SEMINAR ON ADVANCEMENT IN MINING OF OIL AND SOLID FUELS
15-17 December, 2017 at Mining Welfare Centre, Mansarovar, Jaipur-302020
Organised and hosted by MEAI, Rajasthan Chapter-Jaipur

The broad topics for deliberation include: Geological setting of reservoirs for oil and gas fields, exploration techniques of different hydrocarbons, advancements in production/mining technology for oil and gas; coal fields, coal bed methane and shale gas in India.

Call for Papers: Papers on any above themes may please be submitted through e-mail, to the Organizing Secretary on or before November 15, 2017. The submissions are to be in the 'Word file' only and plates & figures in jpg files.

Sponsorship and Promotional Opportunities

<table>
<thead>
<tr>
<th>Category</th>
<th>Sponsorship Free Delegates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diamond Sponsorship</td>
<td>₹ 7 lakh/ US$ 15,000 Five</td>
</tr>
<tr>
<td>Gold Sponsorship</td>
<td>₹ 5 lakh/ US$ 10,000 Four</td>
</tr>
<tr>
<td>Event Partner Sponsorship</td>
<td>₹ 4 lakh/ US$ 8,000 Three</td>
</tr>
<tr>
<td>Lunch/ Dinner Sponsorship</td>
<td>₹ 2 lakh/ US$ 3,000 Two</td>
</tr>
<tr>
<td>Kit Sponsorship</td>
<td>₹ 1.5 lakh/ US$ 2,500 Two</td>
</tr>
<tr>
<td>Memento Sponsorship</td>
<td>₹ 1 lakh/ US$ 2,000 One</td>
</tr>
<tr>
<td>Lanyard Sponsorship</td>
<td>₹ 1 lakh/ US$ 2,000 One</td>
</tr>
</tbody>
</table>

Registration Fee (including 18% GST)

<table>
<thead>
<tr>
<th>Category of delegates</th>
<th>Registration Fee (per delegate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian delegates</td>
<td>₹ 5,000 / on spot ₹ 6,000</td>
</tr>
<tr>
<td>Overseas delegates</td>
<td>US$ 250</td>
</tr>
<tr>
<td>MEAI members</td>
<td>₹ 1000 / on spot ₹ 1,500</td>
</tr>
</tbody>
</table>

All payments are to be made favoring "Mining Engineers' Association of India"

For further details please contact:
Shri P. C. Bakliwal, Secretary, MEAI, Rajasthan Chapter-Jaipur, Mining Welfare Centre, Off Shipra Path, Mansarovar, Jaipur-302020
Mobile 09828668764
E-mail pc_bakliwal@yahoo.co.in and meaijpr2010@gmail.com

An Exciting Announcement

Members of MEAI are aware that we have entered into a strategic partnership with Society for Mining, Metallurgy & Exploration Inc., (SME-USA), through a joint Agreement signed on 1st June 2017.

1. Under this agreement MEAI has become an 'Association-level Member' of SME.
2. Association-level Membership of SME offers the following benefits to MEAI Members -
   - Life Members and Fellow Members of MEAI:
     • Online access to Mining Engineering Magazine
     • Member price for conferences, webinars and books
     • Access to the SME online community
     • eNews
     • Use of the SME logo at mutually agreed upon MEAI events
3. Larger benefits to MEAI in future:
   - Emerging as International level professional organization.
   - Organising major events such as International level EXPO in India in collaboration with SME
   - Becoming part of the international group of professional societies which allows MEAI members to access world’s largest library for mining industry ‘Onemine.org’, when qualified.

4. Immediate action:
   SME has created and launched a professional web page highlighting SME’s new partnership with MEAI at www.smenet.org/meai
   All Life Members and Fellow Members of MEAI can open the ‘landing page’ and complete the ‘sign in process’ through the above website.

NOTE: After the initial trial of the ‘sign in process’ by few senior members, a feedback has been given to SME. Rectification/correction/improvement of the web page is in progress by SME. On completion of all these the website will be officially launched by SME in a couple of days time.

