	Rs. 350/- per tonne
Average Ex-mine price for last three year period	Rs. 400/- per tonne
Comments on economic viability	As per feasibility report

Reserves are calculated by following formula;
Volume of deposit = Area of section x Sectional Influence length
Mineral in tonne = Volume of deposit X bulk density X recovery
Reserves are computed for Proved category, Probable category and possible category.

Proved category (111+211):
In The lease area the iron ore is exposed up to 400mRL in pit of deposit D1 and up to 402mRL in deposit –D2. The iron ore exposed in the pits of both mounds. The mineral is continuing in depth and in sides. The strike length is calculated at field as per the exposure and continuity of the iron band. The width also calculated as per the exposure of iron at different sections. The length is provided on plate Surface Geological Plan and width on plan and on each section. Considering all aspects the proved category reserves are computed upto 400mRL.The length and width of the deposit as observed in the field is shown on plan. As per UNFC these reserves are computed under code 111 and 211 of UNFC.

Probable category (121+ 221):
Considering the continuity of mineral in depth beyond the proved category reserves, the probable category reserves are computed for 15 meters in thickness i.e. between 400mRL and 385mRL. The other limits are considered same as considered for proved category reserves. As per UNFC these reserves are computed under code 121 and 221 of UNFC.

Possible category (333):
Considering the possibility of continuing the deposit in depth beyond the probable category reserves the possible category reserves are computed for 5 metres in thickness just beyond the probable category reserves. Thus possible category reserves are computed between 385mRL- 380mRL. The other limits are considered same as considered for proved and probable categories. As per UNFC these reserves are computed under category333.

k. Reserve Calculations

Proved category (111)

Section	Area of Section Sq. meter	Sectional Influence length meter	Volume of ROM In cu. metre	Mineral in cu. Metre 90%	Mineral in tones V x 3.9
Deposit D-1					
AA'	960	35	33600	30240	117936
BB'	930	30	27900	25110	97929
CC'	740	30	22200	19980	77922
DD'	00	30	00	00	00
Total					293787
D-2					
EE'	400	35	14000	12600	49140
FF'	500	30	15000	13500	52650
GG'	630	35	22050	19845	77395.5
Total					179185.5
Grand Total					472972.5
Reserves in nearest tens					4,72,970

Proved category (211) Blocked Reserves

Section	Area of Section Sq. meter	Sectional Influence length meter	Volume of ROM In cu. metre	Mineral in cu. Metre 90%	Mineral in tones V x 3.9
Deposit D-1					
AA'	560	35	19600	17640	68796
BB'	660	30	19800	17820	69498
CC'	380	30	11400	10260	40014
DD'	1080	30	32400	29160	113724
Total					292032
D-2					
EE'	300	35	10500	9450	36855
FF'		-			-
GG'		-			-
Total					36855
Grand Total					328887
Reserves in nearest tens					3,28,890

Probable Category (121)

Section	Area of Section Sq. meter	Sectional Influence length meter	Volume of ROM In cu. metre	Mineral in cu. Metre 90%	Mineral in tones V x 3.9
Deposit D-1					
AA'	525	35	18375	16537.5	64496.25
BB'	555	30	16650	14985	58441.5
CC'	430	30	12900	11610	45279
DD'	00	30			--
Total					168216.75
D-2					
EE'	200	35	7000	6300	24570
FF'	630	30	18900	17010	66339
GG'	600	35	21000	18900	73710
Total					164619
Grand Total					3,32,835.75
Reserves in nearest tens					3,32,840

Probable Category (221) Blocked Reserves

Section	Area of Section Sq meter	Sectional Influence length meter	Volume of ROM In cu. metre	Mineral in cu. Metre 90%	Mineral in tones V x 3.9
Deposit D-1					
AA'	600	35	21000	18900	73710
BB'	660	30	19800	17820	69498
CC'	480	30	14400	12960	50544
DD'	825	30	24750	22275	86872.5
Total					280624.5
D-2					
EE'	475	35	16625	14962.5	58353.75
FF'	210	30	6300	5670	22113
GG'	120	35	4200	3780	14742
Total					95208.75
Grand Total					375833.25
Reserves in nearest tens					3,75,830

Possible Category (333)

Section	Area of Section Sq. meter	Sectional Influence length meter	Volume of ROM In cu. metre	Mineral in cu. Metre 90%	Mineral in tones V x 3.9
Deposit D-1					
AA'	360	35	12600	11340	44226
BB'	390	30	11700	10530	41067
CC'	300	30	9000	8100	31590
DD'	275	30	8250	7425	28957.5
Total					145840.5
D-2					
EE'	220	35	7700	6930	27027
FF'	280	30	8400	7560	29484
GG'	235	35	8225	7402.5	28869.75
Total					85380.75
Grand Total					231221.25
Reserves in nearest tens					231220

भारत सरकार-भारतीय खान ब्यूरो • Govt.of India-Indian Bureau of Mines • सत्यमेव जयते

अनुमोदित
APPROVED

i. Mineral Reserves/ Resources:

A Total Mineral Reserves	UNFC Code	Quantity in tones Iron Lumps
Proved Mineral Reserves	111	4,72,970
Probable Mineral Reserves	121	3,32,840
B Total Remaining Resources		
Feasibility Mineral Resources	211	3,28,890
Pre-feasible Mineral resources	221	3,75,830
Measured mineral resources	331	-
Indicated Mineral resources	332	-
Inferred mineral resources	333	2,31,220
Reconnaissance mineral resources	334	-



Total mineable reserves Iron ore is around 8,05,810 tonnes

MINEABLE RESERVES AND ANTICIPATED LIFE OF THE MINE

The mineable reserves area 8,05,810 tonnes of Iron Ore. Around 4,67,220 tonnes of mineral will be excavated during the period of this mining plan. and after with a target of 1,29,170 tonnes of iron ore per year the life of the mine will be around 6.62 years. As the mineral is expanding at depth and after the proposed workings and proposed prospecting the life of the mine will be increased.

2.0 MINING

A OPENCAST MINING

a) Briefly describe the existing and proposed method for excavation:

Existing Mining:

Presently the workings are closed. Previous mining is semi mechanized. The excavation of waste material, excavation of mineral, construction of roads etc was by hydraulic excavators/ loaders using rock breakers. The loading of mineral and waste is manual as well as by hydraulic loaders. Approach roads are available for transportation of mineral from face to plant site and waste from face to site of dump. The excavation is by rock breakers. Blasting is not a regular practice.

Proposed Mining:

The semi mechanized opencast mining is proposed to adopt in future. The workings are proposed from top to bottom side to reduce the height of the mound and faces. The bench height is proposed 6 metres and width will be from 6 metres to 8 metres. Approach roads are available and will be provided as required. Blasting will be done as and when required. Excavation of mineral and waste will be by hydraulic excavator and loading will be by hydraulic loaders.

Power Line: A HT line is passes through the area. This line erect during the close period of the lease without giving information to the lessee. However as per rule the lessee will not work in 50 meters zone from the centre of the power line. The 50 meters zone is illustrated on plate-5.

b) Indicate Year-wise tentative excavation in cubic metres

The development is proposed from 2017-18 to 2021-22 (one year is passed)

1. Insitu Tentative Excavation **Table 2 A**

Year	Pit no. bench	Total tentative excavation (Cum)	Top Soil (Cu m)	OB/SB* IB (Cu m)	Iron ore lump and ferruginous material in Cu m		Mineral reject	ROM/ Waste Ratio
					Ore Cu m	Mineral reject Cu m		
2017-18	Year passed							
2018-19	421 D-2 415 D-1	18900 10500	00 00	3780 2100	15120 8400	00 00	00 00	4.05:1
2019-20	415 D-2 409 D-1	20250 19500	00 00	4050 3900	16200 15600	00 00	00 00	4:1
2010-21	409 D-2 415 DE-1 409 D-1	16500 9500 13200	00 00 00	3300 1900 2640	13200 7600 10560	00 00 00	00 00 00	4:1
2021-22	403 D-2 403 D-1	16200 25200	00 00	3240 5040	12960 20160	00 00	00 00	4:1

***OB/SB** are the quartzites as waste. No mineral rejects produced as whole iron ore is marketable upto dust.

The title of the lease was transfer and the present lessee will use the Iron Ore in own industry located at Ganadhi Dham.

Development as per grids Table 2 B

Year	Bench level	Grids NN'	Grid EE'
2018-19	421 D-2 415 D-1	00NN'-100NN' 200NN'-300NN'	00EE'-200EE' 200EE'-400EE'
2019-20	415 D-2 409 D-1	00NN'-200NN' 200NN'-300NN'	00EE'-200EE' 200EE'-400EE'
2020-21	409 D-2 415 D-1 409 D-1	00NN'-200NN' 200NN'-300NN' 200NN'- 300NN'	00EE'-200EE' 200EE'-400EE' 200EE'-400EE'
2021-22	440 D-2 403 D-1	00NN'-200NN' 200NN'-300NN'	00EE'-200EE' 200EE'-400EE'

Year wise production in tones is as follows: Table 2 C

Year	ROM in tonnes	Waste in tonnes	Mineral in Tones
2017-18	Year passed		
2018-19	107020	15290	91730
2019-20	144690	20670	124020
2010-21	142680	20380	122300
2021-22	150700	21530	129170
Total	5,45,090	77,870	4,67,220



II **Dump rehandling (for the purpose of recovery of mineral)**

No mineral recovery will be carried out from dumps.

c) Enclose Individual year-wise development plans and sections

It will be a A class mine other than fully mechanized. The year wise development plan and sections are enclosed as Plate-5 in scale 1 cm = 10 metres showing all requisite details.

d) Describe briefly giving salient features of the proposed method of workings indicating Category of Mine

The mining is going on by opencast semi-mechanized method and same method will be continued in future. The production target is high and availability of labourers is very low, thus the semi-mechanized method is proposed for mining.

Considering the national, state and local holidays, around 300 working days are proposed in a year.

Approach/ Haul roads are available up to the workings and will be provided up to proposed benches.

The **height of benches** is proposed 6 meters and width is proposed 6 meters. The lessee may increase the height of benches after getting permission from DGMS. The mining will be from top to bottom side.

The excavation of mineral and waste will be by hydraulic excavators. The loading of mineral and waste from face into tippers will be by hydraulic loaders as well as manually.

Transportation of mineral from face to plant and waste from face to site of dump is by tippers of 10-20 tonne capacity.

Blasting will be by long hole or short holes if required. Presently the rock breakers are uses for excavation of mineral and overburden and same practice will be continued in future.



e) Describe briefly the layout of mine workings, pit road layout etc

Presently around 2 pits are observed in the lease area as discussed in previous chapter. Mineral Iron Ore is observed in both pits.

The pits are connected by approach road from nearest Tar road and up to site of dumps and proposed plant. The roads will be maintained time to time. The benches are shown on plate-5. The waste dump site is proposed towards western side as shown on plate-5.

The yearwise development is as follows:

Year 2017-18:

This year is passed out. The workings was closed in this year.

Year 2018-19: Deposit D-2, from bench level 421mRL 3150 sq. meters area will excavate for 6 meters thickness.

Deposit D-1, From bench level 415mRL around 1750 sq. meters area will excavate for 6 meters thickness.

Year 2019-20: Deposit D-2, from bench level 415mRL 3375 sq. meters area will excavate for 6 meters thickness.

Deposit D-1, From bench level 409mRL around 3250 sq. meters area will excavate for 6 meters thickness.

Year 2020-21: Deposit D-2, from bench level 409mRL 2750 sq. meters area will excavate for 6 meters thickness.

Deposit D-1, From bench level 415mRL around 1583 sq. meters area (9500 cu .meters) will excavate for 6 meters thickness. From Bench level 409mRL around 2200 sq. meters area for 6 meters thickness.

Year 2021-22: Deposit D-2, from bench level 403mRL 2700 sq. meters area will excavate for 6 meters thickness.

Deposit D-1, From bench level 403mRL around 4200 sq. meters area will excavate for 6 meters thickness.

The mine layout is shown on plate-4 and 5 with UPL etc. The ultimate pit limit is shown on plate-4. The size of the existing pits are shown on plate-4 and described in chapter-1.

f) Conceptual Plan

ULTIMATE EXTENT & SIZE OF THE PIT

The ultimate extent and size of the pits for Iron ore is as follows:

Dimensions are in metres

Dimension	Deposit D-1	Deposit D-2
Length	155 meters	90 meters
Width	45 to 75 meters meters average	70 meters average
Depth	30 meters	50 meters

THE FINAL SLOPE ANGLE ADOPTED

Considering the stability of rocks the final slope angle for ultimate pit slope is proposed 45° from vertical. This slope angle will remain quite safe for these deposits.

अनुमोदित
APPROVED

ULTIMATE CAPACITY OF DUMPS

Around 77870 tonnes of waste will come across during the period of this Review of mining plan. This waste is of upper part of overburden and side burden i.e. quartzite etc. Present dumps are located towards SE side of deposit D-2 on slope of the mound. The waste dump is proposed towards NE side along slope of the mound. The waste will be dumped in 0.10 ha area for 8 meters in height in two terraces of 4 meters height each.

STABILIZATION OF DUMPS

The waste dump is proposed to stabilize by retaining wall of rubble stones. The wall is proposed towards lower altitude side. The plantation is also proposed over the matured dumps for stabilization.
The retaining wall is proposed of 1 meter in height and 2 meter in width.

ULTIMATE PIT LIMIT

The limit of working at the end of lease period is illustrated on plate 4 and 6.
Ultimate pit limit also provided in plate 4 and 6. The ultimate pit limit is the limit of working/ excavation on surface.

RECLAMATION

As the continuity of mineral may be goes in depth beyond the present reserves limit. Thus at this stage reclamation is not proposed. The scheme of reclamation will be provided at suitable time.

Land Use pattern

S.No.	Item	As on date Hectare	End of the Plan 5 year	End of the lease Hectare
1	Area to be excavated	0.60	1.50	1.86
2	Storage of top soil	0.00	0.01	0.00
3	Overburden dump	0.05	0.15	0.15
4	Mineral/Sub-grade stack	0.00	0.00	0.0
5	Infrastructure/ plant	0.01	0.01	0.01
6	Roads	0.18	0.20	0.20
7	Reclamation	0.00	0.0	0.0
8	Plantation/ Green Belt	0.10	0.80	1.63
9	Total Disturbed land	0.94	2.67	3.85

Exploration: Total 5 bore holes are proposed for prospecting work in the whole available rest lease area. The location is shown on plate-4. The work is proposed for year 2018-19.

Mine Development: Existing excavation is in 0.60 ha area. Around 1.50 ha area will excavated during the period of the plan by benches 421mRL, 415mRL, 409mRL and 403nRL. Around 1.86 hectares area will excavate up to the life of the mine up to bench 380mRL. The excavation is from top to bottom side.

Utilization of Mineral: The lessee will use the mineral in his own plant at Ghandi Dham. The lessee will sail the low grade and dust to the cement industries located in the country.

Waste handling: the waste will be dumped in the lease area in 0.10 hectares area for 8 meters height in two terraces of 4meters height each.

Reclamation, Rehabilitation, Afforestation: The mineral continuity will remain in the deposit at the end of the review of the mining plan. The mineral may also come across in proposed exploration. Thus reclamation is not proposed at this stage. At the end of mining the excavated area will be used as water reservoir and it will hand over to society. No displacement of human proposed, thus rehabilitation is not required.

No tree is proposed to disturbed by proposed mining activities. The proposed plantation is very much suitable for this area where there is no plantation at the starry of the mining lease.

EXTENT OF MECHANIZATION

S. No	Item	Machineries	Capacity	Number of machineries
1	Excavation	Air compressor for drilling	120 CFM	One
2	Loader/Excavator	JCB 3D	Loading capacity 0.3 cu. Meter or 0.78 tonne (minimum capacity 40 tonne per hour)	One
3	L & T Poclain With rock breaker attachments	Poclain-90	Loading capacity 0.9 cu. Meter or 2.34 tonnes(capacity 120 tonne per hour)	One
4	Long hole drill	Long hole drill	6 meter deep hole	One
5	Rock breaker attachment			Two
6	Transport	Tipper	10 tonne	Two
7	Water handling	Tractor with tank	4000 liter	One



अनुमोदित
APPROVED

Drilling and Blasting:
The lessee uses rock breakers for excavation of minerals. If required the controlled blasting will be done by short holes of 1.5 meters effective length.



Short Hole

Drill road	1.5 meters effective length
Drill machine	Jack Hammer
Burden	0.8 meter
Spacing	1.0 meter
Hole Diameter	32 mm

Blasting will be done by various types of explosives. Generally the following conventional types of explosives are used in the mine.
Slurry explosive (AN based) viz. power gel, Acquadyne, Superdyne etc.

Booster is proposed as Ammonium nitrate fuel oil (ANFO) mixture (if allowed by government otherwise slurry explosive will be used). The ANFO mixture will be readily produced at site by mixing ammonium nitrate (94.5%) with diesel oil (5.5%).
Initiation is proposed by half second delay detonators.
Storage of Explosive: A 100 kg portable magazine will be provided for storage of explosive if required.

3.0 MINE DRAINAGE

a) **Minimum and Maximum depth of water table based on observations from nearby wells and water bodies:**
In five kms periphery:
General Ground Level in 40 meters in depth from general ground level of 400mRL. Thus ground water table is at 360mRL in five kms periphery.

b) **Indicate minimum and maximum depth of workings**
Minimum depth of workings- 403mRL
Maximum depth of workings –380mRL

c) **Quality and quantity of water likely to be encountered, the pumping arrangements and places where the mine water is finally proposed to be discharged**
There is a sufficient gap between proposed workings up to conceptual and level of ground water table, thus ground water will not encountered in the workings at any stage.

d) **Describe regional and local drainage pattern with annual rain fall, catchment area, and likely quantity of rain water to flow through the lease area, arrangement to arresting the solid wash off etc.**
No such thing is located near the lease area.
The monsoon water which directly precipitate over the lease area and workings will flows down towards lower altitude side by slope of the mound. The rainfall remains around 350mm per year towards maximum. As per maximum rain fall the monsoon water accumulate in the pits is around 2500 Cu. Meter. This water is being dewatered by 10 HP diesel operated pumps and this practice will be continued in future.
The rubble stone walls are constructed towards lower side of the dumps to check the wash off during monsoon.
As per maximum rain fall the water accumulate in the pits is around 2500 Cu. Meter.

भारत सरकार-भारतीय खान ब्यूरो • Govt.of India-Indian Bureau of Mines • सत्यमेव जयते
अनुमोदित APPROVED

4.0 STACKING OF MINERL REJECTS/ SUB GRADE MATERIAL AND DISPOSAL OF WASTE

a) Indicate briefly the nature and quantity of top soil, overburden/waste and mineral rejects to be disposed off.

No top soil observed over the deposit. The mineral rejects not come across during mining.
Only overburden and side burden come across while mining. The overburden/ side burden is of quartzite. The overburden and side burden is medium hard in nature. The overburden/ side burden is fractured near the mineralization. The overburden/ side burden has market in nearby area. The quantity of overburden which comes across during mining is provided in mining chapter.

भारत सरकार-भारतीय खान ब्यूरो • Govt. of India-Indian Bureau of Mines • सत्यमेव जयते
अनुमोदित APPROVED

Year	Top soil (M^3)		Mineral rejects (M^3)			
	Reuse Spreading	Storage	Backfilling	Storage	Blending	Beneficiation
2017-18	Nil	Nil	Nil	Nil	Nil	Nil
2018-19	Nil	Nil	Nil	Nil	Nil	Nil
2019-20	Nil	Nil	Nil	Nil	Nil	Nil
2020-21	Nil	Nil	Nil	Nil	Nil	Nil
2021-22	Nil	Nil	Nil	Nil	Nil	Nil

b) The proposed dumping ground within the lease area be proved for presence or absence of mineral and be outside the UPL unless simultaneous backfilling is proposed or purely temporary dumping for a short period is proposed in mineralized area with technical constraints and justification

The existing dumping sites are located towards NE side slope of the mound as shown on plate-4. These sites are in non mineralized area. The proposed dump is towards NW side slope of the lease area in barren land. The dump will be in 0.10 ha area for 8 metres height in two stages of 4 metres height each.
The lessee will also sale the waste after taking Short Term, Permit from Department as per State Government policy.

c) Attach a note indicating the manner of disposal of waste, configuration and sequence of year wise build up of dumps along with the proposals for protective measures

The waste dump is along slope of the mound as described in above para.

5.0 USE OF MINERAL AND MINERAL REJECTS

a) Describe briefly the requirement of end use industry specially in terms of physical and chemical compositions;

This iron ore is uses in own industries located at Kachha Ghandhi Dham Gujrat. The iron ore with ferruginous material is uses in cement industries. The whole excavated mineral will be dispatched to the consumers.

b) Give brief requirement of intermediate industries involved in upgradation of mineral before end use.

Not required.

c) Give details requirement for other industries, captive consumption export associated industrial use

Not applicable.

d) Indicated precious physical and chemical specification stipulated by buyers

The physical and chemical specification is provided in annexure.

e) Give details of processes adopted to upgrade the ROM to suit the user requirement

The lessee dispatch the mineral to the consumers located at different parts in the country.

भारत सरकार-भारतीय खान ब्यूरो
Govt.of India-Indian Bureau of Mines
सत्यमेव जयते
अनुमोदित
APPROVED

6.0 POCESSING OF ROM AND MINERAL REJECTS

No process takes place at mine site.

a) **If processing/ beneficiation of the ROM or Mineral Rejects is planned to be conducted, briefly describe nature of processing/ beneficiation.**

The lessee may install the processing plant of 300TPD in the lease area if required, otherwise ROM will be dispatched. The lessee will apply for EC for the mine and the plant. The plant includes a Jaw Crusher, a disintegrator and vibrating screens. The plant will be operated by Generators. The site of the plant is shown on plate-5.

b) **Give a material balance chart with a flow sheet or schematic diagram of the processing procedure indicating feed, product, recovery and its gradeat each stage of processing**

Not applicable.

c) **Explain the disposal method for tailings or reject from the processing plant**

No rejects will produce.

d) **Quantity and quality of tailing/ rejects proposed to be disposed**
Not produced.

e) **Specify quantity and type of chemicals if any to be used in the processing plant**
No chemical is used

f) **Specify quantity and type of chemicals to be stored**
Not applicable

g) **Indicate quantity (CuM per day) of water required for mining and processing and sources of supply of water, disposal of water and extent of recycling.**

Around 5 Cu. M water required for mining for domestic and other purpose.



7.0 OTHERS

a) Site services

The site office and rest shelters are located in the lease area.
The office, staff quarters and other facilities will be provided in the lease area.

b) Employment Potential

The following employment is proposed:
Highly Skilled: Two
Skilled: Six
Semi Skilled: Six
Un Skilled: 45 to 63 as per table below (as per semi Mechanized **workings)**

The following supervisory personnel are proposed with management chart:

Mining Engineer (Degree Holder) + Geologist
|
Mines Manager (Certificate Holder)
|_____
| | | | |
Mining Mate machine Watchman Clerk Gardner
| Operators
Mine labourer helpers

भारत सरकार-भारतीय खान ब्यूरो
Govt. of India-Indian Bureau of Mines
सत्यमेव जयते
अनुमोदित
APPROVED

Year	Excavation of ROM per day (approx)	OMS with hydraulic macheneries	Labourers unskilled perday
2017-18	-	-	-
2018-19	357	8	45
2019-20	482	8	61
2020-21	477	8	60
2021-22	502	8	63

8.0 PROGRESSIVE MINE CLOSURE PLAN UNDER RULE 22 (1) OF MCDR 2017

8.1 Environment Base Line Information's:

The lease area is non forest land. The lease area is 4.945 hectares. The pits, dumps, roads etc are observed in the lease area. The present degradation of land is as follows:

(in hectare)

S.No.	Item	As on date
1	Area to be excavated	0.60
2	Storage of top soil	0.00
3	Overburden dump	0.05
4	Mineral/Sub-grade stack	0.00
5	Infrastructure/ plant	0.01
6	Roads	0.18
7	Reclamation	0.00
8	Plantation/ Green Belt	0.10
9	Total Disturbed land	0.94

भारत सरकार-भारतीय खान ब्यूरो
Govt of India-Indian Bureau of Mines
सत्यमेव जयते
अनुमोदित
APPROVED

Water Regime:

No water reservoir or perennial stream etc observed in the lease area and around 500 metres periphery of the lease area.

Quality of air:

The lease area is away from the habitation, the present workings are towards lower side and the workings are by hydraulic machineries. Blasting is not needed as regular practice as the excavation is by rock breakers. Thus the present air pollution is within the prescribed limit. The iron ore comes in lump form Thus the quality of air is fresh and healthy in the lease area.

Ambient Noise Level:

The noise level in the lease area is within the prescribed limit as the workings are towards lower side and well maintained machineries are deployed at mines.

Flora:

In the lease area the main flora is shrubs and bushes. Some babool trees and neem trees are also observed in the lease area which is planted by the lessee.

Climatic Conditions:

Climate of the area is semi arid zone type. The average rain fall remains around 300mm per year. The maximum, mean and lowest temperature remain around 44°C, 24°C and 4°C. Maximum precipitation takes place during month of July and August. The hottest months are May and June and coldest are of December and January.

Human Settlement:

No human settlement observed in the lease area. Nearest village is Bhagali The habitants belongs to ST, SC, Minority, OBC and general categories. The main vocation of the habitants is agriculture. The habitants also has job at nearby mines and nearby towns like Udaipurwati and Neem Ka Thana.
The population of villages observed in five kilometers periphery of the lease area is as follows:



As per latest CENSUS 2011

Village	Population	Male	Female	Literate
Manaksas	4692	2370	2322	2777
Bagholi	4695	2466	2229	2614
Jodhpura	2135	1132	1003	1278
Sarai	1878	969	909	1225
Papra	3354	1771	1583	2099
Karath Dhani	1025	516	509	597
Pachlangi	4458	2291	2167	2902
Surpura	1336	678	658	874
Nayabas	3185	1668	1517	2155
Total	26758	13861	12897	16521
Percentage	100%	51.80%	48.20%	61.74%

Public building, place of worship and monuments

No such things are observed in and around the lease area. One village tar road is passes through the area. The other things observed in five kilometres periphery is illustrated on plate-2

Indicate any sanctuary is located in the vicinity of leasehold

No any sanctuary etc observed in the vicinity of the lease area.

8.2 Impact Assessment:

The land of the lease area will degrade by excavation, dumps and roads.

i) Land area indicating the area likely to be degraded due to quarrying, dumping, roads, workshop, processing plant, tailing pond/dam, township etc;

(in hectare)

S.No	Item	As on date	End of the Plan
1	Area to be excavated	0.60	1.50
2	Storage of top soil	0.00	0.01
3	Overburden dump	0.05	0.15
4	Mineral/Sub-grade stack	0.00	0.00
5	Infrastructure/ plant	0.01	0.01
6	Roads	0.18	0.20
7	Reclamation	0.00	0.0
8	Plantation/ Green Belt	0.10	0.80
9	Total Disturbed land	0.94	2.67



ii) **Air Quality**:
The quality of air likely to be effected by drilling, blasting, rock breaking and transportation of mineral and waste.
The drilling will be by wet process. Blasting is not a regular process and the fumes of blasting will suppressed out soon in opencast mining. The water spray will provide over the nozzle of the breaker to check the dust during rock braking. The water sprinklers will be provided regular on approach road from the tar road to check the dust during transportation.

iii) **Water Quality**:
The quality of water is affected by mining if water comes across in mining or by having any toxic mineral in the lease area.
There is a high gap between the level of ground water and the depth of proposed deepest workings thus ground water will not intersect the workings at any stage. In absence of toxic mineral the quality of water will not get any adverse impact.

iv) Noise Level
The diesel operated machineries and blasting will create noise in the mining. The following measures are proposed:
The high quality silencers will be provided to the diesel operated machineries. The proper maintenance will be provided to the diesel operated machineries. The sharp nozzle will be provided to the rock breaker. The approach roads will be provided smooth and wide. The noise from blasting will be momentarily and thus no measures are called for.

v) Vibration level (due t Blasting)

Blasting will be not a regular practice. The excavation is mainly by hydraulic excavators using rock breakers. Blasting is towards lower side and on small scale. The area is in interior, thus vibrations from blasting will not be very much significant.

vi) **Water Regime:**

No perennial water regime is observed in and near the lease area in 500 metres periphery. The Nalah observed in five kms periphery. This nalahs only flows for a short time during peak rains otherwise remain dry for most of the year. The monsoon water of the lease area flows out towards lower altitude sides and submersed in the agriculture lands. Thus water regime will not disturbed by proposed mining activities. No impact on water regime observed by existing mining activities.

vii) **Acid Mine Drainage**

Not applicable in this mine.

viii) Surface subsidence

It is an opencast mining and no such subsidence will come across by proposed mining.

ix) Socio- Economic

The socio economic conditions of an area will get positive impact by having and economic activity near by the habitation. The local habitants will get permanent extra income and source of employment near the villages.

x) Historical Monuments etc

In absence of such monuments in and around the lease area no impact will be anticipated.

8.3 PROGRESSIVE RECLAMATION PLAN

The mining is from top to bottom side which reduces the height of the mound.

The maximum quantity of waste is sailable and the lessee sails the waste after taking Short Term Permit from the department.

Thus reclamation of excavated land is not proposed. The excavated land (deep cuttings) will be used as water reservoir. The water will be useful for nearby crops, plants and live stock.

अनुमोदित
APPROVED

8.3.1 MINED OUT LAND

(in hectare)

S.No.	Item	As on date	End of the Plan	End of the lease
1	Area to be excavated	0.60	1.50	1.86
2	Storage of top soil	0.00	0.01	0.00
3	Overburden dump	0.05	0.15	0.15
4	Mineral/Sub-grade stack	0.00	0.00	0.0
5	Infrastructure/ plant	0.01	0.01	0.01
6	Roads	0.18	0.20	0.20
7	Reclamation	0.00	0.0	0.0
8	Plantation/ Green Belt	0.10	0.80	1.63
9	Total Disturbed land	0.94	2.67	3.85

भारत सरकार-भारतीय खान ब्यूरो • Govt. of India-Indian Bureau of Mines •
अनुमोदित
APPROVED

The deposit is in government land and proposed mining will be in government land. The lessee planted a number of trees in the lease area. Present plantation is in one hectare area. The lessee will plant around 50 trees in and near the lease area each year to improve the aesthetic beauty of the area. The plantation will be provided both sides of the approach road, along the lease and on upper benches. No other reclamation/ rehabilitation is proposed. Refer Reclamation Plan.

8.3.2 TOP SOIL MANAGEMENT

The separate soil is not observed on the site of proposed workings. However if any soil come across during mining it will be scraped and stacked separately to be used for plantation on dumps and on upper benches when required.

WASTE MANAGEMENT: The retaining wall will be developed around the proposed dumps to catch the rolling downs. Garland drain is also proposed around the dump to arrest the silt during monsoon. Garland drain will also construct around the pit.

8.3.3 TAILING DAM MANAGEMENT

In absence of such tailing dams no management require and none is proposed

8.3.4 ACID MINE DRAINAGE

In absence of acid mine drainage no management is require and none is proposed;

8.3.5 SURFACE SUBSIDENCE

In absence of such no management is require and none is proposed;
Summary of year wise proposals for item no 8.3

Item	Details	Proposed	Actual	Remarks
Dump Management	Area afforested(ha)	Nil	Nil	-
	No of saplings planted	Nil	Nil	-
	Cumulative no of plants	Nil	Nil	-
	Cost including watch and care during the year	Nil	Nil	-
Management of worked out benches	Area available for rehabilitation (ha)	Nil	Nil	-
	Afforestation done (ha)	Nil	Nil	-
	No of sapling planted in the year	Nil	Nil	-
	Cumulative no ofplants	Nil	Nil	-
	Any other method of rehabilitation (specify)	Nil	Nil	-
	Cost including watch and care during the year	Nil	Nil	-
Reclamation and rehabilitation by back filling	Void available for back filling (L x B x D) pit wise/ stop wise	Nil	Nil	
	Void filled by waste/ tailing	Nil	Nil	
	Afforesation on back filled area	Nil	Nil	
	Rehabilitation by making water reservoir	Nil	Nil	
	Any other means (specify)			
Rehabilitation of waste land within the lease	Area available	Nil	Nil	-
	Area rehabilitated	Nil	Nil	-
	Method of rehabilitation	Nil	Nil	-
Other (specify)		Nil	Nil	

भारत सरकार-भारतीय खान ब्यूरो • Govt.of India-Indian Bureau of Mines • तत्यमेव जयते
अनुमोदित
APPROVED

No such things are proposed in this progressive mine closure plan.

8.4 DISASTER MANAGEMENT PLAN

No landslide and inundation like disaster was not come across in this area and nearby the area in past. The workings are proposed from top to bottom by forming proper benching. The proposed workings will be by opencast mining method. Underground mining is not proposed. Face height will maintain safe. No tailing dam is proposed. Thus high -risk accidents like land slide, subsidence, flood, inundation, fire, seismic activities etc. not come across.

Small accidents like fire, explosion in explosive and accident and fall of face like disaster may come across. A fire fighting station (sand filled buckets) is proposed at site in the supervision of mines manager and mate. After receiving the information, the officials will reach up to site and will remove men and machineries from the site. Magazine approved is proposed for storing the explosive and approved boxes are proposed for handling the explosive from magazine to site. Any person, who notices

any explosion or accident, should immediately take steps to give warning by suitable mean and at the same time take necessary action for withdrawal of men from the site. He shall also inform the mines manager and other officials without any delay. The persons should be trained properly to handle the situation. Detailed warning system, implementation procedure, emergency control center, shall be maintained at the mine with names of trained persons. Proper arrangements should be made for treatment of injured persons. Fire fighting arrangements should be provided at all the prone sites. All the safety equipments should be available at mine site. A vehicle should always remain at site (vehicles remain available on road passes through the area. The lessee is capable to meet any type of risk. The fire stations are available Udaipurwati and Neem Ka Thana. Hospital is also located at Udaipurwati and Neem Ka Thana. Dispensary is available at Bhagoli.



The responsible person is as follows:
Directors of M/S Nilkanth Concast Pvt. Ltd.
Address:
BBZ- M-66
In frount of Jhanda Chaukmoji Furniture
Ghandi Dham
Kachha (Gujrat)

8.5 CARE AND MAINTENANCE DURING TEMPORARY DISCONTINUENCE:

No mining operation is proposed to temporary discontinuance during the period of this progressive mine closure plan. During any discontinuance the mining workings will be in the watch of a watchman. Before re-open of the mine the maintenance will be provided to all the machineries deployed at mine. Before entering the labourers into mine the workings are proposed to inspect by manager for safety purpose as per Mines Act.

PLANTATION:
The lease area is 4.945 ha, thus around 50 trees are proposed to plant each year. The plantation is proposed along the lease boundary in non mineralized area as shown on yearwise development plan.

This Mining Plan has been approved Vide letter No.584(4)(3)(173)/2018 RCM-AJM Dt.27.04.18 under MCDR 1988/MCR1960.

8.6 FINANCIAL ASSURANCE

As per rule 27 (1) of Mineral Conservation and Development Rules 2017. Bank Guarantee will be up to the period of validity of the document.

Table indicating the break-up of areas in the Mining Lease for calculation of Financial Assurance

(in hectare)

Sl.No	Head	Area put on use at start of plan (A)	Additional requirement during plan period(B)	Total C=A+B	Area considered as fully reclaimed & rehabilitated (D)	Net area considered for calculation E=C-D
1	Area under mining	0.60	0.90	1.50	0.00	1.50
2	Storage of top soil	0.00	0.01	0.01	0.00	0.01
3	Waste dump site	0.05	0.10	0.15	0.00	0.15
4	Mineral storage	0.00	0.0	0.0	0.00	0.0
5	Infrastructure (workshop, administrative building etc)	0.01	0.00	0.01	0.00	0.01
6	Roads	0.18	0.02	0.20	0.00	0.20
7	Railways	0.00	0.0	0.0	0.00	0.0
8	Tailing pond	0.00	0.0	0.0	0.00	0.0
9	Effluent treatment plan	0.00	0.0	0.0	0.00	0.0
10	Mineral separation plant	0.00	0.0	0.0	0.00	0.0
11	Township area	0.00	0.0	0.0	0.00	0.0
12	Others area considered or brake up	-	0.0	00	0.00	00
Total	Grand Total	0.84	1.03	1.87	0.00	1.87

Plantation is not included in this table

The financial assurance will be as follows:

Degraded area x 3,00,000/-

1.87 x 3,00,000= 5,61,000/- rupees

Minimum financial assurance is Rs. 10,00,000/-

The lessee already deposited the financial assurance as Bank Guarantee.

भारत सरकार भारतीय खान ब्यूरो Govt. of India-Indian Bureau of Mines सत्यमेव जयते

अनुमोदित APPROVED

8/4/18

M/S Nilkanth Concast Pvt. Ltd
Lessee

8/4/18

Govind Singh
Mining Engineer
(Involved in preparation
of mining plan/ scheme since 1987)

27/4/18

क्षेत्रीय खान नियन्त्रक
Regional Controller of Mines
भारतीय खान ब्यूरो
Indian Bureau of Mines
अजमेर AJMER

ANNEXURE-1

भारतीय विशिष्ट पहचान प्राधिकरण
भारत सरकार
Unique Identification Authority of India
Government of India

आधार

Enrolmnt No/Enrolment No.: 2017/44358/19921

Ayachi Chandrashekhar Narsiji (Ayachi Chandrashekhar Narsiji)

S/O: Narsiji Ayachi, plot no-12, ward no-12/B, Gandhidham, Kachchh, Gujarat - 370201

Date: 24/01/2017

Your **Aadhaar** No/ Your **Aadhaar** No.:

6919 0903 6287

MERA AADHAAR, MERI PEHACHAN

1947 | help@uidai.gov.in | www.uidai.gov.in

INFORMATION

- **Aadhaar** is a proof of identity, not of citizenship.
- To establish identity, authenticate online.
- This is electronically generated letter.

Signature valid
Digitally signed by DS UNIQUE IDENTIFICATION AUTHORITY OF INDIA 01
Date: 2017.01.24 10:57:02 IST

भारत सरकार-भारतीय खान ब्यूरो • Govt.of India-Indian Bureau of Mines • सत्यमेव जयते
अनुमोदित
APPROVED

- **Aadhaar** is valid throughout the country.
- You need to enrol only once for **Aadhaar.**
- Please update your mobile number and e-mail address. This will help you to avail various services in future.

भारत सरकार
GOVERNMENT OF INDIA



Ayachi Chandrashekhar Narsiji
DOB: 08/12/1958
Male / MALE

6919 0903 6287

MERA AADHAAR, MERI PEHACHAN

भारतीय विशिष्ट पहचान प्राधिकरण
UNIQUE IDENTIFICATION AUTHORITY OF INDIA

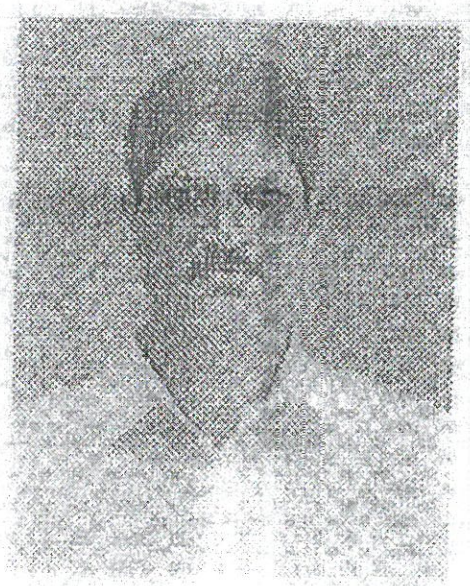
Address:
S/O: Narsiji Ayachi, plot no-12, ward no-12/B, Gandhidham, Kachchh, Gujarat - 370201

6919 0903 6287

MERA AADHAAR, MERI PEHACHAN

स्थाई लेखा संख्या /PERMANENT ACCOUNT NUMBER

ABUPA6576E



नाम /NAME

CHANDRASHEKHAR NARSANGJI AYACHI

पिता का नाम /FATHER'S NAME

NARSANGJI RAVAJI AYACHI

जन्म तिथि /DATE OF BIRTH

08-12-1958

हस्ताक्षर /SIGNATURE

आयकर आयुक्त, राजकोट

COMMISSIONER OF INCOME-TAX, RAJKOT

1(ii)

भारतीय विशिष्ट ओळखण प्राधिकरण

भारत सरकार

Unique Identification Authority of India

Government of India

नामांकन क्रम संख्या/Enrolment No.: 1528/66242/26548

Download Date : 18/05/2017

Generation Date : 29/04/2017

To

ગિરિજા ચંદ્રશેખર અયાચિ

Girija Chandrashekhar Ayachi

plot no. 12

ward 12/b

gandhidham

Gandhidham

Kachchh Gandhidham

Gujarat - 370201

9726209999

Signature valid

તમારો આધાર નંબર / Your Aadhaar No. :

5869 8437 9259

મારો આધાર, મારી ઓળખ

Government of India

ગિરિજા ચંદ્રશેખર અયાચિ

Girija Chandrashekhar Ayachi

જન્મ તારીખ/ DOB: 01/07/1969

સ્ત્રી / FEMALE

5869 8437 9259

મારો આધાર, મારી ઓળખ

Government of India

AADHAAR

સૂચના

- આધાર ઓળખાણનું પ્રમાણ છે, નાગરિકતાનું નહિ.
- ઓળખાણનું પ્રમાણ ઓનલાઈન ઓથેન્ટિકેશન દ્વારા પ્રાપ્ત કરે
- આ ઇલેક્ટ્રોનિક પ્રક્રિયા દ્વારા બનાવેલા દસ્તાવેજ છે.

INFORMATION

- Aadhaar is a proof of identity, not of citizenship.
- To establish identity, authenticate online.
- This is electronically generated letter.

- આધાર દેશભરમાં માન્ય છે.
- આધાર ભવિષ્યમાં સરકારી અને બિન-સરકારી સેવાઓનો લાભ મેળવવામાં ઉપયોગી થશે.
- Aadhaar is valid throughout the country.
- Aadhaar will be helpful in availing Government and Non-Government services in future.

भारत सरकार - भारतीय डाक सेवा • Govt. of India - Indian Bureau of Mail • सत्यमेव जयते

अनुमोदित APPROVED

भारतीय विशिष्ट ओळखण प्राधिकरण

Unique Identification Authority of India

सरनामुं :

પ્લોટ નો. 12, વૉર્ડ 12/બી,

ગાંધીધામ, ગાંધીધામ, કચ્છ,

ગુજરાત - 370201

Address:

plot no. 12, ward 12/b,

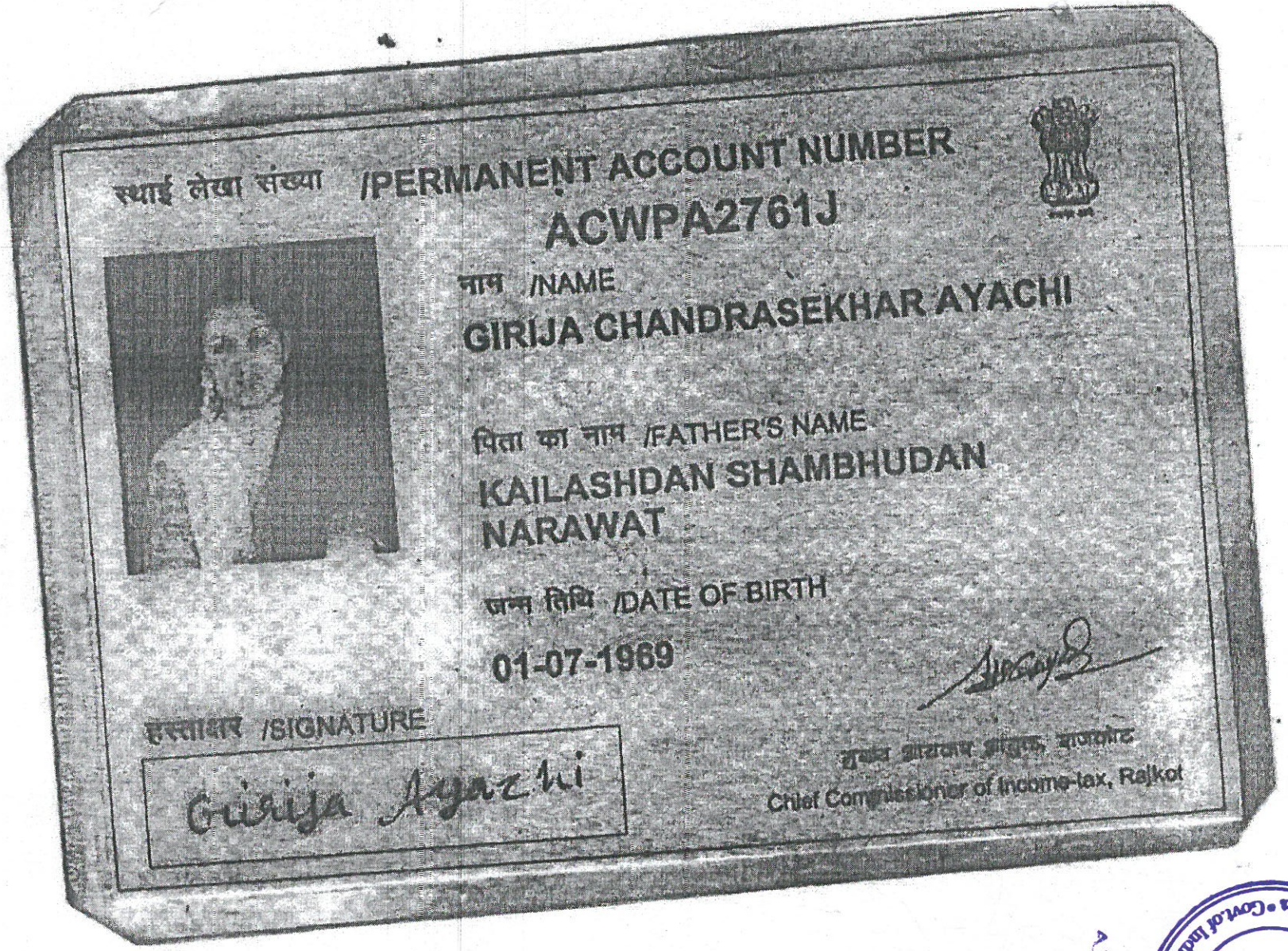
gandhidham, Gandhidham,

Kachchh,

Gujarat - 370201

5869 8437 9259

1947 | help@uidai.gov.in | www.uidai.gov.in



स्थाई लेखा संख्या /PERMANENT ACCOUNT NUMBER

ACWPA2761J

नाम /NAME

GIRIJA CHANDRASEKHAR AYACHI

पिता का नाम /FATHER'S NAME

KAILASHDAN SHAMBHUDAN NARAWAT

जन्म तिथि /DATE OF BIRTH

01-07-1969

हस्ताक्षर /SIGNATURE

Girija Ayachi

मुख्य आयकर आयुक्त, राजकोट

Chief Commissioner of Income-tax, Rajkot

APPROVED

अनुमोदित

भारत सरकार • Govt. of India • Indian Bureau of Mines • भारतीय खान ब्यूरो

सत्यमेव जयते

भारतीय गैर न्यायिक

एक सौ रुपये

Rs. 100

ONE

रु. 100

सत्यमेव

भारत

INDIA NON





राजस्थान RAJASTHAN

T 566795

खअ/सीकर/रि/प्र/खप–10/1998

पूरक संविदा

यह नॉनज्युडिशियल स्टाम्प पेपर रूपये 100/– का श्री बजरंग कुमार बंसल पुत्र श्री महावीर प्रसार अग्रवाल निवासी 'मावण्डा आर.एस. तहसील नीमकाथाना जिला सीकर के पक्ष में खनन पट्टा वास्ते खनिज आयरनओर निकट ग्राम बागोली तहसील उदयपुरवाटी जिला झुन्झुनूं में क्षेत्र 4.945 (5.00 हैक्टर) का शासन के आदेश कमांक प–17(32)खान/ग्रुप–1/2002 दिनांक 10.05.02 एवं सम संख्या आदेश दिनांक 28.10.02 से अवधि संविदा पंजियन तिथि से 30 वर्ष हेतु स्वीकृत हुआ। जिसका संविदा निष्पादन दिनांक 19.10.02 को होकर पंजीयन दिनांक 01.11.02 को होकर खनन पट्टा 30 वर्ष हेतु प्रभाव में आया।

पट्टाधारी श्री बजरंग कुमार बंसल के पक्ष में संविदा निष्पादित क्षेत्र एवं आवंटित/स्वीकृत क्षेत्र के मूल सीमांकन दिनांक 01.08.2002 में भिन्नता पायी गई. कि स्थाई बिन्दु बालाजी की छतरी एवं इन्टर मिडियेट पॉईंट मदन सिंह के कुंऐ का सही कनेक्शन नहीं होना पाया गया तथा श्री बजरंग कुमार बंसल का सीमांकन करते वक्त बालाजी की छतरी से श्री मदन सिंह के कुंऐ तक का सीमांकन सही नहीं होना पाया गया। जिसकी मौके पर पुनः सीमांकन कर बालाजी की छतरी से कुंऐ की बियरिंग 234° दूरी 341 मीटर के अनुसार किया जाने पर शासन के पत्र कमांक प. 17(32)खान/ग्रुप–2/2000 दिनांक 30.11.2012 द्वारा मूल सीमांकन में एफ.आर. पी. से लीज पिलर की विवरण सूची में इन्टरमिडियेट स्टेशन स्थाई व निर्विवादित प्रकृति का होने पर एफ.आर.पी. से ऐसे स्थाई व निर्विवादित इन्टरमिडियेट स्टेशन को सीधा जी.पी.एस. से जोड़ने की अनुमती इस शर्त पर दी गई है कि क्षेत्र किन्ही अन्य

भारत सरकार-भारतीय खान ब्यूरो
Govt. of India-Indian Bureau of Mines
सत्यमेव जयते
अनुमोदित
APPROVED

SUSHIL KUMAR
NOTARY
Regd. No-
GOVT. OF IN

ATTESTED
11 JAN 2013
Notary Public, Sikar (Raj.)

