

This Mining Plan has been approved  
vide letter No. 573/M.2/Miner Dt. 20-10-2012  
Under M.C.D.R. 1957/M.C.R. 1960/  
GCDR 1997/M.C. & D.A. 2003

अनुमोदित  
**APPROVED** - Got Manglod Gypsum Mine



**RAJASTHAN STATE MINES & MINERALS LTD.**

(A Government of Rajasthan Enterprise)

**SBU & PC - GYPSUM, NAGAUR  
RAJASTHAN**



## **SCHEME OF MINING WITH PROGRESSIVE MINE CLOSURE PLAN**

**FOR**

**GOT MANGLOD GYPSUM MINE**

**Tehsil: Jayal, District: Nagaur**

**Lease Area: 870.74 Hectare**

**[Submitted under Rule 12 & 23B of MCDR (Amended) 2003]**

  
Superintendent Mining Engineer  
अधीक्षक खनन इंजीनियर  
Mines - Nagaur Deptt.  
एन एम डी नगाूर जयल  
Bikaner/Jayal

**PREPARED BY:**

D.S.Acharya

*Senior Manager (Geology)*

ROP No.: ROP/AJM/241/2003/A

Valid up to : 09.04.2013



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मंजूर  
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Scheme of Mining-Got Manglod Gypsum Mines

Date 09.07.2012

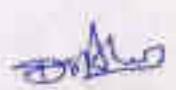
Certificate

This is to certify that provisions of Mines Act, Rules, and orders made there under have been observed in the Scheme of Mining for Got Manglod Gypsum Mines and wherever specific permissions is required, the applicant will approach Director General of Mines Safety.

This is to certify that provisions of Mineral Conservation and Development Rules (Amended), 2003 have been observed in the scheme of mining proposed for Got Manglod Gypsum Mines of M/s Rajasthan State Mines and Minerals Limited having an area of 870.74 hectares near village Got Manglod, Tehsil Jayal, District Nagaur (Rajasthan) wherever specific permission is required, the applicant will approach the concerned authorities of the Indian Bureau of Miners.

This is to certify that the information furnished in the scheme of mining for Got Manglod Gypsum Mines Near Village Got Manglod, Tehsil Jayal & District of Nagaur are true and correct to the best of my knowledge.

  
**Superintending Mining Engineer**  
अधीनस्थ खान अभियंता  
Mines & Geology Deptt.  
खान एवं भू-विज्ञान विभाग  
Bikaner/बीकानेर

  
D.S. Acharya  
Senior Manager (Geology)  
ROP No.: ROP/AJM/241/2003/A  
Valid up to : 09.04.2013



सिद्धोत्पन्न  
APPROVE

Scheme of Mining-Got Manglod Gypsum Mine

Date: 09.07.2013



## CERTIFICATE

I, R.K. Zoshi, Group General Manager (Gypsum), SBU & PC-Gypsum, Rajasthan State Mines & Minerals Limited hereby authorize Sri D.S.Acharya, Senior Manager (Geology) Registration No. RGP/AJM/241/ 2003 /A to prepare the Scheme of Mining with Progressive Mine Closure Plan for Got Manglod Gypsum Mine (870.74 Hectares) Near Village- Got Manglod in Tehsil Jayal, District Nagaur, Rajasthan, as he is Recognized Qualified Person from IBM for the purpose.

For RAJASTHAN STATE MINES & MINERALS LTD.

(R.K. Zoshi)  
Group General Manager (Gypsum)  
SBU & PC-Gypsum



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Scheme of Mining-Got Manglod Gypsum Mine



Date: 09.07.2012

## UNDERTAKING

The Scheme of Mining with Progressive Mine Closure Plan for Got Manglod Gypsum Mine (870.74 Hectares) Near Village-Got Manglod in Tehsil Jayal, District Nagaur has been prepared in full consultation with me and I understand its contents and agree to implement the same in accordance with the law.

For RAJASTHAN STATE MINES & MINERALS LTD.

(R.K. Joshi)  
Group General Manager (Gypsum)  
SBU & PC-Gypsum

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धन्य योजना तैयार करने हेतु  
योग्य व्यक्ति के रूप में  
मान्यता का प्रस्तावपत्र

(खनिज रियायत निगमावली 1960 के नियम 22(सी) के अंतर्गत)

श्री श्री अशोक कुमार ज्ञानचार्ज  
वत्त श्री गणेश प्रसाद ज्ञानचार्ज  
निवासी जमीकानेर

द्वारा अपनी योग्यताओं और अनुभव का सतीषप्रद प्रमाण प्रस्तुत करने के पारमपर्यक  
खनिज रियायत निगमावली, 1960 के नियम 22(सी) के अंतर्गत उन्हें एतद्द्वारा धन्य  
सौजन्य तैयार करने हेतु योग्य व्यक्ति के रूप में मान्यता प्रदान की जाती है ।

उनका फर्जीपत्र क्रमांक

RSF/AM/241/2003/A

है ।

यह मान्यता दिनांक 9 अप्रैल, 2013 को समाप्त

होने वाली है। इस वर्षा की अवधि के लिए वैध है ।

स्थान : अजमेर

दिनांक : 10.04.13



अजमेर  
10/4/13  
क्षेत्रीय खान नियंत्रक  
भारतीय खान ब्यूरो  
अजमेर खान नियंत्रक  
Regional Controller of Mines  
भारतीय खान ब्यूरो, अजमेर  
Indian Bureau of Mines.



Part-I



# REVIEW

OF

# PREVIOUS SCHEME OF MINING



## REVIEW OF MINING PLAN & PREVIOUS SCHEME OF MINING WITH MINE PROGRESSIVE CLOSURE PLAN.

### Name of the Mine

Got Manglod Gypsum Mine  
 Village: GOT MANGLOD.  
 Tehsil : Jayal  
 District: Nagaur (Rajasthan)  
 Mines Area: -870.74 Hectare

### Particulars of Mining Plan & Previous Scheme of Mining With Mine Progressive Closure Plan.

The Mining Plan for Got Manglod Gypsum Mine (Lease area: 870.74 (Hect.) of e-RSMDC known as M/s. Rajasthan State Mines & Minerals Limited (RSMML) near village – Got Manglod, Tehsil Jayal, District – Nagaur was approved by the Indian Bureau of Mines, Ajmer vide letter No. 326/95/ZN-16/90-MCCM(N), dated 25.1.1993, (Annexure-A) for a period of five years from the financial year 1992-93. The previous scheme of mining with progressive mine closure plan for Got Manglod Gypsum Mines was approved by the Superintending Mining Engineer, Department of Mines & Geology, Bikaner vide letter no. SME/BKN/CC/Major/F/2007-08/1670, dated 12.6.2007 (Annexure-B).

The mining lease of Got Manglod Gypsum Mines for an area of 1338.15 Hectare was granted by The Mines Department, Government of Rajasthan vide order no. 5(22)/Khan/Group 3/69, dated 10.04.1993 in favour of the then RIMDC, Jaipur for a period of 20 years w.e.f. 30.06.1970 (Annexure-C).

The Mines Department, Government of Rajasthan vide order no. P.7/41/Khan/Group-2/84, dated 18.3.1985 transferred the mines in favour of e-RSMDC (Annexure-D).

The first renewal of mining lease was granted in favour of e-RSMDC vide order no. P.3/49/khan/Group-1/90, dated 5.12.1992 (Annexure-E).

The mining lease area reduced to 870.74 hectare vide order no. SME/Bika/Pra/Nagaur/ML-1/901256, dated 8.8.1999 (Annexure-F).

The second renewal of Got Manglod Gypsum Mines was granted in favour of Rajasthan State Mines & Minerals Limited vide GOR order no. P.15(16)Khan/Group-1/2000, dated 13.07.2009 (Annexure-G) for a period of 20 years from 30.06.2000.



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Ministry of Mining-Got Manglod Gypsum Mine



1.3 **Date of Commencement of Mining Operations .**

1.4 The mining operation at Got Manglod Gypsum Mines was resumed on 01.10.2008 after the environment clearance.

The environment clearance with annual capacity of gypsum production to the tune of 3.50 lac ton per year was granted by the Ministry of Environment & Forest Government of India, new Delhi vide order no.J-11015/706/2007-1A.II(M),dated 28.05.2008 (Annexure-H).

The current consent to operate the mines from Rajasthan State Pollution Control Board is valid up to 31.05.2014(Annexure-I)

1.5 **Review of approved mining plan & Scheme of Mining.**

(A) **Deficiencies:**

The annual production capacity of mines as per Environment Clearance by the Ministry of Environment & Forest, Government of India, New Delhi is 3.50 lakh metric Ton. The financial year wise comparison of proposed production as per mining plan with actual production from the mines is as under.

Table No.1

Production Status

S.No.	Financial Year	As per approved mining plan in lakh metric ton.	Actual Production in lakh metric ton.
1	2009-10	350000	313714.20
2	2010-11	184600	349036.30
3	2011-12 (up to 30.09.2011)	0.00	0.00

The measured mineral resources of gypsum with cut off grade 60% as estimated in the year 1970 by DMG was to the tune of 72.50 lakh ton and the proved mineral reserve of gypsum was 61.63 lakh ton (estimated as 85% of the measured mineral resources of gypsum & 15% as clay/earth pockets). Out of proved mineral reserve about 29 lakh ton gypsum was excavated up to 1991-92. The first mining plan for mines under Mineral Conservation & Development Rules 1988 was prepared in the financial year 1992-93 and balance minable reserve at the time of mining plan was 32.63 lakh ton. Thereafter the production of gypsum from mines is as under.

S.No.	Financial Year	Production in MT
	Up to 31.03.1981	1775716.56
	1981-82	24047.70
	1982-83	54487.60
	1983-84	78315.00



S.No.	Financial Year	Production in MT
	1984-85	89402.00
	1985-86	103793.14
	1986-87	102740.00
	1987-88	108287.00
	1988-89	70426.00
	1989-90	100000.00
	1990-91	102720.00
	1991-92	124875.00
	1992-93	164890.00
	1993-94	89230.00
	1994-95	101505.00
	1995-96	174350.00
	1996-97	73557.44
	1997-98	79322.00
	1998-99	103813.30
	1999-00	170465.40
	2000-01	153530.76
	2001-02	111238.72
	2002-03	148264.80
	2003-04	232432.78
	2004-05	31800.40
	2005-06	0.00
	2006-07	0.00
	2007-08	0.00
	2008-09	348956.70
	2009-10	313714.70
	2010-11	349036.30
		5381218.30

The measured mineral resources of gypsum as per previous scheme of mining with cut of grade 60%  $\text{Ca SO}_4 \cdot 2\text{H}_2\text{O}$  as on 01.10.2008 was 5.94 lakh ton .

The history of mines and present market trend wherein the gypsum containing about 45%  $\text{Ca SO}_4 \cdot 2\text{H}_2\text{O}$  is also acceptable to the customer due to locational advantage, the available low grade insitu resources of gypsum has been measured through samples collected from drill hole in mining lease area. For this purpose total 36 holes were put up. The location of borehole details has been marked on Surface Geological Plan. The borehole logs are enclosed as annexure -J and summarized details of each bore hole with respect to average gypsum thickness, average gypsum grade and average overburden thickness are enclosed as annexure -K. Based on these data the estimated proved



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Scheme of Mining-Got Manglod Gypsum Mine



mineral reserve of gypsum at Got Manglod Gypsum Mines with cut of average insitu grade of gypsum of about 50 %  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$  is as under

Calculation of measured mineral resources, prefeasibility resources & proved mineral reserve of gypsum at Got manglod Gypsum Mines as on 30.9.2011

1 Measured Mineral Resources.			
(A)	Gypsum bearing area with cut off grade of gypsum +40% $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ .	3169279.00	Sq. Meter
(B)	Less:		
(a)	Abadi land Kediaki Dhani	-12714.00	Sq. Meter
(b)	Abadi land Got Manglod including temple area.	-132888.00	Sq. Meter
(c)	Road & Revenue Track	-97080.00	Sq. Meter
(d)	Complete excavated area	-327275.00	Sq. Meter
(C)	Remaining Gypsum Bearing Area.	2599322.00	Sq. Meter
(D)	Average Thickness of Gypsum Bed	1.49	Meter
(E)	Average Grade of Gypsum	51.21	% $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$
(F)	Volume of gypsum.	3872990.00	Cubic Meter
(G)	Measured Mineral Resources of Gypsum (111).	6777733.00	Metric Ton
(H)	Proved Mineral Reserve of Gypsum (70% of Resources) of category (111).	4744413.00	Metric Ton
2 Measured Mineral Resources in old mined out area.			
(A)	Area of Gypsum patches in old mined out area.	76037.00	Sq. Meter
(B)	Average Thickness of Gypsum Bed	1.40	Meter
(C)	Average Grade of Gypsum	+50	% $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$
(D)	Volume of gypsum	106452.00	Cubic Meter
(E)	Measured Mineral Resources of Gypsum (111)	186291.00	Metric Ton
(F)	Proved Mineral Reserve of gypsum (70% of Resources) of category (111).	130404.00	Metric Ton
	Total(1+2)		
(G)	Total Measured Mineral Resources of Gypsum (331).	6964024.00	
(H)	Total Proved Reserve Mineral of Gypsum (70% of Resources) of category (111).	4874817.00	Metric Ton

3	Prefeasibility Mineral Resources(121)		
(A)	Gypsum bearing area with average grade of gypsum 20% to 40%CaSo <sub>4</sub> 2H <sub>2</sub> O (As on date non salable Gypsum)	392500	Sq.Meter
(B)	Average Thickness of Gypsum Bed	1.17	Meter
(C)	Average Grade of Gypsum	27.91	%CaSO <sub>4</sub> 2H <sub>2</sub> O
(D)	Volume of gypsum	459225	Cubic Meter
(E)	Prefeasibility (Measured) Mineral Resources of Gypsum (121)	803644	Metric Ton
4	Total Measured Mineral Resources of Gypsum (121) Resources ((2(G))+3(E))	7767668.00	
5	Estimated life of mines (first two year @3.50 Lakh ton per year and thereafter @7.50 Lakh per ton per year)	12 Years	Metric Ton
Note:	1.Considered Volume to weight factor(1 Cubic Meter per =1.75 tone)		
	2.Considered 10% prospecting error and 20% possibility of sand/argillaceous pockets or layers within gypsum beds.		
	3.Expected dilution in grade of gypsum during mining operation -5%.		

The proved mineral reserve of gypsum is assessed on the basis of geological data collected at a interval less than 400 meters. The part of concerned resources as considered is feasible & economical viable and therefore the proved mineral reserve of gypsum are considered as category 111 of UNFC classification.

Further exploration/prospecting work may be proposed in future subject to requirement.If demand received for gypsum contain less than 40% CaSo<sub>4</sub> 2H<sub>2</sub>O then the current position of mineral reserve will be changed.

(B) Review of compliance position of Salient features of previous scheme of mining:

(C) **Mine development:**

The overburden is being scrapped and filled back directly into the voids created by the mining operations as per the approved scheme of mining with progressive closure plan. The necessary development works was completed as per the approved scheme of mining with progressive mine closure plan. Presently the required cut off grade of gypsum for mines as per present market demand is fall down to about 45 % Ca SO<sub>4</sub> 2H<sub>2</sub>O. In such situation the low grade gypsum from old mining pits are also being proposed to excavate.

and considered as measure mineral resources & proved mineral reserve for coming years mining operations. The demand of available proved mineral reserve is also increased as compare to annual capacity of mines as per environment clearance from the Ministry of Environment & Forest, Government of India New Delhi and therefore the proposed annual gypsum production capacity is proposed to increase from 3.50 lakh ton to 7 lakh ton in the third year of the scheme of mining with progressive mine closure plan i.e. w.e.f. financial year 2013-14 subject to environment clearance granted by the Ministry of Environment and Forest, Government of India New Delhi for expansion of production capacity at mines. The process for fresh environment clearance is being started parallel to the approval of said scheme of mining with progressive mine closure plan.

(ii) **Production schedule:**

The annual production schedule varies mainly with variation in demand of gypsum from Got Manglod Gypsum Mines as compare to the production target as mentioned in the scheme of mining with progressive mine closure plan. The annual production from mines is within the annual capacity of mines as per environment clearance i.e. 3.50 lakh ton.

(iii) **Afforestation and plantation program:**

Plantation activity was carried out as per approved scheme of mining with progressive mine closure plan but the survival rate is about 50% due to desert climate.

(iv) **Reclamation & rehabilitation:**

No such adverse effect on the environment including the local population was envisaged due to mining of gypsum yet the overburden comprising of sand / argillaceous material which has been backfilled and leveled in the excavated area simultaneously to the excavation of gypsum. Now the same mined out area is being proposed to undertake for excavation of low grade gypsum available at depth.

(v) **Pollution control measures:**

(a) **Ground vibrations and hazards due to drilling and blasting:**

Gypsum mine doesn't require drilling and blasting and hence there is no question of ground vibration and hazards in and around mining areas.

(b) **Dust control:**

The mine is worked by opencast single bench method of mining. As gypsum contains inherent moisture and no significant dust is generated during its



excavation. The haul road from mine face to tar road is sprinkled with water at regular intervals to avoid dust generation on road. However the dust pollution due to windstorm in desert during summer season cannot be prevented.

**(c) Noise pollution:**

The absence of drilling, blasting for excavation does not warrant any hazard from noise pollution. However due to operation of excavator, tractor and trucks, noise level increases but it is well within the permissible limits.

**(d) Water pollution:**

Looking to the adverse climate in this area, there is no question of water pollution & any control measures is required. As far as mining of gypsum is concerned, it has no adverse impact at all on the natural water regime of the area.

**(e) Environment Monitoring:**

The environment survey and monitoring of quality of air, water and noise was carried out for ascertaining the ambient air, water, soil quality and noise level and it found within the permissible limit.