I am delighted to make this important announcement—

T.Victor
Immediate Past President & Chairman, International Affairs
MINING ENGINEERS' ASSN OF INDIA
18 August 2017

ISSN 0975 - 5001

Official Publication of
Mining Engineers' Association of India
Price ₹5/-
An Exciting Announcement

Members of MEAI are aware that we have entered in to a strategic partnership with Society for Mining, Metallurgy & Exploration Inc.,(SME-USA), through a joint Agreement signed on 1st June 2017.

1. Under this agreement MEAI has become an ‘Association-level Member’ of SME.
2. Association-level Membership of SME offers the following benefits to MEAI Members -

Life Members and Fellow Members of MEAI :
- Online access to Mining Engineering Magazine
- Member price for conferences, webinars and books
- Access to the SME online community
- eNews
- Use of the SME logo at mutually agreed upon MEAI events

3. Larger benefits to MEAI in future :
   - Emerging as International level professional organization.
   - Organising major events such as International level EXPO in India in collaboration with SME
   - Becoming part of the international group of professional societies which allows MEAI members to access world’s largest library for mining industry ‘Onemine.org’, when qualified.

4. Immediate action :
   SME has created and launched a professional web page highlighting SME’s new partnership with MEAI at www.smenet.org/meai

All Life Members and Fellow Members of MEAI can open the ‘landing page’ and complete the ‘sign in process’ through the above website.

NOTE: After the initial trial of the ‘sign in process’ by few senior members, a feedback has been given to SME. Rectification / correction / improvement of the web page is in progress by SME. On completion of all these the website will be officially launched by SME in a couple of days.

I am delighted to make this important announcement -

T.Victor
Immediate Past President &
Chairman, International Affairs
MINING ENGINEERS’ ASSN OF INDIA

18 August 2017
President’s Message 5
Editor’s Desk 7
News from the Mining World 8
Reminiscence of a Mining professional in the Stone Quarry sector 12
- P.K. Govindaswamy
Recovery of Lignite from Clay Lignite Inter Burden Waste 16
- A.K. Jaiswal1 and Dr. P.K. Bhargava2
MEAI News 24
Conferences, Seminars, Workshops etc. 34

Correspondence Address
MEAI National Head Quarters
Contact: Secretary General,
Mining Engineers’ Association of India
F-608 & 609, Raghavaratna Towers, ‘A’ Block, VI Floor,
Chirag Ali Lane, Abids, Hyderabad - 500 001.
Ph.: 040-66339625, 23200510
E-mail : meai1957@gmail.com
website : www.meai.org

The Views expressed by the authors in these pages are not necessarily those of publisher / editor / MEAI. Reproduction in whole or in part is strictly prohibited without written permission from the publisher.
The above tariff to be added with GST payable @ 5%

**NOTE**

1. Life institutional members will be given 10% additional discount on the above tariff for their own company’s advertisement.
2. All life members will be given 10% additional discount on the above tariff, for their own personal advertisement.
3. All payments should be made by D.D./Banker's Cheque in favour of "Mining Engineers' Association of India" payable at Hyderabad or through 'Electronic Transfer' or by Cash.
4. The MEAI Bank details to transfer the amount on-line are:
   - **Account Name:** Mining Engineers' Association of India
   - **Bank name:** Andhra Bank, Account Number: 037810100028696, Nampally Branch
   - **IFSC Code:** ANDB0000378
   - **SWIFT CODE:** ANDBINBB, **GSTIN:** 36AAATM7472Q1ZT
5. All advertisements, along with full payment, will be accepted 30 days prior to the month of publication.
6. All advertisement matter shall be supplied by the advertiser in the form of Transparency or ‘Soft copy’ acceptable by the Printer. No design work / art work will be undertaken by us.
7. The Publisher's decision will be final in accepting any advertisement.