अधीक्षण खनि अभियन्ता
जयपुर वृत, जयपुर

ATTESTED

7166
1199

बजरंग कुमार बंसल S/o महावीर
प्रसाद बंसल नि- मावण्डा

M. L. SAINI
STAMP VENDER
L. No. 14/01
NEEMKATHANA

R-S

14-12-12

14-12-12

क्षेत्रों से विरोधित होना नहीं पाया जाने पर बालाजी की छतरी से श्री मदन सिंह के कुंऐ की बियरिंग 234 व दूरी 341 मीटर लेकर क्षेत्र का पुनः सीमांकन हेतु निदेशालय के पत्रांक निखाभू/सीकर/सी.सी. 11/एम.एल. 10/98/1193 दिनांक 05.12.2012 से पुनः सीमांकन के आदेश दिये जने पर क्षेत्र का पुनः सीमांकन दिनांक 19.12.2012 को बालाजी की छतरी से 'श्री मदन सिंह के कुंऐ की बियरिंग छतरी से एक्स 280°–85', एक्स से वाई 195°–55', वाई से वैल 233°–225 मीटर के स्थान पर सीधे इन्टरमिडियेट कनेक्शन 234° व दूरी 341 मीटर से सही किया गया है।

अन्य शर्ते मूल संविद व प्रधान खनिज रियायत नियमावली 1960 व एम.एम. आर.डी. एक्ट 1957 व उनमें समय–समय पर होने वाले संशोधनानुसार मान्य होगी, तथा पट्टाधारी राज्य सरकार /भारत सरकार को देय होने वाले समस्त करों का एवं अधिक रॉयल्टी का नियमानुसार भुगतान करेगा।

आज दिनांक 10-1-2013 को मेरे द्वारा नीचे अंकित गवाहान के समक्ष पूरक संविदा का निष्पादन किया गया ।

प्रमाणित

हस्ताक्षर पट्टाधारी

खनि अभियन्ता, सीकर

अधीक्षण खनि अभियन्ता
जयपुर वृत जयपुर

राजस्थान के राज्यपाल की ओर से
अधीक्षण खनि अभियन्ता,
जयपुर वृत जयपुर

गवाहान–

1. SANDEEP GUPTA S/O Shri Mahendra Gupta
Buxar Naibagar Bihar

2. GAJRAJ SINGH S/O SH. TARA SINGH
A-24, JAGDAMBA COLONY
AMBABARI JAIPUR

SUSHIL KUMAR NOTARY Regd. No. 2629 GOVT. OF INDIA

ATTESTED
11 JAN 2013
(Raj.)

ANNEXURE-2

भारत सरकार-भारतीय खान ब्यूरो • Govt.of India-Indian Bureau of Mines • सत्यमेव जयते

अनुमोदित
APPROVED

खा/सीकर ग्रु0/पप-10/98/

संविदा

यह नोन्न जुडिशियल स्टाम्प पेपर रू0 1400/- अक्षरे रूपये एक हजार चार सो मात्र के किता नग एक रूपये एक हजार, नग तीन रूपये एक सो, के तथा एक रूपये तीस का व एक रूपये बीस का कुल नग सात खनन पटटा वास्ते खनिज आपरन ओर निकट ग्राम बागोली तह0 उदयपुरवाटी जिला झुन्झुनू मे° क्षेत्र 4.9455 हैक्टर्स। सलग्न नक्शा व सीमांकन रिपोर्ट अनुसार अवधि संविदा पंजीयन की तिथी से बीस वर्ष के लिए स्थिर भाटक एम.एम.डी.आर एक्ट, 1957 की तृतीय अनुसूची के अनुसार एंव समय 2 पर संशोधन हो उसके अनुसार देय होगा तथा अधिशुल्क एक्ट की अनुसूची द्वितीय के अनुसार एंव उसमें होने वाले संशोधन के अनुसार देय होगी की शर्त पर शासन के आदेश क्रमांक प-17132। खान/ग्रुप-1/2000 दिनांक 10.5.02 से श्री बजरंग कुमार बंसल पुत्र श्री महावीर प्रसाद अग्रवाल निवासी ,मावन्डा (रेल्वे स्टेशन) तह0 नीमकाथाना जिला सीकर के पक्ष में स्वीकृत हुआ है, के साथ है ।

अन्य शर्तें सलग्न संविदा व प्रधान खनिज रियायत नियमावली 1960 व एम0एम0आर0डी0एक्ट, 1957 व उनमें समय समय पर होने वाले संशोधनानुसार मान्य होगी । पटटाधारी राज्य सरकार/भारत सरकार को देय होने वाले समस्त करों का अधिक रोयल्टी का नियमानुसार भुगतान करेगा ।

हस्ताक्षर पटटाधारी

प्रमाणित

खनि अभियन्ता, सीकर

साक्षी:-

1. (B.S. Poonia S/o Sh. N.R. Poonia)
2. Asmita Saini S/o Mool Chand
NKY.

M.L. 10/98 (175)

FORM K

MODEL FORM OF MINING LEASE

(See Rule 31)

THIS INDENTURE made this _____ day of _____ Years _____ between the Governor of RAJASTHAN/the President of India (hereinafter referred to as the "State Government" which expression shall where the context so admits be deemed to include the successors and assigns) of the one part and:-

(When the lessee is an individual)

Mr. श्री भजराज कुमार वसेल पुत्र श्री मघराज उम्र लगभग अनुमानतः R/o सावजा (R.S.) तह० नीमकाथाना जिला सीकर

(Name of person with address & occupation) (Hereinafter referred to as "the lessee" which expression shall where the context so admits be deemed to include his heirs, executors, administrators, representatives and premitted assigns).

(When the Lessees are more than one individual)

Mr. _____

Mr. _____

(Name of person with address and occupation) (hereinafter referred to as "the lessee" which expression shall where the context so admits be deemed to include their respective heirs, executors, administrators, representatives and their permitted assigns).

(When the Lessee is a registered firm)

Mr. _____

Mr. _____

Mr. _____

भारत सरकार-भारतीय खान ब्यूरो Govt. of India-Indian Bureau of Mines सत्यमेव जयते

अनुमोदित APPROVED

खनि अभियन्ता सीकर

Contd....2

Name and addresses of all the partners all carrying on business in partnership under the firm and name and style of M/S _____(name of firm) registered under the Indian Partnership Act, 1932 (9 of 1932) and having their registered Office at ----- ---------- in the town of (hereinafter referred to as "the licensee" which expression where the context so admits be deemed to include all the said partners their respective heirs, executors, legal representatives and permitted assigns).

(When the Lessee is a registered Company)

Mr.---------- ---------- (Name of Company) a company registered under---------- ---------- (Act under which incorporated) and having its registered Office at ---------- ---------- (Address)(here in after referred to as "the lessee" which expression shall where the context so admits be deemed to include its successors and permitted assigns) of the other part.

-a-

WHEREAS THE lessee/lessees has/have applied to the State Government in accordance with the Mineral Concession Rules, 1960 (herein after referred to as the said rules) for a mining lease for ---------- in respect of the lands described in Part I of the Schedule here under written and has/have/deposited with the State Government the sum of Rs. /0000/- as security and the sum of Rs. /000/- for meeting the preliminary expenses for a mining lease (and WHEREAS the Central Government has approved the grant of lease).

Contd...3

खनि अभियन्ता

WITNESSETH that in consideration of the rents and royalties, convenants and agreements by and in these presents and the Schedule hereunder written reserved and contained and on the part of the lessee/lessees to be paid observed and performed, the State Government (with the approval of the Central Government) here by grants and demises into lessee/lessees.



All those the mines beds/veins seams of-लौह अयस्क

---(here state the mineral or minerals) (herein after and in the Schedule referred to as the said minerals) situated lying and being in or under the lands which are referred to in Part I of the said schedule, together with the liberties, powers and privileges to be exercised or enjoyed in connection here with which are mentioned in Part II of the said schedule subject to the restrictions and conditions as to the exercise and enjoyment of such liberties, powers and privileges which are mentioned in Part III of the said Schedule EXCEPT and reserving out of this demise unto the State Government the liberties, powers and privileges mentioned in Part IV of the said Schedule TO HOLD the premises hereby granted and demised unto the lessee/ lessees from the date of registration/execution of this

lease deed or from _____ day _____ year _____

_____ for the term of संलग्न पंचीयन विलेख के (अनुसार) years (वर्ष) 20 वर्ष,

hence next ensuring YIELDING AND PAYING therefore into the State Government the several rents and royalties mentioned in Part V of the said Schedule at the respective times therein specified subject to the provisions contained in Part VI of the said Schedule and the lessee/lessees hereby convenants/convenant with the State Government as in Part VII of the said Schedule is expressed and the State Government hereby convenants with the lessee/lessees as in Part VIII of the said Schedule as expressed AND it is hereby mutually agreed between the parties here to as in Part IX of the said Schedule is expressed.

IN WITNESS WHEREOF these presents have been executed in manner here under appearing the day and year first above written.

The Schedule above referred to :

PART I

THE AREA OF THIS LEASE

Location and area of the lease:

All that tract of lands situated at ...पाडोली.... (Description of area or areas,...4.945 (S.E.R.) in (Mauza) in...334 पाडोली..... the Registration District of ...चन्द्रपुर.... sub-District..... and Thana...चन्द्रपुर..... Settlement Cadastral survey Nos.45 P.9-10 .....containing an area 4.945 (S.E.R.)..Hectares thereabouts delineated in the plan hereto annexed and thereon coloured लाल ..... and bounded as follows:-

पश्चिम में संरक्षित वन अनुसूची

खनि अधिकारी

सीमा

Contd.::4

On the North by — As per plan and description
On the South by
On the East by — Report Attached herewith
and
On the West by
herein after referred to as "the said lands".

PART II

Liberties, powers and privileges to be exercised and enjoyed by the lessee/lessees subject to the restrictions and conditions in Part III.

To enter upon land and search for, win, work etc.

1. Liberty and power at all times during the term hereby demised to enter upon the said lands and to search for mine, bore, dig, drill for, win, work, dress, process, convert, carry away and dispose of the said mineral/minerals.

To sink, drive and make pits, shafts and inclines etc.

2. Liberty and power for or in connection with any of the purposes mentioned in this part to sink drive make maintain and use in the said lands and pits shafts, inclines, drifts levels water-ways airways and other works (and to use maintain deepen or extent any existing works of the like nature in the said lands).

To bring and use machinery equipment etc.:-

3. Liberty and power for or in connection with any of the purposes mentioned in this part to erect, construct, maintain and use on or under the said lands any engines, machinery, plant, dressing floors, furnaces, coke ovens, brick-kilns, work-shops, store-houses, bungalows, godowns, sheds and other buildings and other works and conveni-ences of the like nature on or under the said lands.

To make roads and ... and use existing roads and ways:-

4. Liberty and power for or in connection with any of the purposes mentioned in this part to make any tramways, railways, roads, aircraft landing grounds and other ways in or over the said lands and to use maintain and go and repass with or without horses, cattle, wagons, aircrafts, locomotives or other vehicles over the same (or any existing tramways roads and other ways in or over the said lands) on such conditions as may be agreed to.

खनि अभियन्ता
सीकर

Contd...5

To get building and road materials etc.:-

5. Liberty and power for or in connection with any of the purposes mentioned in this part to quarry and get stone gravel and other buildings and road materials and clay and to use and employ the same and to manufacture such clay into bricks or tiles and to use such bricks or tiles but not to sell any such material bricks or tiles.

भारत सरकार-भारतीय खान ब्यूरो • Govt. of India-Indian Bureau of Mines • सत्यमेव जयते

अनुमोदित
APPROVED

To use water from streams etc.:-

6. Liberty and power for or in connection with any of the purposes mentioned in this part but subject to the right of any existing or future lessees and with the written permission of Deputy Commissioner/Collector to appropriate and use water from any streams water-courses, springs or other sources in or upon the said lands and to divert step up or dam any such stream or water-course and collect or impound any such water and to make construct and maintain any water-course culverts, drains or reservoirs but not as so to deprive any cultivated lands, villages, buildings or watering places for livestock of a reasonable supply of water as before accustomed nor in any way to foul or pollute any stream or springs, Provided that the lessee/lessees shall not interfere with the navigation in any navigable stream nor shall divert such stream without the previous written permission of the State Government.

To use land for stacking, heaping, depositing purposes:-

7. Liberty and power to enter upon and use a sufficient part of the surface of the said lands for the purpose of stacking, heaping, storing or depositing there in any produce of the mines or works carried on and any tools, equipment, earth and materials and substances dug or raised under the liberties and powers mentioned in this part.

Beneficiation and conveying away of production :-

8. (a) Liberty and power to enter upon and use a sufficient part of the said lands to beneficiate any ore produced from the said lands and to carry away such beneficiated ore.

To make coke (to be used in case of coal only):-

(b) Liberty and power upon the said lands to convert into coke any coal or dust produced from the said lands and to carry away such coke.

खनि अभियन्ता

Contd....6

To clear brushwood and to fell and utilise trees, etc.:-

9. Liberty and power for or in connection with any of the purposes mentioned in this part and subject to the existing rights of others and save as provided in clause 3 of Part III of this Schedule to clear undergrowth and brushwood and to fell and utilise any trees or timber standing or found on the said lands provided that the State Government may ask the lessee/lessees to pay for any trees or timber felled and utilised by him/her at the rates specified by the Deputy Commissioner/Collector or the State Government.

PART III

Restrictions and Conditions as to the Liberties, Powers and Privileges in Part - II.

No building etc. upon certain places :-

1. No building or thing shall be erected, set up or placed and no surface operations shall be carried on in or upon any public pleasure ground, burning or burial ground or place held sacred by any class of persons or any house or village site, public road or other place which the State Government may determine as public ground nor in such a manner as to injure or prejudicially effect any buildings works property or rights of other persons and no land shall be used for surface operations which is already occupied by persons other than the State Government for works or purposes not included in this lease. The lessee/ lessees shall not also interfere with any right of way, well or tank.

Permission for surface operations in a land not already in use :-

2. Before using for surface operations any land which has not already been used for such operations, the lessee/lessees shall give to Deputy Commissioner/Collector of the District two calendar months previous notice in writing specifying the name or other description of the situations and the extent of the land proposed to be so used and the purpose for which the same is required and the said land shall not be so used if objection is issued by the Deputy Commissioner/Collector within two months after the receipt by him of such notice unless the objections so stated shall on reference to the State Government be annulled or waived.

To cut trees in unreserved lands :-

3. The lessee/lessees shall not without the express sanction of the Deputy Commissioner/ Collector cut down or injure any timber or trees on the said lands but may without such sanction

Cont....7

clear away any brushwood or undergrowth which interfere with any operations authorised by these presents. The Deputy Commissioner/Collector or the State Government may require the lessee/lessees to pay for any trees of timber felled and utilised by him/them at the rates specified by the Deputy Commissioner/Collector of the District/[illegible]

To enter upon reserved forests:-

4. Not withstanding anything in this schedule contained the lessee/lessees shall not enter upon any reserved forest included in the said lands without previous sanction in writing of the District Forest Officer nor fell, cut and use any timber or trees without obtaining the sanction in writing of that officer nor otherwise than in accordance with such conditions as the State Government may prescribe.

No mining operations within 50 meters of public works etc.:-

5. The lessee/lessees shall not work or carry on or allow to be worked or carried on any mining operations at or to any point within a distance of 50 metres from any railway line except with the previous written permission of the Railway Administration concerned (or under or beneath any ropeway or any ropeway [illegible]tion, except under and in accordance with the written permission of the authority owning the ropeway) or from any reservoir, canal or other public works such as public roads and buildings or inhabited site except with the previous written permission of the Deputy Commissioner/Collector or any other officer authorised by the State Government in this behalf and otherwise than in accordance with such instructions, restrictions and conditions wither general or special which may be attached to such permission. The said distance of 50 metres shall be measured in the case of railway, reservior or canal horizontally from the outer toe of the bank or the outer edge of the cutting as the case may be and in case of a building horizontally from the plinth thereof. In the case of village roads no working shall be carried on within a distance of 10 meters of the outer edge of the cutting except with the previous permission of the Deputy Commissioner/ Collector or any other officer duly authorised by the State Government in this behalf and otherwise than in accordance with such directions restrictions and additions, either general or special, which may be attached to such permission.

Explanation :- For the purposes of this clause the expression "Railway Administration" shall have the same meaning as it is defined to have in the Indian Railways Act, 1890 by clause (6) of section 3 of that Act. "Public Road" shall mean a road which has been constructed by artificially surfaced as distinct from a track resulting from repeated use. Village road will include any track shown in the Revenue record as village road.

Contd...8

खनि अभियन्ता
सीकर

भारत सरकार-भारतीय खान ब्यूरो
Govt. of India-Indian Bureau of Mines
सत्यमेव जयते

अनुमोदित
APPROVED

Facilities for adjoining Government licences and leases :-

6. The lessee/lessees shall allow existing and future holders of Government licences or leases over any land which is comprised in or adjoins or is reached by the land held by the lessee/lessees reasonable facilities of access thereto :

PROVIDED THAT no substantial hindrance or interference shall be caused by such holders of licences or leases to the operations of the lessee/lessees under these presents and fair compensation (as may be mutually agreed upon or in the event of disagreement as may be decided by the State Government) shall be made to the lessee/lessees for loss or damage sustained by the lessee/lessees by reason of the exercise of this liberty.

PART IV

LIBERTIES, POWERS AND PRIVILEGES RESERVED TO THE STATE GOVERNMENT

To work other minerals :-

1. Liberty and power for the State Government, or to any lessee or persons authorised by it in that behalf to enter into and upon the said lands and to search for, win, work, dig, get, raise, dress, process, convert and carry away minerals other than the said minerals and any other substances and for those purposes to sink, drive, make erect, construct maintain and use such pits, shafts, inclines, drifts, levels and other lines, waterways, water courses, drains, reservoirs, engines, machinery, plant, building, canals, tramways, railways, roadways and other works and conveniences as may be deemed necessary or convenient.

PROVIDED THAT in the exercise of such liberty and power no substantial hindrance or interference shall be caused to or with the liberties, powers and privileges of the lessee/lessees under these presents and that fair compensation (as may be mutually agreed upon or in the event of disagreement as may be decided by the State Government) shall be made to the lessee/lessees for all loss or damage sustained by the lessee/lessees by reason or in consequence of the exercise of such liberty and power.

To make railways and roads :-

2. Liberty and power for the State Government, or any lessee or person authorised by it in that behalf to enter into and upon the said lands and to make upon over or through the same any railways, roadways or pipelines for any purpose other than those mentioned in Part II of these presents and to get from the said lands stones, gravel, earth and other materials for making

Contd.....9

सीकर

102

maintaining and repairing such railways, tramways, and roads or any existing railways and roads and to and repass at all times with or without horses, cattle or other animals, carts, wagons, carriages, locomotives or other vehicles over or along any such railways, roadlines and other ways for all purposes and as occasion may require, provided that in the exercise of such liberty and power by such other lessee or person no substantial hindrance or interference shall be causes to or with the liberties, powers and privileges of the lessee/lessees under these presents and that fair compensation, as may be mutually agreed upon or in the event of disagreement as may be decided by the State Government shall be made to the lessee/ lessees for all loss or damage substantial hindrance or interference shall be caused to or with the exercise by such lessee or person of such liberty and power



अनुमोदित
APPROVED

PART V

RENTS AND ROYALTIES RESERVES BY THIS LEASE

To pay dead rent or royalty whichever is higher

1. The lessee shall pay, for every year except the first year of the lease, dead rent as specified in clauses 2 of this part :-

Provided that, where the holder of such mining lease becomes liable under section 9 of the Act, to pay royalty for any mineral removed or consumed by him or by his agent, manager employee, contractor or sub-lessee from the leased area, he shall be liable to pay either such royalty or the dead rent in respect of that area, whichever is higher.

Rate and mode of payment of dead rent :-

2. Subject to the provisions of clause 1 of this part, during the subsistance of the lease, the lessee/lessees shall pay to the State Government annual dead rent for the lands demised and described in Part I of this schedule at the rate of the time being specified in the Third Schedule to the Act, in such manner as may be specified in this behalf by the State Government.

खनि अभियन्ता
बीकर

Contd..10

Rate and mode of the payment of royalty :-

3. Subject to the provision of clause I of this Part, the lessee/lessees shall during the subsistence of this lease pay to the State Government at such times and in such manner as the State Government may prescribe royalty in respect of any mineral/minerals removed by him/them from the leased area at the rate for the time being specified in the Second Schedule to the Mines and Minerals (Regulations and Development) Act, 1957.

Payment of surface rent, and water rate :-

4. The lessee/lessees shall pay rent and water rate to the State Government in respect of all parts of the surface of the said lands which shall from time to time be occupied or used by the lessee/lessees under the authority of these presents at the rate of Rs. [illegible] @ 70/- [illegible] and Rs. [illegible] @ 200/- [illegible] respectively per annum per hectare of the area so occupied or used and so in proporation for an area less than a hectare during the period from the commencement of such occupations or used until the area shall cease to be so occupied or used and shall as far as possible restore the surface land so used to its original conditions Surface rent and water rate shall be paid as here in before detailed in clause 2: PROVIDED THAT no such rent/water rate shall be payable in respect of the occupation and use of the area comprised in any roads or ways to which the public have full right of access.

PART VI

PROVISIONS RELATING TO THE RENTS AND ROYALTIES

Rent and royalties to be free from deduction etc. :-

1. The rent, water rate and royalties mentioned in Part V of this Schedule shall be paid free from any deductions to the State Government at [illegible] and such manner as the State Government may prescribed PROVIDED Always and it is hereby agree that Rs. [illegible] the balance standing to the credit of the lessee/lessees on account of the deposit made by him/them as licensee/licensees over an area which is included the said lands shall be retained and accepted by the State Government in satisfaction of the rents and royalties mentioned in Part V until they reach that amount.

Mode of Computation of Royalty :-

2. For the purposes of computing the said royalties the lessee/lessees shall keep a correct account of the mineral/minerals produced and despatched. The accounts as

Contd....11

खनि अधिकारी
सीकर

well as the weight of the mineral/minerals in stock or in the process of export may be checked by an officer authorised by the Central or State Government.

Here specify the mode of arriving at the sale price/prices at pits mouths of mineral/minerals.

Course of action if rents and royalties are not paid in time.

3. Should any rent, royalty or other sums due to the State Government under the terms and conditions of these presents be not paid by the lessee/lessees within the prescribed time. The same together with simple interest due thereon at the rate of twenty four percent per annum may be recovered on a certificate of such officer as may be specified by the State Government by general or special order, in the same manner as an arrear of land revenue.

भारत सरकार-भारतीय खान ब्यूरो
Govt.of India-Indian Bureau of Mines
सत्यमेव जयते
अनुमोदित
APPROVED

PART VII

THE CONVENANTS OF THE LESSEE/LESSEES

Lessee to pay rents and royalties, taxes, etc.:-

1. The lessee/lessees shall pay the rent, water rate and royalties reserved by this lease at such times and in the manner provided in Parts V and VI of these presents and shall also pay and discharge all taxes, rates assessments and impositions whatsoever being in the nature of public demands which shall from time to time be charged, assessed or imposed by the authority of the Central and State Government upon or in respect of the premises and works of the lessee/lessees in common with other premises and works of a like nature except demands for land revenues.

To maintain and keep boundary marks in good order:-

2. The lessee/lessees shall at his/their own expense erect and at all times maintain and keep in repair boundary marks and pillars according to the demarcation to be shown in the plan annexed to this lease. Such marks and pillars shall be sufficiently clear of the shrubs and other obstructions as to allow easy identification.

To commence operations within a year and work in a workman like manner :-

3. The lessee/lessees shall commence operation within one year from the date of execution of the lease and shall thereafter at all times during the continuance of his lease search for, win, work and develop, the said minerals without voluntary intermission in a skilful and workman like manner and as prescribed under clause 12 herein after without doing or permitting to be done any unnecessary or avoidable damage to the surface of the said lands or the crops buildings structures or other property thereon. For the purposes

Contd....12

खनि अभियंता
सीकर

of this clause operations shall include the erections of machinery, laying of a tramway or construction of a road in connection with the mine.

To indemnify Government against all claims :-

4. The lessee/lessees shall make and pay such reasonable satisfaction and compensation as may be assessed by lawful authority in accordance with the law in force on the subject for all damage, injury or disturbance which may be done by him/them in exercise of the powers granted by this lease and shall indemnify and keep indemnified fully and completely the State Government against all claims which may be made by any person in respect of any such damage, injury or disturbance and all costs and expenses in connection therewith.

To secure and keep in good condition pits, shafts etc. :-

5. The lessee/lessees shall during the subsistence of this lease well and sufficiently secure and keep open with timber or other durable means all pits, shafts and workings that may be made or used in the said lands and make and maintain sufficients fences to the satisfaction of the State Government round every such pit, shaft or working whether the same is abandoned or not and shall during the same period keep all workings in the said lands except such as may be abandoned accessible free from water and foul air as far as possible.

To strengthen and support the mine to necessary extent :-

6. The lessee/lessees shall strengthen and support to the satisfaction of the Railway Administration concerned or the State Government, as the case may be any part of the mine which in its opinion requires such strengthening or support for the safety of any railway, reservoir, canal road and any other public works or structures.

To allow inspections of workings :-

7. The lessee/lessees shall allow any officer authorised by the Central Government or the State Govt. in that behalf to enter upon the premises including any building, excavation or land comprised in the lease for the purpose of inspecting, examining, surveying (Prospecting) and making plans their of sampling and collecting any data and the lessee/lessees shall with proper person employed by the lessee/lessees and acquainted with the mines and work effectually assist such officer, agents, servants and workmen in conducting every such inspections and shall afford them all facilities, information connected with the working of the mines which they may reasonably require and also shall and will conform to and observe all order and regulations which the Central and State Governments as the result of such inspection or otherwise may, from time to time see fit to impose.

To report accident :-

8. The lessee/lessees shall without delay send to the

खनि अभियन्ता

Contd....13 सीकर

Deputy Commissioner/Collector a report of any accident causing death or serious bodily injury or serious injury to property orseriously affecting or endangering life or property which may occur in the course of the operations under this lease.

To report discovery of other minerals :-

9. The lessee/lessees shall report to the State Government the discovery in the leased area of any mineral not specified in the lease within sixty days of such discovery alongwith full particulars of the nature and position of each such find. If any mineral not specified in the lease is discovered in the leased area, the lessee/lessees shall not win and dispose of such mineral unless such mineral is included in the lease or a separate lease is obtained therefore.

To keep records and accounts regarding production and employees etc :-

10. The lessee/lessees shall at all time during the said term keep or cause to be kept at an office to be situated upon or near the said lands correct and intelligible books of accounts which shall contain accurate entries showing from time to time :-

1. Quantity and quality of the said mineral/minerals realised from the said lands.

2. Quantity of the various qualities of ores beneficiated or converted (for example coal converted into coke).

3. Quantities of the various qualities of the said mineral/minerals sold and exported separately.

4. Quantities of the various qualities of the said mineral/minerals otherwise disposed of and the manner and purpose of such disposal.

5. The prices and all other particulars of all sales of said mineral/minerals.

6. The number of persons employed in the mines or works or upon the said lands specifying nationality, qualifications and pay of the technical personnel.

7. Such other facts particulars and circumstances as the Central or the State Governments may from time to time require and shall also furnish free of charge to such officers and such time as the Central and State Government may appointed true and correct abstract of all or any such books of accounts and such information and returns to all or any of the matters aforesaid as the State Government may prescribe and shall at all reasonable times allow such officers as the Central Government or State Government shall in that behalf appoint to enter into and have free access to the said officers for the purposes of examining and inspecting the said books of accounts, plans and recordsand to make copies thereof and make extracts therefrom.

Contd.....14

भारत सरकार-भारतीय खान ब्यूरो • Govt of India-Indian Bureau of Mines • सत्यमेव जयते

अनुमोदित
APPROVED

खनि अभियन्ता

To maintain, plans, etc.:-

11. The lessee/lessees shall at all time during the said term maintain at the mine office correct intelligible up-to-date and complete plans and section of the mines in the said lands. They shall show all the operations and workings and all the trenches, pits and drillings made by him/them in the course of operations carried on by him/them under the lease, faults and other disturbance encountered and geological data and all such plans and sections shall be amended and filled up by and from actual surveys to be made for that purpose at the end of twelve months or any period specified from time to time and the lessee/lessees shall furnish free of charge to the Central and State Government ture and correct copies of such plans and sections whenever required. Accurate records of all trenches, pits and drillings shall show :

(a) The subsoil and straight through which they pass.
(b) Any mineral encountered.

Any other matter of interest and all data required by the Central and State Government, from time to time.

The lessee/lessees shall allow any officer or the Central the State Government, authorised in this behalf by the Central Government, to inspect the same at all reasonable times. He/they shall also supply when asked for by the State Government/the coal controller (The Director General Geological Survey of India,) (The Controller General, Indian Bureau of Mines) a composite plan of the area showing thickness, dip, inclination, etc. of all the seems as also the quantity of reserves quality wise.

11 A. The lessee shall pay a wage not less than the minimum wage prescribed by the Central or State Government from time to time.

11 B. The lessee shall comply with provisions of the (Mines Act 1952 and the rules made there under)

11 C. The lessee shall take measures for the protection of environment like planting of trees, reclamation of land, use of pollutions control devices and such other measures as may be prescribed by t the Central or State Government, from time to time, at his own expense.

11 D. The lessee shall pay compensation to the occupier of the land on the date and in the manner laid down in these rules.

11 E. The lessee shall, in the matter of employment, give preference to the tribals and to the persons who become displaced because of the taking up of mining operations.

खनि अभियन्ता
सीकर

Contd....15

101

Act 67 of 1957 :-

12. The lessee/lessees shall be bounded by such rules as may be issued from time to time by the Government of India under sections 18 of the Mines and Mineral (Regulation & Development) Act, 1957 (Act 67 of 1957) and shall not carry on mining or other operations under the said lease in any way other than as prescribed under these rules.

To providing weighing machine :-

13. Unless specifically exempted by the State Government the lessee/lessees shall provide and at all times keep at or near the pit head or each of the pit heads at which the said minerals shall be brought to bank a properly constructed and efficient weighing machine and shall weigh or cause to be weighed thereon all the said minerals, from time to time brought to bank sold, exported and converted and also the converted products and shall at the close of each day cause the total weights, ascertained by such means of the said minerals, ores products raised, sold, exported and converted during the previous twenty four hours to be entered in the aforesaid books of accounts. The lessee/lessees shall permit the State Government at all times during the said term to employ any person or persons to be present at the weighing of the said minerals as aforesaid and to keep accounts thereof and to check the accounts kept by lessee/lessees. The lessee/lessees shall give [illegible] days previous notice in writing to the Deputy Commissioner/Collector of every such measuring or weighing in order that he or some officer on his behalf may be present thereat.

भारत सरकार-भारतीय खान ब्यूरो
Govt. of India-Indian Bureau of Mines
सत्यमेव जयते
अनुमोदित
APPROVED

To allow test of weighing machine :-

14. The lessee/lessees shall allow any person or persons appointed in that behalf by the State Government at any time or times during the said term to examine and test every weighing machine to be provided and kept as aforesaid and the weights used there with in order to ascertain whether the same respectively are correct and in good repair and order and if upon any such examination or testing any such weighing machine or weights shall be found incorrect or out of repair or order the State Govt. may require that the same is adjusted, repaired and put in order by and at the expenses of the lessee/lessees and if such requisition be not complied with within fourteen days after the same shall have been made, the State Government may cause such, weighing machine or weights to be adjusted, repaired, and put in order and the expenses of so doing shall be paid by the lessee/lessees to the State Government on demand and if upon any such examination or testing as aforesaid any error shall be regarded as having existed for three calender months previous to the discovery thereof from the last occasion off so examining and testing the same weighing machine and weights in case such occasion shall be within such period of three months and the said rent and royalty shall be paid and accounted for accordingly.

Contd....16

खनि अधिकारी
सीकर

To pay compensation for injury of third parties :-

15. The lessee/lessees shall make and pay reasonable satisfaction and compensation for all damage, injury or disturbance or person or property which may be done by or on the part of lessee/lessees in exercise of the liberties and power granted by these presents and shall at all time save harmless and keep indemnified the State Government from and against all suits, claims and demands which may be brought or made by any person in respect of any such damage, injury or disturbance.

Not to obstract working of other minerals :-

16. The lessee/lessees will exercise the liberties and powers hereby granted in such a manner as to offer no unnecessary or reasonably avoidable obstruction or interruption to the development and working within the said lands of any minerals not included in this lease and shall at all times afford to the Central and State Govt. and to the holders of prospecting licences or mining leases in respect of any such minerals or any minerals within any land adjacent to the said lands as the case may be reasonable means of access and safe and convenient passage upon and across the said lands to such minerals for the purpose of getting working, developing and carrying away the same provided that the lessee/lessees shall receive reasonable compensation for any damage or injury which he/ they may sustain by reason or in consequence of the use of such passage by such lessees or holders of prospecting licenses.

Transfer of lease :-

17 (1) The lessee/lessees shall not, without the previous consent in writing of the State Government,

(a) assign, sublet, mortgage or in any other manner, transfer the mining lease, or any right, title or interest therein, or

(b) enter into or make any arrangement contract or understanding whereby the lessee/lessees will or may be directly or indirectly financed to a substantial extent by, or under which the lessees operations or undertakings will or may be substantially controlled by any person or body of persons other than the "lessee/lessees".

Provided that the State Government shall not give its written consent unless :-

(a) the lessee has furnished an affidavit alongwith his application for transfer of the mining lease specifying therein the amount that he has already taken or proposes to take as consideration from the transferee;

(b) the transfer of the mining lease is to be made to a person or body directly undertaking mining operations.

खान अधिकारी
सीकर

Contd....17

2. Without prejudice to the above provisions, the lessee/lessees may, subject to the conditions specified in the proviso to Rule 35 of said Rules, transfer this lease or any right, title or interest therein, to a person, (who has filed an affidavit stating that he has filed up-to-date income tax returns, paid income tax assessed on him and paid the income tax on the basis of self assessment as provided in the income tax Act, 1961 (43 of 1961), on payment of five hundred rupees) to the State Government;

Provided that the lessee/lessees shall make available to the transferee the original or certified copies of all plans of abandoned workings in the area and in a belt 65 metres wide surrounding it.

(Provided further that where the mortgage is an Institution or a Bank or a Corporation specified in Schedule V, it shall not be necessary for any such Institution or Bank or Corporation to meet with the requirement relating to income tax and the said valid clearance certificate.)

3. The State Government, may, by order in writing, de determine the lease at any time if the lessee/lessees has/ have in the opinion of the State Government, committed a breach of any of the above provisions or has/have transfered the lease or any right, title or interest therein otherwise than in accordance with clause (2) ;

Provided that no such order shall be made without giving the lessee/lessees a reasonable opportunity of stating his/their case.

Not to be financed or controlled by a Trust, Corporation, Firm or person :-

10. The lease shall not be controlled and the lessee/lessees shall not allow themselves to be controlled by any Trust, Syndicate, Corporation Firm or person except with the written consent of the Central Government. The lessee/lessees shall not entered into for make any arrangement compact or understanding where by the lessee/lessees will or may be directly or indirectly by or for the benefit of or subject to the control of any Trust, Syndicate, Corporation, Firm or person unless with the written sanction given prior to such arrangement compact or understanding being entered into or made of the Central Govt. and any or every such arrangement compact or understanding being entered into or made of the Central Government and any or every such arrangement compact or understanding as aforesaid (entered into or made with such sanction as aforesaid) shall only be entered into or made and shall always be subject to an express condition binding upon the other party or parties there to that on the occasion of the state of emergency of which the President of India in his discretion shall be the sole judge it shall be terminable if so required in writing by the State Government and shall in the event of any such requisition being made be forthwith thereafter determined by the lessee/lessees accordingly.

खनि अभियन्ता
बीकर

Contd....18

Lessee shall deposit any additional amount necessary:

19. Whenever the security deposit of Rs. ~~2000/1000~~ 10,000/-(Rs.Ten thousand only) or any further sum hereafter deposited with the State Government in replenishment thereof shall be forfeited or applied by the Central or State Government pursuant to the power in hereinafter declared in that behalf the lessee/ lessees shall deposit with the State Government such further sum as may be sufficient with the unappropriated part thereof to bring the amount in deposit with the State Government up to sum of Rs. 1000/-500.

Delivery of workings in good order to State Government after determination of lease :-

20. The lessee/lessees shall at the expiration or sooner determination of the said term or any renewal thereof deliver upto the State Government all mines, pits, shafts, inclines, drifts, levels, waterways, airways and other works now existing or hereafter to be sunk or made on or under the said lands except such as have been abandoned with the sanction of the State Government and in any ordinary and fair course of working all engines, machinery plant, buildings, structures, otherworks and conveniences which at the commencement of the said term were upon or under the said lands and all such machinery set up by the lessee/lessees below ground which cannot be removed without causing injury to the mines or works under the said lands (except such of the same as may with the sanction of the State Government have become discussed) and all buildings and structures of bricks or stone erected by the lessee/lessees above ground level in good repair order and condition and fit in all respects for further working of the said mines and the said minerals.

Right of pre-emption :-

21. (a) The State Government shall from time to time and all times during the said term have the right (to be exercised by notice in writing to the lessee/lessees) of pre-emption of the said minerals (and all products thereof) lying in or upon the said lands hereby demised or elsewhere under the control of the lessee/lessees and the lessee/ lessees shall with all possible expenditicn deliver all minerals or products or minerals purchased by the State Government under the power conferred by this provision in the quantities at the times in manner and at the place specified in the notice exercising the said right.

(b) Should be the right of pre-emption conferred by this present provision be exercised and a vessel chartered to carry the minerals of products thereof procured on behalf of the State Government or the Central Government be detained or demurrage at the port of loading the lessee/lessees shall pay the amount due for demurrage according to the terms of the charter party of such vessel unless the State Government shall be satisfied that the delay is due to causes beyond the control of the lessee/lessees.

(c) The price to be paid for all minerals or products or minerals taken in pre-emption by the State Government in exercise of the right hereby conferred shall be the fair market price prevailing at the time of pre-emption PROVIDED

खनि अभियन्ता
सीकर

Contd....19

अनुमोदित
APPROVED

THAT in order to assist in arriving at the said fair market price the lessee/lesses shall if so required, furnish to the State Government for the confidential information of the Government, particulars of the quantities, descriptions and prices of the said minerals or products thereof sald to other customers and of charters entered into for freight, for carriage of the same and shall produce to such officer or officers as may be directed by the State Government original or authenticated copies of contracts and charter parties entered into for the sale or freightage of such minerals or products.

(d) In the event of the existence of a state of war or emergency (of which existence and President of India shall be the sole judge and a notification to this effect inthe Gazette of India shall be conclusive proof.), the State Government with the consent of the Central Government shall from time to time and all times during the said term have the right (to be exercised by a notice in writing tothe lessee/lesses forthwith take possession and control of the works, plant/machinery and premises of the lessee/lessees on or in connection with the said lands or operations under this lease and during such possession or control the lessee/lessees shall conform to the obey all directions given by or on behalf of the Central Government or State Government regarding the use of employment of such works, plants, premises and minerals; PROVIDED THAT fair compensation which shallbe determined in default of agreement by the State Government shall be paid to the lessee/lessees for all loss or damage sustained by him/them by reason or in consequence of the exercise of the powers conferred by this clause and PROVIDED ALSO that the exercise of such powers shall not determine the said term hereby granted or affect the terms and provision of these presents further than may be necessary to give effect to the provisions of this clause.

Employment of foreign national:-

22. The lessee/lessees shall not employ in connection with the mining operations any person who is not an Indian national except with the previous approval of the Central Government.

Recovery of expenses incurred by the State Government:-

23. If any of the works or matters which in accordance with the covenants in that behalf hereinbefore contained are to be carried or performed by the lessee/lessees be not so carried out or performed with inthe time specified in the behalf, the State Government may cause the same to be carried out or performed and the lessee/lessees shall pay the State Government on demand all expenses which shall be incurred in such carrying out or performance of the same and the decision of the State Government as to such expenses shall be final.

Furnishing of geophysical data:-

24. The lessee/lessees shall furnish:

(a) all geophysical data relating to mining fields, or engineering and ground water surveys, such as anomaly maps, sections, plans, structures, contour maps, logging, collected by him/them during the course of mining operations to the 1(Director-General, Geological Survey of India, Calcutta)

1. Substituted by G.S.R. 565 dated 4.3.1967

(b) all informations pertaining to investigations of radioactive minerals collected by him/them during course of mining operations to the Secretary Department of Atomic Energy, New Delhi.

Data or information referred to above shall be furnished every year reckoned from the date of commencement of the period of the mining lease.

PART VIII

THE COVENANTS OF THE STATE GOVERNMENT

Lessee/Lessees may hold and enjoy rights quietly :-

1. The lessee/lessees paying the rents, water rate and royalties hereby reserved and observing and performing all the convenants and agreements herein contained and on the lessee/lessees to be observed and performed shall may quietly hold and enjoy the right and premises hereby demised for and during the term hereby granted without any unlawful interruption from or by the State Government, or any person rightfully claiming under it.

Acquisition of land of third parties and compensation thereof :-

2. If in accordance with the provision of clause 4 of Part VII of this Schedule the lessee/lessees shall offer to pay to an occupier of the surface of any part of the said lands compensation for any damage or injury which may arise from the proposed operations of the lessee/lessees and the said occupier shall refuse his consent to the exercise of the right and powers reserved to the State Government and demised to the lessee/lessees by these presents and the lessee/lessees shall report the matter to the State Government and shall deposit with it the amount offered as compensation and if the Central/State Government is satisfied that the amount of compensation offered is fair and reasonable or if it is not so satisfied and the lessee/lessees shall have deposited with it such further amount as the State and Central Government shall consider fair and reasonable the State Government shall order the occupier to allow the lessee/lessees to enter the land and to carry out such operations as may be necessary for the purpose of this lease. In assessing the amount of such compensation the State Government shall be guided by the principles of the Land Acquisition Act.

To renew :-

3. The mining lease is renewable in terms of the provisions of the Act and the rules made thereund

Provided that the State Government may for reasons to be recorded in writing reduce the area applied for.

If the lease is in respect of minerals specified in the First Schedule to the Act, renewal will be subject to the prior approval of the Central Government.

If the lessee/lessees be desirous of taking a renewed lease of the premises hereby demised or of any parts of them for a further therm from the expiration of the term hereby granted and is other wise eligible, he/they shall prior to expiration of the last mentioned term give to the State Government (Twelve calendar months) previous notice in writing and shall pay the rent, rates and royalties hereby reserved and shall observed and perform the several convenants and agreements herein contained and on the part of the lessee/ lessees to be observed and performed up to the expiration of the term hereby granted. The State Government on receipt of application for renewal, shall consider it (in accordance with the provisions of the Act and the rules made thereunder) and shall pass orders as it deems fit. If renewal is granted, the State Government will at the expense of the lessee/ lessees and upon his executing and delivering to the State Government if required a counterpart thereof execute and deliver to the lessee/lessees a renewed lease of the said premises or part thereof for the further term of ५ (पाँच) वर्ष years at such rents, rates and royalties and on such terms and subject to such convenants and agreements, including this present convenant to renew as shall be in accordance with the Mineral Concession Rules, 1960, applicable to चूना पत्थर

_____ (Name of minerals) on the day next following the expiration of the terms hereby granted.

Liberty to determine the lease :-

4. The lessee/lessees may at any time determine this lease by giving not less than 12 calendar months notice in writing to the State Government or to such officer, or authority as the State Government may specify in this behalf and upon the expiration of such notice provided that the lessee/lessees shall upon such expiration render and pay all rents, water rates, royalties, compensation for damages and other moneys which may then be due and payable under these presents to the lessor or any other person or persons and shall deliver these presents to the State Government then this lease and the said term and the liberties, powers and privileges hereby granted shall absolutely cease and determine but without prejudice to any right of remedy of the lessor in respect of any breach of any of the convenants or agreements contained in these presents.

4 A. The State Government may on an application made by the lessee permit him to surrender one or more minerals from his lease which is for a group of minerals on the ground that deposits of that mineral have since exhausted or depleted to such an extent that it is no longer possible to work the mineral economically, subject to the condition that the lessee :-

(a) Make an application for such surrender of mineral at least six months before the intended date of surrender; and

खान अधिकारी
सीकर

(h) Gives an understanding that he will not cause any hindrance in the working of the mineral so surrendered by any other person who is subsiquen-tly granted a mining lease for that mineral.

Refund of security deposits :-

5. On such date as the State Government may elect within 12 calendar months after the determination of this lease of any renewal thereof, the amount of the security deposit paid in respect of this lease and then remaining in deposit with the State Government and not required to be applied to any of the purposed mentioned in this lease shall be refunded to the lessee/lessees. No interest shall run on the security deposit.

PART IX

GENERAL PROVISIONS

Obstructions to inspection :-

1. In case the lessee/lessees or his/their transferee/ assignee does/do not allow entry or inspection by the officers authorised by the Central or State Government under clauses (i), (j), or (l) of sub-rule (1) of rule 27 of said rules, the State Government shall give notice in writing to the lessee/ lessees requiring him/them to show cause within such time as may be specified in the notice why the lease should not be determined and his/their security deposit forfeited and if the lessee/lessees fails/fail to show cause within the foresaid time to the satisfaction of the State Government, the State Government may determine the lease and forfeit the whole or part of the security deposit.

PENALTY IN CASE of default in payment of royalty and breach of convenants :-

2. If the lessee/lessees or his/their transferee or assignee makes/make any default in payment of rent or water rate or royalty as required by section 9 of the Act or commits a breach of any of the conditions and convenants other than those referred to in convenant I above, the State Government shall give notice to the lessee/lessees requiring him/them to pay the rent, water rate, royalty or remedy the breach, as the case may be, within sixty days from the date of receipt of the notice and if the rent, water rate and royalty are not paid or the breach is not remedied within such period, the State Government without prejudice to any proceedings that may be taken against him/them determine the lease and forfeit the whole or part of the security deposit.

खनि अभियन्ता
बीकर

Contd....23

Penalty for repeated breaches of convenants :-

3. In cases of repeated breaches of convenants and agreements by the lessee/lessees for which notice has been given by the State Government in accordance with clauses (1) and (2) a forementioned on earlier occasion, the State Government without giving any further notice, may impose such penalty not exceeding twice the amount of annual deed rent specified in clause 2 Part V.

Failure to fulfil the terms of leases due to "Force Majeure" :-

4. Failure on the part of lessee/lessees to fulfil any of the terms and conditions of this lease shall not give the Central or State Government any claim against the lessee/lessees or be deemed a breach of this lease, in so far as such failure is considered by the said Government to arise from force majeure, and if through force majeure the fulfilment by the lessee/lessees of any of the terms and conditions of this lease be delayed, the period of such delay shall be added to the period fixed by this lease. In this clause the expression "Force Majeure" means act of God, war, insurrection riot, civil commotion, strike, earth quake, tide storm, tidal wave, flood lightening, exploration, fire earthquake and any other happening which lessee/lessees could not reasonably present on control.

Lessee/lessees to remove his/their properties on the expiry of lease :-

5. The lessee/lessees having first paid discharged rents, rates and royalties payable by virtue of these present may at the expiration or sooner determination of the said term or within six calendar months thereafter (unless the lease shall be determined under claused 1 and 2 of this Part and in that case at any time not less than three calendar months nor more than six calendar months after such determination) take down and remove for his/their own benefit all or any engines, machinery, plant, buildings, structures, tramways, railways and other works, erections and conveniences which may have been erected, set up or placed by the lessee/lessees in or upon the said lands and which the lessee/lessees is/are to not bound to deliver to the State Government under clause 20 of Part VII of this Schedule and which the State Government shall not desire to purchase.

Forfeiture of property left more than six months after determination of lease :-

6. If at the end of the six calendar months after the expiration or sooner determination of the said term under the pvorision contained in clause in Part VIII of this schedule become effective there shall remain in or upon the said land any engines, machinery, plant, buildings structure, tramways, railways and other work, erections and conveniences or other property which are not required by the lessee/ lessees in connection with operations in any other lands held by him/them under prospecting licence or mining lease the same shall if not be removed by the lessee/lessees within one calendar month after notice in writing requiring their removal has given to lessee/lessees by the State Government be deemed to become the property of the State Government and may be sold or disposed of in such manner as the State Government shall deem fit without liability to pay any

अनुमोदित
APPROVED

खनि अभियन्ता

compensation or to account to the lessee/lessees in respect thereof.

Notices :-

7. Every notice by these presents required to be given to the lessee/lessees shall be given in writing to such person resident on the said lands as the lessee/ lessees may appoint for the purpose of receiving such notices and if there shall have been no such appointment then every such notice shall be sent to the lessee/ lessees by registered post addressed to the lessee/ lessees at the address recorded in this lease or at such other address in India as the lessee/lessees may from time to time in writing to the State Government designate for the receipt of notices and every such service shall be deemed to be proper and valid service upon the lessee/ lessees and shall not be questioned or challenged by him/ them.

Immunity of State Government from liability to pay Compensation :-

8. If any event the order of the State Government are revised, revewed or cancelled by the Central Government, in pursuance of proceedings under chapter-VII of Mineral Concession Rules 1960, the lessee/lessees shall not be entitled to compensation for any loss sustained by the lessee/lessees in exercise of the powers and privileges conferred upon him/them by these presents.

8 A. The lease is executed at ~~[illegible]~~ Sujangarh District-Churu ~~[illegible]~~ of Rajasthan State and subject to the provision of Article 226 of the constitution of India, it is hereby agreed upon by the lessee and the lessor that in the event of any dispute in relation to the area under lease, condition of lease, the dues realisable under the lease and in respect of all matters touching the relationship of the lessee and the lessor, the suits (or appeals) shall be filed in the civil courts at ---------Churu----------(name of the city and it is hereby expressly agreed that neither party shall be competent to file a suit or bring any action or file any petition at any place other than the courts named above.

9. For the purpose of stamp duty the anticipated royalty from the demised land is Rs. [illegible] Per year.

Contd....25

खनि अभियन्ता
सीकर

भारत सरकार-भारतीय खान ब्यूरो
Govt of India-Indian Bureau of Mines

अनुमोदित
APPROVED

IN WITNESS WHEREOF these presents have been executed in the manner here under appearing the day and year first above written.