**(C) Specific conditions and stipulations imposed by Indian Bureau of Mines while approving the mining plan:**

Complied with.

**(D) Compliance of inspections under MCDR 1988:**

Complied with.

**(E) Any other information:**

Nil

**Superintending Mining Engineer**

सुपरिन्टेंडिंग मीनिंग इंजीनियर  
Mines & Geology Deptt.  
खान एवं भू-व्याप्त विभाग  
Bikaner/बीकानेर

D.S. Acharya

Senior Manager (Geology)

RQP No.: RQP/AJM/241/2003/A

Valid up to : 09.04.2013



Scheme of Mining-Gor Manglod Gypsum Mine  
**APPROVED**

Part-II



# PROPOSED SCHEME OF MINING



**2.0 PROPOSALS UNDER THE SCHEME OF MINING:**

**2.1 Name & Address of the applicant:**

**REGISTERED OFFICE:** Rajasthan State Mines & Minerals Ltd.,  
(A Government of Rajasthan Enterprise)  
C-88-89, Janpath, Lalkothi Scheme,  
JAIPUR – 302 015 (Rajasthan)  
Telegraphic Address: RAJMINES  
Telephone Nos. : 0141-2743734  
Fax No. : 0141-2743735

**GYPSUM UNIT:**

**Group General Manager (Gypsum)**  
Rajasthan State Mines & Minerals Ltd,  
Sadul Club Building,  
Bikaner – 334 001(Rajasthan)  
Telephone Nos.: 0151-2523295(O)  
Mobile 94141-63097(M)  
Fax No.: 0151-2523519.

**2.2 Name, address & registration No. of the Recognized person(s):**

Name, address and registration number of the recognized person together with validity date/person employed under Rule – 42(1)(b) who prepared the Scheme of mining and progressive mine closure plan are as under:

D.S.Acharya, Senior Manager (Geology)  
RQP No.: RQP/AJM/241/2003/A, Valid up to : 09.04.2013  
Sadul Club Building, Bikaner – 334 001 (Rajasthan)  
Phone No. 0151-2522270 (O), 2547182 (R), 94141-63345 (M)  
Fax No.: 0151-2523519.

**2.3 Mineral(s) to be mined:**

Gypsum

**2.4 Area and date of expiry of lease:**

The second renewal of Got Mangled Gypsum Mines was granted in favour of Rajasthan State Mines & Minerals Limited vide GOR order no.P.15(16)Khan/Group-1/2000,dated 13.07.2009(Annexure-G) for a period of 20 years from 30.06.2000.

**2.5 Date of expiry of two years period for which mining plan was approved:**

01.10.2010

## 3.0 RESOURCES &amp; RESERVES:

## 3.1 Category-wise Position as on 30.09.2011.

Table No.3

S.No.	Source	Measured Mineral Resources of Gypsum in Lakh Metric Ton	Proved Mineral Reserve of Gypsum in Lakh Metric Ton	Average grade of Gypsum in terms of $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ %
1	As per approved mining plan (category I11)	72.50	61.63	60%
2	As per proposed scheme of mining as on 30.9.2011 (after adding new additional resources & reserve and subtract actual production (category I11))	69.64	48.75	50%
3	Actual production of gypsum from mines up to 30.09.2010	53.81	53.81	60%
4	Prefeasibility Mineral Resources as on 30.9.2010 (category I21)	8.04	0.00	20% to 40%
	Total identified measured mineral resources/proved mineral reserve position since commencement of mining operation at mines. (2+3+4)	131.49	102.56	

## 3.2 Depletion of Reserves:

53.81 Lac metric ton gypsum has been excavated from the mines till date.

## 3.3 Additional Reserves established:

The new geological resources & minable reserve of gypsum has been estimated on the basis of running face positions, old prospecting pits and drilling data as shown in Annexure-J&K and as marked on surface geological plan. For the calculation of geological resources & minable reserve of

gypsum, first the area has been calculated on Auto CAD Software and it multiplied by the average thickness of gypsum to get volume. The volume further multiplied by volume to weight conversion factor 1.75 ton per cubic meter to get geological resources of gypsum. The minable reserve of gypsum is considered as 70% of the geological resources with estimation that remaining 20% may be earth/argillaceous material and 10% prospecting error possible. As per geological resources the remaining life of mines is more about 12 years. The same process of calculation has been adopted for estimation of gypsum resources and reserve to be utilizes year wise during the next five years.

#### 3.4 Category wise updated reserves as on 30.09.2011:

Measured Mineral Resources of Gypsum (111):- 69.64 Balance Mineable  
 Prefeasibility Mineral Resources of Gypsum (Category 121):- 8.04 Balance Mineable  
 Proved Mineral Reserve of Gypsum (Category 111):- 48.75 Lakh metric ton

#### 4.0 CONCEPTUAL MINING PLAN:

On the basis of total measured mineral resources and proved mineral reserve i.e. about 77.68 lakh metric ton and 48.75 lakh metric ton respectively at mines, the life of mines may be considered as about 15 years with possibility of additional resources in remaining mining lease area. Additional geological data if any may established later on, the same may be incorporated in the next scheme of mining. In case gypsum reserve exhausted on early date due to variation in measured mineral resources of gypsum on negative side, the final mine closure plan may be submitted for surrender of mines.

The measured mineral resources of gypsum may increase or decrease subject to variation in volume to weight conversion factor from place to place, variation in ration of gypsum bed to earth/argillaceous pockets within gypsum bearing area, acceptance of very low grade gypsum by customers, identification of additional reserve if any in future in remaining mining lease area, variation in estimated prospecting error etc.

It is proposed to carry mining operation at Got Manglod Gypsum Mine by open cast workings. The overburden comprising desert sand, argillaceous material and mineralized bed being soft and friable, no drilling and blasting is required for excavation. The thickness of overburden varies from 0.61 meter to 2.74 meter. The thickness of gypsum bed varies from 0.61 meter to 4.27 meter.

The mined out area available after excavation of Gypsum is being backfilled with the overburden for ensuring reclamation of the area. However it is possible that excavated area may convert into pond in which rain water will be accumulated during monsoon season and use as drinking water. Environmental management aspects are dealt in the concerned contents of scheme of mining. This covers the steps taken and proposed for ensuring conservation of mineral and environment.

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## MINING

### 5.1 Salient Description of Present Mining Method:

#### i) Overburden removal

Overburden can be scraped by the use of tractor having an iron scraper blade attachment. The length of blade is about 2.3 mtrs with a height of about 0.60 to 0.75 mtr. It can easily be lowered and raised as per the requirement. During the process of removal of overburden, the blade of tractor is moved in forward direction. The forward motion permits to cut or scrap a thin slice of soil having a thickness up to about 0.50 mtrs. The tractive forces of the blade are sufficient enough to overcome the resistance offered by the overlaying sandy soil. This overburden so scrapped is disposed off into the worked out area. The time taken for removal of overburden depends upon the thickness of overburden and degree of consolidation, the extent of the area, H.P. of tractor used, skill of the operator, location of the worked out area for refilling.

There are many barren patches in the form of earth pockets in the deposit. The earth/clay/silt pockets in the gypsum bearing area are isolated during the mining operations have loosened & almost leveled with the help of tractor/scraper/plough attachment for making the land suitable for cultivation.

The reclamation activity starts when the working face advances to a distance of 50.00 meters & hence reclamation is being carried out simultaneously. In addition to removal of overburden, tractor is used for preparation of mine's roads, ramps and their maintenance.

#### ii) Gypsum Mining by Open Cast Mining Method

After removal of overburden, the gypsum is being extracted and loaded into trucks by hydraulic excavator of  $0.9\text{m}^3$  bucket capacity with engine of 135 H.P. and may load directly into buyers trucks for dispatches or unload at separate place as stock for blending of very low grade gypsum with other gypsum up to maintainable grade of market demand before the dispatches to buyer. In case of stocking of mineral in stock the height of stock piles may be about 3 meters. The machine is having adequate crowding and breakout force to enable it to excavate medium hard rock's without requiring any drilling & blasting. In the area chosen for mining, overburden is removed 10.00 meters in advance for exposing the gypsum bed by combination of tractor-scraper.

### 5.2 Yearly pit wise development plan:

The tentative yearly advancement is marked on the plate Got-5

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## Proposed Year-wise Production Plan:

Table No:4

Proposed Five Year Working						
Year	Average Thickness of Gypsum in meter	Volume of Gypsum in cubic meter	Geological Resources in metric ton	Minable Reserve with Category(111) in metric ton	Average thickness of overburden in meter	Volume of Overburden in cubic meter.
2020	2.52	285340	499345	349542	0.84	95113
2021	2.21	285601	499802	349861	0.99	127939
2022	1.88	571759	1000578	700405	1.17	355829
2023	1.86	571409	999966	699976	1.15	353290
2024	1.14	571386	999926	699948	1.32	661605
2025	1.92	2285495	3999617	2799732	1.09	1476964

## 5.1.1. Any change in the method of mining and deployment of machinery:

The mining operation will be carried out as detailed at point no.5.1 (i) & (ii).

## 5.1.2. HANDLING OF WASTE/SUBGRADE MATERIAL

## 5.1.2.1. Overburden handling:

Prior to mining of Gypsum, the over burden is excavated to expose the Gypsum face. The volumes of OB to be handled for achieving yearly production of Gypsum ROM are tabulated as under.

Table No.5

## Year wise Generation &amp; Backfilling of Wastes in Mined Out Pit

Years	Overburden in cubic meter	Broken Area in Square Meter
I	95113	113230
II	127939	129231
III	355829	304127
IV	353290	307209
V	661605	501216
Total	1476964	1355013

## 5.1.2.2. Sub grade material handling:

As per present market demand, gypsum containing +40%CaSO<sub>4</sub>·2H<sub>2</sub>O has been included in proved mineral reserve to utilize as much as low grade gypsum.

## 7.0. USE OF MINERAL

## 7.1. Changes Proposed in the Use of Minerals (if any) with reasons:

No changes are proposed in the use of mineral. Looking to the present market scenario, the Gypsum produced from our Got Manglod Gypsum Mine may be consumed by various cement plants and other users located in Rajasthan and other states. The Gypsum powder may be produced to full fill demand of agriculture sector for treatment of alkaline soil in the state of Rajasthan, Haryana, Punjab, Uttar Pradesh etc. For this purpose grinding units may be installed in the mining lease area.

**7.2 Changes in specifications Imposed by present Users / New User Industries (If any):**

No changes in specifications are imposed by present users/new user industries.

**7.3 Efforts made for utilization of the sub-grade mineral s:**

The reserve estimated with average grade of 51%  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$  which includes gypsum contains as low as 40%  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$  also. During the mining operation efforts will be made to push low grade gypsum as much as possible from the mineral conservation point by blending of different grade gypsum at suitable place.

**8.0 MINERAL BENEFICATION:**

As the sub grade mineral gypsum is saleable as on date, no beneficiation is required.

**9.0 ENVIRONMENTAL MANAGEMENT PLAN:**

Table No:6

Environmental parameters	Proposals as per approved mine plan	Position at the end of Five years	Proposals for the next Five years
Topsoil storage, preservation and utilisation	Topsoil proposed to be concurrently backfilled in the mined out area.	Topsoil has been backfilled in the mined out area	Topsoil is proposed to be concurrently backfilled in the mined out area.
Land reclamation and rehabilitation	After backfilling topsoil in the mined out area proposed to level the area by using tractor-scraper attachment.	Topsoil has been backfilled in the mined out area and levelled in the mined out area.	After backfilling the topsoil into the mined out area proposed to level the area
Waste dump management	Waste, as interburden soil/ earth pockets, proposed to be backfilled in the mined out area.	All the earth pockets and interburden soil encountered has been backfilled in the mined out area.	Waste, as interburden soil / earth pockets, proposed to be backfilled in the mined out area.
Afforestation programme	It was proposed to take up plantation in the mined out area.	Plantation done as proposed however survival rate remained very poor due to arid climate and severe draughts.	Plantation along the road/revenue track is proposed in the scheme of mining.



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Scheme of Mining-Got Manglod Gypsum Mine



Environmental parameters	Proposals as per approved plan	as per mine impact	Position at the end of Five years	Proposals for the next Five years
Quality of air	No envisaged.	impact	No impact noticed.	Periodical monitoring will be done.
Quality and management of water including surface & ground water	No envisaged.	impact	No impact noticed	Periodical monitoring will be done.
Noise level	Slight increase in the noise level envisaged due to shovel operation & plying of trucks.		Noise level increased, but within permissible limits.	Periodical monitoring has been proposed.
Vibrations	No envisaged.	impact	No impact envisaged	No impact envisaged.
Treatment of mine water and effluent/toxic substances	Not applicable		Not applicable	Not applicable
Re-circulation of treated water	Not applicable		Not applicable	Not applicable

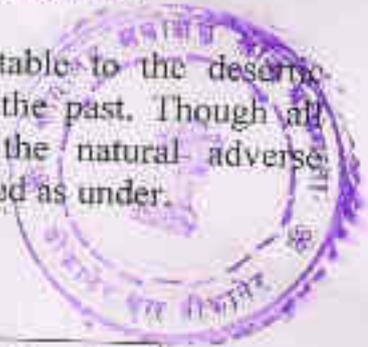
### 10.00 PLANTATION PROGRAMME:

The land falls under the propose mining scheme is government as well as private and in case of private land we will use the land for mining purpose by mutual agreement with land owner for a period of few months depend on the quantity of gypsum in their land. The leveled and backfilled by over burden (top soil) land is returned to land owner immediate after the excavation of gypsum. We will encourage landowners through panchyat for plantation activities by providing plants free of cost along the revenue track/roads.RSMML may under take the plantation work through specialized government or private agency in nearby area of mataji temple and along existing roads. About 5000 plants are proposed to develop in next five years period.



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The species selected for proposed plantation are suitable to the desert climate and the survival rate may remain better than the past. Though all efforts have been made to protect plants against the natural adverse conditions. The year wise plantation work may be tabulated as under.



**Table No.07**  
**Year wise plantation programme**

Species	Year	No. of Plants
Neem, Ber, Parkin Sonia, Khejri, Babool	First	1000
	Second	1000
	Third	1000
	Fourth	1000
	Fifth	1000
Total		5000

**11.0 ANY OTHER INFORMATION:**

No  
Prepared by Recognized Qualified Person

Superintending Mining Engineer  
अधीक्षक खनिज विभाग  
Minas & Geology Deptt.  
जान एवं भू-विज्ञान विभाग  
Bikaner/बीकानेर

  
D.S. Acharya  
MANAGER (Geology)  
ROP No. : ROP/AJM/241/2003/A  
Valid up to : 09.04.2013



अनुमोदित  
APPROVED



### PART-III

# PROGRESSIVE MINE CLOSURE PLAN



## PROGRESSIVE MINE CLOSURE PLAN



### 1.0 INTRODUCTION

In general mining, results a large scale impact on the three major components of the environment i.e. air, land & water. The impact on the physical, chemical & biological quality, in and around the proposed mining site, is generally adverse as compared to the pre-mining quality. This impact can be either minimized to a negligible level or can be turned into favourable changes to the local habitats resulting in a self-sustained ecosystem. Proper planning and strategies can be adopted right from the initiation of any mining project considering not only the short term macro impacts but also anticipating the long term micro impacts.

Gypsum deposits in the Western Rajasthan have been exploited since long back but it is an eco-friendly work rather than the adverse effect on environment of desert. In fact mining of Gypsum has resulted in the socio-economic development of the local people, living in remote areas without any permanent source of income for their livelihood where even basic infrastructure e.g. roads, schools, health centers does not exists. The farmers are taking crops from the mined out lands which were earlier known as waste / barren land due to hardpan of gypsum on surface and almost nil soil cover.

In compliance to the provisions under rule 23 of MCDR (Amendment) 2003, regarding the latest amendments as per Gazette Notification No. GSR 330(E) dated 10.04.2003; the Progressive Mine Closure Plan of GOT MANGLOD Gypsum Mine has been prepared. In this Progressive Mine Closure Plan efforts towards the systematic mining & environment management measures have been summarized with year-wise proposals of activities in the mined out area including reclamation, plantation, environment monitoring and socio-economic development activities.

### 2.0 MINE DESCRIPTION

Mine description has already given in Part -I i.e. Proposed Scheme of Mining.

### 3.0 REVIEW OF IMPLEMENTATION OF SCHEME OF MINING:

Review of implementation of previous mining plan has been discussed in first part i.e. proposed scheme of mining for next five years.

### 4.0 CLOSURE PLAN:

#### 4.1 Mined out land:

Proposed year wise production of Gypsum, overburden was to be handled and respective broken area is shown in the table below:



Table No:08

Year	Gypsum production (MT)	Total O/B handled (M <sup>3</sup> )	Broken Area (M <sup>2</sup> )
I	349542	95113	113230
II	349861	127939	129231
III	700405	355829	304127
IV	699976	353290	307209
V	699948	661605	501216
Total	2799732	1476964	1355013

The year wise reclamation plan for the mined out land is as under:

Table No:9

Year	Broken Area (M <sup>2</sup> )	Area reclaimed (M <sup>2</sup> )	Post mining land use
I	113230	113230	*- Mentioned below.
II	129231	129231	
III	304127	304127	
IV	307209	307209	
V	501216	501216	
Total	1355013	1355013	

\*- Private land will be returned back to the landowner with adequate compensation and with perfect leveling.

#### 4.2 Water quality management:

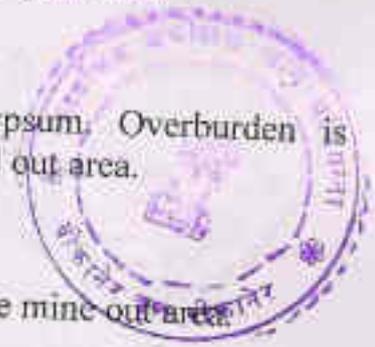
In view of the

- Absence of any natural drainage in the area,
- Scanty rain fall,
- Surface excavation up to a depth of only 4.88 meters.
- The water table at a depth of more than 70 meters.