**For further details, please contact**

Publisher & Secretary General, Mining Engineers' Association of India, Block 'A', F-608 & 609, Raghavaratna Towers, Chirag Ali Lane, Abids, Hyderabad 500001. Ph. 23200510 & 66339625, Mob: 94711 92211, E-mail: meai1957@gmail.com, secretarygeneralmeai@gmail.com, Website: www.meai.org

As approved by President, MEAI
Happy Independence day and cheerful greetings to all in this festive season of August in which we celebrate Raksha Bandhan, Janmastami, Ganesh Chaturthi and “Samvatsari” the Festival of Forgiveness. This year, August becomes extra special as India celebrates its 70 years of Swaraj on 15th. Our Country has been blessed with bountiful rains this year and this will boost the economy as well as bring prosperity to our farmers. All chapters are encouraged to carry out plantation drive in their respective regions. HQ shall recognize impressive plantation efforts through publishing news and photos in the forthcoming editions of MEJ.

During the first month of my taking charge as President, the support I received from the members of MEAI and my Council has been remarkable which gives me confidence for the term ahead.

I am happy to share with you that our delegation met Hon’ble Minister of Mines, Telangana, Shri K.T. Rama Rao and requested them to allot a piece of land for activities of HQ and Hyderabad Chapter. The Minister of Mines has kindly approved of our request and assigned this responsibility to Shri BRV Susheel Kumar, Chairman, Hyderabad Chapter & Director of Mines, Telangana. The delegation also apprised the Minister about the proposed International Seminar to be held at Hyderabad in February 2018 and he assured all support from the Telangana government. I thank and appreciate Shri Susheel Kumar for arranging the meeting with Hon’ble Minister of Mines and Principal Secretary Mines. The meetings of the Constitution amendment committee on 18th July and another meeting of all Chapters’ Chairmen and Secretaries to resolve the issue of GST.

This is also a proud moment for MEAI that on our request, Ministry of Mines, GOI has recognized MEAI and extend invitation to all important committee meetings. Prof. B.B. Dhar and Shri Deepak Gupta, Council members represented the Association in three such meetings held in July and August.

In my maiden message as President, I requested all members and thereafter by letter to all Council members including Chapter Chairmen & Secretaries of all the chapters and all past Presidents to contribute personally as well as from their respective companies by way of making them Life Institutional members and sponsoring advertisements for MEJ, to improve the financial strength of HQ; and I am happy to report that I am getting excellent response from our members. I personally thank all those who made contribution and request the others to contribute at earliest.

To ensure flawless functioning of the Association, I have constituted a few Committees such as International Affairs Committee, Resource Mobilization Committee, Program Committee, Membership Committee, Constitution Amendment Committee, Website Renovation Committee, New Building Project Committee and Legal issues resolving Committee under the Chairmanship of subject experts; and authorized them to take decisions in their committee meetings or through consultation on electronic media. All members are encouraged to contact the said Committees with suggestions and solutions, and volunteer for necessary local efforts.

All chapters are encouraged to plan for nationwide celebration of Indian Mining Day on 1st November, with maximum public engagement and advertisement to help increase the general public awareness and appreciation for activities of mining sector that enrich our general population.

A strong MEAI, technically, financially and well networked, shall go a long way not only in shaping the future of our country but shall also act as a catalyst in the careers of our members. As we usher in the 71st year of Swaraj, let us all take initiative and contribute significantly to strengthen the base of our organization without much delay, to revitalize its Chapters and function to its best.

Arun Kumar Kothari
President
Presidents & Secretaries/Secretary Generals

<table>
<thead>
<tr>
<th>Period</th>
<th>President</th>
<th>Secretary/Secretary General</th>
</tr>
</thead>
<tbody>
<tr>
<td>1957-64</td>
<td>B.L. Verma</td>
<td>B.N. Kanwar</td>
</tr>
<tr>
<td>1964-67</td>
<td>N.S. Claire</td>
<td>R.C. B. Srivastava</td>
</tr>
<tr>
<td>1967-68</td>
<td>L.A. Hill</td>
<td>S. Chandra</td>
</tr>
<tr>
<td>1968-69</td>
<td>H.L. Chopra</td>
<td>M.G. Jhingran</td>
</tr>
<tr>
<td>1969-70</td>
<td>S.S. Manjrekar</td>
<td>V.S. Rao</td>
</tr>
<tr>
<td>1970-71</td>
<td>R.C.B. Srivastava</td>
<td>M.G. Jhingran</td>
</tr>
<tr>
<td>1971-72</td>
<td>K.R. Gandhi</td>
<td>B. Roy Chowdhury</td>
</tr>
<tr>
<td>1972-73</td>
<td>I.N. Marwada</td>
<td>D.D. Sharan</td>
</tr>
<tr>
<td>1973-75</td>
<td>R.S. Sastry</td>
<td>M.S. Vig</td>
</tr>
<tr>
<td>1975-76</td>
<td>G.L. Tandon</td>
<td>K.K. Biran</td>
</tr>
</tbody>
</table>