Signed by

Signature attested

(for and on behalf of the Governor/President of India)

खनि अधिकारी
सीकर

Signed by
(for and on behalf of lessee/licensee)

(In the presence of witness)

1. Witness by _____
Address B.S. Poonia S/o Sh. N.R. Poonia
R/o Neem-Ka-Thana

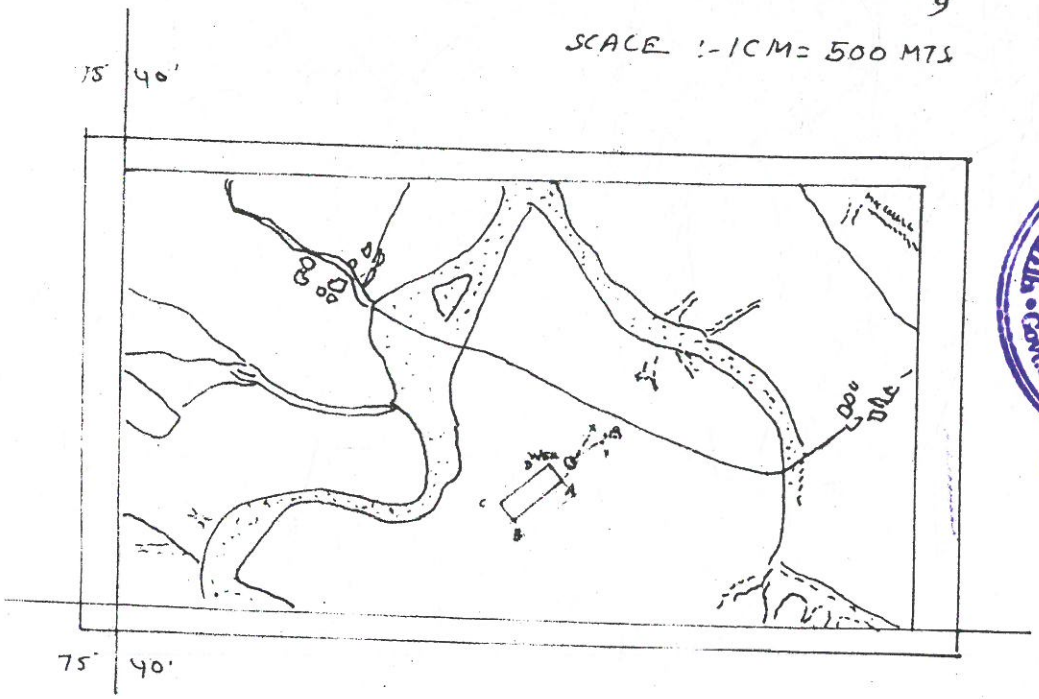
2. Witness by _____
Address Arjun Lal S/o Shyam Lal Chaudhary
(Neem Ka Thana)

DRG. NO. ME/SKR/71/8-02

MAP SHOWING THE DEMARCATED M.L.-10/98 FOR MINERAL IRON-ORE N.V. BAGOLI TEH. UDAIPUR-WATI DISTT. JJN. AREA GRANTED IN F.V.O. SH. BAJRANG KUMAR BANSAL.

TRACE PART OF TOPO-SHEET NO. 45 M/9

SCALE :- 1CM = 500 MTS



INDEX

DEMARCATED M.L.-10/98 AREA 'ABCD' = 4.945 Hect. SAY 5.0 Hect.
DEMARCATED BY. DATED. 1/8/02

SIGN OF PARTY

PREPARED BY

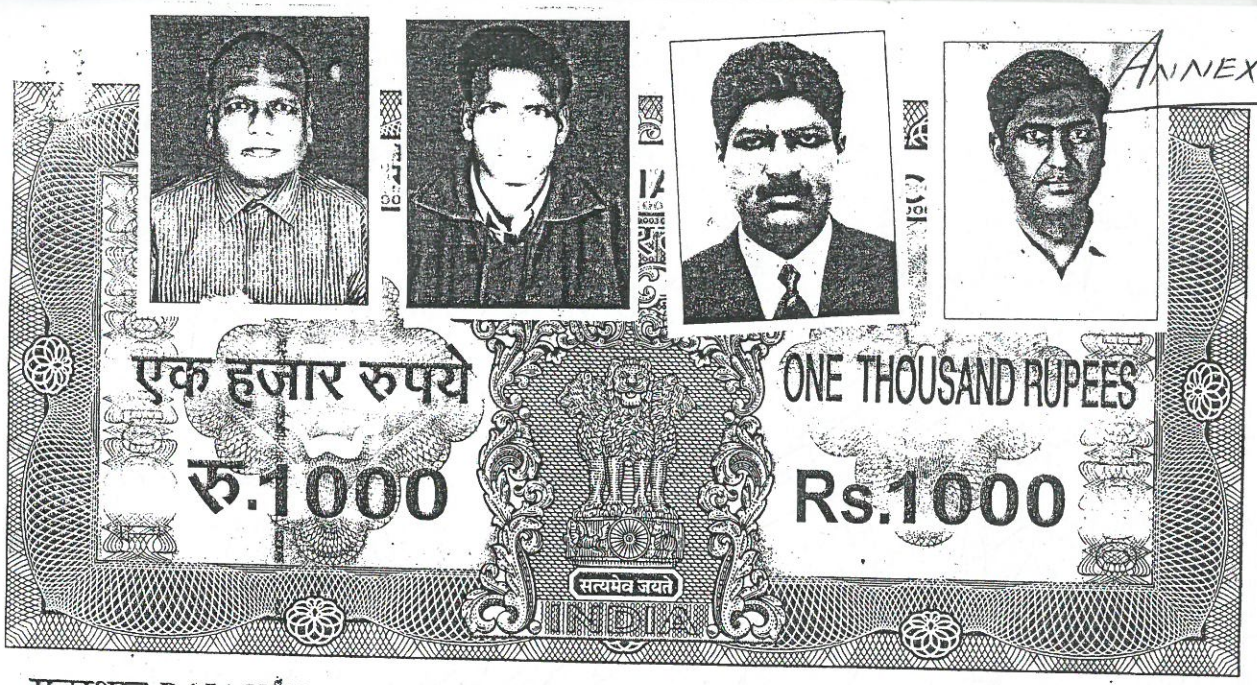
Jr. DIM.

MINING ENGINEER
SIKAR

भारत सरकार-भारतीय खान ब्यूरो
Govt of India-Indian Bureau of Mines
सत्यमेव जयते

अनुमोदित
APPROVED

ANNEXURE-3



राजस्थान RAJASTHAN

C 545305

हस्तानान्तरण संविदा

खअ/सीकर/प्र./खप–10/98

यह नॉन ज्यूडिशियल स्टाम्प पेपर रूपयें 2000/– के किता नग 2 रूपयें 2000/– खनन पट्टा वास्ते खनिज आयरनओर क्षेत्र 4.945 हैक्टर निकट ग्राम बागोली तहसील उदयपुरवाटी जिला झुन्झुनूं में अवधि संविदा पंजियन तिथि से 30 वर्ष के लिए इस शर्त पर कि स्थिर भाटक एम.एम.आर.डी. एक्ट 1957 की तृतीय अनुसूची के अनुसार तथा अधिशुल्क द्वितीय अनुसूचि के अनुसार एवं उसमें समय–समय पर होने वाले संशोधनानुसार देय होगा, की शर्त पर शासन के आदेश कमांक प. 17(32)खान/गुप–1/2002 दिनांक 10.05.02 एवं सम संख्या आदेश दिनांक 28.10.02 द्वारा श्री बजरंग कुमार बंसल पुत्र श्री महावीर प्रसाद अग्रवाल निवासी मावण्डा आर.एस. तहसील श्रीमकाथाना जिला सीकर (राज.) के पक्ष में स्वीकृत हुआ। जिसका संविदा पंजियन दिनांक 01.11.02 को होकर खनन पट्टा 30 वर्ष के लिए प्रभाव में आया।

श्री बजरंग कुमार बंसल के पक्ष में संविदा निष्पादित क्षेत्र आवेदित/स्वीकृत क्षेत्र के मूल सीमांकन दिनांक 01.08.02 में भिन्नता पायी गई कि स्थाई बिन्दु बालाजी की छतरी एवं इण्टर मिडियेटेड पॉईंट मदन सिंह के कुंऐ का सही कनेक्शन नहीं होना पाया जाने पर शासन के पत्र कमांक प. 17(32)खान/ग्रुप–2/2000 दिनांक 30.11.2012 द्वारा मूल सीमांकन में एफ.आर.पी. से लीज पीलर की विवरण सूची में इण्टरमिडियेट स्टेशन स्थाई व निर्विवादित प्रकृति का होने पर एफ.आर.पी. से ऐसे स्थाई व निर्विवादित इण्टरमिडियेट स्टेशन को सीधा जी.पी.एस. से जोड़ने की अनुमती दी जाने पर निदेशालय के आदेश कमांक निखाभू/सीकर/सी.सी. 11/एम.एल. 10/98/193 दिनांक 05.12.2012 से पुनः सीमांकन के आदेश दिये जाने पर क्षेत्र का पुनः सीमांकन दिनांक 19.12.2012 को बालाजी की छतरी से श्री मदन सिंह के कुंऐ की बियरिंग छतरी से एक्स 280°–85 मिनट, एक्स से वाई 195°–55 मिनट, वाई से वैल 233°–225 मीटर के स्थान पर सीधे इण्टरमिडियेटेड कनेक्शन 234° व दूरी 341 मीटर से सही किया गया है, का पूरक संविदा का निष्पादन दिनांक 10.01.2013 को किया जाकर नोटरी से तस्दीक दिनांक 11.01.2013 को हुआ है।

भारत सरकार-भारतीय खान ब्यूरो
Govt. of India-Indian Bureau of Mines
सत्यमेव जयते

अनुमोदित
APPROVED

ATTESTED
MINING ENGINEER
SIKAR

Attorney Holder for Nilkanth Concast Pvt. Ltd.

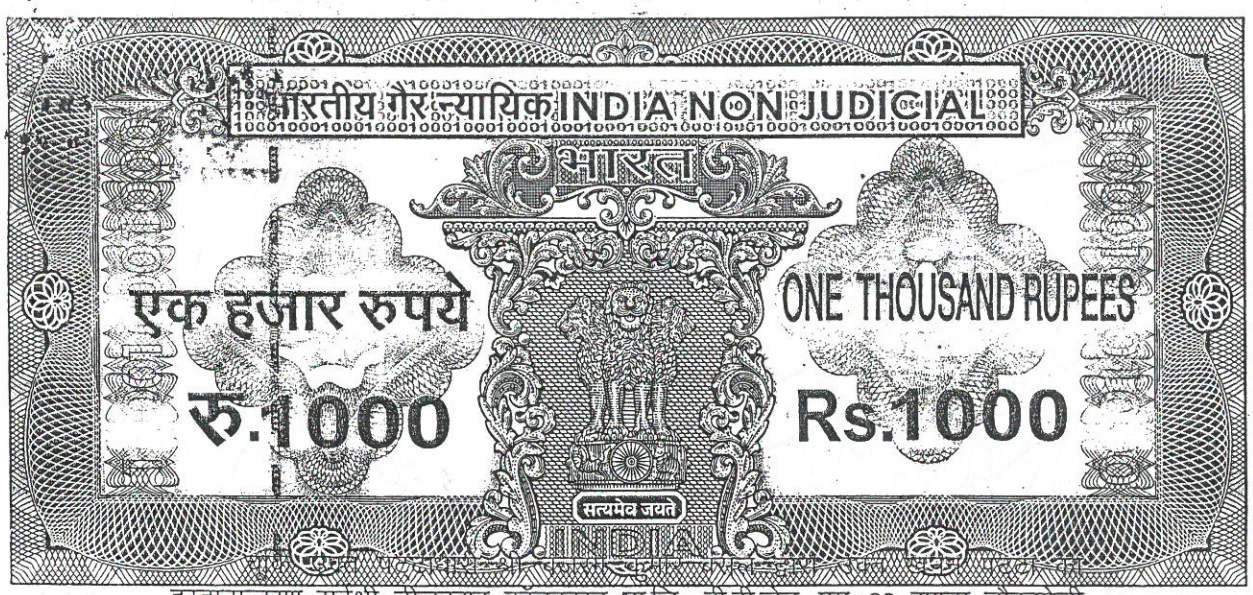
Director/Attorney Holder

अधीक्षण खनि अभियन्ता
जयपुर वृत, जयपुर

2335 मील कलां खान खोह पं० लि० गांव चौमूं/चाकसू जयपुर नागौर

8-10-73

मुरारी लाल शर्मा
कृषि अध्यापक
उदयपुरवाटी (झुन्झुनूं)



राजस्थान RAJASTHAN 545306

हस्तानान्तरण सर्वश्री नीलकण्ठ कॉनकास्ट प्रा.लि., बी.बी.जेड–एम–66 झण्डा चौकमोजी फर्नीचर के सामने, गांधी धाम जिला कच्छ (गुजरात) के पक्ष में करवाने हेतु आवेदन पत्र दिनांक 11.11.2011 को प्रस्तुत किया जाने पर खनन पट्टा का हस्तानान्तरण खनिज रियायत नियमावली 1960 के नियम 37 में उल्लेखित शर्तो पर शासन के आदेश कमांक प. 17(32)खान/ग्रुप–2/2000–पार्ट दिनांक 10.10.2013 द्वारा सर्वश्री नीलकण्ठ कॉनकास्ट प्रा.लि., बी.बी.जेड–एम–66 झण्डा चौकमोजी फर्नीचर के सामने, गांधी धाम जिला कच्छ (गुजरात) के पक्ष में स्वीकृत हुआ है, के साथ है।

अन्य शर्ते संलग्न मूल संविदा व प्रधान खनिज रियायत नियमावली 1960 व एम.एम.आर.डी. एक्ट 1957 तथा एम.सी.डी.आर. 1988 व उसमें समय – समय पर होने वाले संशोधनानुसार मान्य होगी एवं पट्टाधारी राज्य सरकार/भारत सरकार को देय होने वाले समस्त करो का तथा अधिक रॉयल्टी का नियमानुसार भुगतान करेगा।

आज दिनांक 22/11/13 को मरे द्वारा हस्तानान्तरण संविदा का निष्पादन किया गया है।

भारत सरकार-भारतीय खान ब्यूरो • Govt. of India-Indian Bureau of Mines • सत्यमेव जयते

अनुमोदित
APPROVED

हस्तानान्तरणकर्ता

For Nilkanth Concast Pvt. Ltd.
हस्तानान्तरी
Director/Attorney Holder

प्रमाणित

खनि अभियन्ता, सीकर

22/11/13

राजस्थान राज्यपाल की ओर से
अधीक्षण खनि अभियन्ता,
जयपुर वृत जयपुर

गवाहन:–

1. .....
.....

2. .....
.....

M.L No. 10/98

FORM- O

Model form for transfer of mining lease
(See rule 37 A)

अनुमोदित
APPROVED

When the transferor is an individual श्री बजरंग कुमार बंसल पुत्र श्री महावीर प्रसाद अग्रवाल निवासी मावण्डा आरएस. तहसील नीमकाथाना जिला सीकर (राज.)

The indenture made this day of 22/11/13 20 .....

between

.....

.....

..... (Name of the person with address and occupation) (Herein after referred to as the " transferor" which expression shall where the context so admits be deemed to include his heirs, executors, administrator, representatives and permitted assigns)

When the transferors are more than won individual .....

.....

(Name of person with address and occupation) and .....

.....

..... (Name of person with address and occupation) (herein after referred to as the " transferor" which expression shall where the context so admits be deemed to include his heirs, executors, administrator, representatives and permitted assigns)

When the transferor is a registered firm .....

.....

..... (Name of the person with address of all the partners) all carrying on business in partnership under the firm name and style of ....

.....

..... (Name of the firm) registered under the Indian Partnership Act, 1932 (9 of 1932) and having their registered office at .....

..... (hereinafter referred to as the "transferor" which expression where the context so admits be deemed to include all the said partners, their respective heirs, executors, legal representatives and permitted assigns)

For Nilkanth Concast Pvt. Ltd.

Director/Attorney Holder

MINING ENGINEER

When the transferor is a registered company .....

..... a company registered under Company Act. 1956 (Act. under which incorporated) and having its registered office at ---------- (hereinafter referred to as the "Transferor" which expression shall where the context so admits be deemed to include its successors and permitted assigns) of the first part.

And

When the transferees are more than one individual .....

..... (Name of person with address and occupation)(hereinafter referred to as the "transferee" which expression shall where the context so admits be deemed to include his heirs, executors, administrators, representatives and permitted assigns.)

When the transferees are more than one individual ..... (Name of the person with address and occupation) and ..... (Name of person with address and occupation)(hereinafter referred to as the "transferee" which expression shall where the context so admits be deemed to include their respective heirs, executors, administrators, representatives and permitted assigns.)

When the transferee is a registered firm ----------

----------(Name and address of all the partners all carrying on business in partnership under the firm name and style of) ..... (Name of the firm) registered under the Indian Partnership Act, 1932(9 of 1932) and having their registered office at ----------(hereinafter referred to as the "transferee" which expression where the context so admits be deemed to include all the said partners, their respective heirs, executors, legal representatives and permitted assigns).

When the transferee is a registered company सर्वश्री नीलकण्ठ कॉनकास्ट प्रा. लि., बी.बी.जेड–एम–66 झण्डा चौकमोजी फर्नीचर के सामने, गांधी धाम जिला कच्छ (गुजरात) a company registered under Company Act. 1956 (Act. under which incorporated) and having its registered office at **Gujarat Dadra & Nagar Haveli** (hereinafter referred to as the "transferee" which expression shall where the context so admits be deemed to include its successors and permitted assigns) of the second part.

MINING ENGINEER
SIKAR

For Nilkanth Concast Pvt. Ltd.

Director/Attorney Holder

And

The Governor of **Rajasthan** (hereinafter referred to as the 'State Government' which expression shall where the context so admits be deemed to include the successors and assigns) of the third part.

Whereas be virtues of an indenture of lease dated the **19.10.02** and registered as date **01.11.02** in the office of the Sub-registrar of (hereinafter referred to as lessee) the original where of is attached here to and marked 'A' entered into between the State Government (therein called the lessor) and the transferor (hereinafter referred to as lessee) the transferor is entitled to search for, win and work mines and minerals in respect of आयरनओर in the lands described in Schedule there to and also in Schedule annexed hereto for the term and subject to the payment of the rents and royalties and observance and performance of the lessee's covenant and conditions in the said deed of lease reserved and contained including a covenant not to assign the lease or any interest there under without the previous sanction of the State Government.

And

whereas the transferor is now desirous of transferring and assigning the lease to the transferee and the State Government has, at the request of the transferor, granted (with the prior approval of the Central Government) permission to the transferor vide order No प. 17(32)खान/ग्रुप–2/2000–पार्ट dated **10.10.2013** to such a transfer and assignment of the lease upon the condition of the transferees entering into an agreement is and containing the terms and conditions hereinafter set forth.

Now this Deed Witness the follows:

1. Omitted.
2. The transferee hereby covenants with the State Government that from and after the transfer and assignment of the lease the transferee shall be bound by, and be liable to perform, observe and conform and be subject to all the provisions of all the covenants, stipulations and conditions contained in said hereinbefore recited lease in the same manner in all respects as if the lease had been granted to the transferee as the lessee there under and he had originally executed it as such.
3. It is further hereby agreed and declared by the transferor of the one part and the transferee of the other part that

For Nikarth Concast Pvt. Ltd.

Director/Attorney Holder

अनुमोदित
APPROVED

(i) The transferor and the transferee declare that they have ensured that the mineral rights over the area for which the mining lease is being transferred, vest in the State Government.

(ii) The transferor hereby declares that he has not assigned, sublet, mortgaged or in any other manner transferred the mining lease now being transferred and that no other person or persons has any right, title or interest where under in the present mining lease being transferred.

(iii) The Transferor further declares that he has not entered into or made any Agreements, contract or understanding whereby he had been or is being Directly or indirectly financed to a substantial extent by or under which the Transferor's operation or understandings were or are being substantially controlled by any person or body of persons other than the transferor.

(iv) The transferee hereby declares that he/she has accepted all the conditions and liabilities which the transferor was having in respect of such mining licence.

(v) The transferee further declares that he is financially capable of and will directly undertake mining operations.

(vi) The transferee further declares that he has filed an affidavit stating that he has filed up-to-date income tax returns, paid the income tax assessed on him and paid the income tax on the basis of self- assessment as provided in the Income Tax Act. 1961, (43 of 1961).

(vii) The transferor has supplied to the transferee the original or certified Copies of all plans of abandoned workings in the area and in a belt 65 Metres wide surrounding it.

(viii) The transferee hereby further declares that as a consequence of this Transfer, the total area while held by him under mineral concessions are not in contravention of Section 6 of the Mines and Minerals (Development and Regulation) Act, 1957 or rule 35 of the Mineral Concession Rules, 1960.

(ix) The transferor has paid all the rent, royalties, and other dues towards Government till the date, in respect of this lease.

For Nilkanth Concast Pvt. Ltd.

Director/Attorney Holder

In witness where of the parties here to have signed on the date and year first above written.

SCHEDULE

Location and area of the lease

All that tract of lands Situated at निकट ग्राम बागोली तहसील उदयपुरवाटी जिला झुन्झुनूं (Description of area or areas) **4.945** Hector in (Pargana) in **Udaipurwati** the Registration Distt **Jhunjhunu** Sub District **Udaipurwati** and Thana **Udaipurwati** bearing Cadastral Survey Nos **45M9** conssining an area of **4.945**or there about delineated on the plan here to annexed and thereon colored encore and bounded as follows:-

ON THE NORTH BY

ON THE SOUTH BY As per Plan

ON THE EAST BY AND

ON THE WEST BY

Signed by 22/11/13
अधीक्षण खनि अभियन्ता
जयपुर वृत, जयपुर
for and on behalf of the
State Government in the presence of

ATTESTED
Mining Engineer, Sikar
SIKAR

Signature of transferor
Attorney Holder

For Nilkanth Concast Pvt. Ltd.
Signature of transferee
Director/Attorney Holder

Witness

1. .....
.....

2. .....
Suresh Sarbaliya.
.....
D-40, Sapna Nagar
Gandhi Nagar-Kaithal.

भारत सरकार-भारतीय खान ब्यूरो
Govt. of India-Indian Bureau of Mines
सत्यमेव जयते
अनुमोदित
APPROVED

ANNEXURE-4

1688

दिनांक 20.02.2015

श्री/श्रीमति/सर्वश्री [illegible]

फोनसा/- जोधा -सीकर गोली/नवलगढ़ के सामने

आर.के./-[illegible] जिला झुन्झुनूं (मुन्द्रोली)

विषय :- एम.एम.डी.आर. अधिनियम 1967 की धारा 8 ए में किये गये संशोधन अनुसार खनन पट्टो की अवधि वृद्धि के संबंध में।

प्रसंग :- आपके पक्ष में धारित खनन पट्टा वास्ते खनिज आमरण ओर निकट ग्राम डाबोली तहसील उदयपुरवाटी जिला झुन्झुनूं के संबंध में।

महोदय,

उपरोक्त विषयान्तर्गत आपको सूचित किया जाता है कि हाल में एम.एम.डी.आर. (संशोधन) अध्यादेश 2015 की धारा 8 ए का समावेश किया गया है, जो कि खनन पट्टो की समयावधि से संबंधित है।

आपके पक्ष में धारित प्रासंगिक खनन पट्टे की अवधि दिनांक 31-10-2032 तक वैध थी उक्त अध्यादेश जारी होने की दिनांक को खनन पट्टे का प्रथम/द्वितीय/तृतीय नवीनीकरण आवेदन पत्र लम्बित था। एम.एम.डी.आर. संशोधन अध्यादेश 2015 की धारा 8ए(3)/8ए(4) (जो लागू हो) के अनुसार उक्त खनन पट्टे की अवधि दिनांक 31-10-2052 तक स्वतः बढ़ गई है।

अतः संबंधित खनन पट्टे की अवधि स्वतः ही उक्तानुसार संवर्धित हुई मानी जाती है।

भवदीय

खनि अभियन्ता, झुन्झुनूं

दिनांक 20.02.2015

पत्रांक :- 1689-92

प्रतिलिपि निम्न को सूचनार्थ प्रेषित है। प.17(32) खान/झुं-1/2015

1. संयुक्त शासन सचिव, जयपुर को उनकी पत्रावली संख्या ..... के क्रम में सूचनार्थ।
2. श्रीमान् निदेशक महोदय खान एवं भू विज्ञान विभाग, उदयपुर को उनकी पत्रावली संख्या खविभू/सीकर/CC-3/प-1(1)10/98 के क्रम में सूचनार्थ।
3. श्रीमान् अतिरिक्त निदेशक (खान) जयपुर क्षेत्र जयपुर को उनकी पत्रावली संख्या ..... के क्रम में सूचनार्थ।
4. श्रीमान् अधीक्षण खनि अभियन्ता जयपुर वृत जयपुर को उनकी पत्रावली संख्या खा(झु)/सीकर/प-31/98 के क्रम में सूचनार्थ।

खनि अभियन्ता, झुन्झुनूं

Vicky\Letter\performa.doc

ANNEXURE - 5

सत्यमेव जयते

भारत सरकार - भारतीय खान ब्यूरो • Govt. of India - Indian Bureau of Mines • सत्यमेव जयते

अनुमोदित
APPROVED

प्रारूप. आई. आर.
FORM I. R.

CERTIFICATE OF INCORPORATION
निगमन का प्रमाण - पत्र

NO. U27106GJ2003PTC42778

मैं एतद्द्वारा प्रमाणित करता हुं कि आज

कम्पनी अधिनियम 1956 (1956 का 1) के अधीन नियमित की गई है

और यह कम्पनी परिसीमित है ।

I HERE BY CERTIFY THAT NILKANTH CONCAST PRIVATE LIMITED *** ***

IS THIS DAY INCORPORATED UNDER THE COMPANIES ACT, 1956 (NO. 1 OF 1956) AND THAT THE COMPANY IS LIMITED.

मेरे हस्ताक्षर से आज ता. _____ को दिया गया ।

GIVEN UNDER MY HAND AT AHMEDABAD THIS TWENTYFIRST DAY OF AUGUST TWO THOUSAND THREE.

कम्पनी रजिस्ट्रार * REGISTRAR OF COMPANIES * GUJARAT DAMAN & NAGAR HAVELI * गुजरात दमण और नगर हवेली

(P. MEENA)
ASSTT. *Registrar of Companies*
GUJARAT,
Dadra & Nagar Haveli



NILKANTH CONCAST PVT. LTD.

IBM Registration No. : IBM, 9737, 2012

ANNEXURE-6

BHAGVANTSINGH GHOTRA & Associates

Company Secretaries

S - 7, 2nd Floor, Diamond Square Complex, Near Navjivan Press, Income Tax, Ashram Road, AHMEDABAD - 380014. GUJARAT {INDIA}

Contact No.: 9879275495 Email ID: ghotra.associates@outlook.com

SEARCH REPORT

We have carried out the search, on 4TH April, 2018 of the documents of **M/s. NILKANTH CONCAST PRIVATE LIMITED** as available on the official website of the Ministry of Corporate Affairs i.e. www.mca.gov.in. We hereby submit our report in this regard as under:

CIN NO.	:	**U27106GJ2003PTC042778**
COMPANY NAME	:	**NILKANTH CONCAST PRIVATE LIMITED**
DATE OF INCORPORATION	:	**21.08.2003**
REGISTERED OFFICE	:	**BBZ – N – 66, Zanda Chowk, Main Bazar, GANDHIDHAM – 370201 KUTCH GUJARAT, INDIA**
AUTHORISED CAPITAL	:	**₹ 4,00,00,000.00 (divided into 40,00,000 Equity Shares of ₹ 10.00 each)**
PAIDUP CAPITAL	:	**₹ 3,38,78,950.00 (divided into 33,87,895 Equity Shares of ₹ 10.00 each)**
LIST OF DIRECTORS	:	**AS PER ANNEXURE I**
LIST OF DIRECTORS	:	**AS PER ANNEXURE II**

भारत सरकार-भारतीय खान ब्यूरो • Govt of India-Indian Bureau of Mines • सत्यमेव जयते

अनुमोदित
APPROVED

For, BHAGVANTSINGH GHOTRA & ASSOCIATES
COMPANY SECRETARIES

B.G. Ghotra

BHAGVANTSINGH GHOTRA
(PROPRIETOR)
C.P. NO.: 10293, Mem. No.: 28062

BHAGVANTSINGH GHOTRA & ASSOCIATES COMPANY SECRETARIES AHMEDABAD C.P. NO. 10293

PLACE: AHMEDABAD
DATE: 04.04.2018

BHAGVANTSINGH GHOTRA & Associates

Company Secretaries

S - 7, 2nd Floor, Diamond Square Complex, Near Navjivan Press, Income Tax, Ashram Road,
AHMEDABAD - 380014. GUJARAT {INDIA}
Contact No.: 9879275495 Email ID: ghotra.associates@outlook.com

अनुमोदित
APPROVED

ANNEXURE – I: LIST OF SHAREHOLDERS

Sr. No.	Name and Address of Shareholders
1	Mr. CHANDRASHEKHAR N. AYACHI Address: Plot No.: 12, 12 – B, Ren Basera, Collector Road, GANDHIDHAM – 370201. GUJARAT {INDIA}
2	Mrs. GIRIJA C. AYACHI Address: Rain Basera Plot No.: 12, Ward No.: 12 – B, GANDHIDHAM – 370201. GUJARAT {INDIA}
3	Mr. VIJAY HANUBHA BALIA Address: Silicon Vally Co-op. Society, Opp. Jain Shefali House, Tower B, Satellite Road, AHMEDABAD – 380015. GUJARAT {INDIA}
4	Mrs. RAVINDER N. KOUL Address: 153, Sector 7, GANDHIDHAM KUTCH – 370201. GUJARAT {INDIA}
5	Mr. VIRBHADAR RAO Address: Ravindranath Tagore Park, Tagore Road, Sector – 08, GANDHIDHAM KUTCH. GUJARAT {INDIA}
6	Mr. CHANDRASHEKHAR N. AYACHI, Jt. ARUNKUMAR L. AGARWAL KUSUMLATA L. AGARWAL, LAJPATRAJ AGARWAL, On behalf of Nav Bharat Impex Address: Plot No.: 12, 12 – B, Ren Basera, Collector Road, GANDHIDHAM - 370201. GUJARAT {INDIA}
7	Mr. CHANDRASHEKHAR N. AYACHI Jt. DILIP AYACHI, Jt. HARNAMDAS SADHURAM Address: Plot No.: 12, 12 – B, Ren Basera, Collector Road, GANDHIDHAM - 370201. GUJARAT {INDIA}
8	Mr. CHANDRASHEKHAR N. AYACHI, Jt. MOHAN TAHILYANI Address: Plot No.: 12, 12 – B, Ren Basera, Collector Road, GANDHIDHAM – 370201. GUJARAT {INDIA}

For, BHAGVANTSINGH GHOTRA & ASSOCIATES
COMPANY SECRETARIES

BHAGVANTSINGH GHOTRA
(PROPRIETOR)
C.P. NO.: 10293, Mem. No.: 28062

PLACE: AHMEDABAD
DATE: 04.04.2018

BHAGVANTSINGH GHOTRA & Associates
Company Secretaries
S - 7, 2nd Floor, Diamond Square Complex, Near Navjivan Press, Income Tax, Ashram Road
AHMEDABAD - 380014. GUJARAT {INDIA}
Contact No.: 9879275495 Email ID: ghotra.associates@outlook.com

अनुमोदित
APPROVED

ANNEXURE – I: LIST OF DIRECTORS

NO.	NAME	ADDRESS	DESIGNATION	DATE OF APPOINTMENT
1.	Mr. CHANDRASEKHAR NARSANGJI AYACHI DIN: 01137053	Plot No.: 121, 12 – B, Ren Basera, Collector Road, GANDHIDHAM – 370201. Gujarat, India	Director	24.08.2006
2.	Mrs. GIRIJA CHANDRASEKHAR AYACHI DIN: 01136994	Rain Basera, Plot No.: 12, Ward: 12 – B, GANDHIDHAM – 370201. Gujarat, India	Director	05.08.2005

For, BHAGVANTSINGH GHOTRA & ASSOCIATES
COMPANY SECRETARIES

BHAGVANTSINGH GHOTRA
(PROPRIETOR)
C.P. NO.: 10293, Mem. No.: 28062

PLACE: AHMEDABAD
DATE: 04.04.2018

ANNEXURE-7

NILKANTH STEEL

Nilkanth Concast Private Limited

WORKS : Survey No. 221, Vadala, Taluka : Mundra, Dist. Kutch - Gujarat - Pin Code - 370 410.
Tel. : +91 2838 283 495, 96, 97, 98, 99, Fax : +91 2838 283488 • E-mail : info@nilkanthsteels.com
Webiste : www.nilkanthsteels.com

भारत सरकार-भारतीय खान ब्यूरो • Govt.of India-Indian Bureau of Mines • सत्यमेव जयते

अनुमोदित
APPROVED

TO WHOM SO EVER IT MAY CONCERN

WE HEREBY DECLARED THAT MR.SURESH SARBALIA, VICE PRESIDENT OF NILKANTH CONCAST PVT LTD IS THE AUTHORISED PERSON FOR SIGNING ALL MINES RELATED DOCUMENTS.

ABOVE DECLARATION IS TRUE & CORRECT AS PER OUR KNOWLEDGE.

CHANDRASHEKHAR N. AYACHI
(DIRECTOR)

Nilkanth Concast Pvt. Ltd. • Vadala - Mundra •

CORPORATE OFFICE / CORRESPONDENCE ADDRESS : B. B. Z. - N - 66, Zanda Chowk, Gandhidham - Kutch - 370 201 (INDIA)
Tel. : +91 2836 - 224168 / 230711 / 221460 • Fax :+91 2836 - 233734

RMP SIKAR/DRG NO. 01/2013

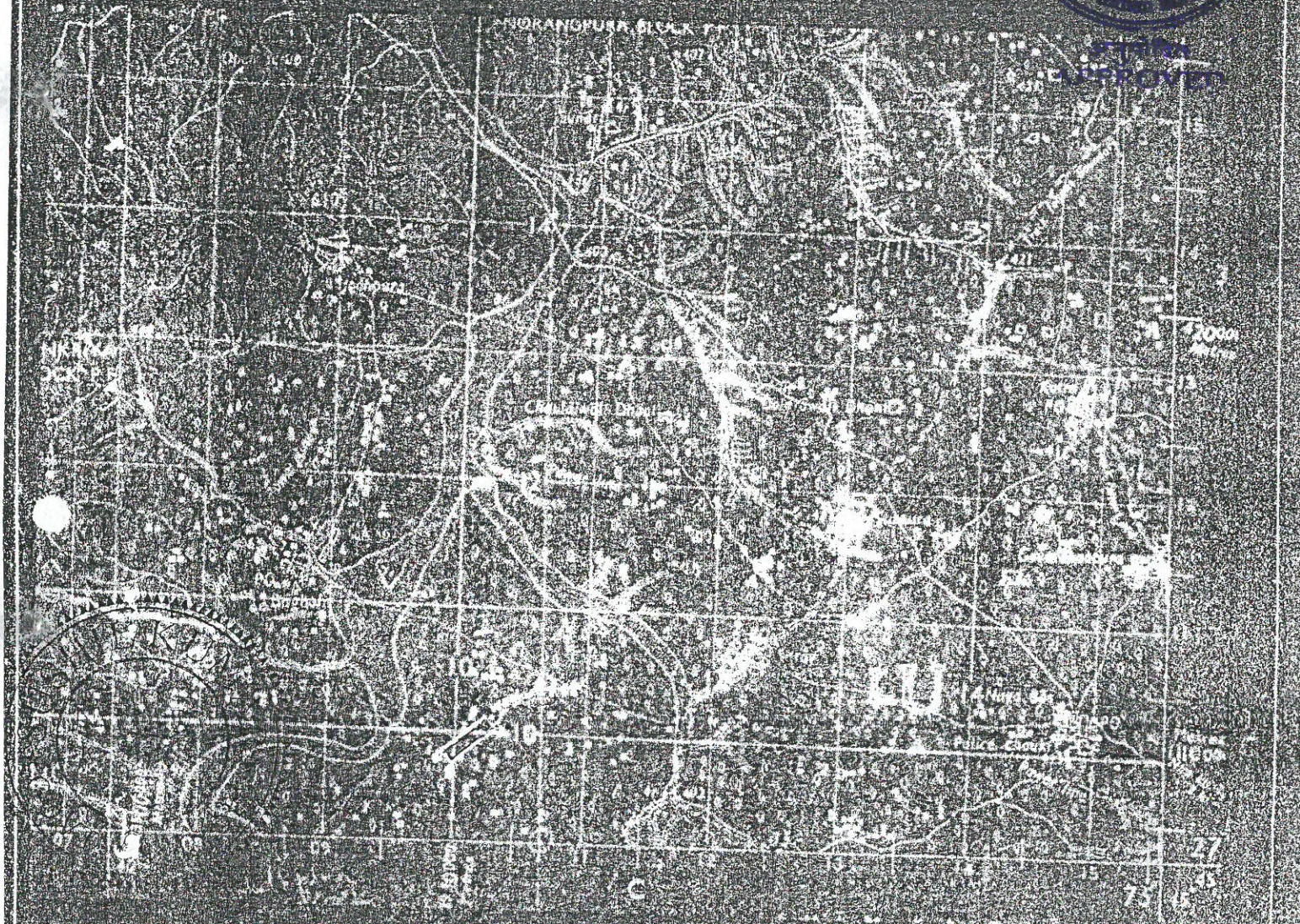
ANNEXURE-8

MAP SHOWING THE DEMARCATED ML 10/98 HELD AREA FOR MINERAL IRON ORE N/V BAGHOLI TEHSIL UDAIPURWATI DISTT. JHUNJHUNU

AREA GRANT IN F/O SHRI BAJRANG KUMAR BANSAL

SCALE - 1 CM = 500 MTS.

PART OF TOPO SHEET NO. 45 M/9



INDEX :-



DEMARCATED & VERIFIDE AREA - 4.945 Hect.

DATE OF DEMARCATION - 19.12.2012 BY SURVEYOR

1 JAN 2013

D/MAN

APPLICANT/LESSEE

MINING ENGINEER
SIKAR

ANNEXURE-9

197

सीमांकन प्रतिवेदन

आज दिनांक 1-8-02 को निम्न हस्ताक्षरकर्ता द्वारा कार्यालय पत्रांक खअ/सीकर/रि.प्र./ख.प.10/98/1986 दिनांक 15-6-02 की अनुपालना में श्री बजरंग कुमार बंसल पुत्र श्री ओम प्रकाश बंसल निवासी - गंगाण्ड (दे.खे.) तह० नीम का थाना (सीकर) द्वारा आवेदित इंमेंट खनन पट्टा वास्ते खनिज - आमरन ओर इंमेंट 4.945 हैक्० ग्रा. - बाणोली तह० - उदयपुरवाटी (झुन्झुनूं) का सीमांकन किया गया। विवरण निम्न प्रकार है।

1. सीमांकन कर्ता - राम लाल सिंह, सर्वेयर
2. चेन मैन - पार्टी द्वारा उपलब्ध कराये गये व्यक्ति।
3. उपकरण - प्रिज मैटिक कम्पास व फीता
4. स्थायी बिन्दु - बालाजी की छतरी व श्री मदन सिंह S/o श्री भंवर सिंह राजपूत नि० - बाणोली का कुआं
5. खनिज - आमरन ओर
6. सर्वे का विवरण :-

कहाँ से	कहाँ को	बियरिंग	दूरी
Balaji ki Chhatri	X	280°00'	— 85.0 मीटर
X	Y	195°00'	— 55.0 "
Y	well of Sh. Madan Singh	233°00'	— 225.0 "
well of Sh. Madan Singh	A	208°30'	— 143.0 "
A	B	230°00'	— 430.0 "
B	C	320°00'	— 115.0 "
C	D	50°00'	— 430.0 "
D	A	140°00'	— 115.0 "

कुल सीमांकित इंमेंट - 4.945 हैक्०
or say 5.0 हैक्०

भारत सरकार - भारतीय खान ब्यूरो
Govt of India - Indian Bureau of Mines
सत्यमेव जयते
अनुमोदित
APPROVED

खनि अभियन्ता
सीकर

P.T.O.

7. सीमा स्तम्भों का विवरण :-

(A) 1. पीलर A से बालाजी का मंदिर - 347°00' पर है।

(A) 2. पीलर A से S-W कोनरि ऑफ हाउस ऑफ श्री वीरबाल गुर्जर - 349°45' पर है।

(B) 1. पीलर B से पपलंगी पहाड़ी पर बना मंदिर - 208° 00' पर है।

2. पीलर B से बंधे का N-E कोना - 287°30' पर है।

(C) 1. पीलर C से बंधे का N-E कोना 245°00' पर है।

2. पीलर C से श्री मदन S/o श्री बद्री माली के घर का S-W कोना - 314°30' पर है।

(D) 1. पीलर D से श्री मदन सिंह राजपूत का (House) - 76°00' पर है।

2. पीलर D से श्री वीरबाल गुर्जर के पक्के मकान (House) का N-W कोना - 83°30' पर है।

8. विशेष विवरण :-

1. उपरोक्त इकाई का सीमांकन पार्टी प्रतिनिधि श्री पवन कुमार अग्रवाल की उपस्थिति में किया जाकर पक्के सीमा स्तम्भ बनवाये जावे।

2. सीमांकित इकाई में पुराने खनन किया हुआ जिसके बोर्ड पर बताया गया कि यहां खनन पट्टे पुराने समय में प्रभाव में रहा हुआ है। सीमांकित इकाई वन सीमा से 25 मी. से अधिक दूरी पर है।

सीमांकन रिपोर्ट तैयार कर सस्ता डर कर दी जावेगी।

रिपोर्ट वास्ते ~~अग्रसारित~~ अग्रलोकार्थ प्रेषित है।

(पवन कुमार अग्रवाल)

सर्वेयर

सहायक निदेशक

खनि अभियन्ता
सीकर

(24)

पीलर A पहाड़ी के उत्तर-पूर्वी ढलान पर अवस्थित है।

A △ 143 मी.

208°30'

(i) पीलर A से बालाजी का मंदिर – 347°00' पर है।

(ii) पीलर A से श्री नी लाल राम पुत्र के मकान का N-W Corner – 83°30' पर है।

well of Shri Madan Singh S/o Shri Bhanwar Singh Rajput R/o Bagoli

0 मी. well △ 225 मी.

well – A – 208°30' – 143 मी.

233°00'

0 मी. Y △ 85 मी.

Y से well – 233° – 225 मी.

170 मी.

0 मी. X △ 85 मी.

X से Y – 195° – 55 मी.

280°00'

FRP – Balaji ki Chabri & well of Madan Singh FRP. 0 मी.

FRP – से X – 280° – 85 मी.

M-2-10/98

कार्यालय से प्राप्त निर्देशांक एवं विचलन द्वारा कुआं तक किया गया

कहां से Balaji की छबरी	कहां को	दिशांश	दूरी
X	X	280°00' —	85.0 mt.
Y	Y	195°00' —	55.0 mt.
well	well of Madan Singh	233°00' —	225.0 mt.
A	A	208°30' —	143.0 mt.
B	B	230°00' —	480.0 "
C	C	320°00' —	115.0 "
D	D	50°00' —	430.0 "
D	A	140°00' —	115.0 "

Area – 4.945 Hect. or say 5.0 acre

मिलान किया गया।

मान चित्रकार

खनि अभियंता
डीग

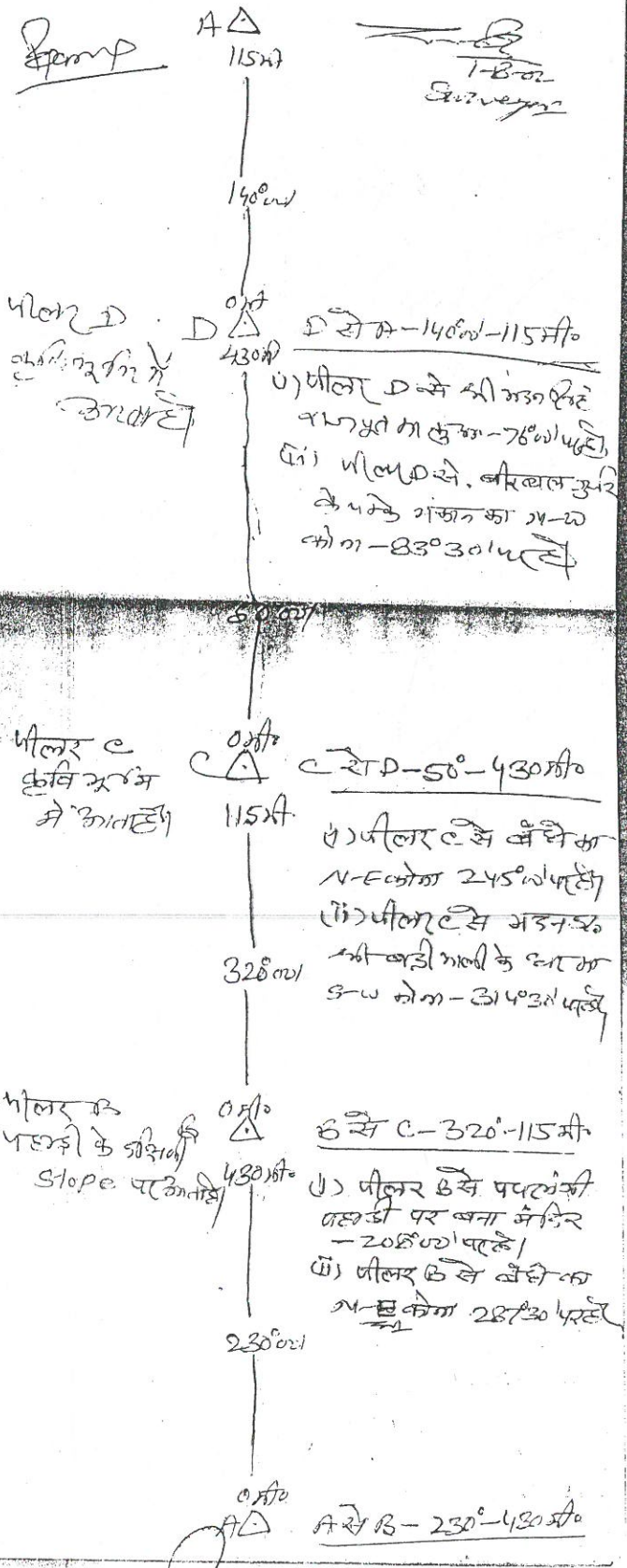
भारत सरकार-भारतीय खान ब्यूरो
Govt of India-Indian Bureau of Mines
सत्यमेव जयते

अनुमोदित
APPROVED

REMARKS

(1) Sanctioned area demarcated as per plan & description report received from office in the presence of Rep representative of applicant and Pillars have been erected.

(2) Closing error of A is under permissible limit.



1-Dec Surveyor

Rep

Rep

194

भारत सरकार-भारतीय खान ब्यूरो
Govt of India-Indian Bureau of Mines
सत्यमेव जयते

अनुमोदित
APPROVED

खनि अभियन्ता
डीकर

Lessee : Shri Bajrang Kumar bansal
Closing Error : No Geometric Area : 4.945 (Hect.)