Mining operation no way degrades the water regime of the area resulting in no change in the ambient water quality. The last Environment monitoring report for the period of May-June-2004 of the area is enclosed with this report.

#### 4.3 Air quality management:

Present mining does not result in any adverse impact on the ambient air quality of the area.



**4.4 Waste management:**

No waste is generated while mining of gypsum. Overburden is simultaneously backfilled & leveled in the mined out area.

**4.5 Topsoil management:**

Topsoil is scrapped and concurrently spread in the mine out area.

**4.6 Tailing dam management:**

Not applicable

**4.7 Disposal of mining machinery:**

One hydraulic shovel, one loader and one Tractor with scrapper are required for excavation of 3.50 lakh ton gypsum with removal of overburden and its handling at stock for the purpose of blending of different grade gypsum. The said equipments/machineries have been hired from outside agencies. The water tanker for water sprinkling is also being hired from outside agency. The equipment /machineries on hiring basis will be doubled from the date of environment clearance for expansion in annual production capacity of mines to the tune of 7.0 lakh ton.

**4.8 Safety & security:**

No unsafe void or pit is resulted by the excavation of gypsum. The maximum depth of the worked out pit is about 5 meters and the edge of the worked out area has been given gentle slope to eliminate sharp difference in the level of the adjacent ground.

**4.9 Disaster management & risk assessment:**

Regular vocational training has been imparted to the workers and pit safety committee is formed at unit level to monitor the safe operation in the gypsum mines.

**4.10 Care & maintenance during temporary discontinuance:**

Not applicable.

**5.0 ECONOMIC REPERCUSSION OF CLOSURE OF MINE AND MANPOWER RETRENCHMENTS:**

Not applicable as most of the machineries will be hired on contract basis and the operational staffs are deployed on deputation. Only statutory manpower is employed which are the permanent employees of the organization.

**6.0 TIME SCHEDULING FOR ABONDONMENT:**

Not applicable

**7.0 ABANDONMENT COST:**

Not applicable

**8.0 FINANCIAL ASSURANCE: -**

The break up of the areas in the GOT MANGLOD Gypsum Mine for calculation of financial assurance is as tabulated under: -

**TABLE-9**

S / No.	Particulars	Area proposed to use at the start of mining scheme	Additional area required during period of scheme	Total Area (Ha.)	Area considered as fully reclaimed & rehabilitated	Net Area considered for calculation
1.	Area under Mining	135.50	-	135.50	-	135.50
2.	Storage for topsoil	N. A.	N. A.	N. A.	N. A.	N. A.
3.	OB Dumps	N. A.	N. A.	N. A.	N. A.	N. A.
4.	Mineral Storage	5.00	---	5.00.	N. A.	5.00.
5.	Infrastructure (Work- shop, Admn. Bldg.)	N. A.	N. A.	N. A.	N. A.	N. A.
6.	Roads	N. A.	N. A.	N. A.	N. A.	N. A.
7.	Railways	N. A.	N. A.	N. A.	N. A.	N. A.
8.	Green belt	N. A.	N. A.	N. A.	N. A.	N. A.
9.	Tailing Ponds	N. A.	N. A.	N. A.	N. A.	N. A.
10.	Effluents treatment plant	N. A.	N. A.	N. A.	N. A.	N. A.
11.	Mineral grinding plants	4.00	N. A.	4.00	N. A.	4.00
12.	Township Area	N. A.	N. A.	N. A.	N. A.	N. A.
13.	Vehicle parking place	4.00	N. A.	4.00	N. A.	4.00

N. A. - Not Applicable

All figures are in Hectares

The financial assurance for proposed broken area of 135.50 hectare in proposed scheme of mining comes to Rs.2032500/- (@ Rs 15000/- per hectare) out of which Rs. 572785/- against earlier proposed broken area of 38.185 hectare in approved previous scheme of mining was deposited vide FDR No. 758315, dated 29.6.2007. Remaining financial assurance of



Rs.1459715/- will be deposited after approval of proposed scheme of mining and expansion in present production capacity by the Ministry of Environment and Forest Government of India New Delhi.

ANY OTHER INFORMATION:

Nil

Prepared by Recognized Qualified Person

  
Superintending Mining Engineer  
अधीक्षण प्रमुख जलविद्युत  
Mines & Geology Deptt.  
ज्ञान एवं सू-विज्ञान विभाग  
Bikaner/बीकानेर

  
D.S.Acharya  
MANAGER (Geology)  
ROP No.: ROP/AJM/241/2003/A  
Valid up to : 09.04.2013



**ANNEXURE**

Scheme of Mining-Got Mangled Gypsum Mine



# ANNEXURE

APPROVED

Amusement - A

Government of India  
Ministry of Mines  
Indian Bureau of Mines  
Office of the Controller of Mines (North Zone)  
\*\*\*\*\*



No.326/95/ZN-16/90-MCCM(N)

IV/B-9, I. N. H. Colony  
Balupura Road, Adarsh Nagar,  
Ajmer - 305 001

Dated : 25-1-93

From : Controller of Mines (NZ),  
Indian Bureau of Mines.

To : Shri M. Pathore,  
Project Manager (P),  
M/s RSMDC Ltd.,  
Udyog Bhawan, Tilak Marg,  
JAIPUR-302005.

Sub : Approval of Mining Plan in respect of Gotmanglod gypsum mine of  
M/s RSMDC Ltd. in the Nagaur distt. of Rajasthan.

Ref : (1) Your ref. of dt.10.4.90, 8.5.92 and 9.11.92.  
(2) Our ref. of even number dated 15.11.90, 20.1.92 & 27.11.92.

Sir,

In exercise of the power conferred by the clause (B) of  
Sub-section (2) of Section 5 of the Mines and Minerals (Regulation and  
Development) Act, 1957 read with Government of India Order No.S.O.645(E)  
dated 28.4.87, I hereby approve the above said mining plan, three copies  
of which are enclosed herewith. This approval is subject to the following  
conditions:

- (I) The Mining Plan is approved without prejudice to any other laws applicable to the mine from time to time whether made by Central Govt., State Govt. or any other authorities.
- (II) It is also clarified that the approval of your afore said mining plan does not in any way imply the approval of the Government in terms of any other provision of Mines and Minerals (Regulation and Development) Act, 1957 or the rules framed hereunder and any other laws.

Encl: Three copies of  
approved Mining Plan.

Yours faithfully,

(M. Mishra)  
Controller of Mines (NZ)  
Indian Bureau of Mines  
...2



Handwritten notes on the left margin: '13/4', '3/2/93', and '5/2/93'.

Handwritten note: 'Ref 203 3-2-93'.

Handwritten notes at the bottom: 'PM (Plan) ...', 'mk', and other illegible scribbles.

Copy forwarded for information to:

- (1) The Controller General, IBM, Nagpur.
- (2) The Chief Controller of Mines, IBM, Nagpur.
- (3) The Reg. Controller of Mines, IBM, Ajmer with a copy of approved mining plan.
- (4) The Director of Mines Safety, DGMS., Anna Nagar Link Road, Ajmer with reference to this office letter of even number dated 27.11.55.
- (5) The Director of Mines & Geology, Govt. of Rajasthan, Shastri Circle, Udaipur.
- ✓ (6) Shri RK Mundra, Chief Mining Engineer, M/s RSMDC Ltd., Udyog Bhawan, Tilak Marg, Jaipur.
- (7) Guard file.

  
(B.C. Mishra)  
Controller of Mines (N)  
Indian Bureau of Mines



**GOVERNMENT OF RAJASTHAN**  
**OFFICE OF SUPERINTENDING MINING ENGINEER**  
**DEPARTMENT OF MINES & GEOLOGY**  
**BIKANER CIRCLE, BIKANER**



No. SME/BKN/CC/Major/F/2007-08/ 1670

Date: - 06-23-07

To,

**M/s Rajasthan State Mines & Minerals Ltd;**  
**Sadul Club Building, Bikaner**

Subject:- Approval of Scheme of Mining along with Progressive Mine Closure Plan for Mineral Gypsum near village **Gotmanglod** Tehsil **Jayal** District **Nagaur** for an area of **870.74 hectares**, submitted under MCR, 1960 and 23 'B' of MCDR (Amended), 2003. (ML. 1/90)

Dear Sir,

In exercise of power conferred under rule 22(4A) of Mineral Concession Rules, 1960 and sub rule (4) of rule 11 and rule 23B of Mineral Conservation & Development Rules (Amended), 2003 read with State Government notification dated 20.04.2005, I hereby **APPROVE** the above said Mine Plan along with Progressive Mine Closure Plan. This approval is subject to the following conditions: -

1. (i) This Scheme of Mining along with Progressive Mine Closure Plan is approved without prejudice to any other law applicable to the mine / area from time to time whether made by Central Government, State Government or any other authority.
  - (ii) It is clarified that the approval of your aforesaid Scheme of Mining along with Progressive Mine Closure Plan does not in any way imply the approval of the Government in terms of any other provision of the Mines and Minerals (Regulation and Development) Act, 1957 or rules framed there under or any other laws.
  - (iii) It is further clarified that approval of this Scheme of Mining along with Progressive Mine Closure Plan is subject to the provision of Forest (Conservation) Act 1980, Forest (Conservation) Rules 1981 and other relevant statutes, orders and guidelines as may be applicable to the lease from time to time.
  - (iv) This Scheme of Mining along with Progressive Mine Closure Plan is approved without prejudice to any order or direction from any Court of Competent Jurisdiction.
  - (v) Exploration will be carried out to prove the presence of any other Gypsum bed beneath the excavated area of working pit within one year from the date of approval of the Scheme of Mining along with Progressive Mine Closure Plan.
2. Two copies of the approved Scheme of Mining along with Progressive Mine Closure Plan are being sent to your RQP as advised in the consent letter.

3. In case lessee fails to implement the approved Progressive Mine Closure Plan, action against him may be taken as per rules and financial assurance submitted by the lessee shall be forfeited.
4. In those cases, where Financial Assurance are forfeited, the Mining Engineer / Assistant Mining Engineer concerned would be responsible for making reclamation and rehabilitation of the area of the lease used by lessee.
5. The lessee will deposit financial assurance of rupees 5,72,785/- in form of FDR of nationalized bank of any other form required under rule 23F of MCDR (Amended) 2003, before resuming the mining operations in the area. The FDR should be pledged with the Mining Engineer, DMG, Nagaur.

Wherever area of Mining and allied activity is increased, it should be ensured by concerned ME / AME that required enhanced Financial Assurance is submitted by the lessee as directed by Rajasthan State Government order no. F-14(7) Mines/ Gr-II/86 Jaipur Dated 12.11.2003.

Yours Faithfully

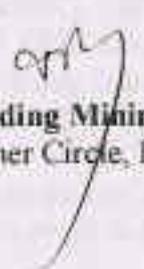
  
**Superintending Mining Engineer**  
Bikaner Circle, Bikaner

No. Even/

Date: -

**Copy forwarded for Kind information to: -**

1. The Regional Controller of Mines, Ajmer Region, IBM, Makhupura Industrial Estate, Ajmer 305 008.
2. The Director of Mines Safety, Directorate General of Mines Safety, Ajmer.
3. The Director, Directorate of Mines & Geology, Shastri Circle, Udaipur.
4. The Additional Director (Mines), DMG, Jodhpur.
5. The Mining Engineer, Nagaur to please ensure compliance of the approved Scheme of Mining along with Progressive Mine Closure Plan along with a copy.
6. Shri kirit Acharya, Manager (geology), RSMML, Bikaner, RQP with two copies of the approved Scheme of Mining along with Progressive Mine Closure Plan.
7. Guard file.

  
**Superintending Mining Engineer**  
Bikaner Circle, Bikaner



नोटिस-1. जब कृषिमंत्री इस अधिसूचना के साथ के 6 मास के भीतर कृषि  
इन्सुरेंस निष्कासन नहीं करता तो, यह अधिसूचना निष्कासन की  
प्रतिक्रिया में भंग हो जायेगी।

नोटिस-2. जब तक कृषिमंत्री संयुक्त इन्सुरेंस निष्कासन नहीं कर दे,  
यह कृषि क्षेत्र में जहाँ अधिसूचना जारी है, निम्नलिखित उद्देश्य के अन्तर्गत यह  
निष्कासन होगा इस उद्देश्य में जारी है। इसी उद्देश्य अधिसूचना में ऐसा उद्देश्य  
के लिये कृषि नहीं कर दिया गया है।

अधिसूचना के,

(संकेतित अक्षर)  
राज्य सरकार, दिल्ली

संख्या: सं 5(22)वा/स/3/69  
प्रकाशित:-

दिल्ली, दिनांक 17/4/1973.

1. निम्नलिखित राज्यों में: राजस्थान, उत्तर प्रदेश, गुजरात, महाराष्ट्र, कर्नाटक, तमिलनाडु, केरल, आंध्र प्रदेश, मध्य प्रदेश, बिहार, असम, सिक्किम, मेघालय, त्रिपुरा, मिजोरम, नागालैंड, अरुणाचल प्रदेश, जम्मू और कश्मीर के इस अधिसूचना के दिनांक से 45 दिनों की अवधि  
के अन्तर्गत निम्नलिखित क्षेत्रों में जारी की जायेगी।  
(क) इस अधिसूचना के दिनांक से 45 दिनों की अवधि के अन्तर्गत निम्नलिखित क्षेत्रों में जारी की जायेगी।  
(ख) इस अधिसूचना के दिनांक से 45 दिनों की अवधि के अन्तर्गत निम्नलिखित क्षेत्रों में जारी की जायेगी।  
(ग) इस अधिसूचना के दिनांक से 45 दिनों की अवधि के अन्तर्गत निम्नलिखित क्षेत्रों में जारी की जायेगी।  
(घ) इस अधिसूचना के दिनांक से 45 दिनों की अवधि के अन्तर्गत निम्नलिखित क्षेत्रों में जारी की जायेगी।

- 2. राजस्थान, राजस्थान, राजस्थान।
- 3. राजस्थान, राजस्थान, राजस्थान।
- 4. राजस्थान, राजस्थान।
- 5. राजस्थान, राजस्थान।

6. राजस्थान स्टेट इन्सुरेंस कॉर्पोरेशन लिमिटेड इन्सुरेंस निष्कासन सं 100, 100,  
राजस्थान स्टेट इन्सुरेंस कॉर्पोरेशन लिमिटेड, राजस्थान-4.

अधिसूचना जारी

No. 15  
15.11  
10. JAN.

APPROVED

राजस्थान सरकार  
जान गृह-2 विभाग



क्रमांक: ९-७४४/जान:गृह-२/८४/

दिनांक: 18-3-85

आदेश

विषय

कुंज खानमट्टा खासो जमिन  
नागौर जिला में राज्य के आदेश संख्या: 10-4-73  
दिनांक: 22/जान/गृह-3/69

द्वारा पहिली राजस्थान स्टेट इण्डस्ट्रीयल एण्ड मिनरल डवलपमेन्ट कारपोरेशन, जयपुर के पक्ष में स्वीकृत किया गया था।

और कुंज राज्य सरकार की नीति के अनुसार जल सम्बन्धी कार्य अब सर्वथी राजस्थान राज्य जल विकास निगम लिमिटेड द्वारा सम्पादित किया जाता है।

अतः राज्य सरकार अब सर्वथी राजस्थान स्टेट इण्डस्ट्रीयल एण्ड मिनरल डवलपमेन्ट कारपोरेशन लि. जयपुर के पक्ष में स्वीकृत खानमट्टा को अब सर्वथी राजस्थान स्टेट मिनरल डवलपमेन्ट कारपोरेशन लिमिटेड, जयपुर के पक्ष में हस्तान्तरण करने की स्वीकृति प्रदान करती है।

सांगु से,

डी.पी. धर्मा  
संभारणाधिकारी

प्रतिबन्धि निम्न को सूचनाओं एवं अग्रिम आवश्यक कार्यवाही हेतु :-

1. सीमान्त विदेशक, जान एवं कुंजखान विकास, जयपुर।
2. सीमान्त महासंचालक, राजस्थान, जयपुर।
3. सीमान्त विकासधीरा - नागौर जोधपुर।
4. सीमान्त अधीका जल अभियन्ता, - नागौर।
5. सीमान्त जल अभियन्ता/सहायक जल अभियन्ता,
6. सर्वथी राजस्थान स्टेट इण्डस्ट्रीयल डवलपमेन्ट एण्ड इन्वेस्टमेन्ट कारपोरेशन लिमिटेड, जयपुर।
7. सर्वथी राज् स्टेट मिनरल डवलपमेन्ट कारपोरेशन लि., जयपुर।
8. गाई फाईल।

४०/-

संभारणाधिकारी

राजस्थान स्टेट मिनरल डवलपमेन्ट कारपोरेशन लि. जयपुर-5

दिनांक: 23-3-85

प्रतिबन्धि: सीमान्त प्रोजेक्ट डेवेलपमेंट निगम, जयपुर  
2. सीमान्त विकासधीरा, जयपुर एवं सीमान्त विकासधीरा, जयपुर