MINING ENGINEERS' ASSOCIATION OF INDIA

- Ahmedabad: B.L. Verma, B.N. Kanwar
- Barajamuda: N.S. Claire, R.C.B. Srivastava
- Bangalore: L.A. Hill, S. Chandra
- Bhubaneswar: K.R. Gandhi, B. Roy Chowdhury
- Chennai: I.N. Marwada, D.D. Sharan
- Hyderabad: R.S. Sastry, M.S. Vig
- Kolkata: G.L. Tandon, K.K. Biran

MINING ENGINEERS' ASSOCIATION

- Ahmedabad: B.L. Verma, B.N. Kanwar
- Barajamuda: N.S. Claire, R.C.B. Srivastava
- Bangalore: L.A. Hill, S. Chandra
- Bhubaneswar: K.R. Gandhi, B. Roy Chowdhury
- Chennai: I.N. Marwada, D.D. Sharan
- Hyderabad: R.S. Sastry, M.S. Vig
- Kolkata: G.L. Tandon, K.K. Biran

Chapter Chairman Secretary

1. Ahmedabad: P.N. Rao, Pulak Mathur
2. Barajamuda: Pankaj Kumar Satija, Mukesh Ranjan
4. Bengaluru: Dr. Rajput Singh, Dr. Santosh K Ray
5. Chennai: S. Chandra, V. Prabhakar Reddy
6. Hyderabad: S. Chandra, V. Prabhakar Reddy
7. Kolkata: S. Chandra, V. Prabhakar Reddy