1. FRP Detail

FRP Type ---Select One--- | FRP Description | GT Sheet No. | Search | Add New FRP

FRP Type	FRP Description	GT Sheet No.	Longitude	Latitude	Coordinate Unit	Village
Other	BALAJI KI CHHATRI	45M09	75-41-57.5	27-45-39.4	Degree,Min,Sec	BAGOLI

2. Description Of Pillar/Area

From | To | Reference | Bearing(Deg,Min,Sec) | Distance(in meters) | Point Type | Sequence | Add

Frp ---Select One---

# Block	From	To	Reference	Bearing(Deg-Min-sec)	Distance (in meters)	Point Type	Sequence	Longitude	Latitude	Edit	Delete
1	Frp	well		234-0-0	341	Intermediate Pillar	1	75-41-47.38	27-45-32.94		
2	well	A		208-30-0	143	Lease Pillar	2	75-41-44.86	27-45-28.87		
3	A	B		230-0-0	430	Lease Pillar	3	75-41-32.77	27-45-19.94		
4	B	C		320-0-0	115	Lease Pillar	4	75-41-30.09	27-45-22.82		
5	C	D		50-0-0	430	Lease Pillar	5	75-41-42.18	27-45-31.74		
6	D	A		140-0-0	115	Lease Pillar	6	75-41-44.86	27-45-28.87		

3. Location Detail

* District --Select One-- | * Tehsil --Select One-- | Near Village | Khasara No. | Plot No. | Khasara Status ----Select one--- | Khasara Ownership --Select One-- | Add

# Block	District	Tehsil	Near Village	Khasara No.	Plot no.	Khasara Status	Khasara Ownership	Edit	Delete
1	Jhunjhunu	Udaipurwati	Bagoli						

* Mandatory Fields

16-8-12

अनुमोदित APPROVED

Indian Bureau of Mines

Freeze Demarcation | Save | Cancel

ANNEXURE-10

राजस्थान सरकार

कार्यालय खनि अभियन्ता, खान एवं भू–विज्ञान विभाग, झुन्झुनू

कमांकः खअ/झुन्झुनू/रि/प्र/खप–10/98/514 दिनांकः 10-7-2015

अनुमोदित
APPROVED

–: प्रमाण पत्र :

यह प्रमाणित किया जाता है कि मैसर्स श्री निलकण्ठ कानंकास्ट प्रा.लि. द्वारा आवेदित धारित खनन पट्टा संख्या 10/98 खनिज आयरनओर क्षेत्रफल 4.945 हैक्टर निकट ग्राम बागोली तहसील उदयपुरवाटी जिला झुंझुंनू जो कि राजस्व ग्राम बागोली आराजी खसरा संख्या 1583, 1601, 1582, 1602, 1604, 1606, 1566, 1567, 1568, 1569, 1570, 1571 जो कि निम्न अक्षांश व देशान्तर के अन्तर्गत आता है। उक्त खनन पट्टा का क्षेत्र संबधित जी.टी.शीट एंव कार्यालय रिकार्ड के अनुसार माननीय सर्वोच्च न्यायालय के रिट याचिका 202/1995 (गोदावर्मन बनाम यूनियन ऑफ इण्डिया) में अरावली हिल्स के संदर्भ में पारित आदेश दिनांक 08.04.05 कन्टेप्ट पिटिशन (सी) 412/2009 तथा आदेश दिनांक 19.02.2010 की अवहेलना में नही आता है। इस क्षेत्र को सम्मिलित करते हुए 500 मीटर की परिधि में कुल क्षेत्रफल 4.945 हैक्टर आता है।

पिलर नं.	अक्षांश (Latitude)	देशांतर (Longitude)
FRP	27° 45'39.39850"	75° 41'57.65231"
A	27° 45'28.86"	75° 41'45.01"
B	27° 45'19.94"	75° 41'32.92"
C	27° 45'22.82"	75° 41'30.24"
D	27 45'31.74"	75° 41'42.33"

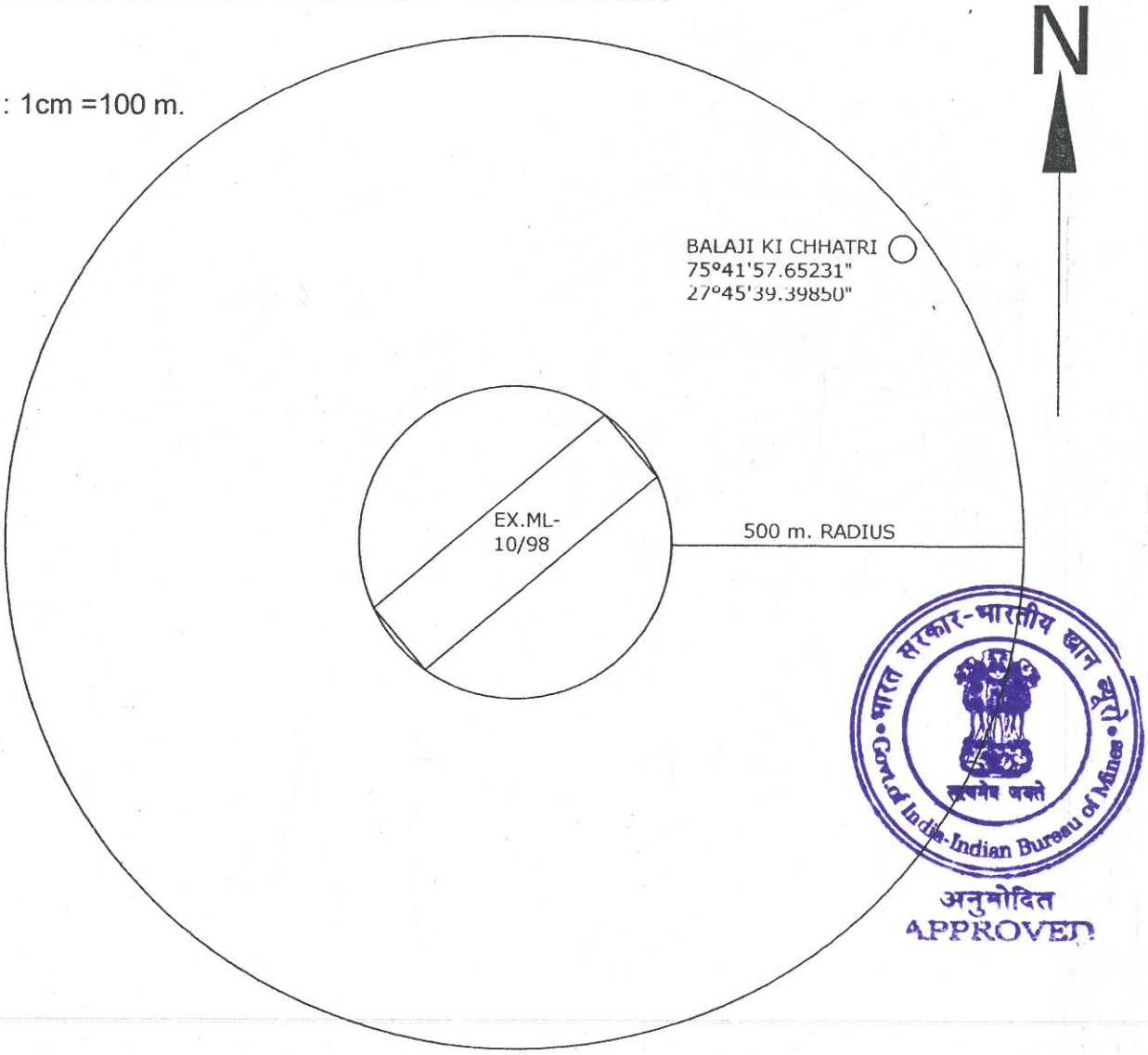
दिनांक 10-7-2015
स्थान

खनि अभियन्ता, झुन्झुनू
O/C

DRG.NO.ME/JJN/231 /7 -2015

MAP SHOWING THE POSITION OF EXISTING HELD LEASES FALLS IN 500 m. RADIUS OF EX.ML-10/98 MINERAL-IRON-ORE N/V-BAGOLI TEHSIL-UDAIPURWATI DISTRICT - JHUNJHUNU

SCALE : 1cm =100 m.



अनुमोदित
APPROVED

EX.ML-10/98 MINERAL IRON-ORE SANCTIONED IN F/O M/S NEELKANTH CAN. Pvt. Ltd. AREA= 4.9450 ha.

AREA FALLS IN 500 m.RADIUS OF EX. ML-10/98 = NIL

PREPARED BY
D/M/JJU.

MINING ENGINEER
JHUNJHUNU

ANNEXURE-11

78

अनुक्रमांक 145
Roll No.

जोधपुर विश्वविद्यालय

अनुमोदित
APPROVED

प्रमाणित किया जाता है कि
गोविन्द सिंह
ने इस विश्वविद्यालय से 1974 की परीक्षा में
बैचलर ऑफ इंजीनियरिंग
(खनन इंजीनियरी शाखा)
की उपाधि द्वितीय श्रेणी में प्राप्त की

THE UNIVERSITY OF JODHPUR

This is to certify that
GOVIND SINGH
obtained the degree of
BACHELOR OF ENGINEERING
(MINING ENGINEERING BRANCH)
of this University in the
Examination of 1974 and that
he was placed in the Second Division

Vice-Chancellor
वाइस-चान्सलर
मार्च 7, 1975

79

15245
क्रमांक

माध्यमिक शिक्षा बोर्ड, राजस्थान

हायर सैकण्डरी परीक्षा, 1968

अनुमोदित
APPROVED

33819
अनुक्रमांक

प्रमाणित किया जाता है कि गोविन्द सिंह

पुत्र/पुत्री चिमन सिंह

जन्म दिनांक अगारह नवम्बर उन्नीस सौ उनन्चास

ने सैकण्डरी स्कूल/~~हायर सैकण्डरी प्रथम भाग*/के समकक्ष~~ परीक्षा में सफलता प्राप्त कर, माह मार्च/अप्रेल सन् 1968 में आयोजित हायर सैकण्डरी परीक्षा दरबार मल्टीपरपज हायर सैकण्डरी स्कूल, टोपरवाना, जयपुर से निम्न विषयों में, प्रथम श्रेणी में उत्तीर्ण की —

अनिवार्य विषय

1. हिन्दी
2. अंग्रेजी

वैकल्पिक विषय (विज्ञान वर्ग)

1. भौतिक विज्ञान
2. रसायन विज्ञान
3. गणित

तथा X में विशेष योग्यता प्राप्त की।

* हायर सैकण्डरी परीक्षा प्रथम भाग के विषय निम्न हैं :—
सामान्य विज्ञान, सामाजिक ज्ञान, प्रारम्भिक गणित; कला एवं उद्योग X
तथा तृतीय भाषा X

अजमेर,
दिनांक 3 जून, 1968

सचिव

Phone : 45258 786 Gram : "LALI"

A. S. ABDUL HAMEED KHAN LALI

Specialists in GARNET
GARNET MINE OWNER
EXPORTERS AND IMPORTERS
of
PRECIOUS, SEMI PRECIOUS & SYNTHETIC STONES

Bankers :
BANK OF BARODA
Johri Bazar, Jaipur-3

DEALS IN
Rough Garnet, Garnet Cuts,
Garnet Beeds, Amethyst, Topaz
& All real Gems.

TAKIA ADAM SHAH
Post Box No. 171
JAIPUR-3 (India)

DATED 20/10/85

(To Whomes It May Concern)

CERTIFICATE

अनुमोदित
APPROVED

It is to be certified thate Shri Govind Singh (mining engineer) worked in our GARNET Mines, situated near Village DEOKHERA, Teh- DEOLI, DIST-TONK, as a mining engineer cum Surveyour.

He worked during the period 1st Jan. 1983 to 30th September 85. During this period his Services was very Valuable for our MINES. But For his Better, our Concern, has no objection, to releave him. May God help him.

For:-

DEOKHERA GARNET MINES

M/S. A.S.Abdul Hameed Khan LALI

Phone : 45258 786 Gram : "LALI"

A. S. ABDUL HAMEED KHAN LALI

Specialists in GARNET
GARNET MINE OWNER
EXPORTERS AND IMPORTERS
of
PRECIOUS, SEMI PRECIOUS & SYNTHETIC STONES

DEALS IN
Rough Garnet, Garnet Cuts,
Garnet Beads, Amethyst, Topaz
& All real Gems.

Bankers :
BANK OF BARODA
Johri Bazar, Jaipur-3

TAKIA ADAM SHAH,
Post Box No. 171
JAIPUR-3 (India)

DATED 16-4-80

TO WHOME IT MAY CONCERN

अनुमोदित
APPROVED

I have pleasure in informing that Sh.Govind Singh S/O Sh.Chiman Singh has worked on my Deokhera Garnet Mine situated at Deoli, as Mining Engineer from 31st July, 1977 to 30 June, 1979.

During this period he successfully Controlled the opencast Mining operation and other works.

He bears good moral charector.

For A. S. Abdul Hameed Khan Lali

Partner

ANNEXURE-12

NAKSHATRA ENVIRO SERVICES

M. 94136-66777
M. 80038-96241

Lab:- 66/40, Heera Path, Mansarovar, Jaipur-302020, E-mail: neslab2004@gmail.com
Website: www.nakshatraenviro.in | E-mail: nakshatraenviro@gmail.com

NABL Accredited (Certificate No. T-2320) & ISO 9001:2015 Certified

Ref. No. – NES/2018/04/43

Date: 07-04-2018

MINERAL ANALYSIS REPORT

Issued to : M/s Nilkanth Concast Pvt. Ltd.
Iron Ore Mine M. L. No. 10/1998
At near Village- Bhagoli, Tehsil- Udaipurwati
District- Jhunjhunun (Raj)

Sample Description : Iron Ore

Sample Quantity : 100 gram

Date of Sample Received : 03-04-2018

Date of Testing : 03-04-2018 to 07-04-2018

Sample Collected By : Unit's Representative

भारत सरकार-भारतीय खान ब्यूरो • Govt. of India-Indian Bureau of Mines • सत्यमेव जयते

अनुमोदित
APPROVED

Results:

Sl. No.	Parameters	Values Found
1.	Silica as SiO_2 %	43.06
2.	Loss on Ignition as LOI %	4.10
3.	Iron as Fe_2O_3 %	48.26

Note:

1. This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without special permission in writing.
2. Total liability of this laboratory is limited to the invoice amount.
3. The results listed refer only to the above sample and applicable parameters Endorsement of products is neither inferred nor implied.
4. Samples will be destroyed after fifteen days from the date of issuing of analysis report unless otherwise specified.

Rajeev
(Rajeev Mathur)
Technical Manager

NAKSHATRA ENVIRO SERVICES JAIPUR

End of Report

(Jag Mohan Sharma)
Quality Manager

Enclosure - 3

Telephone 62597
72690

Telegram: HAFIZJ

HAFIZ ABDULLAKHAN & BROTHERS

MINE OWNERS & MINERAL DEALERS

BANKERS :
BANK OF BARODA
Johari Bazar, Jaipur-3

TAKIA ADAM SHAH
POST BOX No. 11
JAIPUR-302003.

1.7.1977

भारत सरकार-भारतीय खान ब्यूरो • Govt of India-Indian Bureau of Mines • सत्यमेव जयते

अनुमोदित
APPROVED

TO WHOME IT MAY CONCERN

I have pleasure in Certifying that Sh. Govind Singh S/O Sh. Chiman Singh has worked on our Gaunri Garnet Mines situated at Deoli, as Mining Engineer from 1st January, 1976 to 30th June, 1977.

During this period he successfully controlled the Semimechanised under ground mining operation including sinking work.

He bears good moral charector.

Partner.

फार्म संख्या ए-28 (देखिये नियम 103)

नक्शा जमाबन्दी (खतौनी) ग्राम ... पटवार हल्का ... इन्सपेक्टर लैण्ड रिकार्ड हल्का ... तहसील ... जिला ... (राज.)

संवत् २०४३ से संवत् २०४६ तक

खेवट खतौनी संख्या	भूमि धारक (Land holder) का नाम	काश्तकार का नाम, उसके पिता का नाम, जाति तथा निवास स्थान का पता एंव (टेन्योर) का प्रकार	खसरा संख्या	क्षेत्रफल	भूमि का प्रकार	सिंचाई का साधन	कर सहित तफसील	रकम	संवत् ....के लिए: अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के	संवत् ....के लिए: हस्तांतरण की तफसील जिस के पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	संवत् ....के लिए: अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एंव तारीख मय हस्तांतरण के प्रकार के	संवत् ....के लिए: हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	संवत् ....के लिए: अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एंव तारीख मय हस्तांतरण के प्रकार के	संवत् ....के लिए: हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	विशेष विवरण
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

राज. पंचायत (कानून) जयपुर-3

फार्म संख्या ए-28 (देखिये नियम 153)

जमाबन्दी (खतौनी) ग्राम ..... पटवार हल्का ..... इन्स्पेक्टर लैण्ड रिकार्ड हल्का ..... तहसील ..... जिला ..... (राज.)

सम्वत् २० से सम्वत् २० तक

खेवट खतौनी संख्या नई	पुरानी	भूमि धारक (Land holder) का नाम	कास्तकार का नाम, उसके पिता का नाम, जाति तथा निवास स्थान का पता एवं (टेन्योर) का प्रकार	खसरा संख्या	क्षेत्रफल	भूमि का प्रकार	कास्तकार द्वारा भुगतान किया गया लगान (Rent) एवं अन्य कर (Charges)			विशेष विवरण
							चिन्हों का साधन	कर सहित तफसील	रकम	
1	2	3	4	5	6	7	8	9	10	17
269	305									
392	302									
396	399									

1. कादर हल्का	437	
2. तारीख जायेदाद	18-8	98
3. तारीख तैयारी	18-8	98
4. तारीख नुसखती	25-8	98
5. दस्तखत		
6. दस्तखत		
नोटकर्ता		

मिलान किया गया

पक्का कच्चा

अस्थ प्रतिलिपी

18/9/98

कहसीलदार [illegible] डूंगरपुर (राज.)

फार्म संख्या ए-28 (देखिये नियम 153)

जमाबन्दी (खतौनी) ग्राम ... पटवार हल्का ... जाब्ता इन्सपेक्टर ... लैण्ड रिकार्ड हल्का ... तहसील ... जिला ... (राज.)

सम्वत् २०५२ से सम्वत् २०५६ तक

खेवट खतौनी संख्या		भूमि धारक (Land holder) का नाम	काश्तकार का नाम, उसके पिता का नाम, जाति तथा निवास स्थान का पता एवं (टेनेन्ट) का प्रकार	खसरा संख्या	रकबा	भूमि का प्रकार	काश्तकार द्वारा भुगतान किया गया लगान (Real) एवं अन्य कर (Charges)			संवत ..... के लिए		संवत ..... के लिए		संवत ..... के लिए		विशेष विवरण
							सिंचाई का साधन	कर सहित तफसील	रकम	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के	हस्तांतरण की तफसील जिस के पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के	हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तांतरण के प्रकार के	हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2६५	०६५			१४०८	०.१४											
	३०५															
१४०	१३०५			१४०१	०.२६											
	३०६५			९												
				१४६२	०२६											
				१४६४	०.२५											
	३५			१४०३	०.३४											
३१२	३०६			१४७१	०.३१											
	१२०५															
				१४८१	०.०६											
२६	२०५			१४८२	०.०२											
				१४८३	०.५६											

1. आवेदन संख्या 437
2. तारीख आवेदन 16-6-98
3. तारीख तैयारी 16-6-98
4. तारीख तसदीक 16-6-98
5. स्टाम्प (रु.)
6. प्रयोजन
7. तैयारकर्ता

अनुमोदित APPROVED

सहायक भू-अभिलेख अधिकारी (ए. प.) रघुपुर बाढ़ी

मिलान किया गया पढ़ा सुना।

फार्म संख्या ए-26 (देखिये नियम 153)

राज. अधीनस्थ अकाउन्ट्स सर्विस

जमाबन्दी (खतौनी) ग्राम ... पटवार हल्का ... इन्सपेक्टर लैण्ड रिकार्ड हल्का ... तहसील ... जिला ... (राज.)

सम्वत २०२३ से सम्वत २०२९ तक

खेवट खतौनी संख्या	भूमि धारक (Land holder) का नाम	काश्तकार का नाम, उसके पिता का नाम, जाति तथा निवास स्थान का पता एवं (टेन्योर) का प्रकार	क्षेत्रफल बीघा	क्षेत्रफल बिस्वा	भूमि का प्रकार	काश्तकार द्वारा भुगतान किया गया लगान (Rent) एवं अन्य कर (Charges) — सिंचाई का साधन	कर सहित तफसील	रकम	संवत ..... के लिए — अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के	हस्तांतरण की तफसील जिस के पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	संवत ..... के लिए — अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के	हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	संवत ..... के लिए — अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तांतरण के प्रकार के	हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	विशेष विवरण
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

फार्म संख्या ए-28 (देखिये नियम 153)

[illegible] जमाबन्दी (खतौनी) ग्राम [illegible] पटवार हल्का [illegible] इन्सपेक्टर लैण्ड रिकार्ड हल्का [illegible] तहसील [illegible] जिला [illegible] (राज.)

सम्वत् २०४३ से सम्वत् २०४६ तक

खेवट खतौनी संख्या	भूमि धारक (Land holder) का नाम	कास्तकार का नाम, उसके पिता का नाम, जाति तथा निवास स्थान का पता एवं (टेन्योर) का प्रकार	खसरा संख्या	क्षेत्रफल	भूमि का प्रकार	कास्तकार द्वारा भुगतान किया गया लगान (Rent)एवं अन्य कर(Charges)			संवत् .....के लिए		संवत् .....के लिए		संवत् .....के लिए		विशेष विवरण
						सिंचाई का साधन	कर सहित तफसील	रकम	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के	हस्तांतरण की तफसील जिस के पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	अनुप्रमाणित किए गए नामान्तरण(Mutation)के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के	हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तांतरण के प्रकार के	हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
[illegible]	[illegible]	राजस्थान सरकार	[illegible]	१६०१	१.३५	[illegible]										
			[illegible]	१४९६	०.१४	[illegible]										
[illegible]																
१-३०	[illegible]		[illegible]	१६१०	०.१६	[illegible]										
	[illegible]		[illegible]													
[illegible]			[illegible]													
२-३५	२२५		[illegible]	१४१४	२.०१	[illegible]										
	५-५		[illegible]	१४१५	१.४६	[illegible]										
			[illegible]			[illegible]										
			[illegible]			[illegible]										
			[illegible]	१४१६	१.३०	[illegible]										
			[illegible]													
			[illegible]													
[illegible]			[illegible]													
	५		[illegible]													
	५५		[illegible]													
			[illegible]													

जिलान किया गया

भूप [illegible] खुला

अन्य प्रविष्टियाँ

[illegible] (उपपूर) घाटी

अनुमोदित APPROVED

भारत सरकार-भारतीय खनिज ब्यूरो Government of India-Indian Bureau of Mines

[illegible]

1. आवेदन प्राप्त [illegible]
2. तारीख आवेदन 12-[illegible]-10
3. तारीख तहरी 15-[illegible]-10
4. तारीख [illegible] 19-[illegible]-10
5. फाल [illegible]
6. प्रति [illegible]

कार्य संख्या 5-26 (देखिये नियम 153)

पटवार हल्का ..... इन्सपेक्टर लैण्ड रिकार्ड हल्का ..... तहसील ..... जिला ..... (राज.)

सम्वत् २० से सम्वत् २० तक

खसरा/खतौनी संख्या		भूमि प्रकार (उपज/बोल्पन) का नाम	ठेकेदार का नाम, उसके पिता का नाम, जाति तथा निवास स्थान का पता एवं (टेन्डर) का प्रकार			ठेकेदार द्वारा भुगतान किया गया लगान (Rent) एवं अन्य कर (Charges)		
							कर सहित तफसील	रकम
नई	पुरानी							
1	2	3	4	5	6	7	8	9
244	304	पत्थर की खदान	[illegible]	3.00	0.12	[illegible]		
			[illegible]	1.50	0.06	[illegible]		
			[illegible]	1.50	0.06	[illegible]		
			[illegible]					
397	387		[illegible]	1.00	0.06	[illegible]	1.00	0.10
			[illegible]					1.12
			[illegible]					
396	377		[illegible]	1.00	0.20	[illegible]		
			[illegible]					
			[illegible]					
			[illegible]					
			[illegible]					

15-8-98

ONE RUPEE COURT FEE STAMP

APPROVED अनुमोदित

Indian Bureau of Mines

COURT FEE ONE RUPEE

COURT FEE ONE RUPEE

1. लाइसेन्स संख्या 437
2. तारीख जारीकरण 18-8-98
3. तारीख तैयारी 18-8-98
4. तारीख पुनरावृत्ति 18-8-98
5. [illegible]
6. दस्तखत [illegible]
अनुज्ञप्तिधारी

निलाम किया जाना

पक्का कच्चा

यहां प्रतिलिपि

15/8/98

कहसीलदार [illegible] प्रतापपुर (राज.)

फार्म नं० ९-३० (संशोधित नियम) १९६१

भू-अभिलेख तथा बन्दोबस्त विभाग — मसौदा अधिकार अभिलेख तथा रजिस्टर

तहसील ..... जिला ..... (राज्य) तक

वर्ष २०२८ से

खाता संख्या	खसरा संख्या	भूमि का वर्णन	क्षेत्रफल	लगान	परिवर्तन किये गये लगान अन्य कर (Charges)		संवत् के लिए		संवत् के लिए		संवत् के लिए		विशेष विवरण
					कुल संदेय	रकम	अनुमोदित किए गए परिवर्तन (Mutation) के आदेश की संख्या एवं तारीख तथा हस्तान्तरण के प्रकार के	हस्तान्तरण की तफसील जिस के पक्ष में भूमि का हस्तान्तरण किया गया है, भूमि के विवरण (तफसील) के	अनुमोदित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख तथा हस्तान्तरण के प्रकार के	हस्तान्तरण की तफसील जिस के पक्ष में भूमि का हस्तान्तरण किया गया है, भूमि के विवरण (तफसील) के	अनुमोदित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख तथा हस्तान्तरण के प्रकार के	हस्तान्तरण की तफसील जिस के पक्ष में भूमि का हस्तान्तरण किया गया है, भूमि के विवरण (तफसील) के	
1	2	3	4	5	7	8	9	10	11	12	13	14	15	16	17

राज. राजपत्र प्रकाशन, जयपुर-3 फार्म संख्या ए-26 (देखिये नियम 153)

जमाबन्दी (खतौनी) ग्राम ..... पटवार हल्का ..... इन्सपेक्टर लैण्ड रिकार्ड हल्का ..... तहसील ..... जिला ..... (राज.)

सम्वत् २० से सम्वत् २० तक

खेवट खतौनी संख्या		भूमि धारक (Land holder) का नाम	कास्तकार का नाम, उसके पिता का नाम, जाति तथा निवास स्थान का पता एवं (टेन्योर) का प्रकार	खसरा संख्या	क्षेत्रफल	भूमि का प्रकार	कास्तकार द्वारा भुगतान किया गया लगान (Rent)एवं अन्य कर(Charges)			विशेष विवरण
नई	पुरानी						सिंचाई का साधन	कर सहित तफसील	रकम	
1	2	3	4	5	6	7	8	9	10	17
269	305			1X4	0.15					
				1X60	0.20					
				1X62	0.21					
392	304			1X0E	0-16				0.10	
									0.12	
396	399			1X04	0.20					

1. खादन हल्का	437	
2. तारीख आमेदन	दि.	98
3. तारीख तैयारी	दि.	98
4. तारीख सुपुर्दगी	दि.	98
5. रकम		
6. दस्तूर		25)
योग रुपये		

मिलान किया गया

पटवा ..... मुंशी .....

अन्य प्रतिलिपी

सहायक लेखाधिकार [इ. प.] उदयपुर (राज.)

COURT FEE INDIA FOR COMPANY FEES ONLY ONE RUPEE

COURT FEE INDIA FOR COMPANY FEES ONLY ONE RUPEE

COURT FEE INDIA FOR COMPANY FEES ONLY ONE RUPEE

COURT FEE INDIA FOR COMPANY FEES ONLY ONE RUPEE

APPROVED अनुमोदित

Indian Bureau of Mines भारत सरकार • भारतीय खान ब्यूरो

राज. सरकार प्रकाशन, जयपुर-3

फार्म संख्या ९-२० (देखिये नियम 153)

जमाबन्दी (खतौनी) ग्राम ... पटवार हल्का ... इन्सपेक्टर लैण्ड रिकार्ड हल्का ... तहसील ... जिला ... (राज.)

सम्वत् २०२३ से सम्वत् २०४६ तक

खेवट खतौनी संख्या	भूमि धारक (Land holder) का नाम	काश्तकार का नाम, उसके पिता का नाम, जाति तथा निवास स्थान का पता एवं (टेन्योर) का प्रकार	खसरा संख्या	क्षेत्रफल	भूमि का प्रकार	काश्तकार द्वारा भुगतान किया गया लगान (Rent)एवं अन्य कर(Charges)			संवत् ..... के लिए		संवत् ..... के लिए		संवत् ..... के लिए		विशेष विवरण
						सिंचाई का साधन	कर सहित तफसील	रकम	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के	हस्तांतरण की तफसील जिस के पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	अनुप्रमाणित किए गए नामान्तरण(Mutation)के आदेश की संख्या एंव तारीख मय हस्तान्तरण के प्रकार के	हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एंव तारीख मय हस्तांतरण के प्रकार के	हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

फार्म संख्या ए-26 (देखिये नियम 163)

जमाबन्दी (खतौनी) ग्राम ..... पटवार हल्का ..... उपखण्ड इन्सपेक्टर लैण्ड रिकार्ड हल्का ..... तहसील ..... जिला ..... (राज.)

सम्वत् २०५२ से सम्वत् २०५९ तक

खेवट खतौनी संख्या	भूमि धारक (Land holder) का नाम	काश्तकार का नाम, उसके पिता का नाम, जाति तथा निवास स्थान का पता एवं (टेन्योर) का प्रकार	क्षेत्रफल संख्या	चकबन्दी	भूमि का प्रकार	काश्तकार द्वारा भुगतान किया गया लगान (Rent) एवं अन्य कर (Charges)			संवत् ..... के लिए		संवत् ..... के लिए		संवत् ..... के लिए		विशेष विवरण
						सिंचाई का साधन	कर सहित तफसील	रकम	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के	हस्तांतरण की तफसील जिस के पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तान्तरण के प्रकार के	हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	अनुप्रमाणित किए गए नामान्तरण (Mutation) के आदेश की संख्या एवं तारीख मय हस्तांतरण के प्रकार के	हस्तांतरण की तफसील जिसके पक्ष में भूमि का हस्तांतरण किया गया है मय भूमि के विवरण (तफसील) के	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

Annexure—12

File: M/S Nilkanth Concast Pvt. Ltd.	M.L 10/98	**Bhagoli**
Lease area 4.945 hectare	**Jhunjhunun**	Mineral: Iron Ore

FEASIBILITY REPORT

As per Mines Ministry letter no. 10(75)/08-M-V dated 05.03.2010

Chapter-1

General Mine Description	
Lessee	M/S Nilkant Concast Pvt. Ltd.
Status	1. Lessee isa private individual
Address	M/S Nilkant Concast Pvt. Ltd. BBZ-M-66, In front of Jhanda Chaukmoji Furniture Ghandi Dham Kuchha (Gujrat) Pin Code: 370201 **Mobile number: 2838283495** **e-mail: info@nilkanthsteels.com** **Mine Code:** 30 RAJ 33001 **IBM Registration number:** **IBM/9797/2012**
Minerals	Iron ore
Location	N/V- Bhagoli, Tehsil- Udaipurwati, District-Jhunjhunun
M.L. number	M.L. 10/98
Lease area	4.945 hectare
Lease Period	Up to 30.10.2052
G.T. Sheet number	45M/9
Location	Given in location plan
Clearance from MOEF	Not required
Mining Plan	Review of Mining Plan is submitting simultaneously.
Land details in hectares	

S. No.	Type of Land	Area in Hectares
1	Government Land	4.945 ha
2	Private Land Agriculture	--
Total		4.945 ha

Chapter-2	
2.0	**EXPLORATION**
2.1	Pitting/ Trenching The pits are available in the lease area. The locations of pits are shown on plate-4. Mineral iron ore is exposed in the area in pits and on surface.
2.2	Drilling No bore hole drilled in the area. The mineral is almost exposed in the area and goes in depth as per the workings.

Chapter-3	
3.0	**RESERVES- ASSESSMENT-SAMPLING**
3.1	**Sampling and Chemical Analysis** The analysis reports of iron ore is provided in annexure.
3.2	**Recovery Factor & Cut of grade**: Recovery of iron ore seems90% in this deposit. The 10% is intrusive, quartzite and gneisses etc.
3.3	**Reserves** Provided in Chap ter 1 of Part A of the Review of mining plan.

भारत सरकार-भारतीय खान ब्यूरो
Govt.of India-Indian Bureau of Mines
सत्यमेव जयते
अनुमोदित
APPROVED

Chapter-4	
4.0	**PRODUCTION**
4.1	**Production Schedule** The required production is given in tables of Chapter 2 Part A of the Review of mining scheme at page 16 and 17. Maximum production will be 1,29,170 tonnes iron ore per year.
4.2	**Mine Capacity** With the required rate of production the capacity of the mine is for 6.62 years.
4.3	**Handling ROM ore/ O/B/Waste handling** Handling of ROM is around 502 tonnes/ day in year 2021-22.
4.4	**The rate of production** The proposed rate of production will be around 1,29,170 tonnes of Iron Ore per year.
4.5	**Recovery** Recovery of iron ore seems 90% in this deposit. The 10% is intrusive, quartzite Gneisses etc.
4.6	**Grade Control / blending** The whole excavated mineral is marketable.



Chapter 5	
5.0	**MINING**
5.1	**Mining method- bench dimensions** Provided in details in chapter 2 Part A of Review of Mining Plan.
5.2	**Slope Angle** The face slope is proposed 85° and ultimate slope is proposed 45°.
5.3	**Stripping Ratio** **As** per mining scheme the stripping ratio is given at 4:1
5.4	**Drilling/ Mining & Transport, Equipment/ Machineries.** Provided in details in chapter 5 of Mining Scheme.

Chapter-6	
6.0	**Beneficiation**
6.1	**Beneficiation/ Crushing** The ROM mineral will be dispatched to consumer industries and own industries located at Kachha (Gujrat) The mineral will use in pipe coating, in refractory and in cement industries.
6.2	**Manual dressing, sorting** Manual dressing / sorting is proposed at face to separate the semi weathered patch.
6.3	**Sizing and washing** The market is for ROM mineral lump and dust.

Chapter 7	
7.0	**Marketing**
7.1	**Type of commodity with use** It is iron ore is uses in cement industries and in pipe coating industries. The average sale price of iron ore is 400 rupees per tones. This price will seems increase in future.

Chapter-8	
8.0	**Infrastructure**
8.1	**Road** Tar road is available near the lease area. The seasonal motorable rasta is available from tar road to lease area.
8.2	**Power Source** Power is not required at present. The workings will be in day shift only and diesel operated machineries will be deployed for mining works. The power is available in nearby area. .
8.3	**Labour Supply:** Labour is available in the nearby area. Maximum labourers will be engaged from nearby villages.
8.4	**Skill** Skilled labourers are engaged for operating the machineries and semi-skilled labour as helper. The un-skilled labourers will be employed for mineral excavation work.

Chapter 9	
9.0	**Environmental Requirement**
9.1	The lessee will apply for EC for increased production. Mine closure and reclamation plans will be prepared at the time of final closure of the mine (one year before the exhaust of mineral deposit in the mine)
9.2	Sustainable development The development is proposed by forming benches for achieving the proposed target.

भारत सरकार-भारतीय खान ब्यूरो
सत्यमेव जयते
Govt. of India-Indian Bureau of Mines
अनुमोदित
APPROVED

Chapter 10	
10.0	**Others**
10.1	**Legal: factors like tribal issues.** No such type's issues are in existence in this region.
10.2	**National Park** Such things are not in existence in 5 kilometers periphery of applied lease area.

Chapter 11	
11.0	**Economic Evaluation**
11.1	**Capital Cost.** Capital cost is around 30 lac rupees.
11.2	**Production and transportation cost (within lease area)** Production and transportation cost is as follows: Production cost will be around 350 Rs per tone including all expenditure.
11.3	**Royalty and other taxes** The royalty and vat will be paid by purchasers.
11.4	**Total production cost for minerals is 350 rupees per tonne.** The sale value is 400 rupees per tone for iron ore Thus the profit is 400-350 = 50 rupees per tones. The profit is 1,29,170 x 50 = 64,58,500 rupees The total Profit is 64,58,500 rupees per year Thus the project is economically viable under foreseeable operating scenario.

Place- Jaipur
Dated- 8.04.2018

ANNEXURE-15

Good People to Grow With
Indian Overseas Bank
Gandhidham Branch
Plot No-91 &100
Sector-4, Shree Gandhidham Co Op Society
Gandhidham - 370201

Phone: 02836- 231642
231753
Email: iob0298@iob.in

Ref.No.0298/GANDHIDHAM/LG / 2017-18

Date: 28.06.2017

To,
The Regional Controller of Mines,
Indian Bureau Of Mine,
Ajmer.

भारत सरकार-भारतीय खान ब्यूरो • Govt. of India-Indian Bureau of Mines • सत्यमेव जयते

अनुमोदित
APPROVED

Dear Sir,

Ref: Our Bank Guarantee No. 0298/ILG/12/2012 (New LG No.029871212000012) Dated 16.07.2012 for Rs.2,00,000/- (Rupees Two Lacs only) favouring yourself issued on behalf of M/s. Nilkanth Concast Pvt. Ltd.

The subject Bank Guarantee is expiring on **09.07.2017.**
At the request of our constituents M/s Nilkanth Concast Pvt. Ltd., we advise having extended the validity of our LG No **0298/ILG/12/2012 (New LG No.029871212000012)** from 09.07.2017 to 09.07.2022. All other terms and conditions of our original letter of guarantee remain unchanged.

Please note that this letter of extension is an integral part of original Bank Guarantee and valid only when attached with the original guarantee papers.

Notwithstanding anything contained hereinbefore:

1. Our liability under this Bank Guarantee shall not exceed Rs.2,00,000.00 (Rupees Two Lacs Only).
2. This Bank Guarantee shall be valid up to 09.07.2022.
3. We are liable to pay the guaranteed amount or any thereof, under this bank guarantee, only and only if you serve upon us a written claim or demand on or before 09.07.2022.

Thanking you.

Yours faithfully

For INDIAN OVERSEAS BANK
GANDHIDHAM (0298)
D Patni
(Deepak Patni)
Asst. Manager
Roll No. 60277

Asstt. Manager

कृते इण्डियन ओवरसीज बैंक / गांधीधाम शाखा/0298
For Indian Overseas Bank / Gandhidham Branch/0298
Kunal Kumar Singh
वरिष्ठ प्रबंधक / Senior Manager
(Kunal Kumar Singh)
Senior Manager

भारत सरकार-भारतीय खान ब्यूरो
Govt. of India-Indian Bureau of Mines
सत्यमेव जयते
अनुमोदित
APPROVED

INDIAN OVERSEAS BANK
Gandhidham Branch
Plot No-91 & 100
Sector-4, Gandhidham
Kutch, Gujarat-370201

Telephone-02836-231642
Email ID- iob0298@iob.in

Date: 31.08.2017

This covering letter is issued to be annexed to the Letter of Guarantee **No. 029871217000015 dated 31.08.2017** for amount of Rs.8,00,000 /- (Rs.Eight Lacs Only) **valid till 30.08.2022 claim period till 30.08.2022** issued by this Office under the joint signatures of:

(1) **Mr. Deepesh Kumar, Manager** and
(Name and Designation)

(2) **Mr. Kunal Kumar Singh, Senior Manager**
(Name and Designation)

2. Confirmation of this guarantee, if the same is desired, should be obtained from The Controlling Office named below

कृते इंडियन ओवरसीज बैंक
For Indian Overseas Bank
Manager
गांधीधाम Gandhidham

इंडियन ओवरसीज बैंक 298 गांधीधाम-कच्छ

For Indian Overseas Bank
कृते इण्डियन ओवरसीज बैंक / गांधीधाम शाखा-0298
For Indian Overseas Bank / Gandhidham Branch-0298
Kunal Kumar Singh
Senior Manager K-0965

(Name: Deepesh Kumar, Sig. No. D-0669) (Name: Kunal Kumar Singh Sig No. K-0965)

Beneficiary's Name & Address	Controlling Office Address
TO The Regional Controller Indian Bureau of Mines Ajmer (Raj.)	INDIAN OVERSEAS BANK Regional Office, Chinubhai Tower, Handloom House, Ashram Road, Ahmedabad - 380009

F 591



ગુજરાત ગુજરાત GUJARAT 6798 Dated 31/8/2017 BD 555407

Name of Purchaser ... Nilkanth Concast Pvt Ltd

Name of Stamp Paper ... ...

Signature of Purchaser ... ...

DASWANI
Stamp Vendor, Gandhidham
Licence Code No. 32

BG NO: 0298712170000015
DATED: 31.08.2017
BG AMOUNT: 8,00,000.00
VALID UP TO: 30.08.2022
CLAIM UPTO: 30.08.2022

भारत सरकार-भारतीय खान ब्यूरो • Govt of India-Indian Bureau of Mines • सत्यमेव जयते

अनुमोदित
APPROVED

Form No. _____

The Regional Controller of Mines,
Indian Bureau of Mines,
Ajmer

Dear Sirs,

This Deed of guarantee executed on 31st **Day of August, 2017** by **Indian Overseas Bank** constituted under the **Banking Companies Act 1970** having its central office at 763 Anna Salai, Chennai- Tamil Nadu-600002 and amongst other places, a branch at Plot No. 91& 100, Sector-4 Gandhidham Dist-Kutch Gujarat-370201 (hereinafter referred to as the bank) in favour of the Regional Controller of Mines, Indian Bureau of Mines, Ajmer (hereinafter referred to as the Beneficiary) for an amount not exceeding **Rs.8,00,000.00 (Rs. Eight Lakhs Only)** at the request of **M/s Nilkanth Concats Pvt Ltd** (hereinafter referred to as the Contractor/s)

कृते इंडियन ओवरसीज बैंक
For Indian Overseas Bank

प्रबंधक / Manager

कृते इण्डियन ओवरसीज बैंक / गांधीधाम शाखा / 0298
For Indian Overseas Bank / Gandhidham Branch 0298

BG NO: 029871217000015
DATED: 31.08.2017
BG AMOUNT: 8,00,000.00
VALID UP TO: 30.08.2022
CLAIM UPTO: 30.08.2022

अनुमोदित
APPROVED

This guarantee is issued subject to the condition that the liability of the bank under this guarantee is limited to maximum of **Rs. 8,00,000.00 (Rs. Eight Lakhs only)** and the guarantee shall remain in full force up to 30.08.2022 (date of expiry) and cannot be revoked on or before 30.08.2022 (last date of claim) by the Bank or applicant.

SUBJECT TO AS AFORESAID

BANK GUARANTEE AND CO-ACCEPTANCE BOND

1. Agreement on production of a Bank guarantee for **Rs.8,00,000.00 (Rs. Eight Lakhs Only)** under rule 27(1) of MCDR, 2017.
2. We **Indian Overseas Bank**, at the request of **M/s Nilkanth Concats Pvt Ltd** (lessee) do hereby undertake to pay to the Regional Controller of Mines, Indian Bureau of Mines **Ajmer** or any other officer authority nominated by the Controller General, Indian Bureau of Mines an amount not exceeding **Rs 8,00,000.00 (Rs. Eight Lakhs only)** against any loss or damage caused to or suffered or would be caused to or suffered by the Government or towards non compliance of provisions of Rule 22.23&27 of MCDR, 2017 i.e. Mine closure plan/progressive mine closure plan approved in respect of the mining lease for Iron Ore (ore/ores) over an area of 4.945 Hects. granted by State Government to **M/s Nilkanth Concast Pvt Ltd** (lessee) situated in Bagoli Village, Udaypurvati Taluka, Jhunjhunu District, Rajasthan State by reason of any breach of the said lessee of any of the terms or conditions contained in the Mine closure plan/progressive mine closure plan.

3. We, **Indian Overseas Bank** (bank) do hereby undertake to pay the amount due and payable under this guarantee without any demur, to the authority merely on a demand from the Regional Controller of Mines, Indian Bureau of Mines **Ajmer** or any other authorized by the Controller General, Indian Bureau of Mines stating that the amount claimed is due by way of loss or loss of damage caused to or would be caused to or suffered by the government by reason of breach by the said lessee or any of the terms or conditions contained in the mining plan/mining scheme or by reason of lessee's failure to perform the said mine closure plan/progressive mine closure plan. However our liability under this guarantee shall be restricted to an amount not exceeding **Rs.8,00,000.00 (Rs. Eight Lakhs only).**

4. We undertake to pay to the authority on a demand from the Regional Controller of Mines, Indian Bureau of Mines, **Ajmer** or any other officer authorized by the Controller General, Indian Bureau of Mines or Govt. of India any money so demanded notwithstanding any dispute or disputes raised by the lessee in any suit or proceedings pending before any court or tribunal relating thereto our liability under this present being absolute and unequivocal.

   The payment so made by us under this bond shall be valid discharge of our liability for payment there under and lessee shall have no claim against us for making such payment.

कृते इंडियन ओवरसीज बैंक
For Indian Overseas Bank

प्रबंधक / Manager
गांधीधाम Gandhidham

कृते इण्डियन ओवरसीज बैंक / गांधीधाम शाखा/0298
For Indian Overseas Bank / Gandhidham Branch/0298

Kunal Kumar Singh
वरिष्ठ प्रबंधक /Senior Manager

BG NO: 029871217000015
DATED: 31.08.2017
BG AMOUNT: 8,00,000.00
VALID UP TO: 30.08.2022
CLAIM UPTO: 30.08.2022

5. We, **Indian Overseas Bank, Gandhidham Branch**, further agree that the guarantee herein contained shall remain in full force and effect during the period up to the end of the Mining plan/Scheme of Mining period of five years that would be taken for performance of the said Agreement and that shall continue to be enforceable till all the dues of the Govt. under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged till Regional Controller of Mines, Indian Bureau of Mines, Ajmer or any other officer authorized by the Controller General, Indian Bureau of Mines certifies that the terms and conditions of the said progressive mine closure plan/final mine closure plan have been fully and properly carried out by the said lessee and accordingly discharge this guarantee. Unless a demand or claim under this guarantee is made on us in writing on or before **30.08.2022**, we shall be discharged from all liability under this guarantee thereafter.

6. We further agree that Regional Controller of Mines, Indian Bureau of Mines, Ajmer or any other officer authorized by the Controller General, Indian Bureau of Mines shall have fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said lessee from time to time or to postpone for any time or from time to time any powers exercisable by Regional Controller of Mines, Ajmer against the said lessee and to forbear or enforce any of the terms and conditions relating to the said agreement, we (bank) shall not be relieved from our liability by reason of any such variation or extension being granted to the said lessee or for any forbearance, act or omission on the part of Regional Controller of Mines, Indian Bureau of Mines, Ajmer or any indulgence by Regional Controller of Mines, Indian Bureau of Mines, Ajmer to the said lessee or any manner or thing whatsoever which under the law relating to sureties, would but this provision have effect of so relieving us.

7. This guarantee will not be discharged due to change in constitution of the bank or lessee.

8. We, **Indian Overseas Bank, Gandhidham Branch**, lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Regional Controller of Mines, Indian Bureau of Mines, Ajmer in writing.

9. Notwithstanding anything contained herein :

   a) Our liability under this Bank guarantee shall not exceed Rs 8,00,000.00 (Rs. Eight Lakhs only).
   b) The bank guarantee shall be valid up to 30.08.2022.
   c) The period of bank guarantee submitted is valid for the period of the proposals given in the mining plan/Scheme of mining/PMCP etc. We are liable to pay the guarantee amount or any part thereof under this Bank guarantee and only if served upon us a written claim or demand on or before 30.08.2022.

10. If the bank guarantee is to be en-cashed through the court, in that case the (city where Regional office, IBM is located) court will have jurisdiction.

11. In witness whereof, the bank through its authorized officer has set its hand and stamp on this 31st Day of August 2017 at Gandhidham.

कृते इंडियन ओवरसीज बैंक
For Indian Overseas Bank

प्रबंधक / Manager
गांधीधाम Gandhidham

कृते इण्डियन ओवरसीज बैंक / गांधीधाम शाखा/0298
For Indian Overseas Bank / Gandhidham Branch/0298

वरिष्ठ प्रबंधक /Senior Manager

BG NO: 0298712170000015
DATED: 31.08.2017
BG AMOUNT: 8.00.000.00
VALID UP TO: 30.08.2022
CLAIM UPTO: 30.08.2022

NOTWITHSTANDING ANYTHING CONTAINED HEREIN:-

i. Our liability under this Bank Guarantee shall not exceed Rs.8, 00,000.00 (Rs. Eight Lakhs Only)

ii. This Bank Guarantee shall be Valid up to **30.08.2022** (inclusive of claim period; and

iii. We are liable to pay the guarantee amount or any part thereof under this Bank guarantee, only and only if you serve upon us a written claim or demand in writing on or before **31.05.2022**

Thereafter the Bank shall stand discharged from all the liability under this Guarantee and all your rights under this Guarantee shall stand extinguished, irrespective of the fact whether the Guarantee in original is returned back to us or not.

कृते इंडियन ओवरसीज बैंक
For Indian Overseas Bank
प्रबंधक / Manager
गांधीधाम Gandhidham

कृते इण्डियन ओवरसीज बैंक / गांधीधाम शाखा/0298
For Indian Overseas Bank / Gandhidham Branch/0298
वरिष्ठ प्रबंधक /Senior Manager

Dated - this 31st day of August, 2017.

गांधीधाम Gandhidham

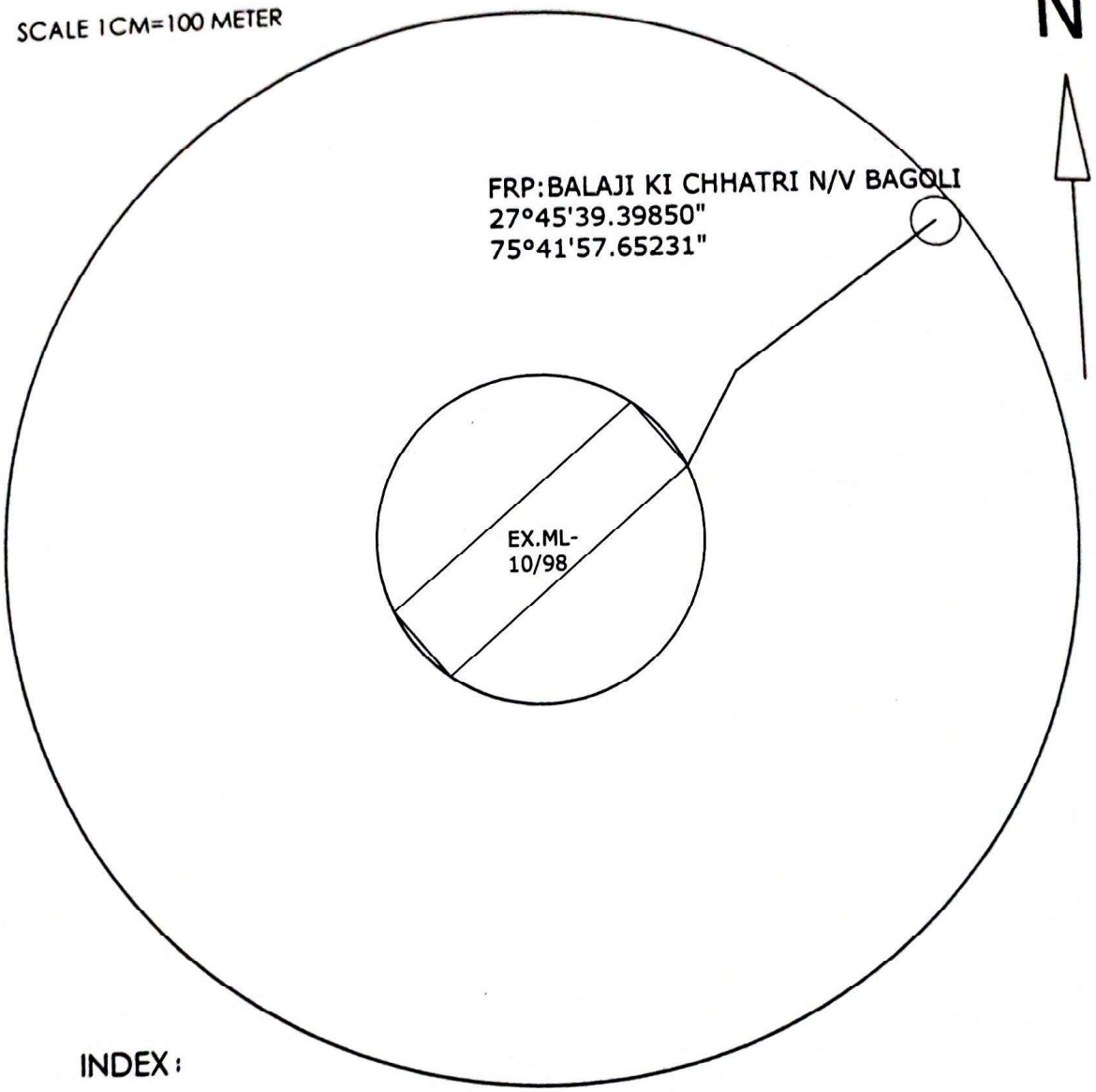
भारत सरकार-भारतीय खान ब्यूरो • Govt. of India-Indian Bureau of Mines • सत्यमेव जयते

अनुमोदित
APPROVED

ME/JJN/DRG/02/06/2020

MAP SHOWING THE POSITION OF EXISTING HELD LEASES (GRANT AFTER DATE 09.09.13) IN 500 m. RADIUS OF EX ML 10/98 IN F/O M/S NEELKANTH CONCAST PVT.LTD. MINERAL-IRON ORE, N/V-BGHORA ,TEHSIL - UDAIPURWATI, DISTRICT - JHUNJHUNU

SCALE 1CM=100 METER



INDEX :

EXISTING LEASE AREA FOR MINERAL IRON ORE IN F/O. M/S NEELKANTH CONCAST PVT.LTD.,AREA =4.9450 hect.