राजस्थान - सरकार

APPROVED

कार्यालय अधीक्षण जॉन अभियन्ता, बीकानेर वृत्त बीकानेर ।

क्रमांक - अकाउंट / बीका / 9 / नागौर / कमल - 1/90/

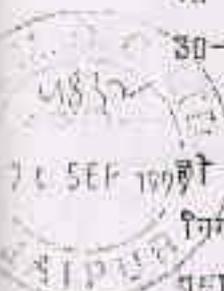
दिनांक : 8-9-99

कार्यालय - आदेश



शुद्धि प्रथम मधीनीकरण डानकाट्टा जॉनिक विभाग निम्नलिखित भौट-  
संशोधन संस्थान व थिना नागौर में सर्वोपरी राजस्थान राज्य जॉनिक विकास  
निगम लिमिटेड के पक्ष में प्रायोजन के आदेश क्रमांक : ए- 3 [49] डान/गुर-1/  
90 दिनांक 5-12- 92 से स्वीकृत किया गया । उक्त डानकाट्टा दिनांक :  
30-6-90 से 10वर्ष की अवधि के लिये स्वीकृत किया है ।

शुद्धि जॉनिक अभियन्ता, नागौर ने बताया है कि निम्न दिनांक 1-8-96



को कार्यालय में पत्र प्रस्तुत कर 457- 41 हेक्टर का जॉनिक अध्ययन करा है ।  
निम्न द्वारा छोटे गये क्षेत्र का उक्त दिनांक : 29-3-99 को विभाग के  
पक्ष में लिया गया ।

अतः जॉनिक अभियन्ता, नागौर के प्रस्तावानुसार डानकाट्टा क्षेत्र  
1338- 19 हेक्टर में से 470- 74 हेक्टर रहते हुए 457- 41 हेक्टर क्षेत्र का  
जॉनिक अध्ययन दिनांक : 29-3-99 से स्वतंत्रता स्वीकृत किया जाता है ।

अधीक्षण जॉनिक अभियन्ता,  
बीकानेर वृत्त बीकानेर ।

दिनांक : 8-8-99

क्रमांक - सम्बंधक / 1256

प्रतिनिधि निम्नलिखित जो सुपार्या एवं आवश्यक कार्यवाही हेतु प्रेषित है-

- 1- सर्वोपरी राजस्थान राज्य जॉनिक विकास निगम लिमिटेड, जयपुर ।
- 2- जॉनिक अभियन्ता, डान एवं भूमिज्ञान विभाग, नागौर को उक्त पत्र 22/8/99 दिनांक : 22/8/99 के संदर्भ में ।
- 3- जिला कलेक्टर, नागौर ।
- 4- रीक्षात पत्रावली ।

अधीक्षण जॉनिक अभियन्ता,  
बीकानेर वृत्त बीकानेर ।

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राजस्थान सरकार  
खान (ग्रुप-1) विभाग

क्रमांक : प.15(16)खान/ग्रुप-1/2000

जयपुर, दिनांक :

आदेश



चूंकि राजस्थान राज्य खान एवं खनिज निगम ने प्रधान खनिज रियायत नियमावली 1960 के नियम 24(ए) के अन्तर्गत खनिज जिप्सम निकट ग्राम गोट-मांगलोद तहसील जायल जिला नागौर में द्वितीय नवीनीकरण खनन पट्टा अनुदान हेतु आवेदन एवं दिनांक 29.06.1999 को प्रस्तुत किया और चूंकि राज्य सरकार संतुष्ट है कि आवेदक राज्य में प्रवर्तमान सम्बद्ध नियमों के अन्तर्गत खनन रियायत के अनुदान के लिए उपयुक्त पत्र/पार्स है।

और चूंकि यह क्षेत्र जिसके लिए आवेदक द्वारा रियायत वाली गई है, अनुदान के लिए मुक्त है।

अतः राज्य सरकार प्रधान खनिज रियायत नियमावली, 1960, जो समय-समय पर संशोधित हुए हैं, में उल्लेखित निबंधनों और प्रतिबंधों के अतिरिक्त निम्न निबंधनों और प्रतिबंधों पर द्वितीय नवीनीकरण खनन पट्टा स्वीकृत करती है :-

1. खनिज जिप्सम
2. क्षेत्र 870.74 हेक्टेयर निकट ग्राम गोट-मांगलोद तहसील जायल जिला नागौर में नीचे पर वास्तविक सीमांकन अनुसार।
3. अवधि अवधि दिनांक 30.06.2000 से 20 वर्ष
4. स्थिरताएक खान एवं खनिज (विकास एवं विनियमन) एक्ट, 1957 की तृतीय अनुसूची के अनुसार एवं समय-समय पर संशोधित हो, के अनुसार
5. प्रतिभूति राशि 10,000/- (अक्षरे दस हजार रुपये मात्र)
6. अधिशुल्क खान एवं खनिज (विकास एवं विनियमन) एक्ट, 1957 की द्वितीय अनुसूची के अनुसार एवं समय-समय पर संशोधन हो, उसके अनुसार
7. मूल्य भाटक जैसा कि राज्य अधिकारी निर्धारित करें
8. अन्य कर राजकीय नियमानुसार
9. अन्य शर्त खनिज रियायत नियम, 1960 एवं खान एवं खनिज (विकास एवं विनियमन) एक्ट, 1957 एवं समय-समय पर संशोधन हो, के अनुसार।

नोट : यदि पट्टाधारी इस आदेश की तिथि से 8 माह की अवधि के भीतर समुचित इकरारनामा निम्नांकित नहीं कर दें तो यह आदेश बिना सूचना के ही प्रतिसंहृत (रिगोर) कर दिया जायेगा।

15C

2011-09  
Jal Singh

आज्ञा से,

24-

उप सचिव

प्रतिलिपि निम्न को सूचनाार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है :-

1. निदेशक, खान एवं भू-विज्ञान विभाग, राजस्थान, उदयपुर को उनके पत्रांक 1094 दिनांक 01.04.2009 के संदर्भ में इस निर्देश के साथ कि संविदा निष्पादन की दिनांक की सूचना यथाशीघ्र इस विभाग को भिजवावे, जिसमें आदेश की दिनांक के 8 माह से अधिक का समय नहीं लगना चाहिए।
2. महालेखाकार, राजस्थान, जयपुर
3. जिला कलेक्टर, नागौर
4. अधीक्षण खनि अभियंता, बीकानेर
5. खनि अभियंता, नागौर
6. महानियंत्रक, भारतीय खान खुरों, इन्दिरा भवन, मिडिल लाइन्स, नागपुर
7. प्रबंध निदेशक, राजस्थान राज्य खान एवं खनिज निगम, 4, मीरा मार्ग, उदयपुर
8. समूह महाप्रबंधक, एस.बी.यू. एण्ड पी.सी. जिप्सम, राजस्थान राज्य खान एवं खनिज निगम, सादुल क्लब बिल्डिंग, बीकानेर।
9. रक्षित पत्रावली।



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Annexure - II

No.J-11015/706/2007-1A.II (M)  
Government of India  
Ministry of Environment and Forests

Paryavaran Bhavan  
C.G.O. Complex,  
Lodi Road, New Delhi-110 003

Dated the 28<sup>th</sup> May, 2008

To

M/s Rajasthan State Mines and Minerals Limited  
SBU & PC, Gypsum,  
Sadul Club Building,  
Bikaner,  
Rajasthan-334 001  
E-mail: [rsmmlgyp@datainfosys.net](mailto:rsmmlgyp@datainfosys.net)

**Subject: Expansion of Got Manglod Gypsum Mining Project (ML No.1/90) of M/s Rajasthan State Mines and Minerals Limited (RSMML) located in Village Got and Manglod, Tehsil Jayal, District Nagaur, Rajasthan -environmental clearance reg.**

Sir,

This has reference to your letter No. RSMML/GYP/Plan/Envnt./2007/138 dated 15.06.2007 regarding the project mentioned above. The proposal is for enhancement of production of Gypsum from 1lakh tonnes per annum (LTPA) to 3.5LTPA. The total mine lease area of the project is 870.74ha, out of which 670.74ha is an agricultural land, 2.78ha is wasteland, 169ha is grazing land and 28.22ha is roads and temple. No forestland is involved. Area proposed for mining is 38.18ha, an area 0.4ha is kept for infrastructure and 832.16ha is others [(220.5ha already excavated area and 611.66ha is non mining area (583.84ha agricultural land, 0.82ha is temple land, and 27ha roads)]. No ecologically sensitive area such as National Park/Wildlife Sanctuary/Tiger Reserve/ Biosphere Reserve etc. is reported to be located in the core and buffer zone of the mine and also that the area does not report to form corridor for Schedule-I fauna. There is no population in the core zone, displacement of population and R&R is not involved, therefore. The gypsum bearing private agricultural land is temporarily provided by the respective land owner (farmer) to RSMML for mining activities and after excavation, the land will be backfilled and levelled and return back to the farmers for agricultural use. The land and crop compensation to the private land owner will be provided @Rs.6 per tonne of gypsum excavated from the land. The working will be opencast by semi-mechanised method without involving drilling and blasting. The targetted production capacity of the mine is 3.5LTPA (0.35million TPA) of gypsum and the life of mine is two years. Approximately 1167TPD of mineral will be transported through road to the consumers. The gypsum bearing area is generally flat and the general elevation of the area is ranging between 289m to 295m AMSL. The present working depth of mine is 2.5m bgl and the

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APPROVED (4/9)

ultimate working depth of mine will be 3m bgl. The ground water table in the buffer zone reported to vary between 28m to 35m bgl during pre-monsoon and post-monsoon. The mine working will not intersect ground water table. The water requirement of the project is estimated as 9.75m<sup>3</sup> per day, which will be sourced from the PHED supply and nearby surface water reservoir. Approximately 20947m<sup>3</sup> per month of top soil (desertic sand) will be generated, which will be concurrently backfilled. The excavated area will be levelled. There will be no external over burden dumps. Plantation will be raised in area of 5ha at the end of the mine life. The public hearing of the project was held on 05.05.2007. The Department of Mines and Geology, Government of Rajasthan had approved scheme of mining including progressive mine closure plan of the project on 12.06.2007 for lease area of 870.74ha. The Mining Engineer, Nagaur, vide their letter No. Kha.Aa/Nagaur/CC-1/Pradhan/ML-1/99/1857 dated 18.06.2007 clarified that the mine lease area does not fall in Aravali. The capital cost of the project is Rs.75Lakhs.

2. The Ministry of Environment and Forests has examined the application in accordance with Section 12 of the EIA Notification 2006 read with para 1.2 of Circular No.J-11013/41/2006-IA.II(I) dated 13.10.2006 and hereby accords environmental clearance under the provisions thereof to the above mentioned Got Mangled Gypsum Mining Project of M/s Rajasthan State Mines and Minerals Limited, for an annual production capacity of 3.5lakh tonnes (0.35million tonnes) of gypsum by opencast semi-mechanised method involving total lease area of 870.74ha, subject to implementation of the following conditions and environmental safeguards:

**A. Specific Conditions**

- (i) The environmental clearance is subject to approval of the State Landuse Department, Government of Rajasthan for diversion of agricultural land for non-agricultural use.
- (ii) The project proponent shall obtain Consent to Establish from the State Pollution Control Board and effectively implement all the conditions stipulated therein.
- (iii) The mining operations shall be restricted to above ground water table and it should not intersect groundwater table. Prior approval of the Ministry of Environment & Forests and Central Ground Water Authority shall be obtained for mining below water table.
- (iv) Topsoil should be stacked properly with adequate protection measures at earmarked sites and used for reclamation and rehabilitation of the mined out areas.

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- (v) The project proponent should concurrently back-fill the mined out area, level it completely and restore the land for its future use. Compliance status should be submitted to the Ministry of Environment and Forests and its Regional Office Lucknow on six monthly basis.
- (vi) There shall be no external waste dumps.
- (vii) Plantation shall be raised in an area of 5ha including a green belt of 7.5m width in the safety zone around the mining lease area and in addition plantation shall be raised along the road side by planting the native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 1000 trees per hectare.
- (viii) Check dams and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine working, soil and mineral dumps. The water so collected should be utilized for watering mine area, roads, green belt development etc. The drains should be regularly desilted and maintained properly.

Garland drain of appropriate size, gradient and length shall be constructed for mine pit and mineral dumps and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material.

- (ix) Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers at suitable locations by the project proponent in and around project area in consultation with Regional Director, Central Ground Water Board. The frequency of monitoring should be four times a year- pre-monsoon (April/May), monsoon (August), post-monsoon (November), and winter (January). Data thus collected should be sent at regular intervals to Ministry of Environment and Forests and its Regional Office located at Lucknow, Central Ground Water Authority and Central Ground Water Board, Western Region, Jaipur.
- (x) Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, Central Ground Water Board.
- (xi) Prior permission of the competent authority for drawal of water from surface water and ground water, if any, required shall be obtained.
- (xii) The proponent shall not carry out drilling and blasting operations.

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- (xiii) Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with Regional Director, Central Ground Water Board.
- (xiv) The project proponent shall regularly monitor free silica content in the RSPM as part of the air quality monitoring during operation of the mine.
- (xv) Regular water sprinkling should be carried out in critical areas prone to air pollution and having high levels of SPM and RPM such as haul road, loading and unloading point and transfer points. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- (xvi) Vehicular emissions should be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The vehicles should be covered with a tarpaulin and shall not be overloaded.
- (xvii) Consent to operate should be obtained from SPCB before starting enhanced production from the mine.
- (xviii) Digital processing of the entire lease area using remote sensing technique shall be carried out for monitoring land use pattern and report submitted to Ministry of Environment and Forests and its Regional Office located at Lucknow.
- (xix) A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.

**B. General conditions**

- (i) No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.
- (ii) No change in the calendar plan including excavation, quantum of gypsum and waste should be made.
- (iii) Conservation measures for protection of flora and fauna in the core & buffer zone should be drawn up in consultation with the local forest and wildlife department.
- (iv) Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RPM, SPM, SO<sub>2</sub> and NO<sub>x</sub> monitoring. Location of the stations should be decided based on the

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meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.

Data on ambient air quality (RPM, SPM, SO<sub>2</sub> and NO<sub>x</sub>) should be regularly submitted to the Ministry including its Regional Office located at Lucknow and the State Pollution Control Board / Central Pollution Control Board once in six months.

- (v) Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangements on haul roads, loading & unloading and at transfer points should be provided and properly maintained.
- (vi) Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM etc. should be provided with ear plugs/ muffs.
- (vii) Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19<sup>th</sup> May, 1993 and 31<sup>st</sup> December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.
- (viii) Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.

Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.

- (ix) A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.
- (x) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Lucknow.
- (xi) The Regional Office of this Ministry located at Lucknow shall monitor compliance of the stipulated conditions. The project authorities should provide a set of filled-in questionnaire and EIA / EMP report to them and

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- extend full cooperation to the Officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.
- (xii) The project authorities should inform to the Regional Office located at Lucknow as well as to the Ministry of Environment and Forests regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (xiii) The project proponent shall submit six monthly report on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Lucknow, Central Pollution Control Board and State Pollution Control Board.
- (xiv) A copy of the clearance letter will be marked to the concerned Panchayat /local NGO, if any, from whom suggestions/representation was received while processing the proposal.
- (xv) The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's / Tehsildar's Office for 30 days.
- (xvi) The project authorities should advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment & Forests at <http://envfor.nic.in> and a copy of the same should be forwarded to the Regional Office of this Ministry located at Lucknow.
3. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
4. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
5. The above conditions will be enforced, inter alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules made thereunder and also any other orders passed by the Hon'ble Supreme Court of India/ High Court of Rajasthan and any other Court of Law relating to the subject matter.

6. Any appeal against this environmental clearance shall lie with the National Environment Appellate Authority, if preferred within a period of 30 days as prescribed under Section 11 of the National Environment Appellate Act, 1997.



Copy to:

- i) The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
- ii) The Secretary, Department of Mines & Geology, Government of Rajasthan, Secretariat, Jaipur.
- iii) The Secretary, Department of Environment, Government of Rajasthan, Secretariat, Jaipur.
- iv) The Chief Conservator of Forests, Central Region, Ministry of Environment and Forests, B-1/72, Sector-A, Aliganj, Lucknow-226020.
- v) The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD-cum-Office complex, East Arjun Nagar, New Delhi-1100032.
- vi) The Member Secretary, Central Ground Water Authority, A-2, W3, Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- vii) The Chairman, Rajasthan State Pollution Control Board, 4, Institutional area, Jhalana, Doongri, Jaipur.
- viii) The Controller General, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur-440 001.
- ix) The District Collector, Nagaur District, Rajasthan.
- x) EI Division, Ministry of Environment and Forests, Paryavaran Bhavan, C. G. O. Complex, Lodi Road, New Delhi-110 003.
- xi) Monitoring File.
- xii) Guard File.
- xiii) Record File.



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Annexure - I

Rajasthan State Pollution Control Board  
4, Institutional Area, Jhalana Doongari, Jaipur-302 004  
Phone: 0141-5159600,5159695 Fax: 0141-5159697  
website: www.rpcb.nic.in  
Registered



Order No F(Mines)/Nagaur(Jayal)/18(1)/2011-2012/4083-4087  
Order No 2011-2012/Mines/1163

M/s Rajasthan State Mines & Minerals Limited (Got- Manglod)

Address: Gypsum, Sadul Club Building, Bikaner,

District: Bikaner

Grant of Consent to Operate under section 21(4) of Air (Prevention & Control of Pollution) Act, 1981 and under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 for your Major Mineral Mine at near Village-Got- Manglod, Tehsil-Jayal, District- Nagaur (M.L.No-01/90 ).