Life Institutional Members

2. ACC Ltd (LIM-25)
3. A.P. Mineral Dev. Corp. Ltd. (LIM-12)
4. Arvavali Minerals & Chemical Industries (P) Ltd. (LIM-048)
5. Associated Mining Co., (LIM-19)
6. Associated Soapstone Distributing Co. (P) Ltd. (LIM-057)
7. Belgium Minerals (LIM-64)
8. Bharat Alloys & Energy Ltd., (LIM-36)
9. Capstone Geo Consultants (India) Pvt. Ltd. (LIM-66)
10. Designer Rocks (P) Ltd., (LIM-32)
11. FCI Arvavali Gypsum & Minerals India Ltd. (LIM-61)
12. Grasim Industries Ltd., (LIM-26)
13. Ambuja Cements Ltd., (LIM-3)
14. Gujarat Heavy Chemicals Ltd., (LIM-6)
15. Gujarat Mineral Dev. Corp Ltd. (LIM-18)
16. Gujarat Sidhee Cements Ltd., (LIM-4)
17. Gulf Oil Corporation Ltd. (LIM-9) (formerly IDL Industries Limited)
18. Hindustan Zinc Ltd. (LIM-60)
19. The India Cements Ltd. (LIM-16)
20. Indian Rare Earths Ltd., (LIM-35)
21. J.K. Cement Ltd. (LIM-058)
22. JSW Cement Ltd. (LIM-63)
23. Jubilee Granites India Pvt. Ltd., (LIM-23)
24. Karigar Mineral Mining Industry (LIM-41)
25. Kirloskar Ferrous Industries Ltd., (LIM-33)
27. Lafarge India Pvt. Ltd. (LIM-69)
28. Madras Cements Ltd., (LIM-17)
29. Manganese Ore (India) Ltd., (LIM-37)
30. M.P.L. Parts & Services Ltd., (LIM-24)
31. MSPL Limited (LIM-30)
32. Mysore Minerals Limited (LIM-45)
33. My Home Industries Limited (LIM-70)
34. Maheswari Minerals Limited (LIM-65) (Laterite Mine Owners and Traders)
35. National Aluminium Co. Ltd., (LIM-1)
36. NMDC Ltd. (LIM-20)
37. Obulapuram Mining Co. (P) Ltd. (LIM-54)
38. Orient Cement (LIM-059)
39. Panduranga - Timblo Industries (LIM-056)
40. Pearl Mineral Ltd., (LIM-39)
41. Priyadarshini Cement Ltd., (LIM-5)
42. Radialis International (LIM-29)
43. Rajgarhia Group of Industries (LIM-050)
44. R.K. Marbles Pvt. Ltd., (LIM-52)
45. Rajasthan State Mines & Minerals (LIM-053)
46. Sagar Cements Ltd., (LIM-21)
47. Sandvik Asia Limited (LIM-46)
48. Sesa Goa Ltd., (LIM-11)
49. Shree Cement Ltd. (LIM-051)
50. Shri Sharda Cold Retreats (P) Ltd., (LIM-24)
51. Shree Engineering Services (LIM-15)
52. S.N. Mohanty (LIM-62)
53. South India Mines & Minerals Industries (LIM-2)
54. South West Mining Ltd. (LIM-40)
55. Sri Kumarswamy Mineral Exports (LIM-43)
56. Sudarshan Group of Industries (LIM-047)
57. Tata Chemicals Ltd., (LIM-7)
58. Tata Steel Limited (LIM-8)
59. Terra Reserves Determination Technologies (P) Ltd., (LIM-055)
60. The K.C.P. Ltd., (LIM-22)
61. Thiveni Earthmovers (P) Ltd., (LIM-31)
62. Transworld Garnet India Pvt. Ltd. (LIM-67)
63. Tungabhadra Minerals Pvt. Ltd. (LIM-42)
64. UltraTech Cement Ltd., A.P. Cement Works, (LIM-28)
65. Ultra Tech Cement Ltd. (LIM-10)
66. Veerabhadrapura Sangappa & Company (LIM-64)
67. V. Thirupathi Naidu (LIM-34)
68. V.S. Lad & Sons (LIM-38)
69. V.V. Mineral (LIM-68)
70. W.B. Engineers International Pvt. Ltd., (LIM-13)
EDITOR'S DESK

The Indian Government has the obligation of developing its mineral resources. It is keen in doubling its mineral industry contribution to GDP from the current ~2% in near future. In order to achieve this goal, potential mineral bearing areas have to be explored and developed. Mineral exploration is a high risk, time consuming and investment intensive proposition; and involves engagement of highly skilled geoscientists and engineers and application of the state-of-the-art technologies.

Fraser Institute ranked India at 94 from 104 countries surveyed in 2016, against the ‘overall investment attractive index’ (built from best practices mineral potential index and policy perception index) which is quite daunting. To lure investments, by creating congenial environment to ensure ‘ease of doing businesses’ in mineral exploration and mining, the government introduced several new legislations and amended the existing ones in recent times. Nonetheless, the investments inflow is not promising.

Simultaneously, Mineral Exploration Trust Fund (METF) was created with funds collected by charging a small percentage on Royalty paid by lessees. These funds will be employed to explore potential blocks up to G3/G2 level through both public (GSI, MECL, State DMGs, AMD, mining undertakings) and private exploration agencies, and ready these blocks for auctioning. As the scope of work surpasses the existing capabilities of the identified exploration agencies, private contractors employed to augment exploration efforts but under the surveillance of National Exploration agencies. This may facilitate application of limited funds accessible with METF but in no way encourages much needed private investments in exploration and mining.

Countries, where private investment ranks high in developing mineral industry, established robust systems through their respective stock exchanges, with criteria set for transparent disclosure that could instil confidence in potential investors. That’s why, vast majority of exploration companies in the world are listed in TSX, LSE, ASX, HKSE, JSE etc. where separate guidelines exist for listing of mineral-based companies. Policies pursued at present in India support maintaining National Mineral Inventory only but assist no help in raising funds from stock exchanges. As a result, the interested parties are resorting to avail foreign but internationally recognized reporting system to raise much-needed funds. Popular CRIRSCO compliant public reporting standards recognized by global stock exchanges are JORC (Australasia), NI 43-101 (Canada), SAMREC (South Africa), SME Guide (USA), PERC (Europe) etc.