NO EXISTING ML AREA (GRANT AFTER DATE 09.09.13) IS HELD AROUND 500 METER RADIOUS OF THIS LEASE AREA

PREPARED BY
Jr.DM/JJN.

MINING ENGINEER
JHUNJHUNU

राजस्थान सरकार

कार्यालय खनि अभियन्ता, खान एवं भू–विज्ञान विभाग, झुंझुंनू

दूरभाष : 01592–237660 e-mail:- me.jhunjhunu@rajasthan.gov.in

कमांक:खअ/झुन्झुनूं/खनन पट्टा 10/98/ 570 दिनांक:17.06.2020

प्रमाण–पत्र

प्रमाणित किया जाता है कि पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय भारत सरकार की अधिसूचना दिनांक 15.01.2016 के अनुसार पट्टाधारी मेसर्स नीलकंठ कोन्कास्ट प्रा० ली० का खनन पट्टा 10/98 क्षैत्रफल 4.9450 हैक्ट्र वास्ते खनिज आयरन ओर निकट ग्राम बाघोली तहसील उदयपुरवाटी, जिला झुन्झुनूं मे घृत है। इस क्षेत्र से 500 मी दूरी के अन्दर दिनांक 09.09.2013 के बाद मे कोई खनन पट्टा स्वीकृत/पंजिकृत नही है। इस प्रकार दिनांक 17.06.2020 की स्थिति अनुसार उक्त क्षैत्र मे कलस्टर का निर्माण नही होता है।

दिनांक

खनि अभियन्ता, झुन्झुनू

राजस्थान सरकार
कार्यालय खनि अभियन्ता, खान एवं भू–विज्ञान विभाग, झुंझुंनू
दूरभाष : 01592–237660 e-mail:- me.jhunjhunu@rajasthan.gov.in

क्रमांकःखअ/झुन्झुनूं/माचि/एम.एल.न 10/98/ 569 दिनांकः 17.06.2020

प्रमाण–पत्र

यह प्रमाणित किया जाता है कि खनन पट्टा सख्या 10/98 मेसर्स नीलकंठ कोन्कास्ट प्रा० ली० के पक्ष मे खनन पट्टा वास्ते खनिज आयरन ओर क्षेत्रफल 4.9450 हैक्टर निकट ग्राम बाघोली तहसील उदयपुरवाटी, जिला झुन्झुनूं के खसरा नं0 1583,1601,1582,1602,1604,1606,1566, 1567,1568,1569,1570व1571 निम्न अक्षांश व देशान्तर के अन्तर्गत आता है। उक्त खनन पट्टा क्षेत्र सम्बन्धित जी.टी.शीट एवं कार्यालय रिकार्ड के अनुसार अरावली हिल्स मे नही आता है। माननीय सर्वोच्च न्यायालय के रिट याचिका संख्या 202/1995 (गोदावर्मन बनाम यूनियन ऑफ इन्डिया) मे अरावली हिल्स के सन्दर्भ मे पारित आदेश दिनांक 08.04.2005 कन्टेप्ट पिटिशन (सी) 412/2004 एवं सर्वोच्च न्यायालय के आदेशो की अवहेलना में नहीं आता है।

	देशान्तर (longitude)	अक्षांश (latitude)
FRP/T.I	75-41-57.65231	27-45-39.39850
A	75-41-45.01	27-45-28.86
B	75-41-32.92	27-45-19.94
C	75-41-30.24	27-45-22.82
D	75-41-42.33	27-45-31.74

Total Area of this ML 4.9450 Hect.

खनि अभियन्ता, झुन्झुनूं

AFFIDAVIT

I, Suresh Sarbaliya Authorized Signatory for M/s. Nilkanth Concast Pvt. Ltd of "Iron Ore Mining Project, M.L. No. 10/98" having mine lease area: 4.945 hectare located Near Village- Bhagoli, Tehsil- Udaipurwati, District- Jhunjhunu (Raj.) states that:

There is no Wild Life Sanctuary/National Park/Notified Eco-sensitive areas located within 10 km radius of the "Iron Ore Mining Project, M.L. No. 10/98", having mine lease area: 4.945 hectare located Near Village- Bhagoli, Tehsil- Udaipurwati, District- Jhunjhunu (Raj.)

Date: 24/09/2020.

Place: .....

For M/s. Nilkanth Concast Pvt. Ltd.

Suresh Sarbaliya
(Vice President)

P-2

Fulgro Engg. Services (I) Pvt. Ltd. Jaipur

भारतीय गैर न्यायिक

एक सौ रुपये

Rs. 100

रु. 100

ONE HUNDRED RUPEES

सत्यमेव जयते

भारत INDIA

INDIA NON JUDICIAL

AFFIDAVIT

राजस्थान RAJASTHAN AH 331655

I, Neha Sharma EIA Coordinator Mining with M/s Fulgro Environmental & Engineering Services India Pvt. Ltd., Jaipur Raj having head office at 27, Ashok Vatika, Khatipura Road, Jhotwara, Jaipur (Raj.) give undertaking on oath that-

There is no Wild Life Sanctuary/National Park/Notified Eco-sensitive areas located within 10 km radius of the "Iron Ore Mining Project, M.L. No. 10/98", having mine lease area: 4.945 hectare located Near Village- Bhagoli, Tehsil- Udaipurwati, District- Jhunjhunu (Raj.)

Date: 24/9/20

Place: Jaipur

Neha Sharma

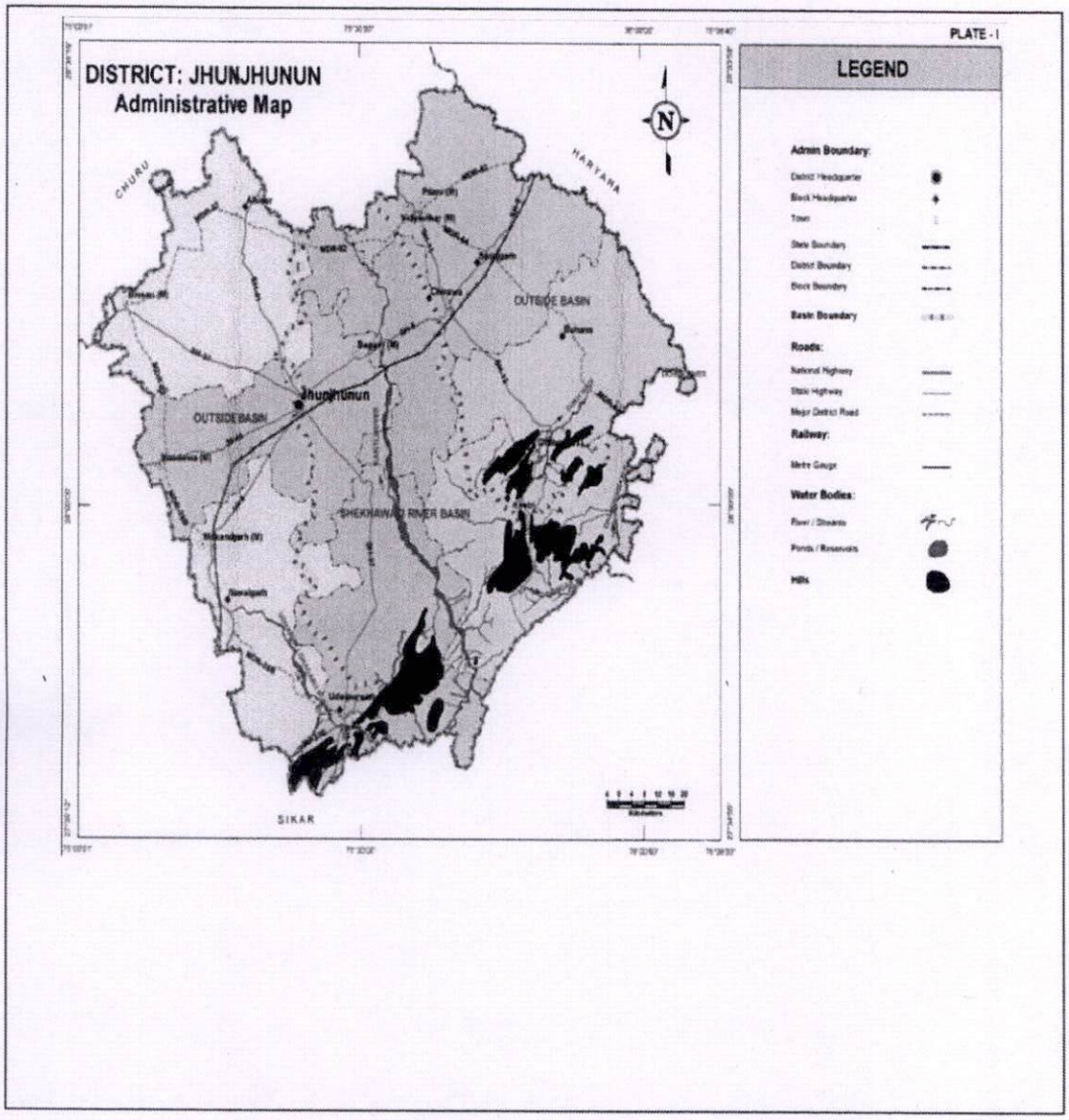
Neha Sharma
(EIA Coordinator)
Fulgro Environmental & Engineering Services India Pvt. Ltd.
27, Ashok Vatika, Khatipura Road,
Jhotwara, Jaipur (Raj.)

ATTESTED

NOTARY PUBLIC
JAIPUR (RAJ.) INDIA

23 SEP 2020

DISTRICT SURVEY REPORT'2018 FOR MINOR MINERAL



JHUNJHUNU DISTRICT

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

CERTIFICATE

District survey report for minor mineral has been prepared by office of the Suprintending Geologist, Jaipur and office of mining Enginner, Jhunjhunu under guidance of higher authorities of Mines and Geology department, Rajasthan, Zone Jaipur.

Senior Geologist
Jaipur

खान एवं भू विज्ञान विभाग
जयपुर

Mining Engineer
Jhunjhunu

खनि अभियन्ता
झुंझुनूं

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

PREFACE

Sustainable Development is built on three pillars - environmental, social and economic. Sustainable development cannot be achieved if the environment is protected but poverty is prevalent in a significant part of the population. Similarly, sustainable development cannot be achieved through inappropriate economic growth, if it undermines the environment in which people and businesses exists. So equilibrium is maintained between environment, society and economics. Sand/gravel has long been used as aggregate for construction of roads and building. Today, the demand for these materials continues to rise.

Ministry of Environment, Forest and Climate Change (MoEFCC) had time to time made provisions for obtaining environmental clearance, such as, wide Environmental Impact Notification, SO 1533 (E), dated 14th September 2006, made mandatory to obtain environmental clearance for different kinds of development projects as listed in Schedule-1.

Further, Hon'ble Supreme Court wide order dated the 27th February, 2012 in I.A. No.12- 13 of 2011 in Special Leave Petition (C) No.19628-19629 of 2009, in the matter of Deepak Kumar etc. Vs. State of Haryana and Others etc., ordered that "*leases of minor minerals including their renewal for an area of less than five hectares be granted by the States/Union Territories only after getting environmental clearance from MoEF*"; And Hon'ble National Green Tribunal, order dated the 13th January, 2015 in the matter regarding sand mining has directed for making a policy on environmental clearance for mining leases in cluster for minor Minerals,

The MoEF&CC in compliance of above Hon'ble Supreme Court's and NGT'S order has prepared "Sustainable sand Mining Guidelines, 2016" in consultation with State governments, detailing the provisions on environmental clearance (EC) for cluster, creation of District Environment Impact Assessment Authority, preparation of District survey report and proper monitoring of minor mineral. There by issued Notification dated 15.01.2016 for making certain amendments in the EIA Notification, 2006, and made mandatory to obtain EC for all minor minerals. Provisions have been made for the preparation of **District survey report (DSR)** of River bed mining and other minor minerals. The Notification dated 15.01.2016 was further amended vide Notification25.07.2018 where the model format for other minor minerals is provided separately.

Knowledge about quality and availability of construction material is a basic need for a Construction/Civil Engineer. Large quantities of different construction material are required in Civil Engineering works like roads, bridges, dams canals, buildings, water supply and drainage etc. The economy of construction work hinges on the use of locally available construction materials hence it is beneficial to know the potential of district in sources of construction materials. This booklet though termed as DSR prepared to full fill the statutory requirement is a comprehensive document which covers the available data and information about construction materials. A geological map indicating type of rocks occurring in the district given at the end is useful as reference.

This report is expected to encourage opening of new quarries, relieve burden on old quarries and cutting down leads in transporting materials. Year after year the construction activities in many spheres are increasing at a rapid rate. This has created large demand for construction materials. Fortunately, potentialities of the natural construction material in the state and the district in particular are quite substantial. A large part of the state is occupied by

खनि अभियन्ता
झुंझुनूं

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

a variety of rocks which provides raw material for construction works.

Application of Geology is well recognized in the field of civil engineering and building activates. If information about various rock types along with their utility in construction is readily available, it can go long way in planning, designing and effective economy in work.

Every effort has been made to cover all matter/issues mentioned in the notification dated 25.07.2018 for District Survey Report for Kota district for Minor Mineral. The main objective of the preparation of DSR is to ensure the following -

(i) Identification of areas of Minor Mineralsdeposits where mining can be allowed;
(ii) Compilation of existing Mining leases/clusters
(iii) Identification of mineral wealth in the district.

The DEIAA and DEAC will scrutinize and recommend for EC of mining of minor minerals on the basis of DSR. This will be a model and guiding document which is a compendium of available mineral resources, geographical set up, environmental and ecological set up of the district and replenishment of minerals and is based on data of various departments, published reports, journals and websites.

The minerals found in the district are Lime stone (Cement Grade), Lime stone, Sand stone as building Dimensional and decorative stone, Silica sand etc.

District survey report (dsr) of jhunjhunudistrictfor minor mineral

NEED OF DSR:-

As per Gazette notification of 15th January 2016 read with Notification of 25.07.2018 of MOEF & CC a survey shall be carried out by the District Environment Impact Assessment Authority (DEIAA) with assistance of Irrigation Department, Forest Department, Mining Department, Ground Water Boards, Remote Sensing Department and Revenue department in the district at regular interval to for preparation of District Survey Report with the following objectives:

(i) Identification of areas of Minor Minerals deposits where mining can be allowed;
(ii) Compilation of existing Mining leases/clusters
(iii) Identification of mineral wealth in the district

As per notification it is essential to prepare a survey document mapping the status of every Minor Mineral especially construction material and other minerals in a district. Though it is an acceptable fact that mineral belts /rivers cut across districts and States, but, keeping in view the fact that the district is the most established unit of administration at which this kind of survey, planning and monitoring can be ensured effectively. So, every district has toprepare this document taking the mineral belt in that district as a unit and inventorising other sources of minor mineral.

The natural resources must be utilized in environment friendly manner in scientific and systematic way and with the objective of sustainable development the policy on the subject should have provisions for protection of environment & ecology. These factors can be accounted for in a most efficient manner at district level. The sustainable mining plan needs to be dynamic.

DSR OF JHUNJHUNU FOR MINOR MINERAL

District survey report of Jhunjhunu was prepared based on direct and indirect benefits of mining and identification of the potential threats to environment in the surrounding areas. Besides the production of aggregate in a particular district is a function of availability of

खनि अभियन्ता
झुंझुनूं

natural resources, the size of the population, the economy of the area and various developmental and infrastructural works being undertaken in the district.

Every effort have been made to cover Masonry Stone mining locations, areas &overview of Mining activity in the Jhunjhunu district with all its relevant features pertaining to Geology & Mineral Wealth. The mineral potential is calculated based on field investigation & geology of the area.

This DSR shall form the basis for application for environment clearance, preparation of reports and appraisal of projects.

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

खनि अभियन्ता
झुंझुनूं

DISTRICT SURVEY REPORT (MINOR MINERAL), JHUNJHUNU

(Under Ministry of Environment, Forest & Climate Change, New Delhi, Notification Date 25-07-2018.)

SR NO.	CONTENTS

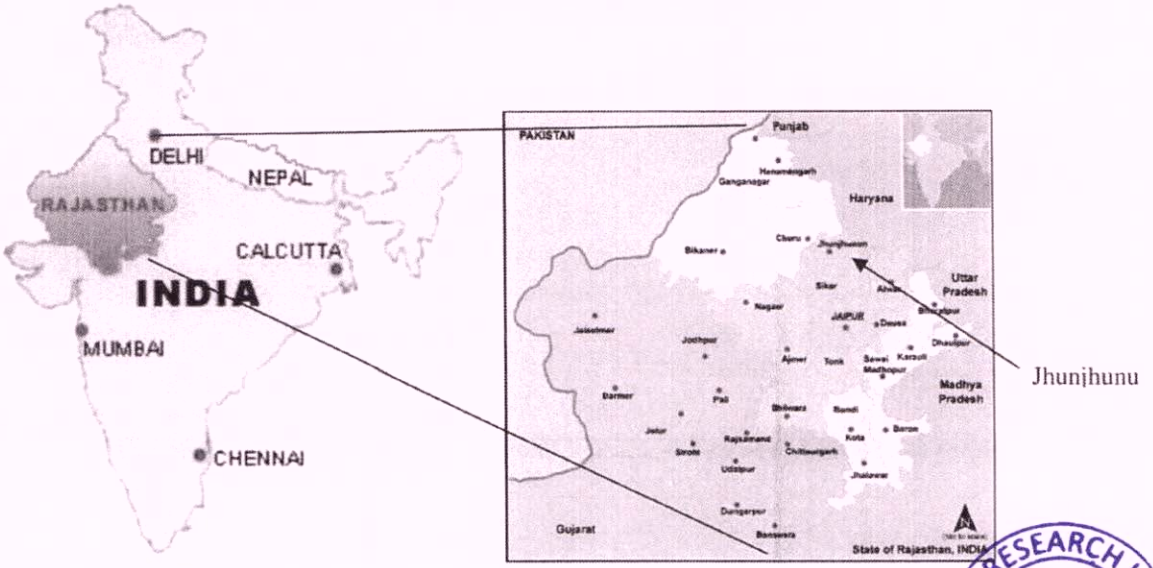
1) INTRODUCTION:-

Jhunjhnu district, covering geographical area of 5926 sq. km and extending between north latitudes 27° 38' and 28°31' and east longitudes 75 °2' and 76° 06' forms north-eastern part of the Rajasthan State. The district falls within Shekhawati region, and is bounded on the northeast and east by Haryana state, on the southeast, south, and southwest by Sikar District, and on the northwest and north by Churu District. It is located a 180 km away from Jaipur, The town is famous for the frescos on its grand Havelis special artistic feature of this region. Most of the part of the district is semi-desert. The Aravali ranges are embracing the south-eastern part of the district.For administrative convenience the district is divided into 08 tehsils and 05 sub tehsils, Fig. 1.1 Administrative Map of Jhunjhnu District. The district covers about 1.73% of Total area of the State. According to 2011 census, total population of Jhunjhnu district was 2137045 with rural population of 1647966 and urban population of 489079 and decennial growth of 11.67% (period 2001-2011).

1.1. LOCATION AND EXTENT

Jhunjhnu District is situated in the north-eastern part of Rajasthan. The district falls within Shekhawati region and is bounded on the northeast and east by Haryana state, on the southeast, south, and southwest by Sikar District, and on the northwest and north by Churu District. It is located a 180 km away from Jaipur, The town is famous for the frescos on its grand Havelis special artistic feature of this region. There are 08 Tehsils or sub-divisions in the district which are named as Jhunjhunu, Malsisar, Buhana, Udaipurwati, Nawalgarh, Khetri, Chirawa, Surajgarh. There are 08 Panchayatsamities and 945 villages. Jhunjhnu district has a total area of 5926 sq. km. with an average population density of 361 people per sq. km. as per the 2011 census.

Location Map of the Jhunjhunu District



वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

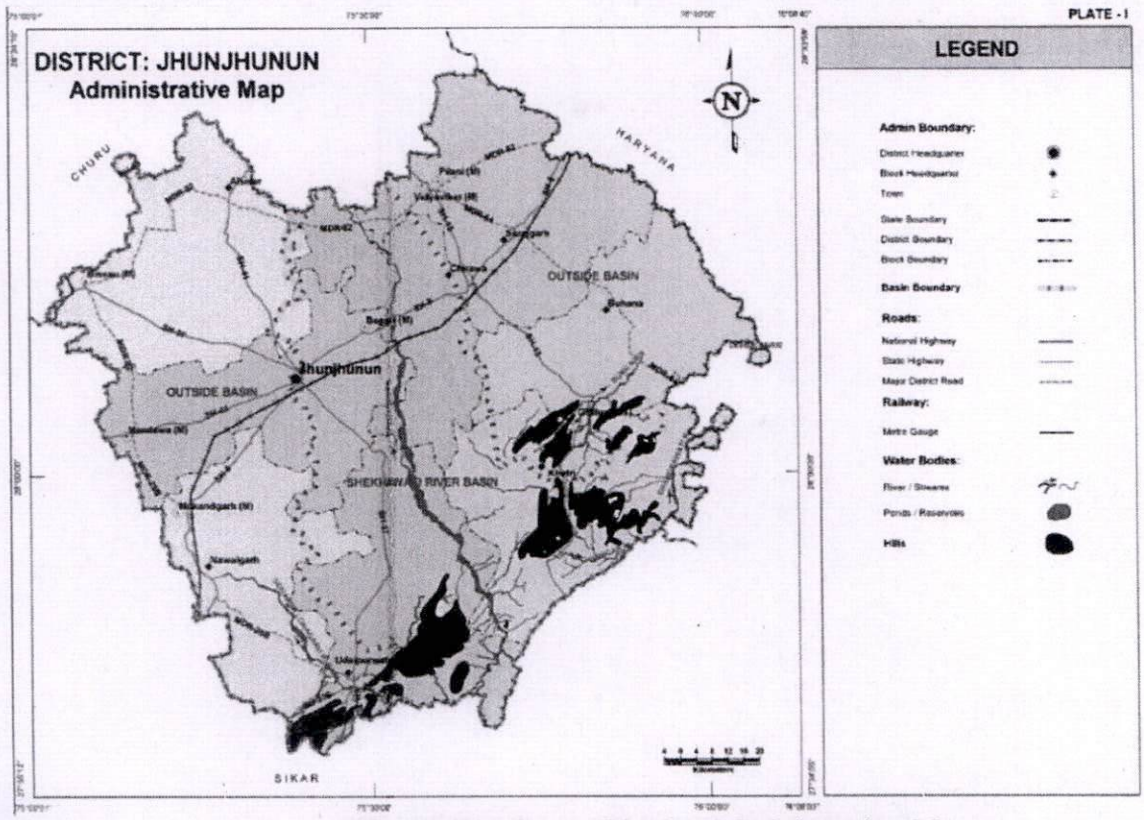


Fig. 1.2 Jhunjhunu District Administration Map

1.2. TRANSPORT AND COMMUNICATION

Jhunjhunu comes within the territory of the North Western Railway. Jhunjhunu city is connected through a broadgauge line to Sikar, Rewari, and Dehli. Railway Minister Suresh Prabhu flagged off two trains to mark the completion of Rs. 260 crore gauge conversion of the 122 km Loharu-Sikar railway line in Rajasthan. Jhunjhunu is well connected by roads from all the major cities of Rajasthan. RJ-SH 8 links Jhunjhunu to Jaipur, Sikar and Luharu. RJ-SH 41 links Fatehpur to Rajgarh via Jhunjhunu. One NH 11 New is also connected to Jhunjhunu.The nearest airport to Jhunjhunu city is Jaipur International Airport.Beside that, a small airstrip is also available in Jhunj small planes.

Air: The nearest Airport is situated184 KMin Jaipur from Jhunjhunu district headquarter.

Rail: Jhunjhunu is connected by regular express trains with Delhi and Jaipur and another important tourist centres of the Shekhawati region.

Road: Jhunjhunu is well connected by roads with Delhi, Jaipur, Jodhpur, Bikaner and other important tourist centres in the Shekhawati.

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

ACCESSIBILITY AND SOME ROAD DISTANCES FROM JHUNJHUNU TO OTHER PLACES TO TOURIST INTEREST:

1.	Delhi	250 KM Via Singhana-Pachaeri&Narnaul260 KM Via Pilani-Bhiwani&Rohtak 272 KM Via Singhana-Khetri&Narnaul
2.	Bikaner	236 KM Via Mandawa-Fatehpur&Ratangarh
3.	Jaipur	184 KM Via Nawalgarh&Sikar
4.	Jodhpur	390 KM Via Sikar&Nagaur
5.	Jaisalmer	572 KM Via Churu, Ratangarh& Bikaner676 KM Via Sikar, Nagaur& Jodhpur 543 KM Via Mandawa, Fatehpur, Ratangarh& Bikaner
6.	Ganganagar	333 KM Via Churu-SardarShahar
7.	Udaipur	585 KM Via Jaipur, Ajmer, Beawar, Kankroli617 KM Via Jaipur, Ajmer, Bhilwara, Chittaurgarh
8.	Chittaurgarh	505 KM Via Jaipur, Ajmer, Bhilwara
9.	Mt. Abu	691 KM Via Jaipur, Ajmer, Beawar, Bar, Sojat, Pali&Sirohi
10.	Ajmer	315 KM Via Sikar& Jaipur
11.	Alwar	246 KM Via Chirawa, Khetri, NeemKa Thana, Shahpura, Bairath&Sariska
12.	Bharatpur	362 KM Alwar, Deeg
13.	Agra	424 KM Via Jaipur
14.	Sikar	70 KM Via Mukundgarh, Dundlod&Nawalgarh
15.	Churu	52 KM Via Bissau

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

NH No.	Rajasthan National Highway Route	State through which passing	Length of NH (km)
NH-11 New	Jaisalmer-Pokharan-Bikaner- Sri Dungarpur-Ratangarh-Fatehpur-Jhunjhunu-Chirawa	Rajasthan	104

Junjhunu is well connected to Jaipur, which is well connected to all major cities of the country by air and also connected to many international places by air. The Jaipur airport is located at Sanganer, which is 12 kilometres from the heart of the city. It has both international and domestic terminal and is well connected to most of the cities across the globe with a number of airlines operating on a regular basis by popular carriers like Jet Airways, SpiceJet, Air India, and IndiGo, Oman Air have daily flights to Jaipur. Now, flights to international cities like Kuala Lumpur, Sharjah and Dubai are also connected from this airport.

2) OVERVIEW OF MINING ACTIVITY IN THE DISTRICT:

Following Minerals are found and quarried in the Sikar District:

Sr.no	Mineral	Sr. no.	Mineral
1.	Masonry Stone	10.	Calcite
2.	Marble	11.	Bajri
3.	Granite	12.	Brick Earth
4.	Lime Stone	13.	Copper Ore
5.	Silica Sand		
6.	Quartz		
7.	Feldspar		
8	Quartzite		
9.	Iron Ore		

The mining activity in the district is administrated by two mining engineer offices viz. Mining Engineer-Jhunjhunu under the control of Superintending Mining Engineer-Jaipur Circle and Additional Director-Mines, Jaipur Zone. The Geological Survey and Prospecting Activity are conducted by the Geologists and Senior Geologist of the office of Superintending Geologist Jaipur under the administrative control of Additional Director-Geology, Jaipur Zone. In district.02 Major minerals and 15 varieties of minor minerals are being exploited. As on 31.03.2017, 10nos of major mineral leases and 472nos of minor mineral leases were under operation in the district, the statistics of which are tabulated in following tables.

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

3) GENERAL PROFILE OF THE DISTRICT:

Jhunjhunu is an ancient town but now a district Headquarter. The Jhunjhunu district shines uniquely among all the districts of Rajasthan. It has a brilliant trail of brave soldiers who have sacrificed their lives for the defence of their country. It is a district of the business magnets and advanced farmers. It is one of the prosperous districts of Rajasthan. Its area is 5929 Sq. Km. Most of the part of the district is semi-desert. The Aravali ranges are embracing the south-eastern part of the District. The huge and magnanimous copper fields are lying in the bowl of these ranges in Singhana and Khetri suburbs. The lush green valleys and beautiful natural scenes captivate the tourists. Lohargal, the holy shrines of pilgrimage, lies in the lap of these ranges. There runs and anecdote that Pandwas, the heroes of the Mahabharata took a bath and bathed their weapons in the Surya Kund, thereby they got salvation. A large number of the people throng every year to take a holy dip in its water on the occasion of the BhadrapadAmavasya every year. This district lies in the core of the well-known erstwhile Shekhawati province. Every con of this province speaks its own history of bravery and valour. Innumerable spots and monuments are connected with lives of these warriors. Moreover, the palatial buildings of the rich people, adorned with fresco paintings in different colours and shades are a great source of attraction for the tourists. The paintings of these havelies have not only become our attraction for the tourists but also a subject of serious studies. They seem to depict the culture, history and flora & fauna of an age.Nowadays these havelies are lying vacant. The owners have left them for big cities and they visit on very rare occasions. They are boarded and watched by the watchmen or Munims. Jhunjhunu district is a part of Shekhawati. It is called Shakhawati after the name of Rao-Shekha. He was a great warrior. He established his kingdom far and wide. He ruled over this territory for many years. He died in the year 1488, near Ralawta.Jhunjhunu is an old and historical town, having its own district headquarter, no authentic proof as yet, when this city was founded and by whom. It is said that it was ruled over by the Chauhan Dynasty in the Vikram era 1045, and Sidhraj was a renowned king. In the year 1450 Mohammed Khan & his son Samas khan defeated the Chauhans and conquered Jhunjhunu. Mohammed khan was first Nawab of Jhunjhunu. Then his son Samas khan ascended the throne in the year. 1459. Samas khan founded the village Samaspur and got SamasTalab constructed. These havelies hails a large number of tourists every year. They keep wonder struck at the paintings etc.The fresco-painting probably came in to existence in the eighteenth century. It was during the period of Shardual Singh Ji that fresco painting was in much vogue.

There are hundreds of such havelies in the prominent towns of the district such as Jhunjhunu, Nawalgarh, Mandawa, Mukundgarh, Dundlod, Chirawa, Bissau, Mahansar, Pilani etc. which bear the wonderful fresco painting in various everlasting colours and designs.In Nutshell Jhunjhunu is very rich in presenting the glorious ancient monument. The temples, mosques, forts, palaces, tombs, wells, step wells, cenotaphs and havelies of excellent fresco-paintings of Junjhunu speak with full throated ease about the glorious past of district. They are the master pieces of art and architecture, Shekhawati region offers many resorts of beauty to the tourist.The city today has a population of more than 2.13 million. Its height above mean sea level is 338 m. Most of the part of the district is semi-desert. The Aravali ranges are embracing the south-eastern part of the district. Most of the part of the district is semi-desert. The Aravali ranges are embracing the south-eastern part of the district.

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

MINERAL RESEARCH INDIA PVT. LTD. NOIDA

3.1 ADMINISTRATIVE SETUP

Jhunjhnu District is situated in the north-eastern part of Rajasthan. The district falls within Shekhawati region and is bounded on the northeast and east by Haryana state, on the southeast, south, and southwest by Sikar District, and on the northwest and north by Churu District. It is located a 180 km away from Jaipur, The town is famous for the frescos on its grand Havelis special artistic feature of this region. There are 08 Tehsils or sub-divisions in the district which are named as Jhunjhunu, Malsisar, Buhana, Udaipurwati, Nawalgarh, Khetri, Chirawa, Surajgarh. There are 08 Panchayatsamities and 945 villages. Jhunjhnu district has a total area of 5926 sq. km. with an average population density of 361 people per sq. km. as per the 2011 census.

Sub-Divisions	PanchayatSamitis	Tehsils
1. Jhunjhunu	1. Jhunjhunu	1. Jhunjhunu
2. Alsisar	2. Alsisar	2. Alsisar
3. Buhana	3. Buhana	3. Buhana
4.Udaipurwati	4.Udaipurwati	4.Udaipurwati
5. Nawalgarh	5. Nawalgarh	5. Nawalgarh
6. Khetri	6. Khetri	6. Khetri
7.Chirawa	7.Chirawa	7.Chirawa
8. Surajgarh	8. Surajgarh	8. Surajgarh

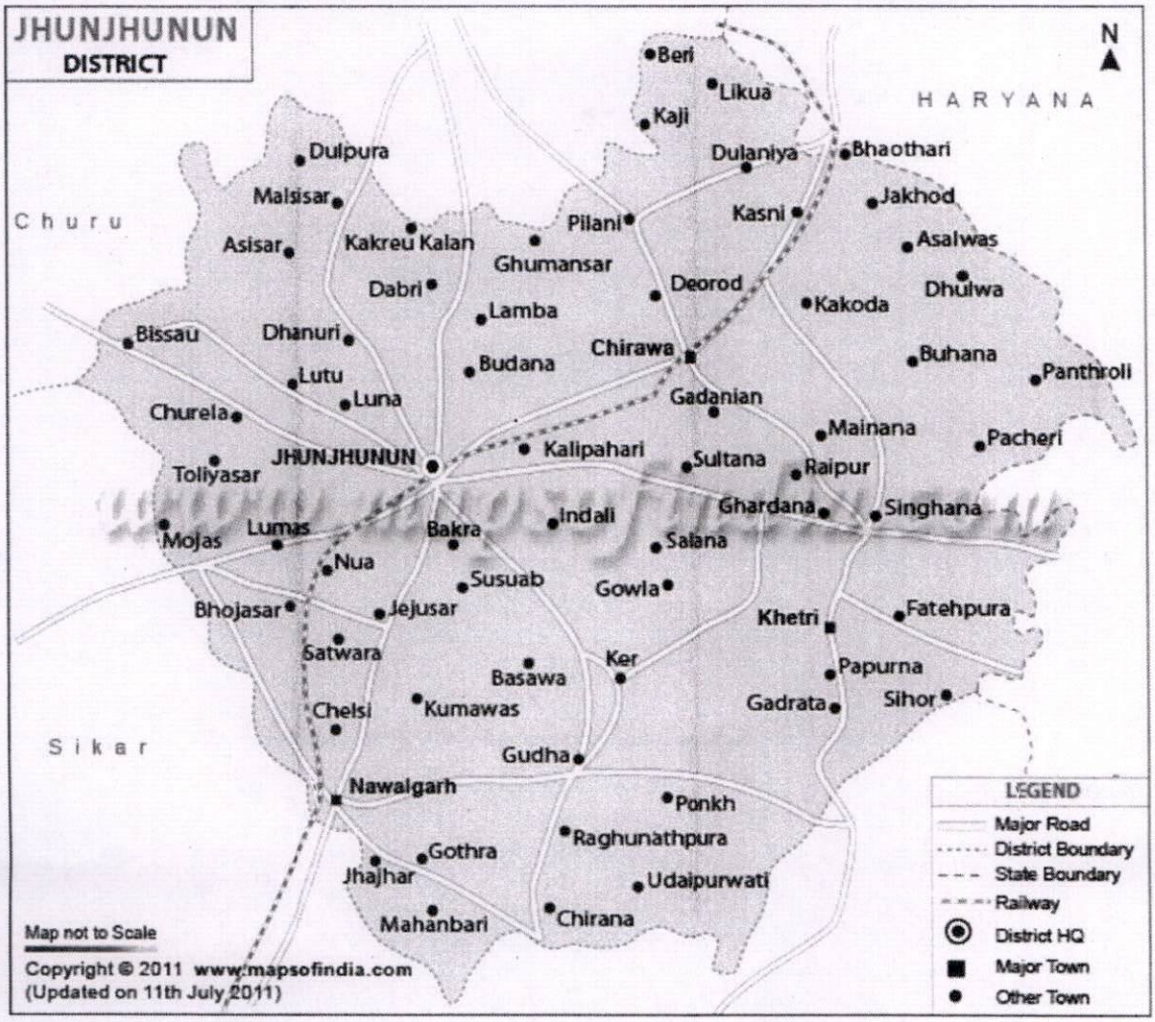
Sub-Divisions/PanchayatSamitis/Tehsils
PanchayatSamitis: There are 08PanchayatSamiti's in Sikar District.
Divisions: There 08Sub-divisions in District
Tehsils are: There are 08 tehsils in Sikar District

Sub-divisions	**08**
Tehsils	**08**
Villages	**945**
PanchayatSamitis	**08**
Gram Panchayat	**301**
Muncipal councils/ Boards	**13**

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं



3.2 DEMOGRAPHIC PROFILE

Jhunjhunu district has a total area of 5926 sq. km. with an average population density of 361 people per sq. km. as per the 2011 census. The city today has a population of more than 2.13 million. Its height above mean sea level is 338 m.According to provisional report of 2011 census, Jhunjhunu city total population of Jhunjhnu district was 2137045 with rural population of 1647966 and urban population of 489079 and decennial growth of 11.67%. The overall literacy rate for the city is 74.13%.86.90% males and 60.95% females were literate. The sex ratio was 950 females per 1,000 males. The child sex ratio stood at 837. According to the 2011 census, Hindus form the majority religious group comprising 85.21% of the district's population, followed by Muslims 14.46%, and others 0.33%.

4. GEOLOGY OF THE DISTRICT:

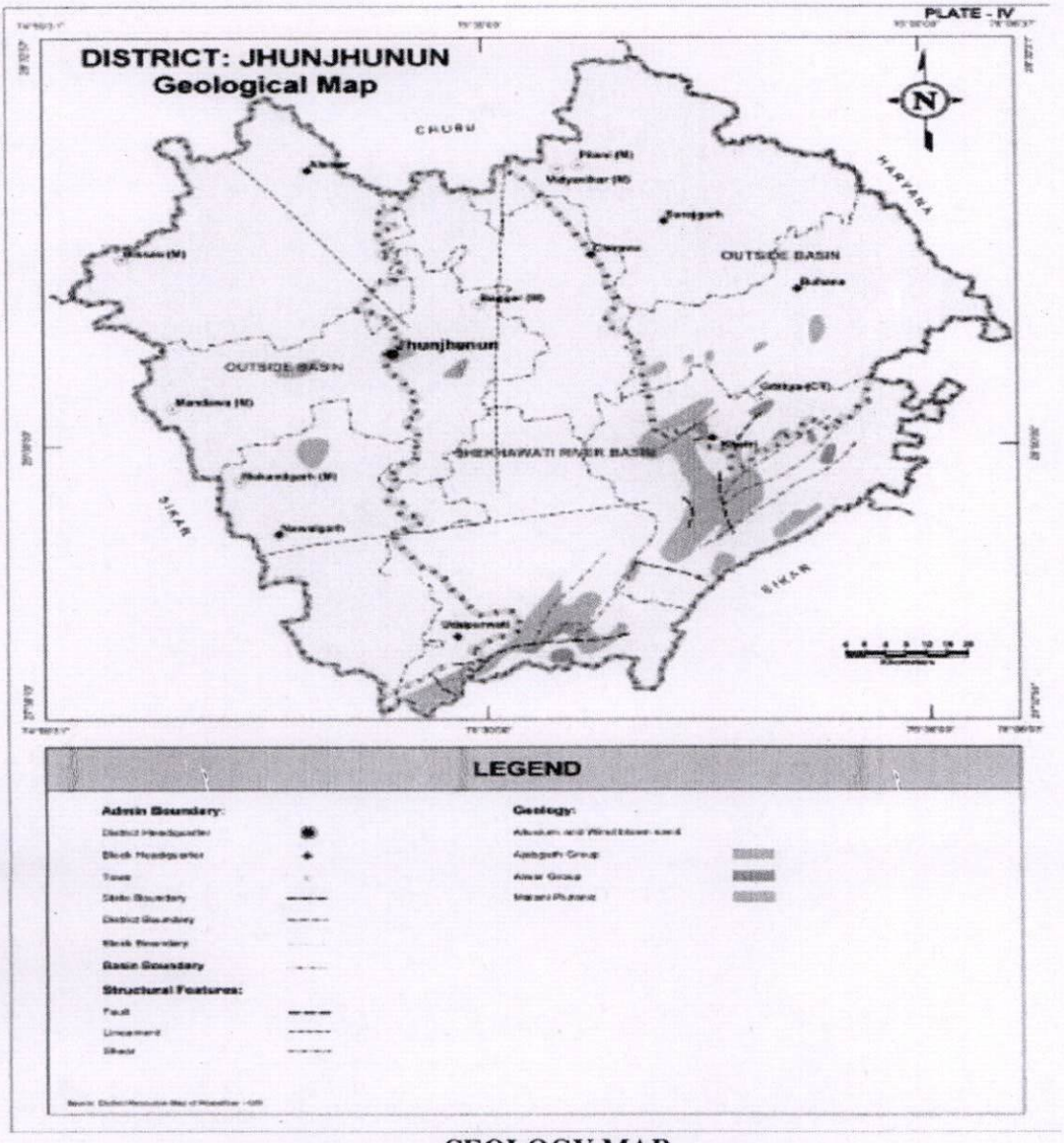
Geologically major part of the district is occupied by Quaternary alluvium and Aeolian sand forming part of the Thar Desert. In the district relief is seen only in the south eastern part in the form of linear ridges and isolated hillocks represented by rocks of BhilwaraSupergroup of Archean age and Delhi Supergroup with intrusive of lower to middle Proterozoic age. Isolated outcrops of Malani Igneous suits of upper Proterozoic age are located in the western part of the district.

GEOSURVEYANCE RESEARCH INDIA PVT. LTD. NOIDA

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

PLATE - IV



GEOLOGY MAP

The Kantli fault which is almost trending east-west is a prominent geomorphic feature in the southern part. In the north of Kantlifault Delhi Super group of rocks have been classified into the Alwar and Ajabgarh Groups, while in south of Kantli fault Delhi Super group of rocks are grouped undertShyamgarh group. Hence geological successions in north of Kantli fault and south of Kantli fault are given separately as below:

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

NORTH OF KANTLI FAULT

Age	Super Group	Group	Lithology
Quarternary			Alluvium and blown sand
Upper Proterozoic	Malani Igneous Suite		uartzfelsites, granite porphyry, rhyolite, granite
Lower to Middle Proterozoic	Intrusive Delhi Super Group	Ajabgarh Group Alwar Group	Quartz Vein and pegmatite Granite Amphibolite Sand stone, shale, tuff Schist and metagreywacke Ortho-quartzite Andalusite schist Granet-amphibole schist Marble Amphibole Quartzite Quartzite
			Uncomformity
Archaean	Bhilwara super group	Mangalwar Comlex (Basement)	Mica schist Marble/dolomite/calc-silicate rock Sillimanite-bearing Paragneiss Quartzite

SOUTH OF KANTLI FAULT

Age	Super Group	Group	Lithology
Quarternary			Alluvium and blown sand
Lower to Middle Proterozoic			Quartz Vein and pegmatite Granite Amphibolite Slate with quartzite bands Slate with Greywacke bands Graphite schist Calc silicate rock Quartzite with slate bands Banded haematite jasper

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

वा.रक्ष भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

			Pellitic schist Quartzite/Conglomerate Felsic volcanic Carbon Phyllite Tectonic Contact
Archaean	Bhilwara super group	Mangalwar Comlex (Basement)	Mica schist arble/dolomite/calc-silicate rock Sillimanite-bearing Paragnieiss Quartzite

BHILWARA SUPER GROUP:

Bhilwara Super group is represented by the quartzite, sillimanite bearing paragneiss, marble/dolomite/calc-silicate, mica schist etc.belonging to MangalwarComlex forming basement in the district. Quartzite is exposed in the west of Singhana and Khetri& South of Kali Pahari in a linear stretch. Sillimanite bearing paragniss is exposed in east and south of Kali Phari and Babai, east and west of Ajitsagar. Marble/dolomite/calc-silicate rocks are mostly exposed in between Kali Pahari and Sior& around Chhapoli. Mica schist is extensively exposed around Babai, Kali Pahari, Taonda, Ajitsagar, Rojara etc.

DELHI SUPER GROUP:

In north of Kantli fault Bhilwara Super Group of rock are unconformably overlain by the rocks of Delhi Super Group classified into Alwar and Ajabgarh Groups. The Alwar Group consists dominantly of quartzite with minor schist and marble. These are exposed from south of Singhana to soth east of Khetri. Ajabgarh Group Comprises schist, metagrey-wacke, ortho-quartzite etc.These are exposed from south-west of Singhana in north to just north of Kantli fault in south. Undeformed and practically unmeta-morphosed sequence of shale, sandstone and tuff, occurring in isolated basins, between Pilani-Devror and south of Chirawa has also been placed within the Ajabgarh Group.

In south of Kantli fault there is tectonic contact between rocks of Bhilwara Super group and Delhi Super group, here Delhi Super group pf rocks have been groued under Shyamgarh Group. The Shyamgarh Group consists of slate, schist, felsic volcanic, cale-silicate rock etc. These rocks are exposed from north of Ponkh in north to south of Raghunathgarh in south.

The rocks of the Delhi Super group are highly deformed into large scale folds and affected by later faults.

INTRUSIVE:

The post-Delhi acidic as well as basic intrusive are intruding throughout the Delhi Super group of rocks. These have been themselves subjected to further metamorphism. The basic intrusive include epidiorite, diorite, amphibolites etc. A large body of these intrusive is located around Babai while small outcrops are found near Udaipurwati, Bagora, and Papura etc.

The acidic intrusive viz. granite, albetite and pegmatite etc. are extensively exposed in the district. The albetites are profusely intruding the Ajabgarh and appear to play an

CONSULTANCY RESEARCH INDIA PVT. LTD. NOIDA

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

important role in the copper mineralisation in Khetri area. The granite is emplaced along the core portion of Alwar as well as Ajabgarh. Extensive outcrops of granites are located around Bagora, Udaipurwati, Manksas, Bagoli, Mandaora, GudhaGaurjiHukumpura, Bamlawas etc. These granite belongs to Erinpura groups of granites.

The pegmatite bodies generally show discordant relationship with the granite suggesting a later emplacement of the former.

MALANI IGNEOUS SUITE:

Isolated small hills and hillocks of granite and effusive rocks, exposed north of Jhunjhunu city, belong to the younger Malani Igneous Suite. The outcrops of granite are seen near Basri, Nand, Rijani, Margsar, Rasora etc. the Malani Igneous Suite rocks exposed near Bagar, Kali Pahari, RatanShahr, Bibasar and Bakra are comprises felsites, granite porphyry, rhyolite etc.

5. DRAINAGE OR IRRIGATION PATTERN:

There is no perennial river in the district. The most important rivers in the district are Kantli, Chandrawati, Goliana and Lihagarh. Kantli originates near Khandela in Sri Madhopur tehsil and flows out of the district in the northeasterly direction to district Jhunjhunu. Chandrawati River originates from the hills in the southeast of NeemKa Thana and flows out of the district in the northeastern direction. In the western desertic plain, there is practically no surface drainage system. Apart from these, there are several minor streams or nallahs originating from the hills which flow for short distances and disappear in the sandy tract. There is natural lake near Pritampuri in the eastern part of the district. It is a small depression where rainwater accumulates and lasts for a few months.

Table - Drainage System with description of Main Rivers

S.N	Name of River	Area Drained in District (Sq. Km)	% Area Drained in the District
1	Lohagarh	**5.908**	**0.099**
2	Goliyana	**1.6998**	**0.028**
3	Chanrawati	**7.927**	**0.133**
4	Kantli	**44.71**	**0.75**

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

Salient Features of Important Rivers and Streams:-

S.N	Name of River or Streams	Total Length in The District (In. Km)	Place of Origin	Altitude at Origion (MRL)
1	Lohagarh	39.584	-	466
2	Goliyana	9.641	-	500
3	Chanrawati	43.445	Biharipur hills	440
4	Kantli	105.808	Khandela hills	332

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

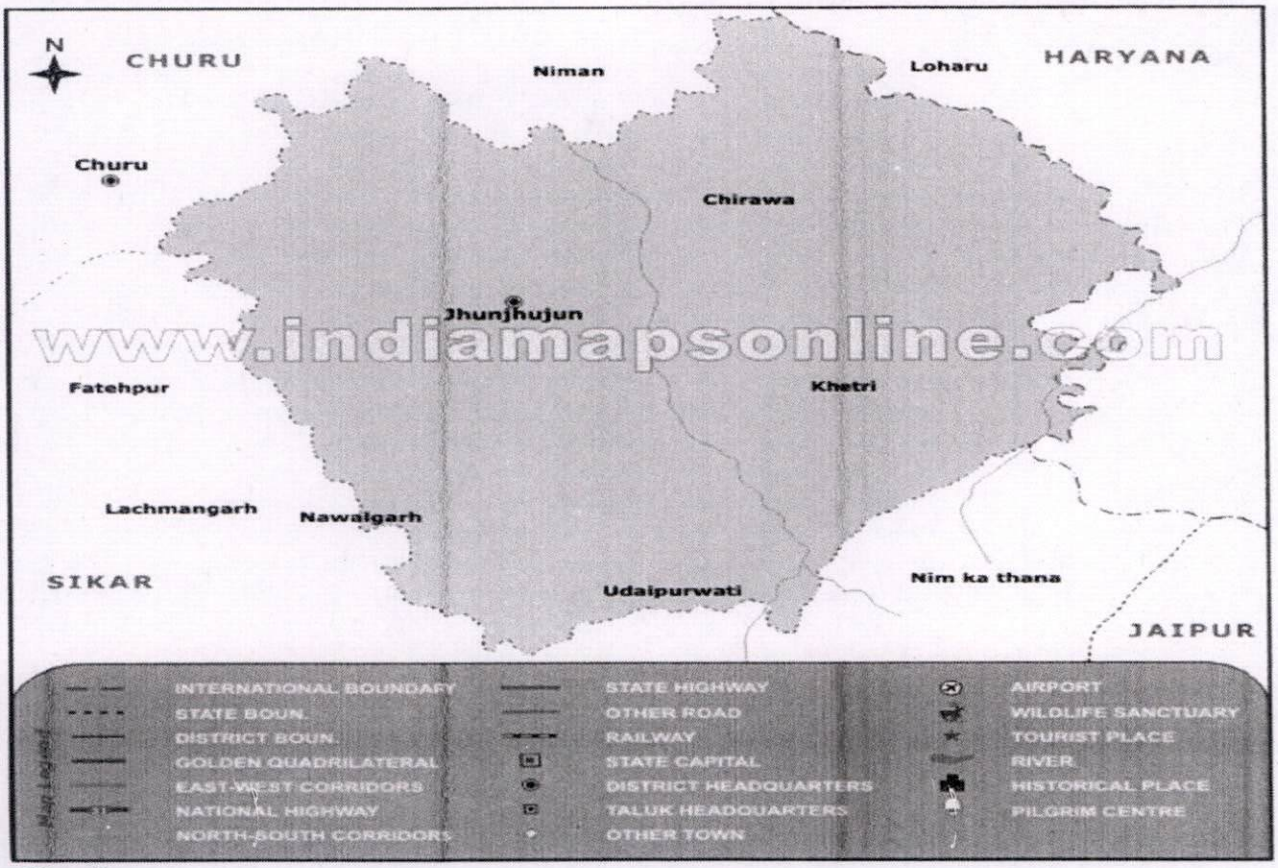


Plate 3

6. LAND UTILIZATION PATTERN IN THE DISTRICT: FOREST, AGRICULTURAL, HORTICULTURAL, MINING ETC.:

Sl.No.	Particulars	(figures in sq.km.)
1	Area not suitable for cultivation	355.92
2	Hills & hilly forest	396.14
3	Pasture land	401.74
4	Barren land	65.91
5	Others	79.00
6	Area suitable for cultivation but not cultivated	422.87
7	Area under cultivation	6463.23
i	Area irrigated by wells	2267.38
ii	Area irrigated by canals	0.17
iii	Area irrigated by tanks/ponds	0.36
iv	Area irrigated by other sources	Nil
v	Unirrigated area	4195.32

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

वरिष्ठ भू वैज्ञानिक
जल एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

7. SURFACE WATER AND GROUND WATER SCENARIO OF THE DISTRICT:

Gneisses and schists of Bhilwara Super Group are the oldest rock types overlain by quartzites, schists, conglomerates, dolomitic limestone etc. belonging to Alwar and Ajabgarh Groups of Delhi Super Group along with granite, pegmatite and amphibolite intrusives of Post Delhi age. The availability, occurrence and movement of ground water is mainly controlled by the topographic features, physical characteristics and structural features present in the geological formations. Ground water occurs under unconfined to semi-confined condition. The principal aquifer in the area is Quaternary sediments covering major part of the district (resting in western and central parts of the district) whereas quartzite, schist, phyllite, limestone and dolomitic limestone of Delhi Super Group also constitute important aquifers (resting in the eastern and northcentral parts of the district mainly in Neemka Thana, Khandela, DantaRamgarh and part of Piprali blocks). alluvium while in hard rock formations, occurrence and movement of ground water is controlled by secondary porosity i.e. through the bedding planes, fissures, joints, fractures, solution cavities and other structurally weaker planes. Hydrogeological map of the area is depicted.