- (i) Your applications dated 20/01/2011
- (ii) Received on 25/01/2011

In view of the details submitted vide your above referred applications/ documents, the Consent to Operate under section 21(4) of Air (Prevention & Control of Pollution) Act, 1981 and under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 is hereby granted for carrying mining activities. This consent is subject to the following stipulations:-

- 1 That this consent is being granted in favour of M/s. Rajasthan State Mines & Minerals Limited (Got- Manglod), a Mine of Major Mineral having M.L.No.- 01/90 in an area measuring 870.7400 Hectares at/near Village-Got- Manglod, Tehsil-Jayal, District-Nagaur.
- 2 That this consent is valid for a period from 01/06/2011 to 31/05/2014
- 3 That this consent is valid for following mining activities:-

Mineral	Permitted Mining Capacity
1 GYPSUM	3.5000 LACS TONNES/ ANNUM

- 4 That you shall achieve following standards in ambient air in mine area / mining activities

Pollutant	Standards for Ambient Air	Standards for mining activity
SPM	500 $\mu\text{g}/\text{M}^3$	SPM = 600 $\mu\text{g}/\text{M}^3$ (To be measured between 3 to 10 meters from mining activity)
SO <sub>2</sub>	120 $\mu\text{g}/\text{M}^3$	
NO <sub>x</sub>	120 $\mu\text{g}/\text{M}^3$	
CO	5000 $\mu\text{g}/\text{M}^3$	



Rajasthan State Pollution Control Board  
4, Institutional Area, Jhalana Deongari, Jaipur-302 004  
Phone: 0141-5159600, 5159605 Fax: 0141-5159897  
website: www.rpcb.nic.in  
Registered



File No F(Mines)/Nagaur(Jaya)/18(1)/2011-2012/4083-4087

Order No 2011-2012/Mines/1163

Date: 05/09/2011

- 5 That the mining effluent shall be treated before disposal so as to conform to the standards prescribed by the Board viz general standards for discharge of the industrial effluent under the Environment(Protection) Act 1986 for Disposal into Inland Surface Water. The main parameters for regular monitoring shall be as under:

S.No.	Parameters	Limits
1	Total Suspended Solids	Not to exceed 100 mg/l
2	pH Value	Between 5.5 to 9.0
3	Oil and Grease	Not to exceed 10 mg/l
4	Biochemical Oxygen Demand (3 days at 27°C)	Not to exceed 30 mg/l
5	Chemical Oxygen Demand	Not to exceed 250 mg/l

- 6 That the occupier/operator of mine shall ensure that all the conditions imposed in the Environmental Clearance granted by the Ministry of Environment & Forests, Government of India, vide letter No J-11015/706/2007-IA.II (M) dated 28/05/2008 shall be strictly complied with.
- 7 That your mining will not intersect the Ground Water Table during the consent period and the permission from the Central Ground Water Authority shall be obtained for intersection of Ground Water Table/ abstraction of ground water, if any and submit a copy of the same to the Board.
- 8 That this **Consent to Operate** is for mining / processing / beneficiation of product as mentioned above in **M.L.No.-01/90** and a separate **Consent to Operate** is required to be obtained for any other Mineral mining/ processing/ beneficiation Plant/process if any and for any addition/ modification/ alteration or change in process.
- 9 That you shall approach Ministry of Environment & Forests, Government of India for corrigendum in Environmental Clearance issued on 28.05.2008 w.r.t. life of the mine or else obtain fresh Environmental Clearance within one year from the date of issuance of this consent & it shall be submitted to the State Board.
- 10 That the lessee shall develop plantation in atleast 33% of the total lease area to maintain ambient air quality around the mine and the Action Plan for plantation submitted by you, shall be implemented.
- 11 That the Mining Unit shall maintain zero discharge status from the premises. No trade effluent shall be discharged inside/outside Mine premises.
- 12 That you will implement all the pollution control measures as per EIA/EMP Report.
- 13 That all other general conditions enclosed as Annexure shall be strictly complied with.



Rajasthan State Pollution Control Board  
4, Institutional Area, Jhalana Doongari, Jaipur-302-004  
Phone: 0141-5159600, 5159695 Fax: 0141-5159697  
website: www.rpcb.nic.in  
Registered



File No F(Mines)/Nagaur(Jayal)/18(1)/2011-2012/4083-4087  
Order No 2011-2012/Mines/1163

Date: 05/09/2011

- 14 That this Consent is subject to the conditions as stated above and general conditions as stated in Annexure. Further, the mining unit will comply with the provisions of the Air (Prevention & Control of Pollution) Act, 1981 & Water (Prevention & Control of Pollution) Act, 1974 and any such conditions as may be specified from time to time by the State Board under the provisions of the aforesaid Acts.
- 15 That the grant of this **Consent to Operate** is issued from the environmental angle only, and does not absolve the project proponent from the other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility, to comply with the conditions laid down in all other laws for the time-being in force, rests with the industry/ unit/ project proponent.
- 16 That the grant of this **Consent to Operate** shall not, in any way, adversely affect or jeopardize the legal proceedings, if any, instituted in the past or that could be instituted against you by the State Board for violation of the provisions of the Act or the Rules made thereunder.

This bears approval of the competent authority.

Encl: As Above

Yours Sincerely

  
Group Incharge-Mines

**Copy To:-**

1. Director, Department of Mines & Geology, Government of Rajasthan, Shastri Circle, Udaipur.
2. Mining Engineer, Department of Mines & Geology, Government of Rajasthan, Nagaur.
3. Regional Officer, Regional Office, Rajasthan State Pollution Control Board, Kishangarh- please inspect the mine & submit inspection report in new format within 3 months from the date of issuance of this consent & also ensure compliance of Consent Conditions.
4. Master File, Consent to Operate, Group Mine, Rajasthan State Pollution Control Board, Jaipur.

Group Incharge-Mines



General Conditions for Consent to Operate Under Air & Water Acts- Mining Units

1. That this consent shall be subject to the condition that you shall operate the mining activities in the area as per the mining right allowed by the Mining Department in the Mining-Lease only.
2. That this consent shall be subject to the directions/orders passed in various Mining/Environment related Writ Petitions by Hon'ble High Court and the Hon'ble Supreme Court.
3. That you shall provide the necessary infrastructure facilities including equipment for the monitoring of ambient air in accordance with the directions given to you by the Rajasthan State Pollution Control Board.
4. That Mining Unit shall undertake the phased restoration, reclamation and rehabilitation of lands as per established practices & procedures (provisions of Mine Closure Plan in case of Major Minerals) affected by prospecting or mining operations and shall complete this work before the conclusion of such operations and the abandonment of prospects or mines.
5. That the project proponent will stack the top soil separately and will use it for plantation and reclamation of overburden dumps.
6. That overburden shall be stored in a systematic manner that it does not obstruct the natural drainage pattern of the area. It may be used for back filling. The land shall be identified for disposal of overburden at environmentally compatible site.
7. That Mining unit shall strictly comply with the Mining Plan and Eco-Friendly Mining Plan as submitted to & approved by the competent authority. (Eco-Friendly Mining Plan for Minor mineral & mining plan for Major minerals & marble, granite Mines).
8. That the water spray and sprinkling system so installed should always be maintained in order to utilize the same for dust suppression.
9. That the domestic effluent if any, shall be treated and disposed of with properly designed septic tank followed by soak pit as per prescribed standard.
10. That the responsibility for performance evaluation of Pollution Control Measure shall be of Mining unit and Mining unit will not commence production unless the satisfactory operation of the Pollution Control Measures is done by the Mining unit in the presence of concerned Regional Officer of Board and is duly certified by him before commencement of production.
11. That Air Emissions shall conform to the standards prescribed under the Environment (Protection) Act, 1986.
12. That noise level shall be kept as detailed below and under no circumstances, it shall exceed the prescribed limit:-
 

a. Day time	(6.0 AM to 9.0 PM)	- 75 dB A (1eq)
b. Night time	(9.0 PM to 6.0 AM)	- 65 dB A (1eq)
13. That Mining unit shall also conduct ambient air quality monitoring for SPM and noise level in the mining area once in six months and monitoring results shall be submitted to the State Board regularly.
14. The Mining unit shall submit Environmental statement for the period April to March latest by the following September every year.

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15. That this consent should not be treated as NOC or approval for mining in forest area, if any, falling in the lease and relevant permission under provisions of the Forest (Conservation) Act, 1980 shall be obtained from the competent authority.
16. That for Diesel Generator Sets, acoustic enclosure/acoustic treatment shall be provided to meet the prescribed norms w.r.t. noise as per the Gazette Notification of Ministry of Environment & Forests dated 02.01.99. Adequate stack height with D.G. Sets shall also be provided and maintained. Noise from the Diesel Generator Sets shall be controlled by providing an acoustic enclosure or by treating the room acoustically. The acoustic enclosure/acoustic treatment of room should be designed for minimum 25 dB (A) Insertion Loss or for meeting the ambient noise standards, whichever is on the higher. The measurement for Insertion Loss may be done at different points at 0.5 metre from the acoustic enclosure/room and then averaged. The Diesel Generator Sets should also be provided with proper exhausts muffler with Insertion Loss of minimum 25 dB (A). The stack height for the Diesel Generator Sets shall be as notified under the EP Act, 1986.
17. That the Mining unit shall submit a fresh application for Consent to Operate in the prescribed form in triplicate alongwith the requisite fee atleast 120 days in advance of expiry of the consent period for its renewal.
18. That the Mining unit shall comply with provisions of the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 and the Hazardous Waste (Management & Handling) Rules, 1989 and related amendments, as applicable.
19. That this consent is valid, subject to fulfillment of all the other statutory requirements in other Law/Acts/Rules as applicable.
20. That the Mining unit shall submit quarterly compliance report of all the above stated conditions to this office.
21. That the Mining unit shall submit Water Cess returns in case the water consumption is more than 10 KLD under provisions of the Water (Prevention & Control of Pollution) Cess Act, 1977 and as amended from time to time.
22. That notwithstanding anything contained in this letter of consent, the State Board hereby reserves to it, the right and power under section 21(6) of the Air (Prevention & Control of Pollution) Act, 1981 & under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 to review anyone/or all the conditions imposed here-in-above and to make such variations as deemed fit for the purpose of Air Act & Water Act.
23. That this consent, under no circumstances, be construed as conferment of any property or any interest in the lease area. It is only confined for the purpose of regulation of provisions of the Air Act.
24. That any incorrect information submitted in the consent application form shall make the industry liable for legal action under the provisions of the Air Act & the Water Act.
25. That in case of failure to comply with any of the consent conditions stated as above, the consent issued to the industry shall automatically stand revoked without any notice.
26. That this Consent will not exempt you from any legal action for the past violations, if any, of the Act/Rules/Notifications/Circulars etc.
27. That the Drills shall be operated with water injection system i.e. wet drilling be carried out during mining or the drills shall be operated with dust extractors.
28. That Garland drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed around the mineral and overburden dumps to prevent run off of water and flow of sediments.
29. That the Project Proponent shall construct Retaining Wall and Siltation Pond of appropriate size around the overburden dumps.
30. That the controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented, and permission from the Director General Mine Safety and the Director Explosives.

(Group Incharge-Mines)

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**Details of Bore Holes at Gop Manglod Gypsum Mines**

Bore Hole Number	Location		Depth in meter		Lithology	Grade in terms of CaSO <sub>4</sub> 2H <sub>2</sub> O %	Moisture in %	Gypsum in %	Weighted Average Grade CaSO <sub>4</sub> 2H <sub>2</sub> O %	
	Longitude	Latitude	From	To						
k-1000	27° 14' 43.7"	74° 04' 0.8"	0	2.13	soil	—	2.13	—	—	
			2.13	2.74	Gypsum	40.23	0.61	24.60	0.60	40.33
			2.74	3.35	Gypsum + Argillaceous layer	15.6	0.61	9.51	—	—
i-2250	27° 14' 43.7"	74° 04' 46.3"	0	0.91	soil	—	0.91	—	—	
			0.91	1.52	Gypsum	32.67	0.61	19.90	0.29	24.07
			1.52	2.74	Argillaceous layer + Gypsum	22.23	1.22	27.12	—	—
			2.74	3.2	Argillaceous layer + Gypsum	19.60	0.46	9.02	—	—
k-1750	27° 14' 43.7"	74° 04' 28.1"	0	1.83	soil	—	1.83	—	—	
			1.83	2.44	Gypsum + Argillaceous layer	41.25	0.61	25.25	1.52	43.65
			2.44	3.35	—	46.16	0.51	41.10	—	—
k-1250	27° 14' 43.7"	74° 04' 9.5"	0	1.22	soil	—	1.22	—	—	
			1.22	1.83	Gypsum	41.55	0.61	25.35	0.61	41.55
			1.83	2.44	Gypsum	38.88	0.61	20.83	1.52	36.54
			2.44	3.35	Gypsum + Argillaceous layer	20.81	0.91	24.40	—	—
j-1750	27° 14' 35.5"	74° 04' 28.1"	0	1.52	soil	—	1.52	—	—	
			1.52	2.44	Gypsum	63.18	0.92	58.13	1.83	54.16
			2.44	3.15	Argillaceous layer + Gypsum	45.03	0.91	41.00	—	—
			3.15	3.56	Argillaceous layer + Gypsum	17.71	0.61	10.80	—	—
l-750	27° 14' 43.7"	74° 03' 51.7"	0	2.13	soil	—	2.13	—	—	
			2.13	2.44	Gypsum	28.36	0.51	8.79	0.31	28.36
			2.44	3.05	Argillaceous layer + Gypsum	13.12	0.61	8.00	—	—
			3.05	3.66	Argillaceous layer + Gypsum	7.58	0.61	4.62	—	—
			3.66	3.96	Gravel	6.67	0.30	2.00	—	—
k-1900	27° 14' 43.7"	74° 04' 19.0"	0	0.91	soil	—	0.91	—	—	
			0.91	1.52	Argillaceous layer + Gypsum	38.85	0.61	35.28	2.04	47.46
			1.52	2.13	Gypsum	30.00	0.91	27.30	—	—
			2.13	3.05	Gypsum	57.33	0.82	52.74	—	—
			3.05	3.35	Argillaceous layer + Gypsum	24.70	0.51	7.61	0.20	24.70
k-500	27° 14' 43.7"	74° 03' 42.8"	0	0.91	soil	—	0.91	—	—	
			0.91	1.52	Soil + Gypsum	30.24	0.61	18.55	0.91	30.24
			1.52	2.13	Gypsum + Argillaceous layer	12.80	0.41	7.81	—	—
			2.13	3.35	Argillaceous layer + Gypsum	13.18	1.22	30.08	—	—
j-500	27° 14' 33.2"	74° 03' 42.0"	0	2.74	soil	—	2.74	—	—	
			2.74	3.35	Argillaceous layer + Gypsum	44.41	0.61	27.09	0.65	44.41
			3.35	4.17	Argillaceous layer + Gypsum	24.34	0.92	37.39	0.52	24.34



Details of Bore Holes at Got Manglod Gypsum Mines

Bore Hole Number	Location		Depth in meter		Lithology	Grade in terms of CaSO <sub>4</sub> 2H <sub>2</sub> O %	Thickness in meter		Gypsum bed	Weighted Average Grade CaSO <sub>4</sub> 2H <sub>2</sub> O %
	Longitude	Latitude	From	To			Soil	Gypsum		
k-250	27° 14' 40"	74° 03' 34.2"	0	2.44	Soil	—	2.44	—	0.31	5.23
			2.44	2.74	Soil	4.67	0.30	1.40		
			2.74	3.05	Soil	5.78	0.31	1.78		
q-250	27° 14' 10.2"	74° 03' 34.3"	0	1.83	Soil	—	1.83	—	1.22	39.04
			1.83	2.44	Soil+Gypsum	62.72	0.61	38.75		
			2.44	3.05	Soil+Gypsum	55.35	0.61	23.76		
h-250	27° 14' 19.3"	74° 03' 33.6"	0	1.83	Soil	—	1.83	—	2.13	40.22
			1.83	2.44	Soil+Gypsum	33.85	0.61	20.85		
			2.44	3.05	Argillaceous layer+Gypsum+soil	35.04	0.61	21.87		
			3.05	3.66	Argillaceous layer+Gypsum	38.58	0.61	23.78		
			3.66	3.96	Argillaceous layer+Gypsum	86.23	0.30	19.87		
			3.96	4.27	Soil	—	0.31	—		
r-1000	27° 13' 46.8"	74° 04' 0.8"	0	0.91	Soil	—	0.91	—	2.33	85.08
			0.91	1.32	Soil+Gypsum	45.03	0.61	27.47		
			1.32	2.44	Argillaceous layer+Gypsum+soil	48.13	0.92	47.43		
			2.44	3.05	Argillaceous layer+Gypsum	32.64	0.61	18.85		
			3.05	3.35	Argillaceous layer+Gravel	10.21	0.30	3.08		
s-1000	27° 13' 54.9"	74° 04' 37.2"	0	2.13	Soil	—	2.13	—	2.51	26.07
			2.13	2.74	Argillaceous layer+Gypsum+soil	28.98	0.61	17.65		
			2.74	3.05	Argillaceous layer+Gypsum	35.89	0.61	6.20		
			3.05	3.96	Argillaceous layer+Gypsum	28.58	0.61	17.43		
o-250	27° 13' 30.5"	74° 03' 35.6"	0	0.3	Soil	—	0.30	—	2.14	1.87
			0.3	2.44	Soil	1.59	1.14	5.30		
			2.44	3.05	Soil	—	0.61	—		
d-250	27° 13' 46.8"	74° 03' 33.3"	0	0.91	Soil	—	0.91	—	2.14	30.38
			0.91	1.83	Soil+Gypsum	33.74	0.92	29.68		
			1.83	2.44	Argillaceous layer+Gypsum+soil	31.48	0.61	19.30		
			2.44	3.05	Soil+Gypsum+gravel	25.79	0.61	15.73		
d-2000	27° 13' 46.8"	74° 04' 36.8"	0	1.22	Soil	—	1.22	—	0.46	79.38
			1.22	1.68	Soil+Gypsum	79.08	0.46	36.38		
			1.68	1.83	Gravel	—	0.15	—		
			1.83	2.44	Soil	—	0.61	—		
			2.44	3.05	Soil	—	0.61	—		
e-1750	27° 13' 54.9"	74° 04' 28.1"	0	2.78	Soil	—	2.78	—	0.61	65.27
			2.78	3.35	Gypsum + soil+Argillaceous layer	65.27	0.61	35.81		