Raising funds through stock exchanges, even during exploration stage, is a proven path available to exploration companies. Indian Parliament enacted Securities Exchange Board of India (SEBI) Act 1992 to protect the interests of investors in securities and to promote the development of, and to regulate, the securities market. SEBI formulates disclosure guidelines to stock exchanges in India. However, distinct guidelines for listing of mineral-based companies, which would be strikingly different compared to manufacturing companies, are yet to be formulated. As of June 2017, weightage given to Metals (including minerals) is only 3.96% and Cement 2.02% in NSE, from amongst 12 sectors. Coal India, ranked 16th, is the biggest company listed from the mineral sector, with a market capitalisation of USD 23 billion, whereas Reliance is the leader, with USD 80 billion. Sectors with high weightages in NSE are Financial (35.03%), Energy (13.04%), Information technology (11.60%), Consumer goods (11.17%) and Automobile (11.02%). May be due to mineral sector’s insignificant contribution to Nifty, SEBI seems to be indifferent in articulating discrete disclosure guidelines for listing of mineral based companies.

UNFC adopted in India found no favour with the stock exchanges internationally, for listing purpose. This vital incoherent step greatly diminishing the possibility of attracting funds by the Indian mining companies thereby compelled to adopt JORC standard. To overcome this predicament, MEAI took lead in establishing a National Core Committee (NACRI) with the support and participation of leading professional bodies and FIMI. NACRI developed a draft Indian Reserve Reporting Code viz. Indian Mineral Industry Guide (IMIG) that is now under active consideration of CRIRSCO. The IMIG, on getting CRIRSCO approval, has the potential to be recognized by stock exchanges globally. This unique and powerful tool will reinforce faith in the investors that are enthusiastic in contributing their might to India’s efforts in amplifying its exploration and mining activities. Therefore, it is high time for SEBI to recognise the importance of IMIG in boosting the growth of the mineral sector in India.

- Editor
Can we benefit from the use of low resolution 3d scans of core boxes?

We at imago are always looking for new opportunities to extract value from the core our clients are processing. With the advent of 3d printing, there has been a plethora of 3d scanners introduced to the market at very low prices. Curious to understand what level of detail could be captured by one of these scanners we acquired the structure.io scanner:

Our results indicate that it is possible to detect the edges of the core boxes and the core blocks from a scan. To a lesser degree we can pickup fractures in the core. We are excited to learn that a new affordable lidar scanner http://scanse.io/ will soon be available. This scanner should significantly improve resolution.

With higher resolutions we believe we will be able to automate the splicing of core runs out of core images and nominate core block for users to assign downhole depth in our catalog. Look forward to your comments below on how we can use the information collected from these scanners and our technology to add value to your projects.

Applications of Virtual Reality to Validating and Verifying Drilling Data

Last month I drafted a quick article sharing the results of a low resolution 3D scan of a core box. My intent was to get feedback on the application of these techniques to geologic data capture workflows. In response our colleague Jennifer Cross came up with an interesting approach to create a 3D model of a core box. Using simultaneous localization and mapping algorithms she was able to produce the following 3D model: https://sketchfab.com/models/8cbf8e8674b443a6df859c25550c56e

The model was created in RealityCapture from 5 images in 00h:01m:06s. She limited the model to 150k triangles to optimize performance. She notes that water droplets on the tray interfered with the reconstruction.

Yes, it is cool, but is it useful? I was not sure what the applications for this technology in the field could be so I posed the question to a forward thinking senior project geologist at a one of sites where Imago is currently streamlining the use of geoscientific imagery. Here is his response:

"At first I didn't really understand what I was looking at then my imagination kicked in. I can imagine the drill crews using this to capture the core straight from the core press (in their V rail once it is cleaned properly). Or a Geologist capturing the core photos this way, and having them stitched into a downhole rendered image.