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

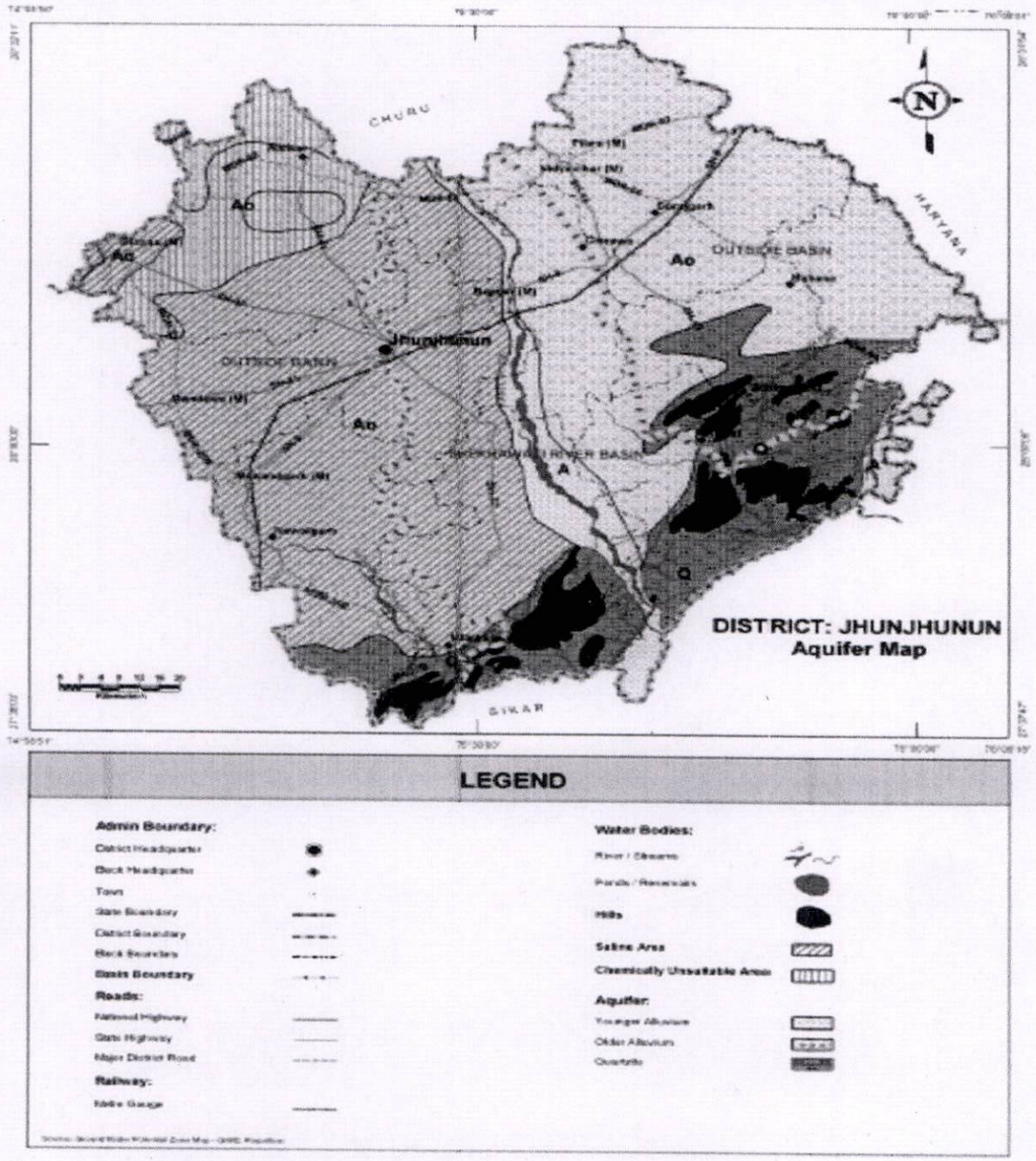


Fig: HYDROGEOLOGY MAP OF DISTRICT JHUNJHUNU

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

WATER LEVEL SCENARIO

The Central Ground Water Board periodically monitors the National Hydrograph Network Stations (NHNS) stations in the Jhunjhunu district, four times a year i.e. in January, May (Premonsoon), August and November (Postmonsoon).

DEPTH TO WATER LEVEL – PREMONSOON

Depth to water level varies significantly from less than 20m below ground level to more than 70mbgl. North and northeastern part of the district i.e., Chirawa-Surajgarh-Buhana region shows deeper water levels of 40 - 60m bgl in general, and reaching upto>70m bgl. Western side of the district, the water level is moderately deep (around 20-40m bgl) but in down south (Udaipurwati block), the water level is quite shallow occurring at less than 20m bgl.

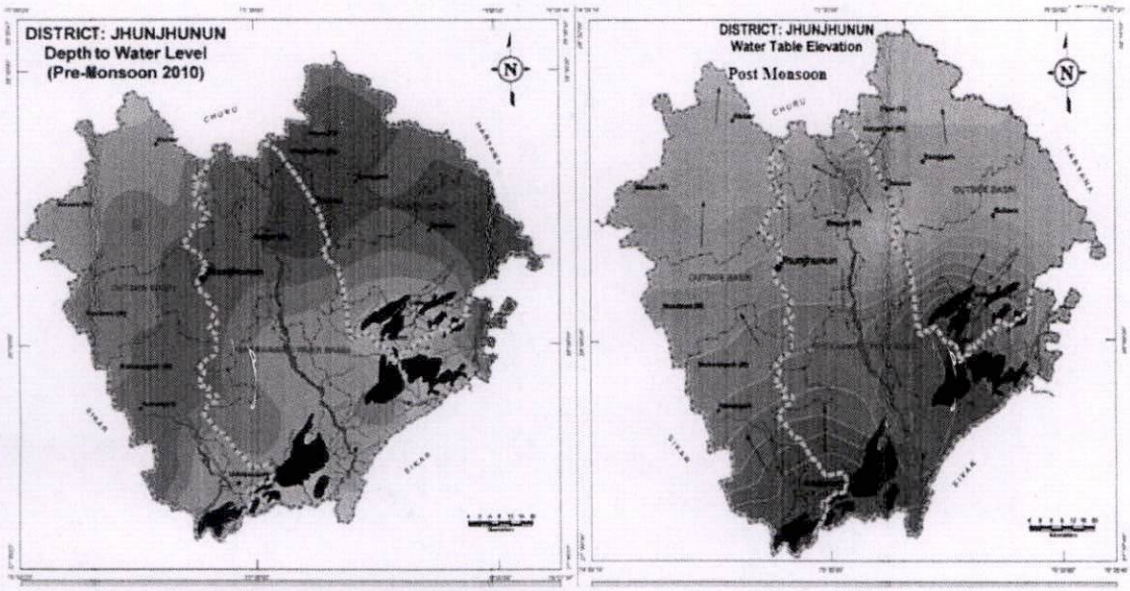


Fig: DEPTHS TO WATER LEVEL

DEPTH TO WATER LEVEL – POSTMONSOON

A 2m contour interval adopted to visualize the ground water level fluctuation reveals the fluctuation to range from upto -2m to more than 18m, as seen in Plate– XI. The negative fluctuation areas (<0m, indicated red regions) are the areas where water level has gone down in post monsoon season with respect to pre- monsoon water levels. Such large ground water depletion areas are located around Jhunjhunun, Nawalgarh, and Surajgarh. Rest of the district has shown a general to significant rise in ground water level in the post monsoon season with respect to pre monsoon season with maximum rise of more than 18m is noticed in eastern part of Khetri.

SEASONAL WATER LEVEL FLUCTUATION

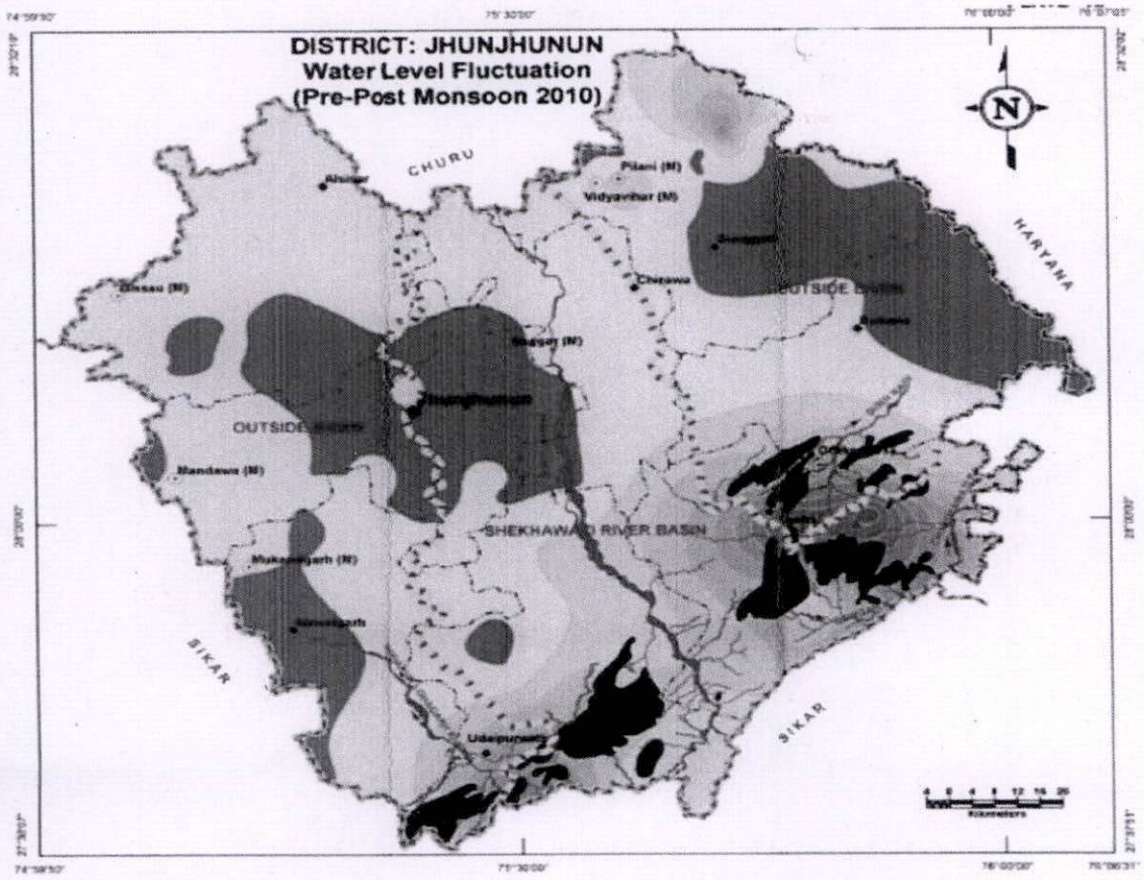
A 2m contour interval adopted to visualize the ground water level fluctuation reveals the fluctuation to range from upto -2m to more than 18m, as seen in Plate– XI. The negative fluctuation areas (<0m, indicated red regions) are the areas where water level has gone down in post monsoon season with respect to pre- monsoon water levels. Such large ground water depletion areas are located around Jhunjhunun, Nawalgarh, and Surajgarh. Rest of the district has shown a general to significant rise

वरिष्ठ भू वैज्ञानिक
खान [illegible] विभाग

खनि अभियन्ता

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

in ground water level in the post monsoon season with respect to pre monsoon season with maximum rise of more than 18m is noticed in eastern part of Khetri.



RAINFALL OF THE DISTRICT AND CLIMATIC CONDITION:

The climate of the district can be classified as largely, arid. It is characterized by very hot summers and very cold winters with generally poor but occasionally good rainfall during southwest monsoon period. In May and June, the maximum temperature may sometimes go up to 48 ^{0}C. Winter temperatures drop down to 3^{0}C to 4^{0}C. The potential evapotranspiration rates are quite high, especially during May and June. Average annual rainfall of this district is about 440.0 mm. Rainfall received in the year 2010 has been very good as compared to other years, because as mentioned above, the district generally receives low rainfall. The general distribution of rainfall across can be visualized from isohyets presented in the Plate – III. Rainfall is highest in the areas closer to hills in the southeastern part of the district as well as in the northwestern part where high rainfall pockets of about 1000mm are seen. The eastern and southwestern parts of the district show low rainfalls and interestingly these areas

TEMPERATURE:
The district is largely part of semi-arid region and is typically characterized by hot summer, fairly good rainfall, a chilly winter season. The months of March to June are summers when the maximum temperature approaches 47°C to 48°Cwhereas the winter months witness extremely cold nights with temperature dropping to about 1°C. The average temperature around the year is about 16 to 20 °C. The average rainfall in this district is just about 363.7mm, mostly receivedfrom the south-west monsoon during the months of July to September.

HUMIDITY: Humidity levels are quite low resulting into general dryness in the air, Except in the brief monsoon season when the humidity reaches upto maximum of 60%.
WINDS: Generally moderate winds prevail throughout the year with slight strengthening during early monsoon period. The wind velocity ranges from 7-8 Km/hr. with direction varying between northeasts to northwest.

HYDROMETEREOLOGY

8.RAINFALL

Table: Monthly Totals for Precipitation in mm [Period: From 2000 to 2017]

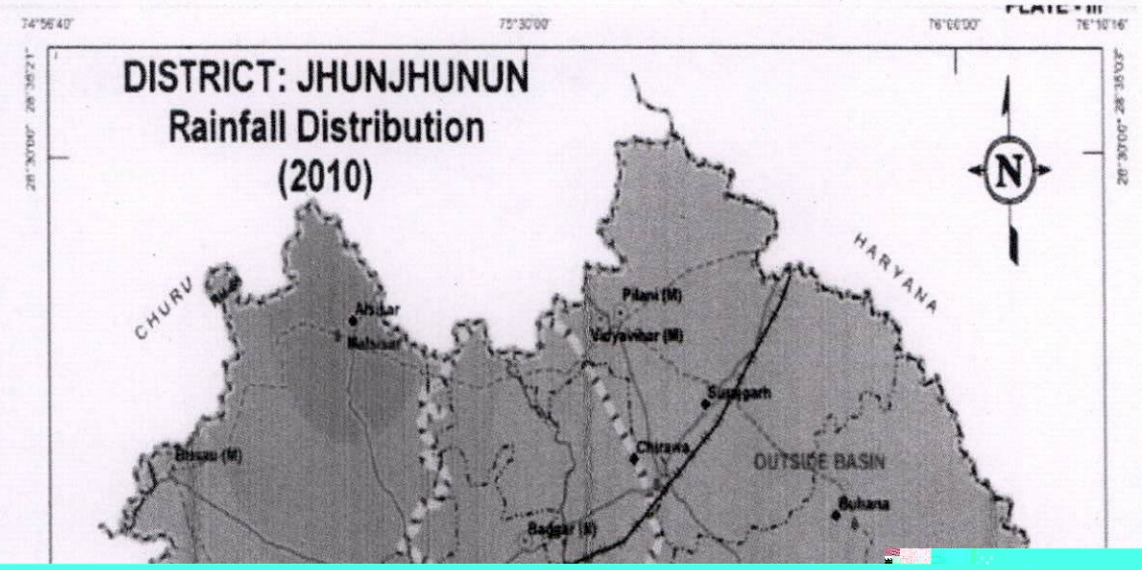
Year	Jan	Fab	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Annual avg.
2000	0	25	5	2	34	113	1617.2	701.2	287	0	4	0	310.48
2001	48	0	0	187	344	1015	1451	1023	46	76	0	0	465.55
2002	7	113	0	23	153	586	68	594	72	0	27	62	189.44
2003	107	113	14	0	30	588	3008	1466	623	0	0	30	664.33
2004	22	0	0	29	135	126	305	1194	39	153	0	7	223.33
2005	12	154	125	0	87	629	1686	102.2	548	81	0	0	380.48
2006	0	0	119	13	398	460	1598	306	169.5	0	0	19	342.5
2007	38	318	231	28	54	374	638	692	889	97	114	12	387.22
2008	3	0	0	115	118	93.2	1410.2	3950.5	417	2	0	0	678.76
2009	34	4	37	4	153	487	579	532	146	45	8	0	225.44
2010	14	53	33	0	42	445	1970	2729	1734	0	211	171	822.44
2011	0	262	37	38	138	940	1172.4	1685	1154	0	0	0	602.93
2012	3	0	0	115	118	93.2	1410.2	3950.5	417	2	0	0	678.76
2013	292	373	14	18	22	287	1906	1643	600	192	100	56	611.44
2014	44	91	256	108	399	415	1737	1054	638	115	0	0	607.13
2015	102	0	372	382	155	520	2435	979	48	67	0	0	562.22
2016	0	9	95	0	176	414	1743	1599	127	221	0	0	548
2017	219	0	22	8	190	880	907	600	235	0	14	15	343.33
Year	Jan	Fab	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Total
Monthly Average	52.5	84.16	75.55	59.44	152.55	470.3	1424.5	1227.68	454.97	58.38	26.55	20.66	609.48

Mean Annual Rainfall (mm) 480.21
Normal Annual Rainfall (mm) 600
Highest Annual Rainfall (mm) 822.44(2010)
Lowest Annual Rainfall (mm) 189.44(2002)

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं


74°56'40"
75°30'00"
76°00'00"
76°10'16"
28°35'21"
28°30'00"
28°00'00"
DISTRICT: JHUNJHUNUN
Rainfall Distribution
(2010)
N
CHURU
HARYANA
Pilani (M)
Mahnsar
Suratgarh
Chirawa
OUTSIDE BASIN
Buhana
Badgar (M)

10. DETAILS OF ROYALTY OR REVENUE RECEIVED IN LAST THREE YEARS:

Year	Revenue recieved (Rs in lacs)
2015-16	8903.00
2016-17	7900.00
2017-18	5546.00

11. DETAILS OF PRODUCTION OF MINOR MINERALS IN LAST THREE YEARS:

Table - No. of Minor Mineral Leases with Area, Production, Sale Value, Revenue and Employment in (Year 2015-16)

S. No	Mineral	Leases	Area	Production	Sale Value	Revenue	Employment
			(Hect)	(Tons)	(Rs.)	(LacRs.)	(Nos.)
1.	Limestone (Burning)	1	4.830	9333	3472000	12.74	8
2.	Marble	9	21.482	59966	20130300	53.97	15
3.	Granite	26	100.483	55745	66090600	50.17	20
4.	Quartzite	11	14.914	34918	2775000	20.95	5
5.	Masonary Stone	395	564.740	9911736	2187241750	2973.52	2390
6.	Kankar-Bajri	0	0.000	4460263	837484080	2757.88	1440
7.	Brick Earth	0	0.000	579128	41470000	144.78	700
8.	Phylite/ Patti Katla	1	1.000	0	0	0.27	0
9.	Calcite	4	19.888	0	0	0.30	0
10	Falspar-Quartz/Silica	20	90.199	72620	47441750	44.62	200
11	Soapstone	3	132.810	0	0	0	0
12	Fire Clay, Red Ocher	2	54.987	0	0	0.11	0

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

Table - No. of Minor Mineral Leases with Area, Production, Sale Value, Revenue and Employment in Kota district (Year 2016-17)

S. No	Mineral	Leases	Area	Production	Sale Value	Revenue	Employment
			(Hect.)	(Tons)	(Rs.)	(Rs.)	(Nos.)
1.	Limestone	1	4.830	9920	3472000	1359000	8

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

	(Burning)						
2.	Marble	9	21.482	22367	20130300	2013000	15
3.	Granite	26	100.483	73434	66090600	6609000	20
4.	Quartzite	11	14.914	11100	2775000	666000	5
5.	Masonary Stone	395	564.740	8748967	2187241750	320438000	2390
6.	Kankar-Bajri	0	0.000	6979034	837484080	209371000	1440
7.	Brick Earth	0	0.000	165880	41470000	4147000	700
8.	Phylite/ Patti Katla	1	1.000	0	0	77000	0
9.	Calcite	4	19.888	0	0	44000	0
10	Falspar-Quartz/Silica	20	90.199	189767	47441750	11414000	200
11	Soapstone	3	132.810	0	0	0	0
12	Fire Clay, Red Ocher	2	54.987	0	0	0	0
	Inc. from Govt. Deptt.					5569000	
	Misc. Income					225669000	

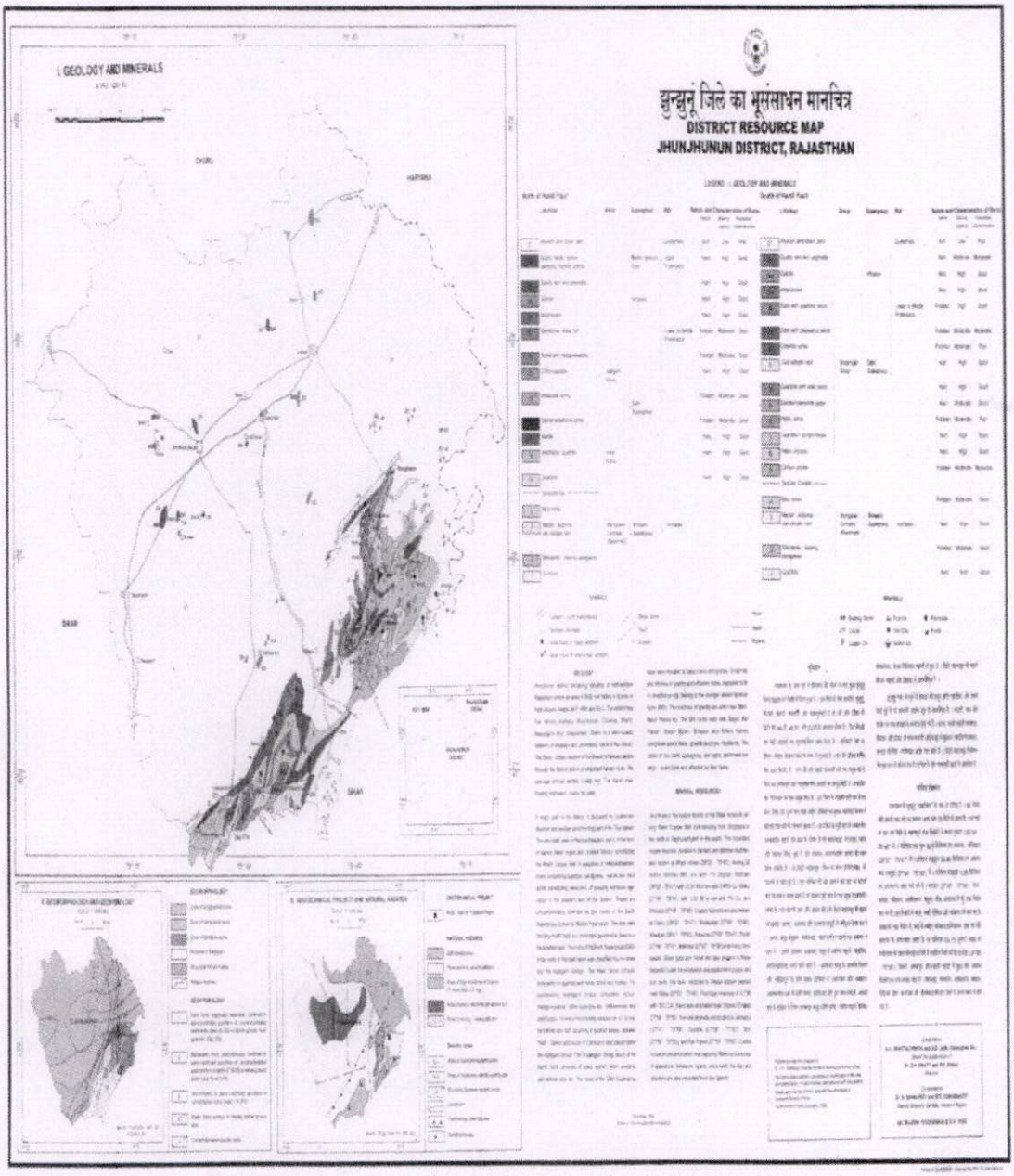
Table - No. of Minor Mineral Leases with Area, Production, Sale Value, Revenue and Employment in Kota district (Year 2017-18)

S. No	Mineral	Leases	Area	Production	Sale Value	Revenue	Employment
			(Hect.)	(Tons)	(Rs.)	(Lac Rs.)	(Nos.)
1.	Limestone (Burning)	1	4.830	4655	3472000	4.19	8
2.	Marble	9	21.482	10262	20130300	10.90	15
3.	Granite	26	100.483	57556	66090600	51.80	20
4.	Quartzite	11	14.914	8960	2775000	5.85	5
5.	Masonary Stone	395	564.740	6954100	2187241750	2086.23	2390
6.	Kankar-Bajri	0	0.000	842485	837484080	294.87	1440
7.	Brick Earth	0	0.000	468800	41470000	117.20	700
8.	Phylite/ Patti Katla	1	1.000	0	0	0.33	0
9.	Calcite	4	19.888	0	0	0.28	0
10	Falspar-Quartz/Silica	20	90.199	61716	47441750	36.74	200
11	Soapstone	3	132.810	0	0	0	0
12	Fire Clay, Red Ocher	2	54.987	0	0	0	0

12. MINERAL MAP OF THE DISTRICT:

खनि अभियन्ता
झुंझुनूं

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA



COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

13. TOTAL MINERAL RESERVE AVAILABLE IN THE DISTRICT:

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

3	Fluorite	near village Chhapoli, tehsilUdaipurwati	Not assessed	Low grade quality
4	**Quartz-Feldspar**	Chirani, Banwas Tehsil Khetri and Parsala Ki Dhani, Bagora in TehsileUdaipurwati.	Not assessed	Glass and ceramic industry
5	**Marble**	Papurna, Meena Ki Dhani, Bhagwatwala Ki Dhani etc. of tehsil Khetri.	ot assessed	The marble is grey, medium to coarse grained, hard and compact. The blocks upto 2.5x1x1 mt. size may be extracted from these areas.

14. QUALITY /GRADE OF MINERAL AVAILABLE IN THE DISTRICT:

DETAILS ARE GIVEN IN POINT NO 11.

15. USE OF MINERAL:

Mining industry plays an important role in economic sector in India. Rajasthan is rich in mineral wealth. The state is endowed with major and minor mineral resources. The region, where the project is situated is mostly dependent on agriculture and mineral resources. The developments of mining are provide direct and indirect employment opportunities, infrastructure development, communication and socio-economic infrastructure.

A. **QUARTZ-**It is used in ceramic, glass manufacturing, ferrosilicon, induction furnace sling and electric lighting indicators and in paints. For this purpose quartz in grind to size 200 to 300 mesh in grinding units.

B. **FELDSPAR-** It is used in glass, ceramic, abrasives and electros as Flux coating, welding rods and inductors. For these purpose, Feldspar is grained to size of 200 to 300 mesh in grinding units.

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

C. **IRON ORE-** The primary use of iron ore in the production of iron. Most of the iron produced is then used to make steel. Steel is used to make automobiles, locomotives, ships, furniture, tolls and so many purposes.

D. **MARBLE:** It is used in Construction as building material, making of Sculptures

E. **LIME STONE:** It is the raw material for the manufacture of quicklime (calcium oxide), slaked lime (calcium hydroxide), cement and mortar. Pulverized limestone is used as a soil conditioner to neutralize acidic soils (agricultural lime). As a reagent in flue-gas desulfurization, it reacts with sulfur dioxide for air pollution control.

F. **SILICA SAND:**Crystalline silica is an essential component of materials which have an abundance of uses in industry and are a vital component in many things used in our everyday lives. It is impossible to imagine houses without bricks, mortar or windows, cars without engines or windscreens, life without roads or other transport infrastructures and everyday items made of glass or pottery.Industrial silica is used in a vast array of industries, the main ones being the glass, foundries, construction, ceramics, and the chemical industry.Silica in its finest form is also used as functional filler for paints, plastics, rubber, and silica sand is used in water filtration and agriculture.Crystalline silica is also irreplaceable in a series of high-tech applications, for example in optical data transmission fibres and precision casting. It is also used in the metallurgical industry as the raw material for silicon metal and ferrosilicon production. Another specialized application is in the oil extraction.

G. **CHINA CLAY:** it is used in ceramics, toys and paper industries.

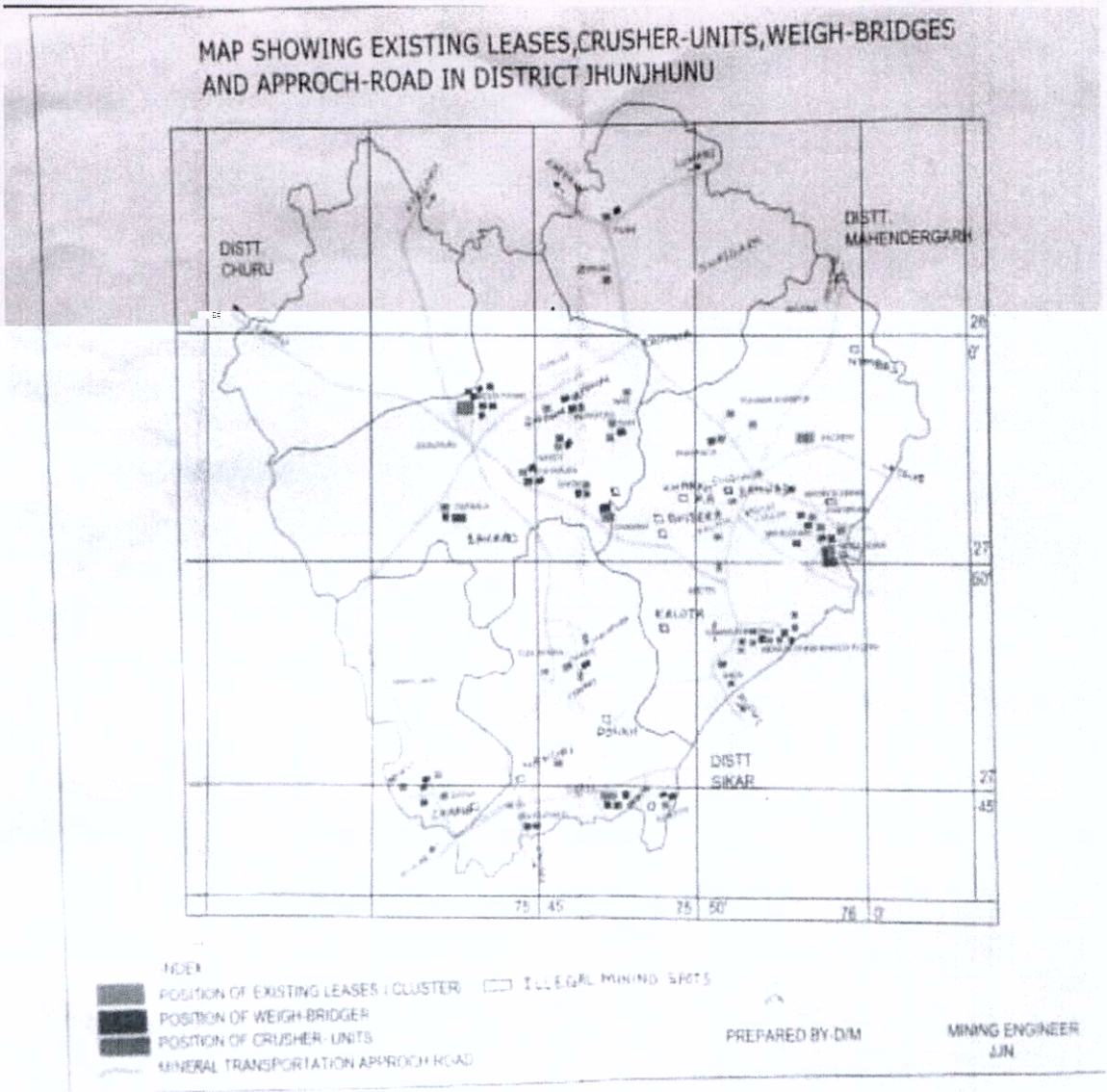
H. **SOAP STONE/DOLOMITE:**It is used in Talc, Paper, Soap&Cosmatic Industries.

16. MINING LEASES MARKED ON THE MAP OF THE DISTRICT:

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA



17. DETAILS OF THE AREA OF WHERE THERE IS A CLUSTER OF MINING LEASES VIZ. NUMBER OF MINING LEASES, LOCATION (LATITUDE AND LONGITUDE):

S.r. No	Name & No. of Cluster	Total No. of Mining Leases in the Cluster	Location Details of Cluster Area. Tehsil
1	CLUSTER NO-1	42	Udaipurwati
2	CLUSTER NO-2	13	Nawalgarh
3	CLUSTER NO-3	24	Buhana

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

365	ME/JJU/Minor/ML/279/2006	Richhpal Khichar	Masonary stone	14-Nov-11	Jalpala Ki Dhani Tan Gadrata / Khetri / Jhunjhunu	1	4641-53	26.09.2016	250000	DEIAA
366	ME/JJU/Minor/ML/223/2010	Indra Choudhary	Masonary stone	24-May-11	Kanli Ki Dhani / Khetri / Jhunjhunu	1	14-15	2/7/2015	270000TPA	SEIAA
367	ME/JJU/Minor(B)/ML/38/2004	Tejpal	Masonary stone, Quartzite	2-Dec-05	Naalpur / Khetri / Jhunjhunu	1	6982-94	26.05.2016	180000	DEIAA
368	ME/JJU/Minor/ML/99/2006	Abhay Singh	Masonary stone	7-Sep-07	Patiyala Ki Dhani Tan Gadrata / Khetri / Jhunjhunu	1	478	20.06.2017	91200	DEIAA
369	ME/JJU/Minor/ML/441/2006	Ganesh Singh	Masonary stone	2-Nov-07	Nayanagar / Khetri / Jhunjhunu	1	7012-24	31.05.2016	30000	DEIAA
370	ME/JJU/Minor/ML/575/2005	Priyanka Kanwar	Masonary stone	31-Aug-07	Karmadi Ki Dhani Tan Sanjay Nagar / Khetri / Jhunjhunu	1	7012-24	31.05.2016	30000	DEIAA
371	ME/JJU/Minor/ML/20/1994	Dharmveer	Masonary stone	5-Jan-08	Morot / Jhunjhunu / Jhunjhunu	0.5	7012-24	31.05.2016	75000	DEIAA
372	ME/JJU/Minor/ML/199/1997	Mahendra Singh	Granite	21-Jan-98	Keharpura / Makhar / Jhunjhunu / Jhunjhunu	1	6995-7007	26.05.2016	48000	DEIAA

खान एवं जयपुर

खनि अभियन्ता
झुंझुनूं

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

373	ME/JJU/Minor/ML/498/2005	Rao Parvat Singh	Masonary stone	7-Jul-06	Patiyala Ki Dhani / Khetri / Jhunjhunu	1	4641-53	26.09.2016	138000	DEIAA
374	ME/JJU/Minor/ML/499/2005	Shree Shyam Associates	Masonary stone	7-Jul-06	Ptiyala Ki Dhani / Khetri / Jhunjhunu	1	4641-53	26.09.2016	138000	DEIAA
375	ME/JJU/Minor/ML/502/2005	Pushpa Kanwar	Masonary stone	-	Patiyala Ki Dhani / Khetri / Jhunjhunu	1	1613-1626	16.12.2016	193200	DEIAA
376	ME/JJU/Minor/ML/9/1999	Shri Chetram Harijan	Masonary stone	4-Sep-00	Dev Road / Chirawa / Jhunjhunu	1	.....	.....	.....	.....
377	ME/JJU/Minor/ML/481/2005	Shree Shyam Associates	Masonary stone	7-Jul-06	Ptiyala Ki Dhani / Khetri / Jhunjhunu	1	1613-1626	16.12.2016	138000	DEIAA
378	ME/JJU/Minor/ML/89/2006	Narendra Singh	Masonary stone	18-Jul-07	Mandawara (Chhapoli) / Udaipurwati / Jhunjhunu	1	.....	.....	.....	.....
379	ME/JJU/Minor/ML/86/1998	Arsad Anees	Masonary stone	19-Apr-01	Jaypahadi / Jhunjhunu / Jhunjhunu	1	6982-94	26.05.2016	85500	DEIAA
380	ME/JJU/Minor/ML/20/2004	Shashikant Sharma	Masonary stone	23-Dec-06	Modi [Gorir] / Khetri / Jhunjhunu	1	1599-1612	16.12.2016	196725	DEIAA
381	ME/JJU/Minor/ML/587/	Sandeep Kumar	Masonary stone	14-Jul-06	Gorir Modi /	1	1599-1612	16.12.2016	216000	DEIAA

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

	2005				Khetri / Jhunjhunu					
382	ME/JJU/Minor/ML/37/2003	Shri Ashok Sharma	Masonary stone	29-Dec-06	Gorir / Khetri / Jhunjhunu	1	307-320	15.03.2018	100000	DEIAA
383	ME/JJU/Minor/ML/685/2007	Ashok Kumar	Masonary stone	23-May-08	Chanana / Chirawa / Jhunjhunu	1	6995-7007	26.05.2016	84915	DEIAA
384	ME/JJU/Minor/ML/556/2006	Jaiprakash	Masonary stone	20-Feb-08	Barwa / Nawalgarh / Jhunjhunu	1	6982-94	26.05.2016	67000	DEIAA
385	ME/JJU/Minor/ML/378/1990	Saroj Devi	Masonary stone	16-Aug-93	Todi Akawali / Udaipurwati / Jhunjhunu	1	6982-94	26.05.2016	3120	DEIAA
386	ME/JJU/Minor/ML/491/2005	Sardar Mal Meena	Masonary stone	29-May-06	Patiyala Ki Dhani / Khetri / Jhunjhunu	1	4641-53	26.09.2016	138000	DEIAA
387	ME/JJU/Minor(B)/ML/46/1970	Shri Modi Mineral Grindind Millas Privcate Limited	Soapstone	18-May-72	Kho-Ii / Udaipurwati / Jhunjhunu	33.42	.....	.....	.....	.....
388	ME/JJU/Minor/ML/209/1994	Jai Shri Balaji	Masonary stone	19-Jan-95	Todi Akawali / Udaipurwati / Jhunjhunu	0.7	6982-94	26.05.2016	15000	DEIAA
389	ME/JJU/Minor/ML/308/2003	Shri Parhalad Ram	Masonary stone	17-Dec-07	Mehara Jat Was / Khetri / Jhunjhunu	1	307-320	15.03.2018	85846	DEIAA

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

Khatehpur

	2007				Jhunjhunu			16		
400	ME/JJU/Minor(B)/ML/154/2005	Suresh Kumar Choudhary	Felspar	29-Jan-09	Ram Kumar Pura / Khetri / Jhunjhunu	4.09	493	20.06.2017	316680	DEIAA
401	ME/JJU/Minor(B)/ML/364/2005	Shri Om Prakash Varma	Felspar	16-Sep-09	Chirani / Khetri / Jhunjhunu	4	.....	.....	.....	.....
402	ME/JJU/Minor/ML/383/2005	Kuljeet Yadav	Masonary stone	14-Nov-07	Jalpala Ki Dhani Tan Gadrata / Khetri / Jhunjhunu	1	6995-7007	26.05.2016	150000	DEIAA
403	ME/JJU/Minor/ML/822/2007	Sharwan Kumar Bijarniya	Masonary stone	20-May-09	Chhapoli / Udaipurwati / Jhunjhunu	1	6982-94	26.05.2016	160617.5	DEIAA
404	ME/JJU/Minor/ML/646/2003	Jitendra Budania	Masonary stone	26-Mar-08	Papurna / Khetri / Jhunjhunu	1	14-15	3/5/2016	990000 TPA	SEIAA
405	ME/JJU/Minor/ML/62/2001	Mr. Jagna Ram Chamar	Masonary stone	6-Aug-02	Khatehpura / Jhunjhunu / Jhunjhunu	1	6982-94	26.05.2016	180000	DEIAA
406	ME/JJU/Minor/ML/29/2005	Vimla Devi	Masonary stone	17-Jan-08	Dumoli Khurd / Buhana / Jhunjhunu	1	.....	.....	.....	.....
407	ME/JJU/Minor/ML/313/2004	Mr. Ramesh Kumar Yadav	Masonary stone	6-Feb-07	Khatipura / Khetri / Jhunjhunu	1	.....	.....	.....	.....
408	ME/JJU/Minor/ML/347/2004	Raghuveer Singh	Masonary stone	1-Nov-07	Tonda / Khetri / Jhunjhunu	1	14-15	16-05-16	222000 TPA	SEIAA

खनि अभियन्ता
झुंझुनूं

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

409	ME/JJU/Minor/ML/25/2003	Shri Manoj Kumar Meena	Granite	7-Jul-03	Gadrata / Khetri / Jhunjhunu	3	.....			
410	ME/JJU/Minor/ML/504/2005	Ramesh Kumar Meena	Masonary stone	11-Jul-06	Ptiyala Ki Dhani / Khetri / Jhunjhunu	1	4641-53	26.09.2016	138000	DEIAA
411	ME/JJU/Minor/ML/296/2009	Arun Kumar Saini	Masonary stone	26-Jul-10	Girawari / Udaipurwati / Jhunjhunu	1	6982-94	26.05.2016	150000	DEIAA
412	ME/JJU/Minor/ML/465/2007	M/S Mateshwari Construction Company	Masonary stone	21-Oct-10	Chhapoli / Udaipurwati / Jhunjhunu	1	307-320	15.03.2018	88378	DEIAA
413	ME/JJU/Minor/ML/1020/2009	Shri Raghuveer Singh	Masonary stone	30-Jul-10	Navta / Buhana / Jhunjhunu	1	.....	.....	.....	.....
414	ME/JJU/Minor/ML/11/2013	Suresh Kumar Gupta	Masonary stone	10-Nov-17	Manota kalan / Khetri / Jhunjhunu	1	7012-24	31.05.2016	99000	DEIAA
415	ME/JJU/Minor/ML/2486/2012	Shravan Kumar	Granite	15-Nov-17	Humkampura bamalwas/ Udaipurwati / Jhunjhunu	3	14-15	14-08-15	30420	SEIAA
416	ME/JJU/Major/ML/10/1998	Ms Nilkhanth Can. Pvt.Ltd	Iron Ore	1-Nov-02	Bagoli / Udaipurwati / Jhunjhunu	4.95	.....	.....	.....	.....
417	ME/JJU/Major/ML/6/2005	Deepak Singh	Iron Ore	22-Oct-08	Papda / Udaipurwati / Jhunjhunu	4.2	.....	.....	.....	.....

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग

खनि अभियन्ता
अंकन

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

418	ME/JJU/Minor/ML/923/2010	Ramotar	Masonary stone	19-Dec-12	Mawta / Udaipurwati / Jhunjhunu	1	14-15	24-07-15	45720 TPA	SEIAA
419	ME/JJU/Minor/ML/924/2010	Maa Mansa Mata Stone Mines	Masonary stone	19-Dec-12	Mawta / Udaipurwati / Jhunjhunu	1	14-15	24-07-15	37820 TPA	SEIAA
420	ME/JJU/Minor/ML/575/2011	Shikha Modi	Masonary stone	5-Jan-12	Kkhiroti Dhaniyan / Udaipurwati / Jhunjhunu	1	1494-1507	16.11.2016	119026.5	DEIAA
421	ME/JJU/Minor/ML/98/2006	Abhijeet Singh	Masonary stone	7-Sep-07	Patiyala Ki Dhani / Khetri / Jhunjhunu	1	478	20.06.2017	89760.7	DEIAA
422	ME/JJU/Minor/ML/197/2006	Nemichand Agarwal	Masonary stone	24-Jan-07	Bechawali Dhani Tan Pratapura / Khetri / Jhunjhunu	1	14-15	12/5/2016	110400 TPA	SEIAA
423	ME/JJU/Minor/ML/99/1994	Pawan Sharma	Masonary stone	13-Jan-95	Mora Pahadi / Jhunjhunu / Jhunjhunu	0.4	493	20.06.2107	55785	DEIAA
424	ME/JJU/Minor/ML/177/2006	Pushpendra Singh	Masonary stone	24-Nov-06	Patiyala Ki Dhani / Khetri / Jhunjhunu	1	1613-1626	16.12.2016	224700	DEIAA
425	ME/JJU/Minor/ML/14/1998	Shri Sanjeev Katewa	Granite	22-Nov-98	Makhar Kerpura / Chirawa / Jhunjhunu	1	6982-94	26.05.2016	36970	DEIAA

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

426	ME/JJU/Minor/ML/98/2003	Shir Krishan Kumar Meena	Granite	20-Sep-04	Baniwala Ki Dhani Tan Sanjay Nagar / Khetri / Jhunjhunu	2.97	.....	.....	.....	.....
427	ME/JJU/Minor/ML/194/1997	Smt. Rekha Mittal	Masonary stone	3-Jun-98	Modi / Khetri / Jhunjhunu	1	14-15	25-04-16	170000TPA	SEIAA
428	ME/JJU/Minor(B)/ML/346/2004	Vinod Singh	Masonary stone, Quartzite	1-Nov-07	Nangaliya Gurjarwas / Khetri / Jhunjhunu	0.99	14-15	22.03.2016	222000	SEIAA
429	ME/JJU/Minor/ML/359/2006	Smt Krishna Ahalawat	Masonary stone	29-Nov-07	Pacheri Kala / Buhana / Jhunjhunu	1	.....	.....	.....	.....
430	ME/JJU/Minor/ML/78/2002	Sant Kumar Sharma	Masonary stone	21-Sep-04	Puhaniya / Buhana / Jhunjhunu	1	.....	.....	.....	.....
431	ME/JJU/Minor/ML/103/1994	Rishi Kumar Morwal	Masonary stone	14-Dec-84	Moda Pahar / Jhunjhunu / Jhunjhunu	1	758-779	30.08.2018	93537	DEIAA
432	ME/JJU/Minor/ML/382/2005	Bhagwati Grits And Pvt. Ltd.	Masonary stone	14-Nov-07	Jalpala Ki Dhani Tan Gadrata / Khetri / Jhunjhunu	1	6982-94	26.05.2016	210000	DEIAA
433	ME/JJU/Minor/ML/495/2005	Shakuntla Devi	Masonary stone	4-Jul-06	Patiyala Ki Dhani / Khetri / Jhunjhunu	1	1599-1612	16.12.2016	150000	DEIAA
434	ME/JJU/Minor/ML/72/1998	Ashok Kumar Agarwal	Masonary stone, Phyllite	20-May-99	Girawari / Udaipurwati /	1	6995-7007, 493	26.05.2016,	100000, 130005	DEIAA

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

					Jhunjhunu			20.06.2017		
435	ME/JJU/Minor/ML/188/2005	Jhooma Devi	Masonary stone	5-May-07	Mandawara / Udaipurwati / Jhunjhunu	1	6982-94	26.05.2016	158000	DEIAA
436	ME/JJU/Minor/ML/2/1995	Mahaveer Prasad	Masonary stone	3-Jan-95	Nevari / Udaipurwati / Jhunjhunu	1	6982-94	26.05.2016	180000	DEIAA
437	ME/JJU/Minor(B)/ML/142/2004	Subhash Choudhary	Quartz	30-Jan-07	Hardiya / Khetri / Jhunjhunu	4.75	1571-1584	16.12.2016	109980	DEIAA
438	ME/JJU/Minor/ML/217/2004	Shri Stone Crusher	Masonary stone	23-Jul-08	Hardiya / Khetri / Jhunjhunu	1	.....			
439	ME/JJU/Minor/ML/5/2000	Ummed Singh Shekhawat	Granite	17-Mar-01	Kerpura / Chirawa / Jhunjhunu	0.95	1508-1521	16.11.2016	16000	DEIAA
440	ME/JJU/Minor/ML/169/2003	Shyam Sundar	Masonary stone	29-Nov-07	Sihodiyo Ki Dhani / Buhana / Jhunjhunu	1	14-15	11/5/2016	180000 TPA	SEIAA
441	ME/JJU/Minor/ML/19/2002	Banne Singh	Masonary stone	17-Aug-02	Todi Akawali / Udaipurwati / Jhunjhunu	1	6982-94	26.05.2016	15000	DEIAA
442	ME/JJU/Minor/ML/307/2003	Jaypal Choudhri	Masonary stone	17-Dec-07	Mehadha Jat Was / Khetri / Jhunjhunu	1	.....	.....	.....	.....
443	ME/JJU/Minor/ML/277/2003	Ashok Kumar	Masonary stone	31-Mar-08	Bukari Ki Dhani Tan Papurna / Khetri /	1	6982-94	26.05.2016	180000	DEIAA

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अधिकारी
झुंझुनूं

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

					Jhunjhunu					
444	ME/JJU/Minor/ML/186/1997	Ramesh Kumar Choudhary	Masonary stone	31-Aug-99	Derwala / Jhunjhunu / Jhunjhunu	2.25	1494-1507	16.11.2106	100000	DEIAA
445	ME/JJU/Minor/ML/306/2003	Shri Kapil Kumar	Masonary stone	17-Dec-07	Mehara Jat Was / Khetri / Jhunjhunu	1	1494-1507	16.11.2106	100000	DEIAA
446	ME/JJU/Minor/ML/312/2004	Shiv Darshan Kakkad	Masonary stone	6-Feb-07	Khatipura / Khetri / Jhunjhunu	1	493	20.06.2017	50000	DEIAA
447	ME/JJU/Minor/ML/94/2003	Sumer Singh	Masonary stone	31-Dec-03	Barwa / Nawalgarh / Jhunjhunu	1	6982-94	26.05.2016	72000	DEIAA
448	ME/JJU/Minor/ML/357/2006	Shri Sudesh Ahalawat	Masonary stone	19-Nov-07	Pacheri Kala / Buhana / Jhunjhunu	1	.....			
449	ME/JJU/Minor/ML/830/2007	Bhagwan Singh	Masonary stone	22-Jan-09	Nevari / Udaipurwati / Jhunjhunu	1	14-15	12/4/2016	189474TPA	SEIAA
450	ME/JJU/Minor/ML/41/2001	Mustak Ali	Masonary stone	1-Jan-07	Pilani Pahadi / Chirawa / Jhunjhunu	1	7012-24	31.05.2016	87150	DEIAA
451	ME/JJU/Minor/ML/147/2004	Laxmi Kanwar	Masonary stone	3-Sep-04	Dhir Ki Dhani Tonda,Dhir Ki Dhani / Khetri / Jhunjhunu	1	14-15	19-10-15	297000 TPA	SEIAA
452	ME/JJU/Minor/ML/284/	Shri Omprakas	Masonary stone	19-Jul-08	Bukari Ki Dhani / Khetri /	1	14-15	14-01-	150000 TPA	SEIAA

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

	2003	h Singh			Jhunjhunu			16		
453	ME/JJU/Minor/ML/13/2000	Yogendra Choudhary	Masonary stone	21-Sep-00	Nari Pahari / Chirawa / Jhunjhunu	1	14-15	25-08-2015	150000 TPA	SEIAA
454	ME/JJU/Minor/ML/61/2001	Mr. Jagna Ram Chamar	Masonary stone	6-Aug-02	Khatehpura / Jhunjhunu / Jhunjhunu	1	6982-94	26.05.2016	165542	DEIAA
455	ME/JJU/Minor/ML/105/1994	Pramod Janu	Masonary stone	25-Jan-95	Chobari Mandi / Jhunjhunu / Jhunjhunu	1.2	14-15	19-05-16	288000 TPA	SEIAA
456	ME/JJU/Minor/ML/80/2000	Kanta Devi	Masonary stone	26-May-01	Pilani Pahadi / Chirawa / Jhunjhunu	1	7012-24	31.05.2016	100000	DEIAA
457	ME/JJU/Minor/ML/149/1995	Shri Jay Singh	Masonary stone	1-Jul-96	Moda Pahar / Jhunjhunu / Jhunjhunu	1	758-779	30.08.2018	115809.7	DEIAA
458	ME/JJU/Minor/ML/185/2008	Shri Rikesh Gupta	Masonary stone	16-Jun-10	Karmadi Ki Dhani Tan Sanjay Nagar / Khetri / Jhunjhunu	1	6995-7007	26.05.2016	90000	DEIAA
459	ME/JJU/Minor/ML/186/2008	Sanjay Singh	Masonary stone	16-Jun-10	Karmadi Ki Dhani Tan Sanjay Nagar / Khetri / Jhunjhunu	1	6995-7007	26.05.2016	96000	DEIAA

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

460	ME/JJU/Minor/ML/15/1995	Maidhan Jat	Masonary stone	16-Sep-95	Khatehpura / Jhunjhunu / Jhunjhunu	1	6982-94	26.05.2016	150000	DEIAA
461	ME/JJU/Minor/ML/296/1989	Ms Jawan Construction Pvt.Ltd	Masonary stone	25-Feb-92	Kana Pahar / Jhunjhunu / Jhunjhunu	4	.....	.....	.....	.....
462	ME/JJU/Minor/ML/208/1994	Kumari Kalpana Abusariya	Masonary stone	22-Jun-95	Khatehpura / Jhunjhunu / Jhunjhunu	1	6982-94	26.05.2016	160305	DEIAA
463	ME/JJU/Minor/ML/102/1994	Raj Kumar Morwal	Masonary stone	24-Jan-95	Mora Pahadi / Jhunjhunu / Jhunjhunu	0.6	493	20.06.2107	88834.5	DEIAA
464	ME/JJU/Minor/ML/29/1995	Maidhan Jat	Masonary stone	21-Sep-95	Khatehpura / Jhunjhunu / Jhunjhunu	1	6982-94	26.05.2016	157895	DEIAA
465	ME/JJU/Minor/ML/6/1995	Juglal Chopra	Masonary stone	25-Jun-85	Nari Pahadi / Chirawa / Jhunjhunu	1.21	14-15	6/8/2015	150000TPA	SEIAA
466	ME/JJU/Minor/ML/172/1989	Jawan Rock Movers Private Limited	Masonary stone	27-Dec-89	Kana Pahadi / Jhunjhunu / Jhunjhunu	92.9	.....	.....	.....	.....
467	ME/JJU/Minor/ML/210/1991	Shri Nand Lal Agarwal	Marble	17-Feb-92	Jodhawali Dhani Tan Papurna / Khetri /	1	.....	.....	.....	.....