**Details of Bore Holes at Got Manglod Gypsum Mines.**

Bore Hole Number	Location		Depth in meter		Lithology	Grade in terms of CaSO <sub>4</sub> 2H <sub>2</sub> O %	Thickness in Gm		Weighted Average Grade CaSO <sub>4</sub> 2H <sub>2</sub> O %	
	Longitude	Latitude	From	To			Gypsum	Soil		
G-1500	27° 13' 38.7"	74° 04' 39"	3.85	3.66	gravel (kankar)	—	0.33	—	47.87	
			0	1.22	Soil	—	1.22	—		
			1.27	1.81	Soil+Gypsum	25.42	0.61	30.25		—
			1.83	2.44	Gypsum+Argillaceous layer	36.30	0.61	32.14		—
			2.44	3.05	Gypsum+soil+gravel	29.65	0.61	15.04		0.61
G-1250	27° 13' 38.7"	74° 04' 11.1"	0	2.13	Soil	—	2.13	—	—	
			2.13	3.05	Gypsum+Argillaceous layer+gravel	17.47	0.90	16.07		—
			3.05	3.35	Soil	—	0.30	—		—
G-1000	27° 13' 38.0"	74° 04' 01.1"	0	1.22	Soil	—	1.22	—	67.31	
			1.22	2.33	Gypsum+soil+Argillaceous layer	67.31	0.91	61.26		0.91
			2.33	2.74	Calcareous rock	—	0.61	—		—
			2.74	3.05	gravel (kankar)	—	0.31	—		—
G-250	27° 13' 54.0"	74° 03' 31.6"	0	1.52	soil	—	1.52	—	37.34	
			1.52	2.13	Soil+Argillaceous layer	37.34	0.61	22.68		0.61
			2.13	2.74	Argillaceous layer	9.00	0.61	5.49		—
			2.74	3.2	gravel	—	0.46	—		—
			3.2	3.66	gravel	—	0.46	—		—
G-900	27° 14' 19.3"	74° 03' 42.6"	0	1.22	soil	—	1.22	—	64.76	
			1.22	1.83	Gypsum + soil	62.34	0.61	38.03		1.85
			1.83	2.44	Gypsum	72.44	0.61	42.97		—
			2.44	3.05	Gypsum+soil	60.50	0.61	36.78		—
			3.05	3.35	Soil+Gypsum	13.87	0.30	4.16		—
			3.35	3.66	soil	—	0.31	—		—
F-1500	27° 14' 27.4"	74° 04' 19.0"	0	0.61	Soil	—	0.61	—	48.53	
			0.61	1.22	Gypsum	75.91	0.61	46.31		1.05
			1.22	2.44	Gypsum + Argillaceous layer	42.72	1.22	52.12		—
			2.44	3.05	Gypsum+Argillaceous layer+soil	46.14	0.61	29.15		—
			3.05	3.66	Soil +Argillaceous layer	35.48	0.61	21.64		—
			3.66	4.57	Gravel+Low grade Gypsum	11.60	0.91	10.88		—
			4.57	5.48	Gravel	—	0.91	—		—
			5.48	6.1	Soil+sandstone+Argillaceous layer+Gypsum	6.28	0.61	1.89		—
			6.1	6.71	tentative hard rock	3.76	0.61	2.29		—
			6.71	7.32	hard rock+soil	2.62	0.61	1.48		—



**Details of Bore Holes at Got Manglod Gypsum Mines.**

Bore Hole Number	Location		Depth in meter		Lithology	Grade in terms of CaSO <sub>4</sub> 2H <sub>2</sub> O %	Thickness in meter	Grade thickness	Thickness of Gypsum in meter	Weighted Average Grade CaSO <sub>4</sub> 2H <sub>2</sub> O %
	Longitude	Latitude	From	To						
A-2000	27° 14' 27.4"	74° 04' 37.2"	0	0.91	Soil	—	—	—	—	—
			0.91	1.52	Gypsum+Argillaceous layers+soil	45.32	0.61	27.52	0.07	12.60
			1.52	1.83	Gypsum+Argillaceous layers+soil	37.63	0.31	11.67		
			1.83	3.66	Gypsum+Argillaceous layers+high soil+hard rock	2.70	1.83	4.94		
			3.66	4.57	Argillaceous layers	7.26	0.91	6.52		
			4.57	5.49	soil	2.39	0.92	2.20		
			5.49	6.1	carbonate rock +Argillaceous layer	—	0.61	—		
			6.1	7.32	hard rock	—	1.22	—		
			7.32	8.15	hard rock	—	1.83	—		
A-1750	27° 14' 19.3"	74° 04' 26.1"	0	0.61	Soil	—	—	—	—	—
			0.61	1.22	Gypsum	83.71	0.61	49.25	4.27	71.84
			1.22	1.83	Gypsum+soil	68.70	0.61	41.31		
			1.83	2.44	Gypsum	77.79	0.61	47.45		
			2.44	3.05	Gypsum+soil	79.55	0.61	47.28		
			3.05	3.66	Gypsum+soil	65.93	0.61	40.12		
			3.66	4.27	Gypsum+Argillaceous layer+soil	71.87	0.61	43.84		
			4.27	4.88	Gypsum+Argillaceous layer+high soil	61.07	0.61	37.25		
			4.88	5.49	tentative low Gypsum+high Argillaceous layer+high soil	20.51	0.61	12.51	0.61	20.61
			5.49	6.1	tentative hard rock gravel+Argillaceous layer+soil	16.93	0.61	10.33		
			6.1	7.32	Argillaceous layer+soil	4.38	1.22	6.08		
			7.32	7.93	low grade Gypsum+Argillaceous layer+soil	5.80	0.61	2.54		
			7.93	9.15	Gypsum+Argillaceous layer+soil	4.75	1.22	5.80		
A-1750 (point no. 24)	27° 14' 27.4"	74° 04' 28.1"	0	0.91	soil+Argillaceous layer	—	—	0.00	—	—
			0.91	1.83	Gypsum+Argillaceous layer	54.96	0.92	50.56	1.83	51.86
			1.83	2.74	Gypsum+Argillaceous layer	48.73	0.91	44.34		



Details of Bore Holes at Got Manglod Gypsum Mines



Bore Hole Number	Location		Depth in meter		Lithology	Grade in terms of CaSO <sub>4</sub> % CaO %	Thickness in meter	X thickness Gypsum in meter	Weighted Average Grade % CaO 2H <sub>2</sub> O %
	Longitude	Latitude	From	To					
			2.74	4.27	Argillaceous layer+soil	4.26	1.39	5.82	
			4.27	6.1	gravel	2.31	1.83	4.23	
			6.1	8.66	Argillaceous layer	2.41	1.74	6.60	
			8.64	10.37	gravel+Argillaceous layer	4.05	1.55	6.14	
			10.37	12.5	gravel	—	2.13	—	
			12.5	13.11	hard to calcareous rock gravel+soil+red Argillaceous layer	—	3.61	—	
			13.11	31.4	hard to Argillaceous layer	—	18.29	—	
			31.4	42.82	calcareous rock	—	1.22	—	
			42.82	50	red hard Argillaceous layer	—	17.38	—	
A-2500	27° 14' 25.0"	74° 04' 56.4"	0	1.52	Soil	—	1.52	—	
			1.52	2.13	gravel+soil	4.73	0.61	2.89	
			2.13	2.44	Gypsum+Argillaceous layer+soil	32.15	0.51	9.97	0.92
			2.44	3.05	Gypsum+Argillaceous layer+soil	36.27	0.51	16.02	
B-2250	27° 14' 15.3"	74° 04' 46.3"	0	2.13	Soil	—	2.13	—	
			2.13	2.44	low grade Gypsum+high soil	31.97	0.31	6.81	0.31
			2.44	3.05	Gypsum+Argillaceous layer+soil	9.39	0.61	5.73	
C-250	27° 13' 36.7"	74° 03' 31.6"	0	3.05	Soil	—	3.05	—	
h-2250	27° 13' 30.5"	74° 04' 46.3"	0	3.05	Soil	—	3.05	—	
A-0	27° 14' 27.8"	74° 03' 24.2"	0	0.61	Soil	—	0.61	—	
			0.61	1.22	Gypsum	62.26	0.61	37.92	1.22
			1.22	1.83	Gypsum+Argillaceous layer+soil	29.61	0.61	15.08	
			1.83	2.44	Gypsum+soil	16.16	0.51	9.86	2.89
			2.44	3.05	Gypsum+Argillaceous layer	14.43	0.61	8.30	
			3.05	3.66	Gypsum+Argillaceous layer	14.91	0.61	9.16	
			3.66	4.27	Gypsum+Argillaceous layer	13.60	0.61	8.30	
			4.27	4.88	Gypsum+Argillaceous layer	13.42	0.15	2.01	
4.88	4.57	Soil	—	0.15	—				
A-500	27° 14' 27.8"	74° 03' 43.6"	0	0.61	Soil	—	0.61	—	

Details of Bore Holes at Got Manglod Gypsum Mine										
Bore Hole Number	Location		Depth in meter		Lithology	Grade in terms of CaSO <sub>3</sub> 2H <sub>2</sub> O %	Thickness in meter	Grade thickness	Thickness of Gypsum in meter	Weighted Average Grade (CaSO <sub>3</sub> 2H <sub>2</sub> O %)
	Longitude	Latitude	From	To						
			0.91	1.52	Gypsum+Argillaceous layer+soil	49.00	0.61	29.89		49.00
			1.52	2.13	low grade Gypsum+Argillaceous layer+soil	24.33	0.61	17.80	0.61	24.33
			2.13	2.74	low grade Gypsum+Argillaceous layer+soil	16.57	0.61	10.11		
			2.74	3.66	low grade Gypsum+Argillaceous layer+soil	15.43	0.92	14.20		
			3.66	4.27	low grade Gypsum+Argillaceous layer+soil	8.24	0.61	5.03		
g-1750	27° 14' 10.4"	74° 04' 26.3"	0	1.22	Soil		1.22			
			1.22	1.52	Gypsum+soil	80.11	0.30	24.03	0.31	40.11
			1.52	2.13	tentative low Gypsum+Argillaceous layer+soil	20.62	0.61	12.58		
			2.13	3.05	Gypsum+Argillaceous layer+soil	29.89	0.92	21.98	0.92	29.89
			3.05	3.66	gravel/low Gypsum+Argillaceous layer	4.20	0.61	2.62		
			3.66	4.27	Gypsum+Argillaceous layer+high soil	4.55	0.61	2.78		
			4.27	4.88	Gravel+soil	11.25	0.61	6.80		
h-2500	27° 14' 19.9"	74° 04' 54.3"	0	1.83	Soil		1.83			
			1.83	2.44	Soil	2.99	0.61	1.79	1.80	3.50
			2.44	3.05	Argillaceous layer	3.40	0.61	2.09		
			3.05	3.66	Argillaceous layer	4.16	0.61	2.54		
			3.66	4.27	Soil		0.61			
g-2000	27° 14' 11.5"	74° 04' 35.4"	0	0.61	Soil		0.61			
			0.61	1.22	Gypsum+soil	59.09	0.61	41.85	2.24	51.00
			1.22	1.83	Gypsum+soil	39.32	0.61	21.99		
			1.83	2.44	high grade Gypsum	73.32	0.61	44.75		
			2.44	3.05	Gypsum	74.01	0.61	20.83		
			3.05	3.35	low grade Gypsum+soil	38.08	0.30	11.42		
g-750	27° 14' 11.2"	74° 04' 51.7"	0	0.61	Soil		0.61			
			0.61	0.91	Gypsum	65.00	0.30	19.50	0.91	45.43
			0.91	1.22	Soil	0.05	0.31	0.00		

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Details of Bore Holes at Got Manglod Gypsum Mines.

Bore Hole Number	Location		Depth in meter		Lithology	Grade in terms of CaSO <sub>4</sub> 2H <sub>2</sub> O %	Thickness in meter	Grade thickness	Thickness of Gypsum bed in meter	Weighted Average Grade CaSO <sub>4</sub> 2H <sub>2</sub> O %
	Longitude	Latitude	From	To						
			1.22	1.52	Gypsum	71.79	0.30	71.84	0.31	74.83
			1.52	2.12	Soil	0.00	0.61	0.55		
			2.12	2.44	Argillaceous layer+Soil+Gypsum+ low grade	24.84	0.31	7.72		
			2.44	3.05	Soil	0.00	0.61	0.00		
e-1250	27° 13' 54.5"	74° 04' 0.9"	0	0.81	Soil	---	0.81	---	2.13	56.31
			0.81	0.91	Gypsum+Argillaceous layer+soil	80.55	0.10	74.17		
			0.91	1.52	Gypsum+Argillaceous layer	95.00	0.61	34.16		
			1.52	2.13	Gypsum+Argillaceous layer	68.56	0.61	41.82		
			2.13	2.74	Gypsum+Argillaceous layer	33.15	0.61	20.22		
			2.74	3.05	low grade Gypsum+Argillaceous layer	15.46	0.31	4.77		
g-1250	27° 14' 11.2"	74° 04' 9.9"	0	1.22	Soil	---	1.22	---	1.22	40.68
			1.22	1.83	Argillaceous layer+soil	41.22	0.61	25.14		
			1.83	2.44	Argillaceous layer+soil+Gypsum	40.14	0.61	24.45		
			2.44	3.05	Argillaceous layer+soil	3.57	0.61	2.38		
			3.05	3.66	Argillaceous layer+soil	3.59	0.61	2.25		
i-1033	27° 14' 27.4"	74° 04' 0.0"	0	1.22	Soil	---	1.22	---	1.85	33.61
			1.22	1.83	Argillaceous layer	27.08	0.61	30.42		
			1.83	2.44		30.93	0.61	08.07		
			2.44	3.05		22.81	0.61	13.81		



Summary of Geological Details at Boreholes

A. Average Grade of Gypsum (40% CaSO<sub>4</sub>·2H<sub>2</sub>O).

S.No.	Bore Hole No.	Thickness of Overburden in meter	Thickness of Gypsum in Bed in meter.	Percentage of CaSO <sub>4</sub> ·2H <sub>2</sub> O
1	K-1000	2.13	0.61	28.63
2	K1250	1.22	0.61	41.55
3	K1500	0.91	2.44	47.46
4	K1750	1.83	1.52	43.65
5	J1750	1.52	1.83	54.16
6	I1500	0.61	3.05	48.59
7	I1750	0.91	1.83	51.86
8	I2000	0.91	0.92	42.60
9	H1750	0.61	4.27	71.94
10	G2000	0.61	2.74	52.00
11	J500	2.74	0.61	44.41
12	I0	0.61	1.22	40.98
13	I500	0.91	0.61	49.00
14	H250	1.83	2.13	40.22
15	H500	1.22	1.83	64.36
16	G250	1.83	1.22	59.04
17	G750	0.61	0.91	45.43
18	G-1250	1.22	1.22	40.68
19	G1750	1.22	0.91	40.73
20	E1250	0.61	2.13	56.51
21	E1750	2.74	0.61	65.27
22	D2000	1.22	0.46	79.08
23	D1000	0.92	1.53	45.69
24	C1000	1.22	0.91	67.31
25	C1500	1.22	1.22	47.87
			1.49	51.21

Details of bore holes showing thickness with average grade of Gypsum 20 to 40% CaSO<sub>4</sub>·2H<sub>2</sub>O.

S.No.	Bore Hole No.	Thickness of Overburden in meter	Thickness of Gypsum in Bed in meter.	Percentage of CaSO <sub>4</sub> ·2H <sub>2</sub> O
1	K-2250	0.92	2.29	24.47
2	K-750	2.13	0.31	28.36
3	K-500	0.91	0.61	30.24
4	E-2000	2.13	1.53	26.97
5	D-250	0.92	2.14	30.18
6	E-250	1.52	0.61	37.14
7	I-2500	2.13	0.92	28.25
8	H-2250	2.13	0.31	21.97
9	I-1000	1.22	1.83	23.61
	Average		1.17	27.91

Note:- Bore hole no. K-250, B-250, C-1250, C-250, B-2250, H-2500 is considered as barren hole as the gypsum content is less than 20% Ca SO<sub>4</sub>·2H<sub>2</sub>O

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List of equipment deployed at Gotmanglod Gypsum Mines.

S.No.	Equipment	Make	Specification	Numbers
1	Hydraulic Excavator (Back-hoe)	L&T Komatsu	135HP, 0.9M <sup>3</sup> Bucket Capacity	1
2	Tractor with scrapper attachment	MAHINDRA	40HP	1
3	Water Sprinkler Tractor Driven	MAHINDRA	40HP	1

The number of equipment will be doubled after the environment clearance for expansion in annual production capacity of gypsum at mines from 3.50 lakh ton to 7.00 lakh ton per year.