I can imagine a centralized 'control room' where multiple projects are sending their core 'photo-telemetry' data where banks of computers pull out vein density, rock type, structures, etc. which are then reviewed by a senior group Geologist, (or small team of specialists). Consistency in logging types could evolve out of continual use. And of course, it just looks like something that would impress a group of GM's..."

I agree with most of his comments but I think the real opportunity lies in:

"Consistency in logging types could evolve out of continual use"

MB Crusher machinery increases productivity in quarries

The day starts very early for quarry workers. The working cycle is adapted to the length of the day, in order to make the most of daylight hours. Perfect harmony between man and nature, made possible thanks to respect for the resources which are extracted every day, in quarries and mines all over the world.
Nothing lasts forever, and even in quarries, the available resources are limited and destined to run out. For this reason, it is always necessary to look for new ways to profitably re-use the extracted material, even that which, until recently, was considered as waste. With MB Crusher solutions, all materials can become sources of immediate income.

Characterised by the wide area they cover and the considerable variations in height, quarries put the traditional fleet of machines used on the site through their paces. The range of MB Crusher brand products provides a practical solution to the need for the availability of instruments which are tough yet agile, capable of reaching areas where only excavators can move.

In order to improve synergy and compatibility with the traditional equipment used in quarries, such as fixed and mobile crushers and screeners, MB Crusher has developed a range of Crusher and Screening Buckets specially studied for extraction sites. Made entirely out of HARDOX®, MB machines are available in various models and sizes according to the excavator on which they are to be fitted. MB offers a specific range dedicated to quarries and mines, which also includes the largest crusher and screening buckets in the world: the BF150.10, which can be fitted to excavators of 70 tons and more, and the MB-S23, which has a load capacity of 4.3 cm³.

Thanks to exclusive and patented Made in Italy technology, MB crusher and screening buckets can process all extracted material, in order to render it re-usable directly on-site. The precision of production allows for materials which were previously destined solely for disposal to be processed in calibrated batches, which can be re-sold or re-used on-site, thus leaving the mineral balance of the quarry unaltered.

The range of MB crusher and screening buckets dedicated to quarries is suited for operations in steep and uneven areas, characterised by substantial changes in temperature. They require simple and rapid maintenance, which can be carried out directly by excavator operators on-site, guaranteeing problem-free production. It is the flexibility and innovation of MB products that leads important companies, which already have large mobile and fixed crusher plants, to ever more frequently decide to equip themselves with MB crusher and screening buckets, in order to carry out specific operations in restricted spaces which are difficult to access.

There are two up-coming events dedicated to the world of quarries where it will be possible to see MB Crusher machinery at first hand viz, in Germany at the Steinexpo fair (30 August - 2 September) with a BF90.3 crusher bucket and an MB-S18 screening bucket at work in a true test area, and in Italy at the Marmomac fair taking place in Verona from 27 to 30 September.

Louise Mulhall, World Coal, July 26, 2017
with Best Wishes from

SHIV MARBLE

Mines Owner and Supplier

Of

Marble Blocks and Khanda

Contact: Mr. Jagdish Meena
Office: Palpur Kho (Rajgarh)
Alwar
Cell: 9461717070, 9950048490
with Best Wishes from

Tirupati Aura

Mine Owner and Supplier

Of

Marble, Granite, Limestone, Dolomite and Calcite

Contact: Mr. Abhishek Sharma
Office: D 56 Siddharth Nagar, Near hotel Lalit
        Jawahar Circle. Jaipur 302017
Cell: 9829811111, 8952011111
Background
During 90's the overall operating conditions in stone quarries were very pathetic. With the opening of economy, and consequent stress on infrastructure development, demands of aggregates had multiplied resulting several new companies including some corporate coming forward in investing and developing new quarries to cater to their project requirements. When the quarry sector was passing through these circumstances that, myself at the age of 42, possessing two decades of main stream mining experience, equipped with a first class mine managers certificate made the crucial decision – to join a construction company to head its stone quarry operations.

Looking back, two factors influenced my decision: one- the president of the company assured full freedom and support for any effort I initiate to modernize / improve the working condition of quarries, complying with all statutory provisions and the second – may be more important at the personal level, the opportunity to do something better / improve / contribute to society rather than to pass my life in doing routine things over and over.