वरिष्ठ भू वैज्ञानिक,
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

					Jhunjhunu					
468	ME/JJU/Minor/ML/15/1991	Kumari Manisha Tulasyan	Masonary stone	3-Jul-91	Moda Pahad / Jhunjhunu / Jhunjhunu	1	758-779	30.08.2018	93537	DEIAA
469	ME/JJU/Minor/ML/98/1994	Balkishan Sharma	Masonary stone	15-Dec-94	Moda Pahar / Jhunjhunu / Jhunjhunu	0.6	758-779	30.08.2018	71499.4	DEIAA
470	ME/JJU/Minor/ML/27/1995	Arsad Anees	Masonary stone	7-Dec-95	Jaypahadi / Jhunjhunu / Jhunjhunu	1.13	6982-94	26.05.2016	91200	DEIAA
471	ME/JJU/Minor/ML/211/1991	Vijay Laxmi	Marble	17-Feb-92	Jodha Wali Dhani Tan Papurna / Khetri / Jhunjhunu	1	.....	.....	.....	.....
472	ME/JJU/Minor/ML/15/1988	Ms Jawan Rock Movers Pvt Ltd	Masonary stone	19-May-88	Kana Pahar / Jhunjhunu / Jhunjhunu	2.5	.....	.....	.....	.....
473	ME/JJU/Minor/ML/251/1990	M/S Panchwati Stone Crusher Company	Masonary stone	10-May-91	Mora Pahadi / Jhunjhunu / Jhunjhunu	1	493	20.06.2017	126000	DEIAA
474	ME/JJU/Minor/ML/632/2005	Kumari Taruna Abusariya	Masonary stone	7-Mar-06	Khatehpura / Jhunjhunu / Jhunjhunu	1	6982-94	26.05.2016	120000	DEIAA

खनि अभियन्ता
झुंझुनूं

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

475	ME/JJU/Minor/ML/2521/2012	Smt. Parkati Rot	Granite	28.02.18	Humkampura bamalwas/ Udaipurwati / Jhunjhunu	3	220-233	15-02-2018	117140	DEIAA
476	ME/JJU/Minor/ML/122/2012	Sh. Vijay jangir	quartzite and silicasand	28.02.18	Sihodiyo Ki Dhani / Buhana / Jhunjhunu	11.5076	11015	25-02-2016	4.6 lac	MOEF

वरिष्ठ भू वैज्ञानिक
खान एवं भू विज्ञान विभाग
जयपुर

खनि अभियन्ता
झुंझुनूं

COGNIZANCE RESEARCH INDIA PVT. LTD. NOIDA

National Accreditation Board for Testing and Calibration Laboratories

SCOPE OF ACCREDITATION

Laboratory Name	NOIDA TESTING LABORATORIES, GT - 20, SECTOR - 117, NOIDA, GAUTAM BUDDH NAGAR, UTTAR PRADESH , INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	TC-6814	Page No. :	6 / 56
Validity	05/12/2019 to 02/12/2021	Last Amended on	-

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
46	BIOLOGICAL- WATER	Water Bore-well	Detection of E. coli	IS 5887 (Part-!): 2005
47	BIOLOGICAL- WATER	Water Bore-well	Detection of Fecal streptococci	IS 5887 (Part-2) : 2013
48	BIOLOGICAL- WATER	Water Bore-well	Detection of S. aureus	IS 5887 (Part-2) : 2013
49	BIOLOGICAL- WATER	Water Bore-well	Detection of Salmonella	IS 5887 (Part-3): 2005
50	BIOLOGICAL- WATER	Water Bore-well	Total Coliform Count	IS 1622: 2003
51	BIOLOGICAL- WATER	Water Bore-well	Total Plate Count	IS 1622: 2003
52	BIOLOGICAL- WATER	Water Bore-well	Yeast & Mould Count	IS 1622: 2003
53	BIOLOGICAL- WATER	Water Drinking	Detection of E, coil	IS 5887 (Part-1): 2005
54	BIOLOGICAL- WATER	Water Drinking	Detection of Fecal streptococci	IS 5887 (Part-2): 2013
55	BIOLOGICAL- WATER	Water Drinking	Detection of S. aureus	IS 5887 (Part-2): 2013
56	BIOLOGICAL- WATER	Water Drinking	Detection of Salmonella	IS 5887 (Part-3): 2005
57	BIOLOGICAL- WATER	Water Drinking	Total Coliform Count	IS 1622: 2003
58	BIOLOGICAL- WATER	Water Drinking	Total Plate Count	IS 1622: 2003
59	BIOLOGICAL- WATER	Water Drinking	Yeast & Mould Count	IS 1622: 2003
60	BIOLOGICAL- WATER	Water for Construction Purpose	Detection of E. coli	IS 5887 (Part-1): 2005
61	BIOLOGICAL- WATER	Water for Construction Purpose	Total Coliform Count	IS 1622: 2003
62	BIOLOGICAL- WATER	Water for Processed Food Industries	Total Coliform Count	IS 1622: 2003
63	BIOLOGICAL- WATER	Water for Processed Food Industries	Detection of Lipolytic and Proteolytic Organism	IS 4251 : 2005
64	BIOLOGICAL- WATER	Water for Processed Food Industries	Total Plate Count	IS 1622: 2003
65	BIOLOGICAL- WATER	Water for Swimming Pools	Detection of E. coli	IS 5887 (Part-1): 2005

SCOPE OF ACCREDITATION

Laboratory Name	NOIDA TESTING LABORATORIES, GT - 20, SECTOR - 117, NOIDA, GAUTAM BUDDH NAGAR, UTTAR PRADESH , INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	TC-6814	Page No. :	8 / 56
Validity	05/12/2019 to 02/12/2021	Last Amended on	-

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
82	CHEMICAL-ATMOSPHERIC POLLUTION	Air Gases & Atmosphere Indoor Air	Carbon Monoxide	NIOSH to 6604: 1996
83	CHEMICAL-ATMOSPHERIC POLLUTION	Air, Gases & Atmosphere Ambient Air & Indoor Air	Respirable Suspended Particulate Matters, PM10 (RSPM)	IS 5182: 2006
84	CHEMICAL-ATMOSPHERIC POLLUTION	Air, Gases & Atmosphere Indoor Air	Ammonia (NH3)	NIOSH to 6015: 1994
85	CHEMICAL-ATMOSPHERIC POLLUTION	Air, Gases & Atmosphere Ambient Air	Arsenic (as As)	IS 5182 (Part-22): 2004
86	CHEMICAL-ATMOSPHERIC POLLUTION	Air, Gases & Atmosphere Ambient Air	Benzene (a) Pyrene Particulate Phase only	IS 5182 (Part-12): 2006
87	CHEMICAL-ATMOSPHERIC POLLUTION	Air, Gases & Atmosphere Ambient Air	Lead (as Pb)	IS 5182 (Part-22): 2004
88	CHEMICAL-ATMOSPHERIC POLLUTION	Air, Gases & Atmosphere Indoor Air	Benzene (C6H6)	IS 5182 (Part-11): 2006
89	CHEMICAL-ATMOSPHERIC POLLUTION	Air, Gases & Atmosphere Indoor Air	Nickel (as Ni)	IS 5182 (Part-22): 2004
90	CHEMICAL-ATMOSPHERIC POLLUTION	Air, Gases & Atmosphere Indoor Air	Respirable suspended Particulate matter , Fine Particulate Matter,PM2.5	IS 5182: 2006

SCOPE OF ACCREDITATION

Laboratory Name	NOIDA TESTING LABORATORIES, GT - 20, SECTOR - 117, NOIDA, GAUTAM BUDDH NAGAR, UTTAR PRADESH , INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	TC-6814	Page No. :	10 / 56
Validity	05/12/2019 to 02/12/2021	Last Amended on	-

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
100	CHEMICAL-POLLUTION & ENVIRONMENT	Sludge	Cadmium	IS 3025 (Part-41): 1992
101	CHEMICAL-POLLUTION & ENVIRONMENT	Sludge	- pH Value	IS 3025 (Part-11): 1983
102	CHEMICAL-POLLUTION & ENVIRONMENT	Sludge	Bio Assay Test	IS:6582 1971: 1971
103	CHEMICAL-POLLUTION & ENVIRONMENT	Sludge	C.O.D.	IS 3025 (Part-58): 2006
104	CHEMICAL-POLLUTION & ENVIRONMENT	Sludge	Chloride	NTL/SOIL/SOP/01 Issue - 011: 2015
105	CHEMICAL-POLLUTION & ENVIRONMENT	Sludge	Chromium Total	IS 3025 (Part-52): 2003
106	CHEMICAL-POLLUTION & ENVIRONMENT	Sludge	Conductivity	NTL/SOIL/SOP/02 Issue - 01: 2015
107	CHEMICAL-POLLUTION & ENVIRONMENT	Sludge	Copper	IS 3025 (Part-42): 1992
108	CHEMICAL-POLLUTION & ENVIRONMENT	Sludge	Lead	IS 3025 (Part-47): 1994

SCOPE OF ACCREDITATION

Laboratory Name	NOIDA TESTING LABORATORIES, GT - 20, SECTOR - 117, NOIDA, GAUTAM BUDDH NAGAR, UTTAR PRADESH , INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	TC-6814	Page No. :	11 / 56
Validity	05/12/2019 to 02/12/2021	Last Amended on	-

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
109	CHEMICAL-POLLUTION & ENVIRONMENT	Sludge	Nickel	IS 3025 (Part-54): 2003
110	CHEMICAL-POLLUTION & ENVIRONMENT	Sludge	Nitrogen Ammoniacal	IS-3025 (Part-34): 1988
111	CHEMICAL-POLLUTION & ENVIRONMENT	Sludge	Oils & Grease	IS 3025 (Part-39) : 1991
112	CHEMICAL-POLLUTION & ENVIRONMENT	Sludge	Phenolic Compounds	IS: 3025 (Part-43): 1992
113	CHEMICAL-POLLUTION & ENVIRONMENT	Sludge	Total Petroleum Hydrocarbons, Volatile Aromatic Compounds, Benzene, Toluene, Ethyl Benzene, Xylene, Naphthalene	IS 3025 (Part-39): 1991
114	CHEMICAL-POLLUTION & ENVIRONMENT	Sludge	Total Phosphorus	IS: 3025 (Part-31): 1985
115	CHEMICAL-POLLUTION & ENVIRONMENT	Sludge	Total Solids	IS: 3025 (Part-15): 1984
116	CHEMICAL-POLLUTION & ENVIRONMENT	Sludge	Zinc (as Zn)	IS 3025 (Part-49): 1994
117	CHEMICAL-POLLUTION & ENVIRONMENT	Slugde	Cyanide (as CN)	IS 3025 (Part-27): 2003

SCOPE OF ACCREDITATION

Laboratory Name	NOIDA TESTING LABORATORIES, GT - 20, SECTOR - 117, NOIDA, GAUTAM BUDDH NAGAR, UTTAR PRADESH , INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	TC-6814	Page No. :	12 / 56
Validity	05/12/2019 to 02/12/2021	Last Amended on	-

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
118	CHEMICAL-POLLUTION & ENVIRONMENT	Soil / Sludge	Bulk Density	NTL/SOIL/SOP/05 Issue - 01: 2015
119	CHEMICAL-POLLUTION & ENVIRONMENT	Soil / Sludge	Calcium	NTL/SOIL/SOP/08 Issue - 01: 2015
120	CHEMICAL-POLLUTION & ENVIRONMENT	Soil / Sludge	Chloride	NTL/SOIL/SOP/011 Issue - 01: 2015
121	CHEMICAL-POLLUTION & ENVIRONMENT	Soil / Sludge	Conductivity	NTL/SOIL/SOP/03 Issue - 01: 2015
122	CHEMICAL-POLLUTION & ENVIRONMENT	Soil / Sludge	Magnesium	NTL/SOIL/SOP/09 Issue - 01: 2015
123	CHEMICAL-POLLUTION & ENVIRONMENT	Soil / Sludge	Moisture	NTL/SOIL/SOP/01 Issue - 01: 2015
124	CHEMICAL-POLLUTION & ENVIRONMENT	Soil / Sludge	Oils & Grease	NTL/SOIL/SOP/015 Issue - 01: 2015
125	CHEMICAL-POLLUTION & ENVIRONMENT	Soil / Sludge	Organic Matter	NTL/SOIL/SOP/012 Issue - 01: 2015
126	CHEMICAL-POLLUTION & ENVIRONMENT	Soil / Sludge	pH Value	NTL/SOIL/SOP/02 Issue - 01: 2015

SCOPE OF ACCREDITATION

Laboratory Name	NOIDA TESTING LABORATORIES, GT - 20, SECTOR - 117, NOIDA, GAUTAM BUDDH NAGAR, UTTAR PRADESH , INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	TC-6814	Page No. :	13 / 56
Validity	05/12/2019 to 02/12/2021	Last Amended on	-

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
127	CHEMICAL-POLLUTION & ENVIRONMENT	Soil / Sludge	Potassium	NTL/SOIL/SOP/06 Issue - 01: 2015
128	CHEMICAL-POLLUTION & ENVIRONMENT	Soil / Sludge	S.A.R.	NTL/SOIL/SOP/013 Issue - 01: 2015
129	CHEMICAL-POLLUTION & ENVIRONMENT	Soil / Sludge	Sodium	NTL/SOIL/SOP/07 Issue - 01: 2015
130	CHEMICAL-POLLUTION & ENVIRONMENT	Soil / Sludge	Specific Gravity	NTL/SOIL/SOP/04 Issue - 01: 2015
131	CHEMICAL-POLLUTION & ENVIRONMENT	Soil / Sludge	Sulphate (as SO4)	NTL/SOIL/SOP/010 Issue - 01: 2015
132	CHEMICAL-POLLUTION & ENVIRONMENT	Soil / Sludge	Total Kjeldhal Nitrogen (TKN)	NTL/SOIL/SOP/014 Issue - 01: 2015
133	CHEMICAL-POLLUTION & ENVIRONMENT	Soil / Sludge	Total Solids	NTL/SOIL/SOP/016 Issue - 01: 2015
134	CHEMICAL-POLLUTION & ENVIRONMENT	Waste Water - ETP / STP Water	B.O.D.	IS 3025 (Part-44): 2003
135	CHEMICAL-POLLUTION & ENVIRONMENT	Waste Water - ETP / STP Water	Boron	IS 3025 (Part-57): 2005

SCOPE OF ACCREDITATION

Laboratory Name	NOIDA TESTING LABORATORIES, GT - 20, SECTOR - 117, NOIDA, GAUTAM BUDDH NAGAR, UTTAR PRADESH , INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	TC-6814	Page No. :	26 / 56
Validity	05/12/2019 to 02/12/2021	Last Amended on	-

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
303	CHEMICAL- WATER	Food Process Water	Residual Free Chlorine	IS 3025 (Part-26): 2002
304	CHEMICAL- WATER	Food Process Water	Silica (as SiO2)	IS 3025 (Part-35) : 1985
305	CHEMICAL- WATER	Food Process Water	Silica (as SiO2)	IS 3025 (Part-35) : 1985
306	CHEMICAL- WATER	Food Process Water	Sodium	IS 3025 (Part-45): 2003
307	CHEMICAL- WATER	Food Process Water	Sodium	IS 3025 (Part-45): 2003
308	CHEMICAL- WATER	Food Process Water	Temperature	IS 3025 (Part-9): 2002
309	CHEMICAL- WATER	Food Process Water	Temperature	IS 3025 (Part-9): 2002
310	CHEMICAL- WATER	Food Process Water	Total Acidity	IS 3025 (Part-22): 2003
311	CHEMICAL- WATER	Food Process Water	Total Acidity	IS 3025 (Part-22): 2003
312	CHEMICAL- WATER	Food Process Water	Total Dissolved Solids (TDS)	IS 3025 (Part-16): 2002
313	CHEMICAL- WATER	Food Process Water	Total Dissolved Solids (TDS)	IS 3025 (Part-16): 2002
314	CHEMICAL- WATER	Ground Water	Alkalinity	IS 3025 (Part-23): 2003
315	CHEMICAL- WATER	Ground Water	Alkalinity	IS 3025 (Part-23): 2003
316	CHEMICAL- WATER	Ground Water	Dissolved Oxygen	IS 3025 (Part-38): 2003
317	CHEMICAL- WATER	Ground Water	Dissolved Oxygen	IS 3025 (Part-38): 2003
318	CHEMICAL- WATER	Ground Water	Phosphorus (P / PO4)	IS 3025 (Part-31): 1988
319	CHEMICAL- WATER	Ground Water	Phosphorus (P / PO4)	IS 3025 (Part-31): 1988
320	CHEMICAL- WATER	Ground Water	Silica (as SiO2)	IS 3025 (Part-35) : 1985
321	CHEMICAL- WATER	Ground Water	Silica (as SiO2)	IS 3025 (Part-35) : 1985

SCOPE OF ACCREDITATION

Laboratory Name	NOIDA TESTING LABORATORIES, GT - 20, SECTOR - 117, NOIDA, GAUTAM BUDDH NAGAR, UTTAR PRADESH , INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	TC-6814	Page No. :	27 / 56
Validity	05/12/2019 to 02/12/2021	Last Amended on	-

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
322	CHEMICAL- WATER	Ground Water	Ammoniacal Nitrogen	IS 3025 (Part-34): 2009
323	CHEMICAL- WATER	Ground Water	Ammoniacal Nitrogen	IS 3025 (Part-34): 2009
324	CHEMICAL- WATER	Ground Water	B.O.D.	IS 3025 (Part-44) : 2003
325	CHEMICAL- WATER	Ground Water	B.O.D.	IS 3025 (Part-44) : 2003
326	CHEMICAL- WATER	Ground Water	Bicarbonate (HCO3)	IS 3025 (Part-51): 2006
327	CHEMICAL- WATER	Ground Water	Bicarbonate (HCO3)	IS 3025 (Part-51): 2006
328	CHEMICAL- WATER	Ground Water	C.O.D.	IS 3025 (Part-58): 2006
329	CHEMICAL- WATER	Ground Water	C.O.D. (as O2)	IS 3025 (Part-58): 2006
330	CHEMICAL- WATER	Ground Water	Calcium	IS 3025 (Part-40): 2002
331	CHEMICAL- WATER	Ground Water	Calcium	IS 3025 (Part-40): 2002
332	CHEMICAL- WATER	Ground Water	Carbonate (CO3)	IS 3025 (Part-51): 2001
333	CHEMICAL- WATER	Ground Water	Carbonate (CO3)	IS 3025 (Part-51): 2001
334	CHEMICAL- WATER	Ground Water	Colour	IS 3025 (Part-4) : 1983
335	CHEMICAL- WATER	Ground Water	Colour	IS 3025 (Part-4) : 1983
336	CHEMICAL- WATER	Ground Water	Free Carbon Dioxide	IS 3025 (Part-61): 2008
337	CHEMICAL- WATER	Ground Water	Free Carbon Dioxide	IS 3025 (Part-61): 2008
338	CHEMICAL- WATER	Ground Water	Inorganic Solids	IS 3025 (Part-15) : 1984
339	CHEMICAL- WATER	Ground Water	Inorganic Solids	IS 3025 (Part-15) : 1984
340	CHEMICAL- WATER	Ground Water	Magnesium	IS 3025 (Part-46): 2003

SCOPE OF ACCREDITATION

Laboratory Name	NOIDA TESTING LABORATORIES, GT - 20, SECTOR - 117, NOIDA, GAUTAM BUDDH NAGAR, UTTAR PRADESH , INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	TC-6814	Page No. :	28 / 56
Validity	05/12/2019 to 02/12/2021	Last Amended on	-

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
341	CHEMICAL- WATER	Ground Water	Magnesium	IS 3025 (Part-46): 2003
342	CHEMICAL- WATER	Ground Water	Nitrate	IS 3025 (Part-34): 2003
343	CHEMICAL- WATER	Ground Water	Nitrate	IS 3025 (Part-34): 2003
344	CHEMICAL- WATER	Ground Water	Nitrite (as NO2)	IS:3025 (Part-34): 2003
345	CHEMICAL- WATER	Ground Water	Nitrite (as NO2)	IS:3025 (Part-34): 2003
346	CHEMICAL- WATER	Ground Water	Odour	IS 3025 (Part-5) : 2002
347	CHEMICAL- WATER	Ground Water	Odour	IS 3025 (Part-5) : 2002
348	CHEMICAL- WATER	Ground Water	Oxygen Absorbed in 4h	IS 3025 (Part-63): 2007
349	CHEMICAL- WATER	Ground Water	Oxygen Absorbed in 4h	IS 3025 (Part-63): 2007
350	CHEMICAL- WATER	Ground Water	-pH Value	IS 3025 (Part-11) : 2002
351	CHEMICAL- WATER	Ground Water	-pH Value	IS 3025 (Part-11) : 2002
352	CHEMICAL- WATER	Ground Water	Phenolic Compounds	IS 3025 (Part-43): 1992
353	CHEMICAL- WATER	Ground Water	Phenolic Compounds	IS 3025 (Part-43): 1992
354	CHEMICAL- WATER	Ground Water	Potassium	IS 3025 (Part-45): 2003
355	CHEMICAL- WATER	Ground Water	Potassium	IS 3025 (Part-45): 2003
356	CHEMICAL- WATER	Ground Water	Sodium	IS 3025 (Part-45): 2003
357	CHEMICAL- WATER	Ground Water	Sodium	IS 3025 (Part-45): 2003
358	CHEMICAL- WATER	Ground Water	Sulphate	IS 3025 (Part-24): 2003
359	CHEMICAL- WATER	Ground Water	Sulphate	IS 3025 (Part-24): 2003
360	CHEMICAL- WATER	Ground Water	Taste	IS 3025 (Part -8) : 2002

SCOPE OF ACCREDITATION

Laboratory Name	NOIDA TESTING LABORATORIES, GT - 20, SECTOR - 117, NOIDA, GAUTAM BUDDH NAGAR, UTTAR PRADESH , INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	TC-6814	Page No. :	29 / 56
Validity	05/12/2019 to 02/12/2021	Last Amended on	-

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
361	CHEMICAL- WATER	Ground Water	Taste	IS 3025 (Part -8) : 2002
362	CHEMICAL- WATER	Ground Water	Total Dissolved Solids (TDS)	IS 3025 (Part-16) : 2002
363	CHEMICAL- WATER	Ground Water	Total Dissolved Solids (TDS)	IS 3025 (Part-16) : 2002
364	CHEMICAL- WATER	Ground Water	Total Hardness	IS 3025 (Part-21) : 2009
365	CHEMICAL- WATER	Ground Water	Total Hardness	IS 3025 (Part-21) : 2009
366	CHEMICAL- WATER	Ground Water	Total Kjeldhal Nitrogen	IS:3025 (Part-34) : 2003
367	CHEMICAL- WATER	Ground Water	Total Kjeldhal Nitrogen	IS:3025 (Part-34) : 2003
368	CHEMICAL- WATER	Ground Water	Total Suspended Solids	IS 3025 (Part-17): 1994
369	CHEMICAL- WATER	Ground Water	Total Suspended Solids	IS 3025 (Part-17): 1994
370	CHEMICAL- WATER	Ground Water	Turbidity	IS 3025 (Part-10) : 2002
371	CHEMICAL- WATER	Ground Water	Turbidity	IS 3025 (Part-10) : 2002
372	CHEMICAL- WATER	Ground Water	Chloride	IS 3025 (Part-32): 2007
373	CHEMICAL- WATER	Ground Water	Chloride	IS 3025 (Part-32): 2007
374	CHEMICAL- WATER	Ground Water	Conductivity at 25°C	IS 3025 (Part -14): 2002
375	CHEMICAL- WATER	Ground Water	Conductivity at 25°C	IS 3025 (Part -14): 2002

SCOPE OF ACCREDITATION

Laboratory Name	NOIDA TESTING LABORATORIES, GT - 20, SECTOR - 117, NOIDA, GAUTAM BUDDH NAGAR, UTTAR PRADESH , INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	TC-6814	Page No. :	30 / 56
Validity	05/12/2019 to 02/12/2021	Last Amended on	-

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
376	CHEMICAL- WATER	Ground Water	Fluoride	APHA 4500F (D): 2017
377	CHEMICAL- WATER	Ground Water	Fluoride	APHA 4500F (D): 2017
378	CHEMICAL- WATER	Ground Water	Organic Solids	IS 3025 (Part-15): 1998
379	CHEMICAL- WATER	Ground Water	Organic Solids	IS 3025 (Part-15): 1998
380	CHEMICAL- WATER	Ground Water	Residual Free Chlorine	IS 3025 (Part-26) : 2002
381	CHEMICAL- WATER	Ground Water	Residual Free Chlorine	IS 3025 (Part-26) : 2002
382	CHEMICAL- WATER	Ground Water	Temperature	IS 3025 (Part-9): 2002
383	CHEMICAL- WATER	Ground Water	Temperature	IS 3025 (Part-9): 2002
384	CHEMICAL- WATER	Ground Water	Total Acidity	IS 3025 (Part-22): 2003
385	CHEMICAL- WATER	Ground Water	Total Acidity	IS 3025 (Part-22): 2003
386	CHEMICAL- WATER	Ground Water	Total Solids	IS 3025 (Part-15): 2009
387	CHEMICAL- WATER	Ground Water	Total Solids	IS 3025 (Part-15): 2009
388	CHEMICAL- WATER	Ground Water	Fixed Solids	IS 3025 (Part-18): 1998
389	CHEMICAL- WATER	Ground Water	Fixed Solids	IS 3025 (Part-18): 1998
390	CHEMICAL- WATER	Industrial Water	Alkalinity	IS 3025 (Part-23): 2003
391	CHEMICAL- WATER	Industrial Water	Alkalinity	IS 3025 (Part-23): 2003
392	CHEMICAL- WATER	Industrial Water	Ammoniacal Nitrogen	IS 3025 (Part-34): 2009
393	CHEMICAL- WATER	Industrial Water	Ammoniacal Nitrogen	IS 3025 (Part-34): 2009
394	CHEMICAL- WATER	Industrial Water	B. O. D.	IS 3025 (Part-44) : 2003

National Accreditation Board for Testing and Calibration Laboratories

SCOPE OF ACCREDITATION

Laboratory Name	NOIDA TESTING LABORATORIES, GT - 20, SECTOR - 117, NOIDA, GAUTAM BUDDH NAGAR, UTTAR PRADESH , INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	TC-6814	Page No. :	41 / 56
Validity	05/12/2019 to 02/12/2021	Last Amended on	-

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
598	CHEMICAL- WATER	Packaged Drinking Water	Taste	IS 3025 (Part -8) : 2002
599	CHEMICAL- WATER	Packaged Drinking Water	Taste	IS 3025 (Part -8) : 2002
600	CHEMICAL- WATER	Packaged Drinking Water	Temperature	IS 3025 (Part-9): 2002
601	CHEMICAL- WATER	Packaged Drinking Water	Temperature	IS 3025 (Part-9): 2002
602	CHEMICAL- WATER	Packaged Drinking Water	Total Acidity	IS 3025 (Part-22): 2003
603	CHEMICAL- WATER	Packaged Drinking Water	Total Acidity	IS 3025 (Part-22): 2003
604	CHEMICAL- WATER	Packaged Drinking Water	Total Dissolved Solids (TDS)	IS 3025 (Part-16): 2002
605	CHEMICAL- WATER	Packaged Drinking Water	Total Dissolved Solids (TDS)	IS 3025 (Part-16): 2002
606	CHEMICAL- WATER	Packaged Drinking water	Total Hardness	IS 3025 (Part-21) : 2009
607	CHEMICAL- WATER	Packaged Drinking water	Total Hardness	IS 3025 (Part-21) : 2009
608	CHEMICAL- WATER	Packaged Drinking Water	Total Kjeldhal Nitrogen	IS:3025 (Part-34): 2003
609	CHEMICAL- WATER	Packaged Drinking Water	Total Kjeldhal Nitrogen	IS:3025 (Part-34): 2003
610	CHEMICAL- WATER	Packaged Drinking Water	Total Solids	IS 3025 (Part-15): 2009
611	CHEMICAL- WATER	Packaged Drinking Water	Total Solids	IS 3025 (Part-15): 2009
612	CHEMICAL- WATER	Packaged Drinking Water	Total Suspended Solids	IS 3025 (Part-17): 1994
613	CHEMICAL- WATER	Packaged Drinking Water	Total Suspended Solids	IS 3025 (Part-17): 1994
614	CHEMICAL- WATER	Packaged Drinking water	Turbidity	IS 3025 (Part-10) : 2002
615	CHEMICAL- WATER	Packaged Drinking water	Turbidity	IS 3025 (Part-10) : 2002
616	CHEMICAL- WATER	Surface Water	Alkalinity	IS 3025 (Part-23): 2003

SCOPE OF ACCREDITATION

Laboratory Name	NOIDA TESTING LABORATORIES, GT - 20, SECTOR - 117, NOIDA, GAUTAM BUDDH NAGAR, UTTAR PRADESH , INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	TC-6814	Page No. :	42 / 56
Validity	05/12/2019 to 02/12/2021	Last Amended on	-

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
617	CHEMICAL- WATER	Surface Water	Alkalinity	IS 3025 (Part-23): 2003
618	CHEMICAL- WATER	Surface Water	Ammoniacal Nitrogen	IS 3025 (Part-34): 2009
619	CHEMICAL- WATER	Surface Water	Ammoniacal Nitrogen	IS 3025 (Part-34): 2009
620	CHEMICAL- WATER	Surface Water	B. O. D.	IS 3025 (Part-44): 2003
621	CHEMICAL- WATER	Surface Water	B. O. D.	IS 3025 (Part-44): 2003
622	CHEMICAL- WATER	Surface Water	Bicarbonate (HCO3)	IS 3025 (Part-51): 2006
623	CHEMICAL- WATER	Surface Water	Bicarbonate (HCO3)	IS 3025 (Part-51): 2006
624	CHEMICAL- WATER	Surface Water	C. O. D.	IS 3025 (Part-58): 2006
625	CHEMICAL- WATER	Surface Water	C. O. D.	IS 3025 (Part-58): 2006
626	CHEMICAL- WATER	Surface Water	Calcium	IS 3025 (Part-40): 2002
627	CHEMICAL- WATER	Surface Water	Calcium	IS 3025 (Part-40): 2002
628	CHEMICAL- WATER	Surface Water	Carbonate (CO3)	IS 3025 (Part-51): 2006
629	CHEMICAL- WATER	Surface Water	Carbonate (CO3)	IS 3025 (Part-51): 2006
630	CHEMICAL- WATER	Surface Water	Chloride	IS 3025 (Part-32): 2007
631	CHEMICAL- WATER	Surface Water	Chloride	IS 3025 (Part-32): 2007
632	CHEMICAL- WATER	Surface water	Colour	IS 3025 (Part-4) : 1983
633	CHEMICAL- WATER	Surface water	Colour	IS 3025 (Part-4) : 1983
634	CHEMICAL- WATER	Surface Water	Conductivity at 25°C	IS 3025 (Part-14) : 2002
635	CHEMICAL- WATER	Surface Water	Conductivity at 25°C	IS 3025 (Part-14) : 2002
636	CHEMICAL- WATER	Surface Water	Dissolved Oxygen	IS 3025 (Part-38): 2003

National Accreditation Board for Testing and Calibration Laboratories

SCOPE OF ACCREDITATION

Laboratory Name	NOIDA TESTING LABORATORIES, GT - 20, SECTOR - 117, NOIDA, GAUTAM BUDDH NAGAR, UTTAR PRADESH , INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	TC-6814	Page No. :	43 / 56
Validity	05/12/2019 to 02/12/2021	Last Amended on	-

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
637	CHEMICAL- WATER	Surface Water	Dissolved Oxygen	IS 3025 (Part-38): 2003
638	CHEMICAL- WATER	Surface Water	Fixed Solids	IS 3025 (Part-18) : 1998
639	CHEMICAL- WATER	Surface Water	Fixed Solids	IS 3025 (Part-18) : 1998
640	CHEMICAL- WATER	Surface Water	Fluoride	APHA 4500F (D) : 2017
641	CHEMICAL- WATER	Surface Water	Fluoride	APHA 4500F (D) : 2017
642	CHEMICAL- WATER	Surface Water	Free Carbon Dioxide	IS 3025 (Part-61): 2008
643	CHEMICAL- WATER	Surface Water	Free Carbon Dioxide	IS 3025 (Part-61): 2008
644	CHEMICAL- WATER	Surface water	Inorganic Solids	IS 3025 (Part-15): 1984
645	CHEMICAL- WATER	Surface water	Inorganic Solids	IS 3025 (Part-15): 1984
646	CHEMICAL- WATER	Surface Water	Magnesium	IS 3025 (Part-46): 2003
647	CHEMICAL- WATER	Surface Water	Magnesium	IS 3025 (Part-46): 2003
648	CHEMICAL- WATER	Surface Water	Nitrate	IS 3025 (Part-34): 2003
649	CHEMICAL- WATER	Surface Water	Nitrate	IS 3025 (Part-34): 2003
650	CHEMICAL- WATER	Surface Water	Nitrite (as NO2)	IS 3025 (Part-45): 2003
651	CHEMICAL- WATER	Surface Water	Nitrite (as NO2)	IS 3025 (Part-45): 2003
652	CHEMICAL- WATER	Surface Water	Odour	IS 3025 (Part-5) : 2002
653	CHEMICAL- WATER	Surface Water	Odour	IS 3025 (Part-5) : 2002
654	CHEMICAL- WATER	Surface WAter	Organic Solids	IS 3025 (Part-15): 1998
655	CHEMICAL- WATER	Surface WAter	Organic Solids	IS 3025 (Part-15): 1998

SCOPE OF ACCREDITATION

Laboratory Name	NOIDA TESTING LABORATORIES, GT - 20, SECTOR - 117, NOIDA, GAUTAM BUDDH NAGAR, UTTAR PRADESH , INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	TC-6814	Page No. :	44 / 56
Validity	05/12/2019 to 02/12/2021	Last Amended on	-

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
656	CHEMICAL- WATER	Surface Water	Oxygen Absorbed in 4h	IS 3025 (Part-63) : 2007
657	CHEMICAL- WATER	Surface Water	Oxygen Absorbed in 4h	IS 3025 (Part-63) : 2007
658	CHEMICAL- WATER	Surface Water	-pH Value	IS 3025 (Part-11) : 2002
659	CHEMICAL- WATER	Surface Water	-pH Value	IS 3025 (Part-11) : 2002
660	CHEMICAL- WATER	Surface Water	Phenolic Compounds	IS 3025 (Part-43): 1992
661	CHEMICAL- WATER	Surface Water	Phenolic Compounds	IS 3025 (Part-43): 1992
662	CHEMICAL- WATER	Surface Water	Phosphorus (P / PO4)	IS 3025 (Part-31): 1988
663	CHEMICAL- WATER	Surface Water	Phosphorus (P / PO4)	IS 3025 (Part-31): 1988
664	CHEMICAL- WATER	Surface Water	Potassium	IS 3025 (Part-45): 2003
665	CHEMICAL- WATER	Surface Water	Potassium	IS 3025 (Part-45): 2003
666	CHEMICAL- WATER	Surface Water	Residual Free Chlorine	IS 3025 (Part-26): 2002
667	CHEMICAL- WATER	Surface Water	Residual Free Chlorine	IS 3025 (Part-26): 2002
668	CHEMICAL- WATER	Surface Water	Silica (as SiO2)	IS 3025 (Part-35): 1984
669	CHEMICAL- WATER	Surface Water	Silica (as SiO2)	IS 3025 (Part-35): 1984
670	CHEMICAL- WATER	Surface Water	Sodium	IS 3025 (Part-45): 2003
671	CHEMICAL- WATER	Surface Water	Sodium	IS 3025 (Part-45): 2003
672	CHEMICAL- WATER	Surface Water	Sodium	IS 3025 (Part-45): 2003
673	CHEMICAL- WATER	Surface Water	Sodium	IS 3025 (Part-45): 2003
674	CHEMICAL- WATER	Surface Water	Sulphate	IS 3025 (Part-24): 2003

SCOPE OF ACCREDITATION

Laboratory Name	NOIDA TESTING LABORATORIES, GT - 20, SECTOR - 117, NOIDA, GAUTAM BUDDH NAGAR, UTTAR PRADESH , INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	TC-6814	Page No. :	45 / 56
Validity	05/12/2019 to 02/12/2021	Last Amended on	-

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
675	CHEMICAL- WATER	Surface Water	Sulphate	IS 3025 (Part-24): 2003
676	CHEMICAL- WATER	Surface Water	Taste	IS 3025 (Part -8) : 2002
677	CHEMICAL- WATER	Surface Water	Taste	IS 3025 (Part -8) : 2002
678	CHEMICAL- WATER	Surface Water	Temperature	IS 3025 (Part-9): 2002
679	CHEMICAL- WATER	Surface Water	Temperature	IS 3025 (Part-9): 2002
680	CHEMICAL- WATER	Surface Water	Total Acidity	IS 3025 (Part-22): 2003
681	CHEMICAL- WATER	Surface Water	Total Acidity	IS 3025 (Part-22): 2003
682	CHEMICAL- WATER	Surface Water	Total Dissolved Solids (TDS)	IS 3025 (Part-16): 2002
683	CHEMICAL- WATER	Surface Water	Total Dissolved Solids (TDS)	IS 3025 (Part-16): 2002
684	CHEMICAL- WATER	Surface Water	Total Hardness	IS 3025 (Part-21) : 2009
685	CHEMICAL- WATER	Surface Water	Total Hardness	IS 3025 (Part-21) : 2009
686	CHEMICAL- WATER	Surface Water	Total Kjeldhal Nitrogen	IS:3025 (Part-34): 2003
687	CHEMICAL- WATER	Surface Water	Total Kjeldhal Nitrogen	IS:3025 (Part-34): 2003
688	CHEMICAL- WATER	Surface Water	Total Solids	IS 3025 (Part-15): 2009
689	CHEMICAL- WATER	Surface Water	Total Solids	IS 3025 (Part-15): 2009
690	CHEMICAL- WATER	Surface Water	Total Suspended Solids	IS 3025 (Part-17): 1994
691	CHEMICAL- WATER	Surface Water	Total Suspended Solids	IS 3025 (Part-17): 1994
692	CHEMICAL- WATER	Surface Water	Turbidity	IS 3025 (Part-10) : 2002
693	CHEMICAL- WATER	Surface Water	Turbidity	IS 3025 (Part-10) : 2002

METHODOLOGY ADOPTED FOR SAMPLING AND ANALYSIS

1.0 Meteorology

The methodology adopted for monitoring surface observations is as per the standard norms laid down by bureau of Indian standards (IS : 8829) and India Meteorological Department (IMO)

1.1 Methodology of Data generation

The weather monitoring station (WMS) equipped with continuous monitoring equipment was installed at site at a height of about 10 m above ground level to record wind speed, direction relative humidity and temperature the meteorological monitoring station was located in such a way that it is free from was recorded by visual observation Rainfall was monitored by rain gauge. The continuous recording meteorological instrument of AWM (Ecotech) has been used for recording the met data. The sensitivity of the equipment is as given in Table -1.0:

TABLE -1.0
SENSITIVITY OF METEOROLOGY MONITORING STATION

S. No.	Parameter	Test Method	Range	Instrument used	Model and Make of instrument
1	Weather Monitoring (Air temperature – Max & Min, Max RH, Min RH, Wind Speed, Wind direction, Rainfall, Air pressure.	-	Rainfall: 0.25mm-100mm/hr. Air pressure: 350 mb-950mb	Weather monitor	AWM (Ecotech)

Hourly maximum minimum and average values of wind speed, direction and temperature were recorded continuously with weather monitoring equipment all the sensors were connected to filter and then logged on to data logger.

1.2 Ambient Air Quality

The air samples were analyzed as per standard methods specified by CPCB, IS: 5182. The techniques used for ambient air quality monitoring and minimum detectable levels are given in Table 1.1.

TABLE -1.1

S. No.	Parameter	Test Method	Range	Instrument used	Model and Make of instrument
1	PM_{10}	IS 5182 (Part-23) 2006, CPCB Guidelines for Ambient Air Monitoring	5.0 to 1000 µg/m^3	Combined Sampler	GT-241 (Green tech instruments)
2	$PM_{2.5}$	USEPA to 40 – CER-appendex L, Part to 50/53 Candidate Method CPCB Guidelines for Ambient Air Monitoring	5.0 to 1000 µg/m^3	Combined Sampler	GT-241 (Green tech instruments)
3	SO_2	IS 5182 (Part-2)-2001,RA 2006	5.0 to 100 µg/m^3	Gas sampler	GT-241 (Green tech instruments)
4	NO_x	IS 5182 (Part-6)-2006	6.0 to 100 µg/m^3	Gas sampler	GT-241 (Green tech instruments)
5	CO	NIOSH to 6604: 1996	0.1 µg/$m^3$to 10mg/m^3	CO monitor	SENSIT P100 (Sensit Tech.) gazguard Tx (Pollution Protection Systems Ltd.)

1.3 Water Analysis

Samples for chemical analysis were collected in polyethylene carboys. Samples collected for metal content were acidified with 1 ml HNO_3. Samples for bacteriological analysis were collected in sterilized glass bottles. Selected physicochemical and bacteriological parameters have been analyzed for projecting the existing water quality status in the study area. Parameters like temperature, Dissolved Oxygen (DO) and pH were analyzed at the time of sample collection. The methodology for sample collection and preservation techniques was followed as per the Standard Operating Procedures (SOP) mentioned in Table-1.2.

Table 1.2
Standard Operating Procedures (SOP) for Water Sampling

Sr. No.	Parameter	Type and Container for sample collection	Sample quantity in ml	Storage/Preservation
1	pH, Colour, Odour, Taste	Grab Sampling Plastic / glass	50	On site analysis
2	Electrical Conductivity	Grab Sampling Plastic / glass	50	On site analysis
3	Total Dissolved Solids	Grab Sampling Plastic / glass	100	Refrigeration, can be stored for 7 days
4	Hardness	Grab Sampling	100	Add HNO3 to pH<2,

		Plastic / glass		Refrigeration, 6 Months
	Alkalinity	Plastic/glass	100	Refrigeration, 14 days
5				
6	Chlorides	Grab Sampling Plastic / glass	50	Not required, 28 days
7	Nitrates	Plastic	100	Refrigeration, 48 Hours
8	Sulphates	Grab Sampling Plastic / glass	100	Refrigeration, 28 days
9	Fluorides	Plastic container only	100	Not required, 28 days
10	Sodium, Potassium	Plastic	100	Not required, 28 days
11	Trace Metals (Hg, Cd, Cu, Fe, Zn, Pb)	Plastic/glass containers rinse with 1+1 HNO	100 ml	Add HNO_3 to pH >2, Grab sample; 6 months
12	BOD	Grab sampling Plastic/glass container	500 ml	Refrigeration, 48 hrs
13	COD	Grab sampling Plastic/glass container	100 ml	Add H2SO4 to pH>2, refrigeration; 7 days

1.3.1 Analytical techniques

The analytical techniques used for water and wastewater analysis is given in the Table 1.3

TABLE-1.3
ANALYTICAL TECHNIQUES
FOR WATER AND WASTEWATER ANALYSIS

Sr. no.	Parameter Method (IS Standards)	Parameter Method (IS Standards)
1	pH	IS 3025:(Part11):2002
2	Colour	IS 3025:(Part4):1983
3	Odour	IS 3025:(Part5):2002
4	Taste	IS 3025:(Part8):2002
5	Turbidity	IS 3025:(Part10):2002
6	Electrical Conductivity	IS 3025:(Part14):2002
7	Total Dissolved Solids	IS 3025:(Part16):2002
8	Alkalinity	IS 3025:(Part23):2003
9	Total Hardness	IS 3025:(Part21):2009
10	Chlorides	IS 3025:(Part32):2007
11	Fluorides	APHA4500F(D):2017
12	Phosphate	IS 3025: (Part 31) 1988
13	Nitrates	IS 3025(Part 34):2003
14	Sulphates	IS 3025:(Part24):2003
15	Phenolic Compounds	IS 3025:(Part43):1992
16	Calcium	IS 3025:(Part40):2002
17	Magnesium	IS 3025(Part46):2003
18	Sodium	IS 3025:(Part45):2003
19	Potassium	IS 3025:(Part45):2003
20	Copper	IS 3025:PART42:1992
21	Zinc	IS 3025:PART49:1994
22	Lead	IS 3025:PART47:1994

23	Arsenic	IS 3025:PART37:1988
24	Cadmium	IS 3025:PART41:1992
25	BOD	IS 3025:PART44:2003
26	COD	IS 3025:PART58:2006
27	Coliform Organisms	IS 1622:2003

1.4 Soil Quality

At each location soil samples were collected from three different depth viz. 30 cm, 60 cm and 90 cm below the surface and are homogenized this in line with IS: 2720. The homogenized samples were analyzed for physical and chemical characteristics. The soil samples were collected and analyzed once in the season. The samples have been analyzed as per IS: 2720. The methodology adopted for each parameter is described in Table-1.4

TABLE-1.4

ANALYTICAL TECHNOQUES FOR SOIL ANALYSIS

Sr. No.	Parameters	Test Method
1	pH	NTL/SOIL/SOP/02
2	Moisture	NTL/SOIL/SOP/01
3	Electric Conductivity	NTL/SOIL/SOP/03
4	Bulk Density	NTL/SOIL/SOP/05
5	Nitrogen as (N)	NTL/SOIL/SOP/014
6	Potassium as (K)	NTL/SOIL/SOP/06
7	Organic carbon	NTL/SOIL/SOP/012

1.5 Noise levels

1.5.1 Method of Monitoring

Noise level monitoring was carried out at 6 locations continuously for 24-hours with one hour interval by R-Tek RT /ET-933 Sound Level Meter.