**Government of Rajasthan**  
**Office of the Superintending Mining Engineer**  
**Bikaner Circle, Bikaner(Raj.)**

No. SME/BKN/Nagaur/Major/ML-1/90/ 1925  
M/s Rajasthan State Mines & Minerals Ltd  
Sadul club Building,  
Bikaner

Date: 19-10-2002

**Sub.:- Approval of Mining Scheme including Progressive Mine Closure Plan** in for Mineral Gypsum Near Village Got Manglod Tehsil Jayal Distt. Nagaur for an area of **870.74 Hect**, (ML No- 1/1990 ) Submitted under rule 22 of MCR 1960 & 23(B) (1) of MCDR1988 (Amendment) 2003

**Dear Sir,**

In exercise of the power conferred under rule 22 (4A) of Mineral Concession rules 1960 and sub rule (4) of rule 11 and rule 23(B) of Mineral Concession and development (amendment) rule 2003 read with State Govt. notification dated 20-04-2005, I Here by **APPROVE** the above said Mining Scheme including Progressive Mine Closure Plan. This approval is subject to the following conditions:-

- 1 (i) **This Mining Scheme including Progressive Mine Closure Plan** is approved with out prejudice to any other laws applicable to the Mine/area from time to time whether made by the Central Government State Government or any other authority.
- (ii) It is clarified that the approval of your aforesaid **Mining Scheme Including progressive Mine closure plan** does not in any way imply the approval of the Government in terms of any other provision of the mines and Minerals (Regulation and Development) Act, 1957 or the Rules framed there under and any other laws.
- (iii) It is further clarified that approval of the **Mining Scheme Including Progressive Mine Closure Plan** is subject to the provision of Forest (Conservation) Act, 1980, Forest (conservation) Rule, 1981 and other relevant statutes, orders and guidelines as may be applicable to the lease from time to time.
- 2 **The Mining Scheme Including Progressive Mine Closure Plan** is approval without prejudice to any order or direction from any Court of Competent jurisdiction.

- 3 Exploration will be carried out to prove the presence of any other Gypsum bed beneath the excavated area of working pit with in one year from the date of approval of this Mining Scheme Including progressive Mine Closure Plan.
- 4 In case lessee fails to implement approved Mining Scheme including Progressive Mine Closure Plan. Action against him be taken as per rules and financial assurance submitted by the lessee shall be forfeited.
- 5 In those cases where financial assurance are forfeited the M.E /A.M.E concerned would be responsible for making reclamation and rehabilitation of lease are used by lessee.

Wherever area of mining and allied activity is increased it should be ensured by concerned ME/AME that the required enhanced financial assurance is submitted by lessee as directed by Rajasthan State Government order No. F-14(7)Mines/Gr.11/86 Jaipur, Dt. 12-11-03

Yours Faithfully,

Superintending Mining Engineer  
Bikaner Circle, Bikaner

Date:

No. Even/

Copy forwarded for kind information to :

- 1 The Regional Controller of Mines, Ajmer Region. IBM Makhapura Ind- Area Ajmer-305008 with One Copy of approved Mining Scheme Including Progressive Mine Closure Plan .
- 2 The Director, of Mines Safety, Directorate General of Mines Safety, Ajmer
- 3 The Director, Mines and Geology , Shastri Circle , Udaipur with One Copy of approved Mining Scheme Including Progressive Mine Closure Plan .
- 4 Addition Director (Mines) Jodhpur.
- 5 M.E Nagaur Please ensure Compliance of Approved Mining Scheme Including Progressive Closure Plan with a Copy of approved Mining Scheme Including Progressive Mine Closure Plan .
- 6 Shri D.S. Acharya RQP, M/s R.S.M.M. Ltd., Bikaner
- 7 Guard File.

Superintending Mining Engineer  
Bikaner Circle, Bikaner

कार्यालय उप वन संरक्षक, नागौर

स्टेटिकमन के पार, नागौर, फोन : 01592-241048, फैक्स : 01592-248175, ईमेल : duf.agr.forest@rajasthan.gov.in

क्रमांक : एफ ( ) तक/उबसं/2015-16/1393

दिनांक : 10-3-16

निमित्त :

वरिष्ठ प्रबन्धक,  
आर.एस.एम.एम. लिमिटेड,  
बीकानेर

विषय : गौठ मांगलोद खनन क्षेत्र के 10 किमी परिधि में फलोरा एवं फोना की सूची का ऑथेन्टिकेशन करने के सम्बन्ध में।

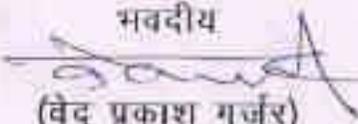
प्रसंग : आपका पत्रांक 75 दिनांक 08.02.2016

महोदय,

विषयान्तर्गत लेख है कि आप द्वारा प्रसांगिक पत्र के साथ प्रस्तुत गौठ मांगलोद खनन क्षेत्र के 10 किमी परिधि में फलोरा एवं फोना की सूची का ऑथेन्टिकेशन कर दिया गया है। मोर के संरक्षण की योजना का अदलोकन किया गया। इस संबंध में आपको सुझाव दिया जाता है कि इस खनन क्षेत्र के 10 किमी परिधि में जायल नर्सरी स्थित है। इसमें काफी मात्रा में मोर पाये जाते हैं। आस पास के ग्रामिणों के सहायोग से इन मोरों को चून्गा (दाना) डाला जाता है एवं घायल मोरों को रेस्क्यू सेन्टर में इलाज किया जाता है।

अतः आप द्वारा मोर संरक्षण योजना में प्रस्तावित धनराशि का जायल में मोरों के संरक्षण में उपयोग किया जा सकता है।

भवदीय

  
(वेद प्रकाश गुर्जर)  
उप वन संरक्षक,  
नागौर

**LIST OF FLORA & FAUNA (10 KM RADIUS OF MINE SITE)**

**GOTMANGLOD GYPSUM MINE  
MINE LEASE AREA- 870.74 ha  
AT  
VILLAGE – GOT-MANGLOD  
TEHSIL – JAYAT, DISTRICT – NAGOUR  
RAJASTHAN**

**APPLICANT:  
RAJASTHAN STATE MINING & MINERALS LTD. (RSMML)  
(A GOVERNMENT OF RAJASTHAN ENTERPRISE)  
SBU & PC-GYPSUM, BIKANER, RAJASTHAN**

LIST OF FLORA & FAUNA OF GOTMANGLOD GYPSUM MINE BY M/S RAJASTHAN STATE MINE & MINERAL LTD LOCATED AT VILLAGE GOT MANGLOD TEHSIL JAYAL AND DISTRICT NAGARK

➤ Flora species found in the study area (10 Km radius)

Botanical Name	Common Name	Family
Acacia nilotica	Desi Babul	Fabaceae
Acacia senegal	Khumbat	Fabaceae
Acacia tortilis	Israeli Babul	Fabaceae
Aerva persica	Bui	Amaranthaceae
Albisia lebeck	Siris	Fabaceae
Azadirachta indica	Neem	Meliaceae
Blepharis indica	Bhangri	Acanthaceae
Calligonum polygonoides	Phog	Polygonaceae
Calotropis procera	Aak	Apocynaceae
Capparis decidua	Kair	Brassicaceae
Celosia argentea	Lal murga	Amaranthaceae
Cenchrus biflorus	Bharat	Poaceae
Cenchrus setigerus	Dhaman	Poaceae
Citrullus colocynthis	Indrayan	Cucurbitaceae
Clome viscosa	Bagra	Brassicaceae
Clerodendrum phomoidis	Arna	Lamiaceae
Coccolus pendulus	Pihwan	Menispermaceae
Crotalaria burhia	Saniya	Fabaceae
Cyamopsis tetragonoloba	Gwar	Fabaceae
Cymbopogon jwarancusa	Burada	Poaceae
Cynodon dactylon	Dab	Poaceae
Cyperus arenarius	Motha	Cyperaceae
Cyperus bulbosus	Mogara	Cyperaceae
Cyperus rotundus	Kal-Ghas	Cyperaceae
Dactyloctenium indicum	Ghantiya	Poaceae
Desmostachya bipinnata	Dah	Poaceae
Dichanthium annulatum	Khad Ghas	Poaceae
Digera muricata	Lahava	Amaranthaceae
Ephedra foliata	Sua phugoro	Ephedraceae
Euphorbia caducifolia	Thur	Euphorbiaceae
Euphorbia granulata	Dudhii	Euphorbiaceae
Fagonia schweinfurthii	Dhamasa	Zygophyllaceae
Parsetia hamiltonii	Kag-Piang	Brassicaceae
Caselia pharnaceoides	Sareli	Aizoaceae
Glossonema varians	Dodh	Apocynaceae

LIST OF FLORA & FAUNA OF GOTMANGLOD GYPSUM MINE BY M/S RAJASTHAN STATE MINE & MINERAL LTD LOCATED AT VILLAGE GOT MANGLOD TEHSIL JAYAL AND DISTRICT NAGAUR

<i>Grewia tenax</i>	Gangani	Malvaceae
<i>Heliotropium marifolium</i>	Rawa	Boraginaceae
<i>Lasiurus indicus</i>	Sevan	Poaceae
<i>Leptadenia pyrotechnica</i>	Khemp	Apocynaceae
<i>Lycium barbarum</i>	Morali	Solanaceae
<i>Maytenus emarginata</i>	Kanikero	Celastraceae
<i>Mimosa hamata</i>	Jhinjani	Fabaceae
<i>Mollugo cerviana</i>	Adela Ket	Molluginaceae
<i>Panicum turgidum</i>	Murat	Poaceae
<i>Prosopis cineraria</i>	Khajari	Fabaceae
<i>Prosopis juliflora</i>	Angresi Babul	Fabaceae
<i>Policaria angustifolia</i>	Sonla	Compositae
<i>Rivea hypocrateriformis</i>	Rata bell	Convolvulaceae
<i>Rhynchosia minima</i>	Chiri-Motio	Fabaceae
<i>Salvadora oleoides</i>	Mitha Jal	Salvadoraceae
<i>Salvadora persica</i>	Khari Jal	Salvadoraceae
<i>Tecomella undulata</i>	Rohida	Hamoniaceae
<i>Tephrosia purpurea</i>	Boni	Fabaceae

➤ Mammals found in the study area

S.No	Scientific name	Common name	Schedule as per WPA 1972
1.	<i>Canis aureus indicus</i>	Common Jackel	Schedule II
2.	<i>Hyaena hyaena</i>	Striped Hyna	Schedule III
3.	<i>Boselaphus tragocamelus</i>	Nilgai	Schedule III
4.	<i>Lepus nigricollis</i>	Indian Hare	Schedule IV
5.	<i>Mus musculus</i>	House mouse	Schedule V
6.	<i>Mus hooduga</i>	Indian field mouse	Schedule V
7.	<i>Rattus rattus</i>	Black rat	Schedule V
8.	<i>Milvardia gleadowi</i>	Sand coloured soft furred rat	Schedule V
9.	<i>Colomda ellioti</i>	Indian bush rat	Schedule V
10.	<i>Funanthulus pennanti</i>	Striped squirrel	Schedule IV

LIST OF FLORA & FAUNA OF GOMETANGLOD GYPSUM MINE BY M/S RAJASTHAN STATE MINE & MINERAL LTD LOCATED AT VILLAGE GOT MANGLOO TEHSIL JAYAL AND DISTRICT NAGAUR

➤ Reptiles & Amphibians found in the study area

S.No	Scientific Name	Common Name	Schedule as per WPA 1972
1.	<i>Calotes versicolor</i>	Oriental Garden Lizard	Schedule II
2.	<i>Uromastyx hardwickii</i>	Indian spiny tailed lizard	Schedule II
3.	<i>Eryx johnii</i>	Indian Sand Boa	Schedule IV
4.	<i>Bungarus Caeruleus</i>	Indian Krait	Schedule IV
5.	<i>Naja naja</i>	Cobra	Schedule II

➤ Birds species found in the study area

S.No	Scientific name	Common name	Schedule as per WPA 1972
1.	<i>Acridotheres tristis</i>	Indian Myna	Schedule IV
2.	<i>Columba livia</i>	Blue rock pigeon	Schedule IV
3.	<i>Corvus splendens</i>	House crow	Schedule IV
4.	<i>Perdix perdix</i>	Gray partridge	Schedule IV
5.	<i>Merops orientalis</i>	Green bee eater	Schedule IV
6.	<i>Passer domesticus</i>	House sparrow	Schedule IV
7.	<i>Saxicoloides fulicata</i>	Indian robin	Schedule IV
8.	<i>Trianga hypoleucos</i>	Common bayr pipper	Schedule IV
9.	<i>Turdoides caudatus</i>	Common babbler	Schedule IV
10.	<i>Pycnonotus cafer</i>	Red vented bulbul	Schedule IV
11.	<i>Dicrurus adimillibis</i>	Black Drongo	Schedule IV
12.	<i>Copsychus saularis</i>	Maggie Robin	Schedule IV
13.	<i>Muscicapa parva</i>	Red breasted Flycatcher	Schedule IV
14.	<i>Orthotomus sutorius</i>	Tailor Bird	Schedule IV
15.	<i>Saxicola torquata</i>	Chat Collared Bush	Schedule IV
16.	<i>Eudynamis scolopacea</i>	Asian Koel	Schedule IV
17.	<i>Clamator jacobinus</i>	Pied Crested Cuckoo	Schedule IV
18.	<i>Ptilinopus krameri</i>	Rose ringed Parakeet	Schedule IV
19.	<i>Corvus splendens</i>	House Crow	Schedule V
20.	<i>Corvus macrorhynchos</i>	Jungle Crow	Schedule IV
21.	<i>Tyto alba</i>	Owl	Schedule IV
22.	<i>Pavo Cristatus</i>	Peafowl	Schedule I

# CONSERVATION PLAN FOR “PEAFOWL”



**GOTMANGLOD GYPSUM MINE**  
**MINE LEASE AREA- 870.74 ha**  
**At**  
**VILLAGE – GOT-MANGLOD**  
**TEHSIL – JAYAL, DISTRICT – NAGOUR**  
**RAJASTHAN**

**APPLICANT:**

**RAJASTHAN STATE MINING & MINERALS LTD. (RSMML)**  
**(A GOVERNMENT OF RAJASTHAN ENTERPRISE)**  
**SBU & PC-GYPSUM, BIKANER, RAJASTHAN**

**Consultant**

**MANTEC CONSULTANTS PVT. LTD.**

*QCI/NABET Accredited EIA Consultant at S.No.101 as per List of Accredited consultant Organizations/Rev.36/Nov. 05, 2015 and MoEF & NABL approved Laboratory*  
**805, Vishal Bhawan, 95 Nehru Place, New Delhi-110019, PH. 011-26429294/95/96,**  
**Fax. 011-26463665/26842531, e-mail: [mantec@vsnl.com](mailto:mantec@vsnl.com),**  
**Environment Division, D-36, Sector-6, Noida-201 301, U. P.,**  
**Ph. 0120-4215000, 0120-4215807 Fax. 0120-4215809,**  
**e-mail: [environment@manteconsultants.com](mailto:environment@manteconsultants.com)**  
**website: [www.manteconsultants.com](http://www.manteconsultants.com)**

# 1. PROJECT DESCRIPTION

## General

The mining lease area of 870.74 Hectares in village- Got Manglod Tehsil Jayal District Nagaur for mining of Gypsum was granted to RSMML vide GOR order no. order no. P.15 (16) Khan/Group-1/2000, dated 13.07.2009 for a period of 20 years from 30.06.2000. Out of the total mine lease area of 870.74 ha; 670.74 ha is agricultural land, 2.78 ha is wasteland and 169 ha is grazing land and 28.22 ha road and temple. No forest land is involved. Mining shall be carried out for a targeted production of 7.0 lac tones per annum of gypsum by opencast semi-mechanized method without involving drilling and blasting.

Rajasthan State Mines & Minerals Limited ( A Government of Rajasthan Enterprise) has proposed to enhance the production capacity of gypsum from 3.5 Lac TPA to 7.0 Lac TPA. Therefore this project requires new Environmental Clearance from MoEF as per EIA Notification dated 14th September, 2006 before enhancement of production capacity. This conservation plan has been prepared after the site visit in and around the mining lease & as per requirement of TOR set by the MOEF. The process during operation of the mining has been reviewed, possible impacts examined and ameliorative measures suggested. Rajasthan State Mines & Minerals Limited has engaged M/s. **Mantec Consultant**, Environmental Management Division, Sector-6, Noida for preparation of Environment Impact Assessment Report for obtaining Environment Clearance.

	Gypsum
Location of Mine	Old ML no. 1/1990( New ML. No. 1/99 as per renewal ) Village Got Manglod ,Tehsil Jayal, District Nagaur
Life of mine	~ 12 years
Proposed annual production of mine	7 Lac TPA
Method of mining	Opencast semi-mechanized
No of working days in a year	300
Water requirement	15 KLD
Source of water	Through tanker supply .

## Need of the Project

Mining of gypsum deposits in the western Rajasthan area is an eco-friendly work rather than the diverse effect on environment of the Desert. Cement, Fertilizer and Plaster of Paris are the three important industries in which the gypsum is utilized. Both Mineral and byproduct gypsum are used in cement manufacturing.