S. No.	Parameter	Test Method	Range	Instrument used	Model and Make of instrument
1	Noise	IS 9989 – 1981(RA 2008)	30dB - 130dB(Leq)	Sound Level Meter	RT/ET-933 (R-tek)

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-011220-01	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

Sampling & Analysis Data

Sample Drawn By : Laboratory
Sampling Location : Near Mine Site (AQ1)
Monitoring Period : Dec 2020 - Feb 2021
Protocol Used : CPCB Guidelines
Sampling Plan &Procedure : SOP-AAQ/08
Sampling Instrument Used : GT-241(Green tech instruments)
Duration of Sampling : 24 hours
Average Flow Rate SPM: 1.15 (m3/min.)
Average Flow Rate Gases: 1.0 (lpm)

Sr. No.	Monitoring Date	PM10	PM2.5	SO_2	NOx
1	1.12.20	43.28	26.21	4.82	9.85
2	2.12.20	42.7	24.59	4.89	9.76
3	9.12.20	43.29	22.8	4.91	9.89
4	10.12.20	41.3	22.5	4.93	10.12
5	16.12.20	41.35	22.62	4.97	10.58
6	17.12.20	42.32	23.19	4.8	9.3
7	23.12.20	44.26	26.08	4.86	10.15
8	24.12.20	43.39	24.16	4.78	10.08
9	1.01.21	43.2	23.12	4.89	9.58
10	2.01. 21	45.36	24.13	5.01	11.62
11	8.01.21	43.38	24.19	4.92	11.2
12	9.01.21	48.39	27.15	4.93	11.37
13	15.01.21	48.74	27.66	5.2	12.4
14	16.01.21	50.1	30.2	4.96	11.01
15	22.01.21	48.67	29.57	4.85	10.18
16	23.01.21	47.53	27.12	5.08	11.15
17	1.02.21	46.76	27.01	4.86	9.96
18	2.02.21	44.36	24.01	4.83	9.17
19	8.02.21	45.82	26.08	4.92	10.01
20	9.02.21	44.79	27.03	4.82	11.01
21	15.02.21	43.88	27.19	4.83	11.51
22	16.02.21	45.69	26.52	4.87	12.3
23	22.02.21	47.55	27.45	4.86	11.81
24	23.02.21	46.68	26.78	4.97	12.01
Min		**41.3**	**22.5**	**4.78**	**9.17**
Max		**50.1**	**30.2**	**5.2**	**12.4**
Average		**45.16**	**25.77**	**4.91**	**10.68**
P 98		**49.47**	**29.91**	**5.14**	**12.35**
Std Dev		**2.47**	**2.15**	**0.09**	**0.96**
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		100 µg/m³	60 µg/m³	80 µg/m³	80 µg/m³

CHECKED BY

AUTHORIZED SIGNATORY

Laboratory : GT-20, Sector-117, Noida Gautam Budh Nagar - 201301
Branch Office : IP-2, Haridwar, Uttrakhand
Branch Office : Gayatri Nagar. Katgodam, Haldwani, Uttrakhand
E. : *noida.laboratory@gmail.com, info@noidalabs.com* ***W.:*** *www. noidalabs.com*

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-011220-02	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

Sampling & Analysis Data

Sample Drawn By : Laboratory
Sampling Location : Near to Mine Site: Dhani (180 Meter downwind) (AQ2)
Sampling Plan &Procedure : SOP-AAQ/08
Duration of Sampling : 24 hours
Average Flow Rate SPM: : 1.15 (m^3/min.)
Average Flow Rate Gases: : 1.0 (lpm)

Monitoring Period : Dec 2020 - Feb 2021
Protocol Used : CPCB Guidelines
Sampling Instrument Used : GT-241(Green tech instruments)

S. No.	Monitoring Date	PM10	PM2.5	SO_2	NO_x
1	3.12.20	42.6	24.95	4.94	9.83
2	4.12.20	41.6	21.8	4.9	9.5
3	11.12.20	43.52	22.67	5.12	11.12
4	12.12.20	45.74	24.56	4.97	10.25
5	18.12.20	42.63	25.03	5.2	10.02
6	19.12.20	41.95	21.95	5.32	10.45
7	25.12.20	42.63	23.45	5.03	10.37
8	26.12.20	41.86	25.91	5.12	11.16
9	3.01.21	45.75	25.56	5.08	11.04
10	4.01. 21	44.14	25.23	4.98	9.52
11	10.01.21	46 7	26.91	5.12	9.96
12	11.01.21	47.29	23.48	5.22	10.49
13	17.01.21	48.5	27.72	5.16	10.05
14	18.01.21	48.69	27.03	5.21	10.85
15	24.01.21	50.77	30.1	5.33	11 96
16	25.01.21	51.4	30.4	5.4	12.8
17	3.02.21	50.63	28.13	5.15	11.85
18	4.02.21	44.14	22.93	5.13	10.05
19	10.02.21	44.25	22.62	5.38	10.32
20	11.02.21	42.25	25.56	5.17	10.41
21	17.02.21	45.75	26.02	5 21	10.83
22	18.02.21	45.21	25.91	5.26	10.79
23	24.02.21	44.15	26.38	5.38	10.56
24	25.02.21	42.6	25.08	5.12	10.72
Min		**41.6**	**21.8**	**4.9**	**9.5**
Max		**51.4**	**30.4**	**5.4**	**12.8**
Average		**45.30**	**25.45**	**5.16**	**10.66**
P 98		**51.11**	**30.26**	**5.39**	**12.41**
Std Dev		**3.00**	**2.30**	**0.14**	**0.78**
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		100 µg/m3	60 µg/m^3	80 µg/m^3	80 µg/m^3

CHECKED BY

AUTHORIZED SIGNATORY

Laboratory : GT-20, Sector-117, Noida Gautam Budh Nagar - 201301
Branch Office : IP-2, Haridwar, Uttrakhand
Branch Office : Gayatri Nagar. Katgodam, Haldwani, Uttrakhand
E. : noida.laboratory@gmail.com, info@noidalabs.com **W.:** www. noidalabs.com

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

☎ +91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-011220-03	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

Sampling & Analysis Data

Sample Drawn By : Laboratory
Sampling Location : Near Road Junction (Neem Ka Thana Road) (AQ3)
Sampling Plan &Procedure : SOP-AAQ/08
Duration of Sampling : 24 hours
Average Flow Rate SPM: Averag : 1.15 (m^3/min.)
Flow Rate Gases: : 1.0 (lpm)

Monitoring Period : Dec 2020 - Feb 2021
Protocol Used : CPCB Guidelines
Sampling Instrument Used : GT-241(Green tech instruments)

S. No.	Monitoring Date	PM10	PM2.5	SO_2	NOx
1	5.12.20	47.95	25.88	5.79	11.85
2	6.12.20	47.49	25.11	6.01	12.18
3	13.12.20	47.38	24.98	5.82	11.94
4	14.12.20	46.8	24.5	5.6	11.7
5	20.12.20	47.13	24.32	5.89	12.01
6	21.12.20	48.45	26.34	5.62	11.73
7	27.12.20	49.48	28.19	6.03	13.08
8	28.12.20	53.01	31.94	6.13	13.29
9	5.01.21	48.84	26.41	5.73	12.81
10	6.01. 21	52.14	30.58	5.82	12.95
11	12.01.21	51.43	30.28	5.65	12.01
12	13.01.21	47.44	24.39	6.63	14.02
13	19.01.21	53.02	32.01	5.98	13.01
14	20.01.21	52.42	31.91	6.01	14.09
15	26.01.21	55.8	32.9	6.9	14.5
16	27.01.21	52.31	31.62	6.4	13.98
17	5.02.21	50.45	28.91	5.9	12.84
18	6.02.21	52.54	31.01	6.61	14.11
19	12.02.21	48.93	26.76	5.64	11.88
20	13.02.21	47.52	24.66	6.16	13.12
21	19.02.21	50.02	29.05	5.85	12.23
22	20.02.21	51.42	31.31	5.79	12.01
23	26.02.21	50.48	29.19	6.14	13.01
24	27.02.21	47.95	24.48	5.73	11.84
Min		46.8	24.32	5.6	11.7
Max		55.8	32.9	6.9	14.5
Average		50.12	28.23	6.01	12.78
P 98		54.52	32.49	6.78	14.32
Std Dev		2.44	3.02	0.34	0.88
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		100 µg/m^3	60 µg/m^3	80 µg/m^3	80 µg/m^3

CHECKED BY

AUTHORIZED SIGNATORY

NOIDA TESTING LABORATORY NTL

Laboratory : GT-20, Sector-117, Noida Gautam Budh Nagar - 201301
Branch Office : IP-2, Haridwar, Uttrakhand
Branch Office : Gayatri Nagar. Katgodam, Haldwani, Uttrakhand
E. : noida.laboratory@gmail.com, info@noidalabs.com **W.:** www. noidalabs.com

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-011220-04	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

Sampling & Analysis Data

Sample Drawn By : Laboratory
Sampling Location : Bhagoli (AQ4)
Monitoring Period : Dec 2020 - Feb 2021
Protocol Used : CPCB Guidelines
Sampling Plan &Procedure : SOP-AAQ/08
Sampling Instrument Used : GT-241(Green tech instruments)
Duration of Sampling : 24 hours
Average Flow Rate SPM: Average : 1.15 (m^3/min.)
Rate Gases: : 1.0 (lpm)

S. No.	Monitoring Date	PM10	PM2.5	SO_2	NOx
1	1.12.20	43.28	25.87	5.78	11.35
2	2.12.20	42.6	23.6	5	10.5
3	9.12.20	43.29	25.84	5.16	10.92
4	10.12.20	44.25	27.08	5.03	10.63
5	16.12.20	43.3	25.88	5.85	11.49
6	17.12.20	45.24	28.03	5.08	10.76
7	23.12.20	44.26	27.29	5.14	11.91
8	24.12.20	43.39	25.96	5.96	11.99
9	1.01.21	46.2	29.98	6.01	12.84
10	2.01. 21	48.36	30.01	5.99	11.98
11	8.01.21	48.69	30.08	6.18	12.91
12	9.01.21	48.96	30.29	6.01	12.79
13	15.01.21	52.4	31.6	6.3	13.7
14	16.01.21	50.96	31.08	5.89	11.57
15	22.01.21	51.68	31.41	6.28	13.24
16	23.01.21	50.81	29.03	6.21	13.09
17	1.02.21	48.28	30.01	5.64	11.21
18	2.02.21	49.28	30.76	5.96	11.91
19	8.02.21	45.88	27.97	6.05	12.81
20	9.02.21	46.55	29.98	6.28	13.22
21	15.02.21	43.82	25.95	5.17	10.85
22	16.02.21	44.39	27.96	5.68	11.28
23	22.02.21	43.38	25.91	5.39	11.17
24	23.02.21	42.79	23.87	5.58	11.62
Min		42.6	23.6	5	10.5
Max		52.4	31.6	6.3	13.7
Average		46.42	28.10	5.73	11.92
P 98		52.07	31.51	6.29	13.49
Std Dev		3.15	2.40	0.44	0.95
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		100 µg/m^3	60 µg/m^3	80 µg/m^3	80 µg/m^3

CHECKED BY

AUTHORIZED SIGNATORY

Laboratory : GT-20, Sector-117, Noida Gautam Budh Nagar - 201301
Branch Office : IP-2, Haridwar, Uttrakhand
Branch Office : Gayatri Nagar. Katgodam, Haldwani, Uttrakhand
E. : noida.laboratory@gmail.com, info@noidalabs.com **W.:** www. noidalabs.com

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-011220-05	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

Sampling & Analysis Data

Sample Drawn By : Laboratory
Sampling Location : Papra (AQ5)
Monitoring Period : Dec 2020 - Feb 2021
Protocol Used : CPCB Guidelines
Sampling Plan &Procedure : SOP-AAQ/08
Sampling Instrument Used : GT-241(Green tech instruments)
Duration of Sampling : 24 hours
Average Flow Rate SPM: Average : 1.15 (m^3/min.)
Rate Gases: : 1.0 (lpm)

S. No.	Monitoring Date	PM10	PM2.5	SO_2	NO_2
1	3.12.20	43.98	25.9	5.38	11.08
2	4.12.20	43.9	25.7	5.3	11.31
3	11.12.20	45.12	27.32	5.7	11.96
4	12.12.20	44.85	27.01	5.4	11.21
5	18.12.20	46.28	27.96	5.6	11.85
6	19.12.20	45.91	27.84	5.8	12.34
7	25.12.20	46.24	27.89	5.7	12.01
8	26.12.20	49.58	31.35	5.5	11.74
9	3.01.21	48.96	30.82	5.6	11.92
10	4.01. 21	50.23	31.95	6.2	13.85
11	10.01.21	50.08	31.08	5.9	12.85
12	11.01.21	52.26	33.44	6.3	13.98
13	17.01.21	54.81	35.6	5.7	12.21
14	18.01.21	53.21	34.02	6.1	13.25
15	24.01.21	54.01	34.91	5.8	12.01
16	25.01.21	53.06	34.28	5.9	12.98
17	3.02.21	54.12	34.89	6.6	14.2
18	4.02.21	53.08	35.01	6	13.01
19	10.02.21	49.86	31.12	5.5	11.84
20	11.02.21	49.04	31.08	5.4	11.28
21	17.02.21	46.52	27.98	5.7	11.91
22	18.02.21	45.28	27.52	5.6	11.83
23	24.02.21	46.91	27.94	5.7	11.9
24	25.02.21	46.24	27.32	5.5	11.85
Min		43.9	25.7	5.3	11.08
Max		54.81	35.6	6.6	14.2
Average		48.93	30.43	5.76	12.29
P 98		54.49	35.33	6.46	14.10
Std Dev		3.55	3.25	0.32	0.87
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		100 µg/m^3	60 µg/m^3	80 µg/m^3	80 µg/m^3

CHECKED BY

AUTHORIZED SIGNATORY

Laboratory : GT-20, Sector-117, Noida Gautam Budh Nagar, 201301

Branch Office : IP-2, Haridwar, Uttrakhand

Branch Office : Gayatri Nagar. Katgodam, Haldwani, Uttrakhand

E. : noida.laboratory@gmail.com, info@noidalabs.com **W.:** www. noidalabs.com

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

☎ +91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-011220-06	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

Sampling & Analysis Data

Sample Drawn By : Laboratory
Sampling Location : Sarai (AQ6)
Sampling Plan &Procedure : SOP-AAQ/08
Duration of Sampling : 24 hours
Average Flow Rate SPM: Average : 1.15 (m^3/min.)
Rate Gases: : 1.0 (lpm)

Monitoring Period : Dec 2020 - Feb 2021
Protocol Used : CPCB Guidelines
Sampling Instrument Used : GT-241(Green tech instruments)

S. No.	Monitoring Date	PM10	PM2.5	SO_2	NOx
1	5.12.20	48.96	30.21	5.9	12.22
2	6.12.20	48.24	29.93	6.3	13.41
3	13.12.20	47.4	27.4	5.7	12.51
4	14.12.20	49.96	31.58	5.8	12.1
5	20.12.20	49.24	31.25	6.8	13.87
6	21.12.20	48.21	29.85	6.3	13.48
7	27.12.20	50.68	31.96	6.7	14.74
8	28.12.20	54.21	34.58	7.1	15.3
9	5.01.21	52.24	33.21	6.9	14.91
10	6.01. 21	56.78	37.54	7.2	16.1
11	12.01.21	55.25	35.37	6.5	13.98
12	13.01.21	58.6	38.7	7.5	16.32
13	19.01.21	55.28	35.43	6.2	13.24
14	20.01.21	58.59	37.48	7.4	15.91
15	26.01.21	55.62	35.21	6.8	13.91
16	27.01.21	57.41	37.96	7.5	16.8
17	5.02.21	56.21	37.45	7.1	15.9
18	6.02.21	58.01	37.92	6.7	14.63
19	12.02.21	54.38	34.97	5.9	12.87
20	13.02.21	52.81	33.18	6	13.58
21	19.02.21	54.29	34.16	7.2	15.53
22	20.02.21	49.27	31.28	6.4	13.84
23	26.02.21	49.15	31.14	6.1	13.24
24	27.02.21	50.28	31.95	6.8	13.96
Min		**47.4**	**27.4**	**5.7**	**12.1**
Max		**58.6**	**38.7**	**7.5**	**16.8**
Average		**52.96**	**33.69**	**6.62**	**14.28**
P 98		**58.60**	**38.36**	**7.50**	**16.58**
Std Dev		**3.69**	**3.13**	**0.56**	**1.34**
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		100 µg/m^3	60 µg/m^3	80 µg/m^3	80 µg/m^3

CHECKED BY

AUTHORIZED SIGNATORY

TESTING LABORATORY NTL

Laboratory : GT-20, Sector-117, Noida Gautam Budh Nagar - 201301
Branch Office : IP-2, Haridwar, Uttrakhand
Branch Office : Gayatri Nagar. Katgodam, Haldwani, Uttrakhand
E. : *noida.laboratory@gmail.com, info@noidalabs.com* ***W.:*** *www. noidalabs.com*

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-011220-07	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

Sampling & Analysis Data

Sample Drawn By : Laboratory
Sampling Location : Neem Ka Thana (AQ7)
Sampling Plan &Procedure : SOP-AAQ/08
Duration of Sampling : 24 hours
Average Flow Rate SPM: Average : 1.15 (m^3/min.)
Rate Gases: : 1.0 (lpm)

Monitoring Period : Dec 2020 - Feb 2021
Protocol Used : CPCB Guidelines
Sampling Instrument Used : GT-241(Green tech instruments)

S. No.	Monitoring Date	PM10	PM2.5	SO_2	NOx
1	5.12.20	67.81	37.94	7.6	15.4
2	6.12.20	66.24	37.76	7.9	15.81
3	13.12.20	69.56	39.28	8.1	17.21
4	14.12.20	65.62	35.81	7.8	15.95
5	20.12.20	68.96	39.12	7.6	15.57
6	21.12.20	66.23	37.71	9.4	18.94
7	27.12.20	70.82	40.24	7.6	15.41
8	28.12.20	73.21	41.69	8.2	17.35
9	5.01.21	71.27	41.21	8.9	18.28
10	6.01. 21	76.23	43.94	8.1	18.17
11	12.01.21	69.24	40.12	9.5	19.27
12	13.01.21	73.24	42.56	8.8	17.95
13	19.01.21	69.27	40.14	8.4	17.27
14	20.01.21	77.59	44.65	9.4	19.62
15	26.01.21	75.34	43.58	9.1	19.25
16	27.01.21	78.9	45.6	9.6	19.89
17	5.02.21	77.51	44.67	9.8	20.2
18	6.02.21	78.32	45.37	8.5	17.57
19	12.02.21	77.68	44.62	7.8	15.42
20	13.02.21	71.23	41.28	8.4	17.81
21	19.02.21	69.57	40.57	8.1	17.38
22	20.02.21	66.29	37.78	8.5	18.17
23	26.02.21	67.54	38.61	7.6	15.43
24	27.02.21	66.41	37.93	7.9	15.81
Min		**65.62**	**35.81**	**7.6**	**15.4**
Max		**78.9**	**45.6**	**9.8**	**20.2**
Average		**71.48**	**40.91**	**8.46**	**17.49**
P 98		**78.63**	**45.49**	**9.71**	**20.06**
Std Dev		**4.44**	**2.88**	**0.71**	**1.57**
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		100 µg/m^3	60 µg/m^3	80 µg/m^3	80 µg/m^3

CHECKED BY

AUTHORIZED SIGNATORY

Laboratory : GT-20, Sector-117, Noida Gautam Budh Nagar, 201301
Branch Office : IP-2, Haridwar, Uttrakhand
Branch Office : Gayatri Nagar. Katgodam, Haldwani, Uttrakhand
E. : noida.laboratory@gmail.com, info@noidalabs.com **W.:** www. noidalabs.com

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Noise	N-220221-01	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

SAMPLING & ANALYSIS DATA

Sample Drawn By : Laboratory (N.T.L)
Sample Drawn On : 22/02/2021
Sampling Location : **Mine Site (NQ1)**

RESULTS

S. No	Test Parameters	Results	Units	Requirement (as per CPCB Guidelines Limits in dB (A) Leq		
				Category of Area/ Zone	Day Time	Night Time
1.	L_{day} (6.0 AM TO 10.0 PM)	48.5	dB(A)	Industrial Area	75	70
2.	L_{night} (10.0 PM TO 6.0 AM)	38.7	dB(A)	Commercial Area	65	55
				Residential Area	55	45
				Silence Zone	50	40

Notes: -

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.
5. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

CHECKED BY

AUTHORIZED BY

NOIDA TESTING LABORATORIES NTL

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

☎ +91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Noise	N-230221-02	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

SAMPLING & ANALYSIS DATA

Sample Drawn By : Laboratory (N.T.L)
Sample Drawn On : 23/02/2021
Sampling Location : **Dhani (NQ2)**

RESULTS

S. No	Test Parameters	Results	Units	Requirement (as per CPCB Guidelines Limits in dB (A) Leq		
				Category of Area/ Zone	Day Time	Night Time
1.	L_{day} (6.0 AM TO 10.0 PM)	47.1	dB(A)	Industrial Area	75	70
2.	L_{night} (10.0 PM TO 6.0 AM)	38.3	dB(A)	Commercial Area	65	55
				Residential Area	55	45
				Silence Zone	50	40

Notes: -

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.
5. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

CHECKED BY

NOIDA TESTING LABORATORIES NTL

AUTHORIZED BY

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Noise	N-240221-03	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.

Project Name: "Iron Ore Mining Project (M.L No. 10/98)"

Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

SAMPLING & ANALYSIS DATA

Sample Drawn By : Laboratory (N.T.L)

Sample Drawn On : 24/02/2021

Sampling Location : **Near Road Junction (Neem Ka Thana Road) (NQ3)**

RESULTS

S. No	Test Parameters	Results	Units	Requirement (as per CPCB Guidelines Limits in dB (A) Leq		
				Category of Area/ Zone	Day Time	Night Time
1.	L_{day} (6.0 AM TO 10.0 PM)	51.2	dB(A)	Industrial Area	75	70
2.	L_{night} (10.0 PM TO 6.0 AM)	42.3	dB(A)	Commercial Area	65	55
				Residential Area	55	45
				Silence Zone	50	40

Notes: -

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.
5. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

CHECKED BY

AUTHORIZED BY

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Noise	N-250221-04	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

SAMPLING & ANALYSIS DATA

Sample Drawn By : Laboratory (N.T.L)
Sample Drawn On : 25/02/2021
Sampling Location : **Bhagoli (NQ4)**

RESULTS

S. No	Test Parameters	Results	Units	Requirement (as per CPCB Guidelines Limits in dB (A) Leq		
				Category of Area/ Zone	Day Time	Night Time
1.	L_{day} (6.0 AM TO 10.0 PM)	51.8	dB(A)	Industrial Area	75	70
2.	L_{night} (10.0 PM TO 6.0 AM)	43.4	dB(A)	Commercial Area	65	55
				Residential Area	55	45
				Silence Zone	50	40

Notes: -

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory
4. This test report will not be used for any publicity/legal purpose.
5. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

NOIDA TESTING LABORATORIES NTL

CHECKED BY **AUTHORIZED BY**

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Noise	N-260221-05	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

SAMPLING & ANALYSIS DATA

Sample Drawn By : Laboratory (N.T.L)
Sample Drawn On : 26/02/2021
Sampling Location : **Papra (NQ5)**

RESULTS

S. No	Test Parameters	Results	Units	Requirement (as per CPCB Guidelines Limits in dB (A) Leq)		
				Category of Area/ Zone	Day Time	Night Time
1.	L_{day} (6.0 AM TO 10.0 PM)	49.4	dB(A)	Industrial Area	75	70
2.	L_{night} (10.0 PM TO 6.0 AM)	40.7	dB(A)	Commercial Area	65	55
				Residential Area	55	45
				Silence Zone	50	40

Notes: -

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.
5. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

CHECKED BY

NOIDA TESTING LABORATORIES NTL

AUTHORIZED BY

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Noise	N-270221-06	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

SAMPLING & ANALYSIS DATA

Sample Drawn By : Laboratory (N.T.L)
Sample Drawn On : 27/02/2021
Sampling Location : **Sarai (NQ6)**

RESULTS

S. No	Test Parameters	Results	Units	Requirement (as per CPCB Guidelines Limits in dB (A) Leq		
				Category of Area/ Zone	Day Time	Night Time
1.	L_{day} (6.0 AM TO 10.0 PM)	50.3	dB(A)	Industrial Area	75	70
2.	L_{night} (10.0 PM TO 6.0 AM)	41.4	dB(A)	Commercial Area	65	55
				Residential Area	55	45
				Silence Zone	50	40

Notes: -

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.
5. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

CHECKED BY

AUTHORIZED BY

Laboratory : GT-20, Sector-117, Noida Gautam Budh Nagar - 201301
Branch Office : IP-2, Haridwar, Uttrakhand
Branch Office : Gayatri Nagar. Katgodam, Haldwani, Uttrakhand
E. : noida.laboratory@gmail.com, info@noidalabs.com ***W.:*** www. noidalabs.com

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

☎ +91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Soil	SS-240221-15	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

Sampling & Analysis Data

Sample Received On : 24/02/2021
Sample Drawn By : Laboratory (NTL)
Sample Description : Soil Sample Collected from **Sarai (SQ6)**
Analysis Duration : 24/02/2021 to 02/03/2021

Sl. No.	Parameters	Unit	Results	Test Method
1	Soil Colour	-	Light Brown	STP/SOIL
2	Soil Type	-	Sandy Loam	STP/SOIL
3	Soil Texture	-	-	STP/SOIL
	Sand	% by mass	44	STP/SOIL
	Silt	% by mass	39	STP/SOIL
	Clay	% by mass	17	STP/SOIL
4	pH	-	8.2	IS:2720(Part-26)
5	Electrical Conductivity	dS/m	0.20	IS:2720(Part-21)
6	Moisture	%	6.4	STP/SOIL
7	Bulk Density	gm/cc	1.5	STP/SOIL
8	Nitrogen	(kg/ha.)	125	STP/SOIL
9	Phosphorous	(kg/ha.)	43	STP/SOIL
10	Potassium	(kg/ha.)	205	STP/SOIL
11	Organic Matter	%	0.35	STP/SOIL

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.

NOIDA TESTING LABORATORY NTL

CHECKED BY **AUTHORIZED SIGNATORY**

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

☎ +91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Water Quality Analysis	W-240221-01	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

SAMPLING & ANALYSIS DATA

Sample Received on	:	24/02/2021
Sample Drawn By	:	Laboratory (NTL)
Sample Quantity	:	1.0 Lt.
Analysis Duration	:	24/02/2021 to 02/03/2021
Sampling Location	:	**Dhani**
Sample Description	:	**Ground Water (GW1)**
Sample Condition on receipt	:	Sealed and packed

S. No.	Parameter	Unit	Result	Acceptable Limits as per IS 10500 :2012	Permissible Limits as per IS 10500 :2012
1	pH	-	7.6	6.5-8.5	NR
2	Colour	Hazen Unit	<5	5	15
3	Odour	-	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU	<1	1	5
5	Conductivity	mS/cm	1411	--	--
6	Total Dissolved solids (TDS)	mg/l	901	500	2000
7	Total Alkalinity	mg/l	375	200	600
8	Total Hardness	mg/l	470	300	600
9	Nitrate	mg/l	4.2	45	NR
10	Chloride (as Cl)	mg/l	210	250	1000
11	Potassium (as K)	mg/l	3.2	$	$
12	Sulphate	mg/l	70	200	400
13	Fluoride (as F)	mg/l	0.1	1	1.5
14	Sodium (as Na)	mg/l	106	$	$
15	Magnesium (as Mg)	mg/l	39.05	30	100
16	Calcium (as Ca)	mg/l	125	75	200
17	Phenolic Compounds	mg/l	<0.001	0.001	0.002
18	Iron as Fe	mg/l	<0.3	1.0	NR

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.
5. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

CHECKED BY

AUTHORIZED SIGNATORY

Laboratory : GT-20, Sector-117, Noida Gautam Budh Nagar - 201301
Branch Office : IP-2, Haridwar, Uttrakhand
Branch Office : Gayatri Nagar. Katgodam, Haldwani, Uttrakhand
E. : noida.laboratory@gmail.com, info@noidalabs.com ***W.:*** www. noidalabs.com

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

☎ +91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Water Quality Analysis	W-240221-02	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

SAMPLING & ANALYSIS DATA

Sample Received on : 24/02/2021
Sample Drawn By : Laboratory (NTL)
Sample Quantity : 1.0 Lt.
Analysis Duration : 24/02/2021 to 02/03/2021
Sampling Location : **Bhagoli**
Sample Description : **Ground Water (GW2)**
Sample Condition on receipt : Sealed and packed

S. No.	Parameter	Unit	Result	Acceptable Limits as per IS 10500 :2012	Permissible Limits as per IS 10500 :2012
1	pH	-	7.7	6.5-8.5	NR
2	Colour	Hazen Unit	<5	5	15
3	Odour	-	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU	<1	1	5
5	Conductivity	mS/cm	1385	--	--
6	Total Dissolved solids (TDS)	mg/l	793	500	2000
7	Total Alkalinity	mg/l	289	200	600
8	Total Hardness	mg/l	368	300	600
9	Nitrate	mg/l	2.5	45	NR
10	Chloride (as Cl)	mg/l	195	250	1000
11	Potassium (as K)	mg/l	3.6	$	$
12	Sulphate	mg/l	65	200	400
13	Fluoride (as F)	mg/l	0.1	1	1.5
14	Sodium (as Na)	mg/l	103	$	$
15	Magnesium (as Mg)	mg/l	40.08	30	100
16	Calcium (as Ca)	mg/l	136	75	200
17	Phenolic Compounds	mg/l	<0.001	0.001	0.002
18	Iron as Fe	mg/l	<0.3	1.0	NR

Notes:
1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.
5. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer

CHECKED BY

NOIDA TESTING LABORATORY (P) LTD. NTL

AUTHORIZED SIGNATORY

Laboratory : GT-20, Sector-117, Noida Gautam Budh Nagar - 201301
Branch Office : IP-2, Haridwar, Uttrakhand
Branch Office : Gayatri Nagar. Katgodam, Haldwani, Uttrakhand
E. : noida.laboratory@gmail.com, info@noidalabs.com ***W.:*** www. noidalabs.com

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Water Quality Analysis	W-240221-03	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

SAMPLING & ANALYSIS DATA

Sample Received on : 24/02/2021
Sample Drawn By : Laboratory (NTL)
Sample Quantity : 1.0 Lt.
Analysis Duration : 24/02/2021 to 02/03/2021
Sampling Location : **Near Road Junction**
Sample Description : **Ground Water (GW3)**
Sample Condition on receipt : Sealed and packed

S. No.	Parameter	Unit	Result	Acceptable Limits as per IS 10500 :2012	Permissible Limits as per IS 10500 :2012
1	pH	-	7.6	6.5-8.5	NR
2	Colour	Hazen Unit	<5	5	15
3	Odour	-	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU	<1	1	5
5	Conductivity	mS/cm	1285	--	--
6	Total Dissolved solids (TDS)	mg/l	758	500	2000
7	Total Alkalinity	mg/l	215	200	600
8	Total Hardness	mg/l	303	300	600
9	Nitrate	mg/l	3.2	45	NR
10	Chloride (as Cl)	mg/l	159	250	1000
11	Potassium (as K)	mg/l	4.0	$	$
12	Sulphate	mg/l	49	200	400
13	Fluoride (as F)	mg/l	0.1	1	1.5
14	Sodium (as Na)	mg/l	95	$	$
15	Magnesium (as Mg)	mg/l	38.6	30	100
16	Calcium (as Ca)	mg/l	121	75	200
17	Phenolic Compounds	mg/l	<0.001	0.001	0.002
18	Iron as Fe	mg/l	<0.3	1.0	NR

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.
5. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer

NOIDA TESTING LABORATORIES NTL

CHECKED BY

AUTHORIZED SIGNATORY

Laboratory : GT-20, Sector-117, Noida Gautam Budh Nagar - 201301
Branch Office : IP-2, Haridwar, Uttrakhand
Branch Office : Gayatri Nagar. Katgodam, Haldwani, Uttrakhand
E. : noida.laboratory@gmail.com, info@noidalabs.com ***W.:*** www. noidalabs.com

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Water Quality Analysis	W-240221-04	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

SAMPLING & ANALYSIS DATA

Sample Received on : 24/02/2021
Sample Drawn By : Laboratory (NTL)
Sample Quantity : 1.0 Lt.
Analysis Duration : 24/02/2021 to 02/03/2021
Sampling Location : **Papra**
Sample Description : **Ground Water (GW4)**
Sample Condition on receipt : Sealed and packed

S. No.	Parameter	Unit	Result	Acceptable Limits as per IS 10500 :2012	Permissible Limits as per IS 10500 :2012
1	pH	-	7.8	6.5-8.5	NR
2	Colour	Hazen Unit	<5	5	15
3	Odour	-	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU	<1	1	5
5	Conductivity	mS/cm	1413	--	--
6	Total Dissolved solids (TDS)	mg/l	910	500	2000
7	Total Alkalinity	mg/l	382	200	600
8	Total Hardness	mg/l	472	300	600
9	Nitrate	mg/l	5.8	45	NR
10	Chloride (as Cl)	mg/l	214	250	1000
11	Potassium (as K)	mg/l	3.5	$	$
12	Sulphate	mg/l	75	200	400
13	Fluoride (as F)	mg/l	0.2	1	1.5
14	Sodium (as Na)	mg/l	108	$	$
15	Magnesium (as Mg)	mg/l	31.5	30	100
16	Calcium (as Ca)	mg/l	128	75	200
17	Phenolic Compounds	mg/l	<0.001	0.001	0.002
18	Iron as Fe	mg/l	<0.3	1.0	NR

Notes:
1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.
5. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

NTL

CHECKED BY

AUTHORIZED SIGNATORY

Laboratory : GT-20, Sector-117, Noida Gautam Budh Nagar - 201301
Branch Office : IP-2, Haridwar, Uttrakhand
Branch Office : Gayatri Nagar. Katgodam, Haldwani, Uttrakhand
E. : noida.laboratory@gmail.com, info@noidalabs.com ***W.:*** www. noidalabs.com

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

☎ +91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Water Quality Analysis	W-240221-05	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

SAMPLING & ANALYSIS DATA

Sample Received on : 24/02/2021
Sample Drawn By : Laboratory (NTL)
Sample Quantity : 1.0 Lt.
Analysis Duration : 24/02/2021 to 02/03/2021
Sampling Location : **Sarai**
Sample Description : **Ground Water (GW5)**
Sample Condition on receipt : Sealed and packed

S. No.	Parameter	Unit	Result	Acceptable Limits as per IS 10500 :2012	Permissible Limits as per IS 10500 :2012
1	pH	-	7.8	6.5-8.5	NR
2	Colour	Hazen Unit	<5	5	15
3	Odour	-	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU	<1	1	5
5	Conductivity	mS/cm	1389	--	--
6	Total Dissolved solids (TDS)	mg/l	884	500	2000
7	Total Alkalinity	mg/l	341	200	600
8	Total Hardness	mg/l	425	300	600
9	Nitrate	mg/l	3.4	45	NR
10	Chloride (as Cl)	mg/l	190	250	1000
11	Potassium (as K)	mg/l	4.1	$	$
12	Sulphate	mg/l	68	200	400
13	Fluoride (as F)	mg/l	0.1	1	1.5
14	Sodium (as Na)	mg/l	98	$	$
15	Magnesium (as Mg)	mg/l	40.1	30	100
16	Calcium (as Ca)	mg/l	120	75	200
17	Phenolic Compounds	mg/l	<0.001	0.001	0.002
18	Iron as Fe	mg/l	<0.3	1.0	NR

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.
5. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

CHECKED BY

AUTHORIZED SIGNATORY

Laboratory : GT-20, Sector-117, Noida Gautam Budh Nagar - 201301
Branch Office : IP-2, Haridwar, Uttrakhand
Branch Office : Gayatri Nagar. Katgodam, Haldwani, Uttrakhand
E. : noida.laboratory@gmail.com, info@noidalabs.com ***W.:*** www. noidalabs.com

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Water Quality Analysis	W-240221-06	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

SAMPLING & ANALYSIS DATA

Sample Received on : 24/02/2021
Sample Drawn By : Laboratory (NTL)
Sample Quantity : 1.0 Lt.
Analysis Duration : 24/02/2021 to 02/03/2021
Sampling Location : **Pachlangi**
Sample Description : **Ground Water (GW6)**
Sample Condition on receipt : Sealed and packed

S. No.	Parameter	Unit	Result	Acceptable Limits as per IS 10500 :2012	Permissible Limits as per IS 10500 :2012
1	pH	-	7.7	6.5-8.5	NR
2	Colour	Hazen Unit	<5	5	15
3	Odour	-	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU	<1	1	5
5	Conductivity	mS/cm	1419	--	--
6	Total Dissolved solids (TDS)	mg/l	893	500	2000
7	Total Alkalinity	mg/l	389	200	600
8	Total Hardness	mg/l	482	300	600
9	Nitrate	mg/l	4.4	45	NR
10	Chloride (as Cl)	mg/l	215	250	1000
11	Potassium (as K)	mg/l	3.8	$	$
12	Sulphate	mg/l	70	200	400
13	Fluoride (as F)	mg/l	0.1	1	1.5
14	Sodium (as Na)	mg/l	105	$	$
15	Magnesium (as Mg)	mg/l	36.8	30	100
16	Calcium (as Ca)	mg/l	127	75	200
17	Phenolic Compounds	mg/l	<0.001	0.001	0.002
18	Iron as Fe	mg/l	<0.3	1.0	NR

Notes:
1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.
5. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer

CHECKED BY

NOIDA TESTING LABORATORIES NTL

AUTHORIZED SIGNATORY

Laboratory : GT-20, Sector-117, Noida Gautam Budh Nagar - 201301
Branch Office : IP-2, Haridwar, Uttrakhand
Branch Office : Gayatri Nagar. Katgodam, Haldwani, Uttrakhand
E. : noida.laboratory@gmail.com, info@noidalabs.com **W.:** www. noidalabs.com

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Soil	SS-240221-10	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

Sampling & Analysis Data

Sample Received On : 24/02/2021
Sample Drawn By : Laboratory (NTL)
Sample Description : Soil Sample Collected from **Mine Site (SQ1)**
Analysis Duration : 24/02/2021 to 02/03/2021

Sl. No.	Parameters	Unit	Results	Test Method
1	Soil Colour	-	Yellowish Brown	STP/SOIL
2	Soil Type	-	Sandy Loam	STP/SOIL
3	Soil Texture	-	-	STP/SOIL
	Sand	% by mass	44	STP/SOIL
	Silt	% by mass	38	STP/SOIL
	Clay	% by mass	18	STP/SOIL
4	pH	-	8.2	IS:2720(Part-26)
5	Electrical Conductivity	dS/m	0.408	IS:2720(Part-21)
6	Moisture	%	3.2	STP/SOIL
7	Bulk Density	gm/cc	1.5	STP/SOIL
8	Nitrogen	(kg/ha.)	132	STP/SOIL
9	Phosphorous	(kg/ha.)	56	STP/SOIL
10	Potassium	(kg/ha.)	245	STP/SOIL
11	Organic Matter	%	0.21	STP/SOIL
12	Iron	Mg/kg	4.8	STP/SOIL

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.

CHECKED BY

AUTHORIZED SIGNATORY

Laboratory : GT-20, Sector-117, Noida Gautam Budh Nagar - 201301
Branch Office : IP-2, Haridwar, Uttrakhand
Branch Office : Gayatri Nagar. Katgodam, Haldwani, Uttrakhand
E. : *noida.laboratory@gmail.com, info@noidalabs.com* ***W.:*** *www. noidalabs.com*

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

☎ +91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Soil	SS-240221-11	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

Sampling & Analysis Data

Sample Received On : 24/02/2021
Sample Drawn By : Laboratory (NTL)
Sample Description : Soil Sample Collected from **Dhani (SQ2)**
Analysis Duration : 24/02/2021 to 02/03/2021

Sl. No.	Parameters	Unit	Results	Test Method
1	Soil Colour	-	Yellowish Brown	STP/SOIL
2	Soil Type	-	Sandy Loam	STP/SOIL
3	Soil Texture	-	-	STP/SOIL
	Sand	% by mass	42	STP/SOIL
	Silt	% by mass	39	STP/SOIL
	Clay	% by mass	19	STP/SOIL
4	pH	-	8.1	IS:2720(Part-26)
5	Electrical Conductivity	dS/m	0.301	IS:2720(Part-21)
6	Moisture	%	3.6	STP/SOIL
7	Bulk Density	gm/cc	1.5	STP/SOIL
8	Nitrogen	(kg/ha.)	141	STP/SOIL
9	Phosphorous	(kg/ha.)	35	STP/SOIL
10	Potassium	(kg/ha.)	208	STP/SOIL
11	Organic Matter	%	0.31	STP/SOIL

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.

CHECKED BY

NOIDA TESTING LABORATORIES NTL

AUTHORIZED SIGNATORY

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Soil	SS-240221-12	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

Sampling & Analysis Data

Sample Received On : 24/02/2021
Sample Drawn By : Laboratory (NTL)
Sample Description : Soil Sample Collected from **Near Road Side (SQ3)**
Analysis Duration : 24/02/2021 to 02/03/2021

Sl. No.	Parameters	Unit	Results	Test Method
1	Soil Colour	-	Yellowish Brown	STP/SOIL
2	Soil Type	-	Sandy Loam	STP/SOIL
3	Soil Texture	-	-	STP/SOIL
	Sand	% by mass	52	STP/SOIL
	Silt	% by mass	40	STP/SOIL
	Clay	% by mass	8	STP/SOIL
4	pH	-	8.2	IS:2720(Part-26)
5	Electrical Conductivity	dS/m	0.235	IS:2720(Part-21)
6	Moisture	%	3.1	STP/SOIL
7	Bulk Density	gm/cc	1.4	STP/SOIL
8	Nitrogen	(kg/ha.)	105	STP/SOIL
9	Phosphorous	(kg/ha.)	28	STP/SOIL
10	Potassium	(kg/ha.)	121	STP/SOIL
11	Organic Matter	%	0.16	STP/SOIL

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.

NOIDA TESTING LABORATORIES NTL

CHECKED BY **AUTHORIZED SIGNATORY**

Laboratory : GT-20, Sector-117, Noida Gautam Budh Nagar - 201301
Branch Office : IP-2, Haridwar, Uttrakhand
Branch Office : Gayatri Nagar. Katgodam, Haldwani, Uttrakhand
E. : *noida.laboratory@gmail.com, info@noidalabs.com* ***W.:*** *www. noidalabs.com*

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Soil	SS-240221-13	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

Sampling & Analysis Data

Sample Received On : 24/02/2021
Sample Drawn By : Laboratory (NTL)
Sample Description : Soil Sample Collected from **Bhagoli (SQ4)**
Analysis Duration : 24/02/2021 to 02/03/2021

Sl. No.	Parameters	Unit	Results	Test Method
1	Soil Colour	-	Yellowish Brown	STP/SOIL
2	Soil Type	-	Sandy Loam	STP/SOIL
3	Soil Texture	-	-	STP/SOIL
	Sand	% by mass	48	STP/SOIL
	Silt	% by mass	36	STP/SOIL
	Clay	% by mass	16	STP/SOIL
4	pH	-	7.9	IS:2720(Part-26)
5	Electrical Conductivity	dS/m	0.370	IS:2720(Part-21)
6	Moisture	%	4.1	STP/SOIL
7	Bulk Density	gm/cc	1.6	STP/SOIL
8	Nitrogen	(kg/ha.)	129	STP/SOIL
9	Phosphorous	(kg/ha.)	73	STP/SOIL
10	Potassium	(kg/ha.)	380	STP/SOIL
11	Organic Matter	%	0.27	STP/SOIL

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.

CHECKED BY

NTL

AUTHORIZED SIGNATORY

Laboratory : GT-20, Sector-117, Noida Gautam Budh Nagar - 201301
Branch Office : IP-2, Haridwar, Uttrakhand
Branch Office : Gayatri Nagar. Katgodam, Haldwani, Uttrakhand
E. : *noida.laboratory@gmail.com, info@noidalabs.com* ***W.:*** *www. noidalabs.com*

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

☎ +91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Soil	SS-240221-14	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

Sampling & Analysis Data

Sample Received On : 24/02/2021
Sample Drawn By : Laboratory (NTL)
Sample Description : Soil Sample Collected from **Papra (SQ5)** (Agriculture Land)
Analysis Duration : 24/02/2021 to 02/03/2021

Sl. No.	Parameters	Unit	Results	Test Method
1	Soil Colour	-	Yellowish Brown	STP/SOIL
2	Soil Type	-	Sandy Loam	STP/SOIL
3	Soil Texture	-	-	STP/SOIL
	Sand	% by mass	42	STP/SOIL
	Silt	% by mass	43	STP/SOIL
	Clay	% by mass	15	STP/SOIL
4	pH	-	8.1	IS:2720(Part-26)
5	Electrical Conductivity	dS/m	0.240	IS:2720(Part-21)
6	Moisture	%	7.2	STP/SOIL
7	Bulk Density	gm/cc	1.5	STP/SOIL
8	Nitrogen	(kg/ha.)	135	STP/SOIL
9	Phosphorous	(kg/ha.)	51	STP/SOIL
10	Potassium	(kg/ha.)	129	STP/SOIL
11	Organic Matter	%	0.41	STP/SOIL

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.

CHECKED BY

AUTHORIZED SIGNATORY

Laboratory : GT-20, Sector-117, Noida Gautam Budh Nagar - 201301
Branch Office : IP-2, Haridwar, Uttrakhand
Branch Office : Gayatri Nagar. Katgodam, Haldwani, Uttrakhand
E. : noida.laboratory@gmail.com, info@noidalabs.com ***W.:*** www. noidalabs.com

NOIDA TESTING LABORATORIES

(A Government Approved Testing Laboratory)

(An ISO : 9001 : 2015, 14001 : 2015 & ISO 45001 : 2018 & NABL Accredited Laboratory)

MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

Analyzing for an Assured Future

☎ +91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Soil	SS-240221-15	06/03/2021

Issued To: M/s Fulgro Environmental and Engineering Services India Pvt. Ltd.
Project Name: "Iron Ore Mining Project (M.L No. 10/98)"
Location: Near Village- Bhagoli, Tehsil: Udaipurwati, District: Jhunjhunu, Rajasthan

Sampling & Analysis Data

Sample Received On : 24/02/2021
Sample Drawn By : Laboratory (NTL)
Sample Description : Soil Sample Collected from **Sarai (SQ6)**
Analysis Duration : 24/02/2021 to 02/03/2021

Sl. No.	Parameters	Unit	Results	Test Method
1	Soil Colour	-	Light Brown	STP/SOIL
2	Soil Type	-	Sandy Loam	STP/SOIL
3	Soil Texture	-	-	STP/SOIL
	Sand	% by mass	44	STP/SOIL
	Silt	% by mass	39	STP/SOIL
	Clay	% by mass	17	STP/SOIL
4	pH	-	8.2	IS:2720(Part-26)
5	Electrical Conductivity	dS/m	0.20	IS:2720(Part-21)
6	Moisture	%	6.4	STP/SOIL
7	Bulk Density	gm/cc	1.5	STP/SOIL
8	Nitrogen	(kg/ha.)	125	STP/SOIL
9	Phosphorous	(kg/ha.)	43	STP/SOIL
10	Potassium	(kg/ha.)	205	STP/SOIL
11	Organic Matter	%	0.35	STP/SOIL

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.

NOIDA TESTING LABORATORY NTL

CHECKED BY **AUTHORIZED SIGNATORY**

Quality Council of India

National Accreditation Board for Education & Training

CERTIFICATE OF ACCREDITATION

Fulgro Environmental & Engineering Services, Jaipur

27, Ashok Vatika, Khatipura Road, Jhotwara, Jaipur

Accredited as Category - A organization under the QCI-NABET Scheme for Accreditation of EIA Consultant Organizations: Version 3 for preparing EIA-EMP reports in the following Sectors:

Sl. No.	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1	Mining of minerals including open cast/ underground mining	1	1 (a) (i)	A
2	River Valley projects	3	1 (c)	B
3	Thermal power plants	4	1 (d)	A
4	Metallurgical industries (ferrous & non-ferrous)	8	3 (a)	B
5	Cement plants	9	3 (b)	A
6	Pesticides industry and pesticide specific intermediates (excluding formulations)	17	5 (b)	A
7	Petrochemical based processing (processes other than cracking & reformation and not covered under the complexes)	20	5 (e)	A
8	Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemical and chemical intermediates)	21	5 (f)	A
9	Oil & gas transportation pipeline (crude and refinery/ petrochemical products), passing through national parks/ sanctuaries/coral reefs / ecologically sensitive areas including LNG terminal	27	6 (a)	A
10	Isolated storage & handling of hazardous chemicals (As per threshold planning quantity indicated in column 3 of Schedule 2 & 3 of MSIHC Rules 1989 amended 2000)	28	6 (b)	B
11	Highway	34	7 (f)	A
12	Aerial Ropeways	35	7 (g)	B
13	Common Effluent Treatment Plants (CETPs)	36	7 (h)	B
14	Common Municipal Solid Waste Management Facility (CMSWMF)	37	7 (i)	B
15	Building and construction projects	38	8 (a)	B
16	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RA AC minutes dated Dec 12, 2019 posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/20/1189 dated Jan 22, 2020. The accreditation needs to be renewed before the expiry date by Fulgro Environmental & Engineering Services, Jaipur following due process of assessment.

Sr. Director, NABET	Certificate No.	Valid till
Dated: January 22, 2020	NABET/ EIA/1922/ RA 0148	Feb 09, 2022

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.