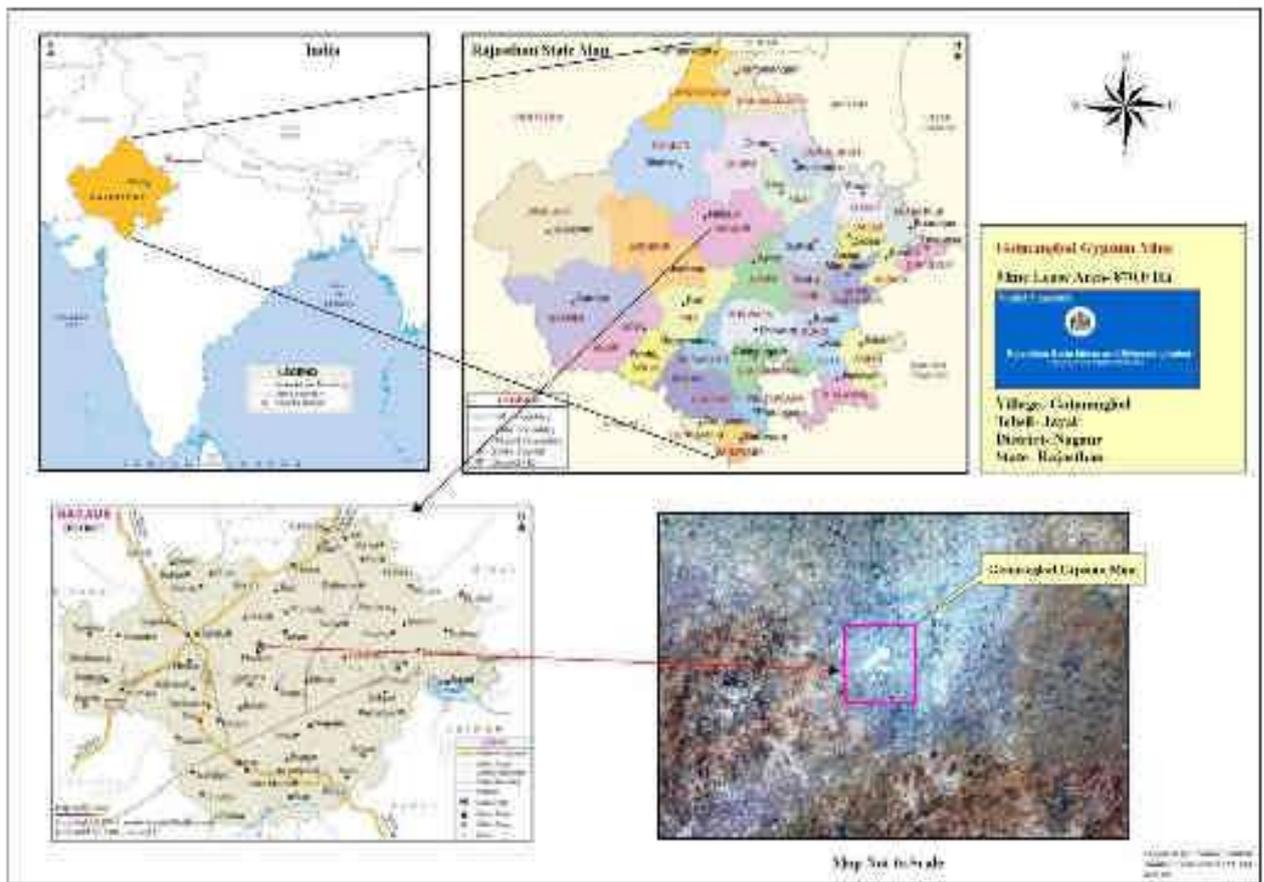
## Location of the Project

The mining lease area is located in village- Got Manglod, Tehsil- Jayal District - Nagaur, (Rajasthan).The project falls in the Toposheet No. : 45 I/3 & 4.

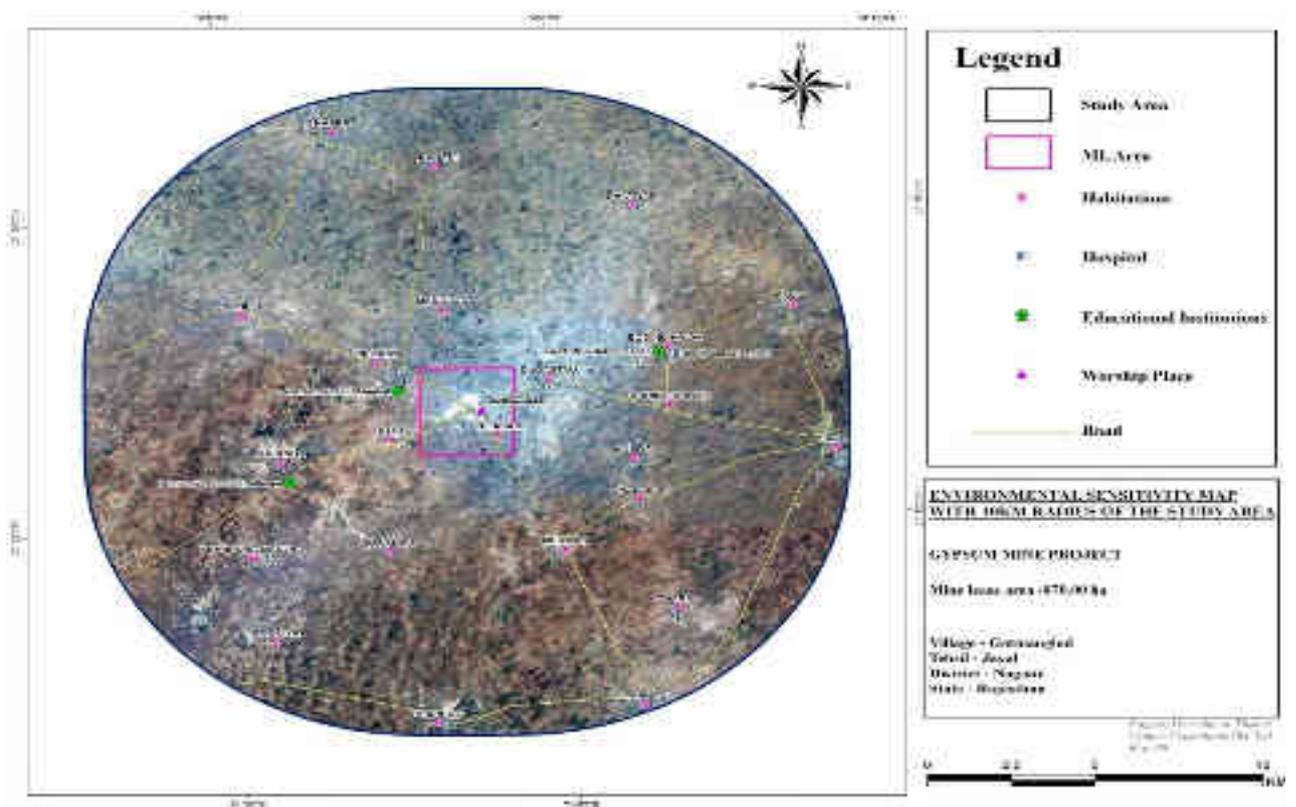
Latitude : 28<sup>0</sup>20'3.25" N to 28<sup>0</sup>21'39.2" N

Longitude: 72<sup>0</sup>22'52.97" E to 72<sup>0</sup>25'34.97" E

## Location Map of the Area



## 10 km radius Area Map



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## 2. IMPACT ON "PEAFOWL" & THEIR HABITAT

### General

Identification of all potential environmental impacts due to project is an essential step of Environmental Impact Assessment. In case of mining projects, impacts on biodiversity, air pollution, water pollution, waste management and social issues are significant. Both direct and indirect environmental impacts will be created on various environmental attributes due to proposed mining activity in the surrounding environment, during the operational phase.

The occurrence of gypsum deposits, being site specific, their exploitation often does not allow for any choice except adoption of eco-friendly operation. Positive impacts on socio-economic environment are expected due to creation of employment opportunities. Mining activities are normally carried out over a long period which also encourages development in the area such as roads, schools, hospitals etc. As such, the impact of the plant on these wild lands and on the animals sheltered within is likely to be from several factors. Impacts on the biodiversity are as follow:

### Impact of Particulate matter

Particulate matter is the major source of the gypsum Mining. Dust is generated during Excavation, transport of materials, site development and loading and unloading of gypsum etc. Dust gets deposited over surrounding vegetation being carried by wind. Dust has an inhibiting growth on plants and creates allergy and respiratory disorder in animals. The soil property and micro flora and fauna are also affected by dust.

### Impact of Air Pollution

Gases such as Sulphur Dioxide, Oxides of Nitrogen etc. emitted from vehicular exhaust. Other important gaseous pollutants are SO<sub>2</sub> and N<sub>2</sub>O. It is well known that SO<sub>2</sub> has harmful effects on plants and animals. The levels of foliar injury, chlorophyll content and ascorbic acid were found to decrease and that of Sulphur increase in vegetation. Beyond permissible limits SO<sub>2</sub> can cause cough, irritation of respiratory tract and breathing problem in animals and birds. Exposure to N<sub>2</sub>O at concentrations of 100 ppm or more can prove disastrous to fauna.

### Loss of Biodiversity

Of the total number of species in a plant community, a relatively small percent are abundant while large number is rare. While the few abundant species regulate the energy flow in the community, the large numbers of rare species determine the species diversity. Higher diversity in plant means longer food chains, more species interactions, greater possibilities for negative feed-back control, which reduces oscillations in species structure and increase stability. This condition is obtained in climax mature forests. Community of animals, birds & plants species are vulnerable to external stressors like pollution, fire and thinning up of trees. Once, the plant species start disappearing by selective removal, dependent animal communities loose out in the struggle for survival. Plant species of interior habitats may be lost at a faster rate compared to edge habitats.

### Impact of Heavy Traffic Movement

During operation phase, large scale movement of vehicles will generate noise and dust and may reduce habitat utilization by birds.

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### 3. Conservation Plan for Indian Peafowl (*Pavo cristatus*)

A Indian peafowl or Peacock or Mor (*Pavo cristatus*) is a large pheasant justifiably declared as the National Bird of India in 1963 due to its flagship value founded on its glorious position in mythology and its widespread distribution and grandeur. In India, it is given the utmost protection by inclusion in Schedule I of Indian Wildlife Act, 1972. Being a wide spread species, apart from the various urban habitats, it is also found in agriculture fields, along streams with good vegetation and close to human habitations in a semi-feral condition (Johnsgard 1986). In the present study area this species have been confirmed from various habitats located near the village periphery.

**Species Authority: Linnaeus, 1758**

**Kingdom: Animalia**

**Phylum: Chordata**

**Class: Aves**

**Order: Galliformes**

**Family: Phasianidae**

**Genus: Pavo**

- **Length:** 195- 225(Body)
- **Weight:** 4-6 Kg. (Average)
- **Habitat:** Ground in open forest or on land under cultivation
- **Distribution:** Himalayan ranges and North-East India
- **Food:** Berries, grains but also prey on snakes lizards, and small rodents
- **Life span:** 23 year
- **Status:** **Least concern**

#### **Appearance**

Male peacock has a spectacular glossy green long tail feathers that may be more than 60 percent of the bird's total body length. These feathers have blue, golden green and copper colored ocelli (eyes). The long tail feathers are used for mating rituals like courtship displays. The feathers are arched into a magnificent fan shaped form across the back of the bird and almost touching the ground on both sides. Females do not have these graceful tail feathers. They have the fan like crest with whitish face and throat, chestnut brown crown and hind neck, metallic green upper breast and mantle, white belly and brown back rump and tail. Their primaries are dark brown.



### **Male Peafowl & Female Peafowl**

Peafowl are best known for the male's extravagant display feathers which, despite actually growing from their back, are thought of as a tail. The "train" is in reality made up of the enormously elongated upper tail coverts. The tail itself is brown and short as in the peahen. The colours result not from any green or blue pigments but from the micro-structure of the feathers and the resulting optical phenomena. The long train feathers (and tarsal spurs) of the male develop only after the second year of life. Fully developed trains are found in birds older than four years. In northern India, these begin to develop each February and are moulted at the end of August. The moult of the flight feathers may be spread out across the year. Peafowl forage on the ground in small groups, known as musters that usually have a cock and 3 to 5 hens. After the breeding season, the flocks tend to be made up only of females and young. They are found in the open early in the mornings and tend to stay in cover during the heat of the day. They are fond of dust-bathing and at dusk, groups walk in single file to a favorite waterhole to drink. When disturbed, they usually escape by running and rarely take to flight.

Peafowl produce loud calls especially in the breeding season. They may call at night when alarmed and neighboring birds may call in a relay like series. Nearly seven different call variants have been identified in the peacocks apart from six alarm calls that are commonly produced by both sexes.

Peafowl roost in groups during the night on tall trees but may sometimes make use of rocks, buildings or pylons. In the Gir forest, they chose tall trees in steep river banks. Birds arrive at dusk and call frequently before taking their position on the roost trees. Due to this habit of congregating at the roost, many population studies are made at these sites. The population structure is not well understood. In a study in northern India (Jodhpur), the number of males was 170-210 for 100 females but a study involving evening counts at the roost site in southern India (Injar) suggested a ratio of 47 males for 100 females.

### **Habitat**

The Indian Peafowl (*Pavo cristatus*) was once widely distributed and abundant throughout the Indian mainland. In recent years, there has been an increasing concern about their declining status.

Indian peacocks are generally forest inhabitants. Once peafowl settle on a place to live, they typically don't stray far. They're drawn to airy forests. They prefer sites close to reliable water access, often riverbanks. Peafowl are also prevalent in areas that have fruit crops, which they frequently eat. They largely favor being away from human activity and disturbance.

### **Food and Feeding Habits**

Peafowl's are omnivores, eating plant parts, flower petals, seed heads, insects and other arthropods, reptiles and amphibians. In the study area, dense tree canopy cover supports good insect diversity which is very common food for peafowl's

### **Conservation Status**

Although the Indian Peafowl is under Schedule I species as per Indian Wildlife Conservation Act and Least concern category in IUCN list.

### **Threats**

Poaching of Indian Peafowl for their meat and feathers in addition to accidental poisoning by feeding on pesticide treated seeds are known threats to the wild birds. Adult birds can usually escape from ground predators by flying into trees. Large animals such as tigers, leopards and dholes can sometimes ambush them. They are also sometimes hunted by large birds of prey such as the Crested Hawk-Eagle and Rock Eagle-owl. Chicks are somewhat more prone to predation than adult birds. Adults living near human habitations are also sometimes hunted by domestic dogs. Study

### **Approach**

Since the buffer zone of the proposed mining site reported with Schedule I species *Pavo cristatus* commonly known as peacock, a systematic study was conducted to assess their status in term of movements and habitat use of the species. At first, a detailed biological survey of the core zone and buffer zone (10 km radius from periphery of the mine) was carried out to understand the status distribution of the species in the study area.. The conclusion of the survey discussed the potential sightings & habitat use and movement and food habits of peacock in the study area.

### **Sightings and Habitat Use**

From the core zone no any peacock was sighted. However, direct sightings of the peacock were located near the human dominated and associated surround habitats like agricultural field near village water bodies. This species is well adapted to natural village environment setting. According to the villagers during day time they temporarily move towards the surrounding areas like agriculture hedges, orchards and nearest water bodies for feeding while during night time roosts on the trees present in vicinity of the human settlements and also road side trees.

### **Inference - Buffer zone as a Peacock habitat**

Present survey of the peafowl in the buffer zone of the project site shows that, peafowl is well adapted to the existing rural setting of the study area. However, the following points can give an insight on the overall status of peafowl in the study area and thereby plan for better management strategies related to proposed project activities. Local residents of the study area were well aware of the movement pattern of peafowl in their surrounding habitats. Peafowl uses agriculture and various rural habitats as a feeding ground during day time while during night time they take shelter on the trees as well as on the roof of the houses. It clearly indicates peafowl normally uses ecosystems or habitats adjacent to village. From the above said facts, it can be inferred that, some villages of the buffer zone provide roosting and feeding ground for the peafowl, while core zone do not have potential habitat for roosting or feeding ground for peacock. Therefore, it has been visualized that, the proposed project will not have any significant impact on peacock in terms of their normal movements and other activities. However, it is necessity to take some management options like habitat improvement in the villages located in the immediate vicinity of the project site. Emphasized that, sometime peacocks roosts on the roof of the houses.

### **Conservation Approach**

Following conservation measures will be adapted for peacock conservation.

#### **Habitat Improvement Action Plan**

Habitat improvement programme will include plantation of various plant species like, *Neem*(*Azadirachta indica*), *Ber* (*Zizyphus jujube*), *Parkinsonia*, *Khejri* (*Prosopis cineraria*), *babool* (*Acacia indica*) and other species reported from the study area should be taken in to priority. Plantation activity in an area of 5 ha was proposed as per the approved mine plan.

In order to improve vegetation cover, it is suggested to carry out extensive afforestation program different phases. These species will help to provide habitat for faunal species, and also increase the species diversity and maintain the naturalness of the surrounding area. Habitat improvement programme in the different villages will be undertaken in the buffer zone area for shelter and roosting of peacocks. This will be achieved by plantation of local varieties of the tree species near villages in buffer area.

#### **Seed distribution among the villagers**

During this habitat improvement programme the seeds of *Moringaoleifera* (Sehjan) will be distributed in the various villages of the study area. Compost packets will be also provided at the intervals of the every six months.

#### **Water feeling in the existing water bodies**

Place suitable for mini watersheds will be identified in the core as well as the buffer zone. Water will be filled through tankers in the village ponds or water holes.

### **Awareness programme for "Biodiversity" conservation**

The success of any conservation plan of this magnitude is entirely hinged on the active support and whole hearted co-operation of all stakeholders with the members of public playing a major role. For this purpose, meetings and seminars will be organized from village to village on regular basis to carry the people along with implementation. The discussion may evolve around habitat loss, migration of peacock, control of peacock damage, fire damage control and how best the vegetation can be revamped etc.

During awareness programme following activities will be arranged at the various village level schools as mentioned above (year wise),

- "Essay writing on Peacock"
  - "Drawing competition on Peacock"
- Suggestions/recommendations
- Restricting use of pollutants in their habitat.
  - Minimize vehicle pollution, wildlife road fatalities and damage to precious habitat by peoples to start movement towards these areas.
  - Making provision of veterinary care and cages for injured or sick deformed birds.

#### **Suggestions/recommendations**

- Restricting use of pollutants in their habitat.
- Minimize vehicle pollution, wildlife road fatalities and damage to precious habitat by peoples to start movement towards these areas.
- Making provision of veterinary care and cages for injured or sick deformed birds.

### **Budget**

The proponent has proposed a sum of Rs. 1.5 Lac/- for the "Peacock" conservation plan under the following heads up to three years in consultation of local forest department.

<b>S. No</b>	<b>Work Activity</b>	<b>Budget</b>
1.	Habitat improvement programme	50,000/-
2.	Seed distribution among the villagers	25,000/-
3.	Water feeling in the existing water bodies	25,000/-
4.	Awareness programme for "Biodiversity" conservation	50,000/-
	<b>Total</b>	<b>1,50,000/-</b>