The company had then two operating semi-mechanized stone quarries – one in Bangalore, another in Chennai, attached with crushing plants, to cater to the aggregate requirements of company’s city based infrastructure projects.

The combined aggregate production from these two captive sources was around 4 lakh tons per annum. As of today – 25 years down the line - the production level is plus 150 million tons per annum.

At the time of my joining, the above said quarries were managed by a team of 8 to 10 Foreman/ Mate level mining staff under the guidance of a senior mines Foreman level officer, nearing retiring age, posted at the company’s head quarter at Chennai. Just two years before my joining the company recruited a Second class Mines Manager on the advice of Directorate of Mines Safety.

The said mining team also served the purpose of carrying out controlled blasting operation to remove hard rock to make way for foundations of structures as and when required by the civil engineering department of the company.

After an in-depth analysis, the following corrective steps were taken to deal with the existing situations and anticipated challenges:

1. A dedicated team with relevant qualification and experience was prerequisite to upgrade contemporary quarrying works to scalable, economic and mechanizable level. Recruited statute qualified mines managers/ mining engineers by offering attractive compensation package to ensure that our quarries operated systematically / scientifically. These newly recruited managers/ engineers given special orientation training and their personal grievances were addressed expeditiously resulting almost nil attrition.

2. Encouraged and facilitated adoption of globally proven technology in quarrying and crushing operations so as to ensure that our quarrying and crushing activities are eco-friendly and their adverse impact to environment is negligible. I handpicked my team and mentored them to migrate from more of manually controlled and heavy structures based crushing plants to the state of the art, highly automated semi-mobile and mobile crushing plant. This switch made us realize not only substantial improvement in our productivity levels but our flexibility and maneuverability also improved manifolds and we were able to reduce the gestation period of crushing installation and operation by more than half as compared to the conventional stationary crushing plants.

3. Convinced the top management and facilitated our mining, mechanical and electrical engineers in actively participating in technical conference, seminars and other knowledge sharing platforms. This step exposed our engineers and managers to technological developments in mining and crushing domains. Participation of our engineers in such knowledge sharing pulpits became so fruitful and conspicuous that we, as a department, have presented a good deal...
of technical papers in India and overseas and quite a few of these papers were based on original field research and high-end research tools like statistical models, simulations, face-mapping etc were used to craft these documents which received huge applause from academia, industry and the organization.

4. To tackle the complex and dynamic nature of our ever-growing construction jobs requiring multiple job skills, convinced management to recruit exclusively for Quarry Department, graduate and diploma engineer trainees in all three functional disciplines – mining, mechanical and electrical. While these trainees would take at least 4-5 years to get developed to handle the operations, it was a farsighted deed which resulted in having a pool of bright and custom-trained engineers to take charge of demanding and ever increasing scale of production, ever tightening statutory requirements and quality of product and process. Today, the quarry and crushing department has more than 250 engineers spread across various business groups – probably the largest talent pool to execute quarrying, crushing and controlled blasting activities amongst the construction companies in India.

5. Encouraged and facilitated our trainees, engineers and managers to get exposed to the soft side of the business – communication, costing and budgeting, planning, auditing, finance and control and human skills. A good number of our team members have undergone conventional management education from top notch business schools in India like SP Jain Institute of Management & Research, L&T Institute of Planning and Management, BITS Pilani, Anna University to name a few. Contribution of people rejuvenated through this brilliant exposure is very conspicuous and has changed the department’s paradigm from being a service unit to becoming a prospective business unit.

6. All these efforts and initiatives have reshaped quarrying and crushing department. From a meager 400,000 t annual production supported by two or three quarries and crushing plants, we are now India’s largest institutional producer of construction aggregates with an annual output in excess of 15 Mt and installed capacity in excess of 17 Mt per annum – a whopping surge of about 4000%. As of today we have about 40 crushing plants presently in operation meeting aggregate / sand requirements of various types of our infra projects – roads, dams, metros, ports, nuclear projects etc.

7. Our 40-odd quarries and crushing plants are managed by a team of about 10 First class Mine managers, 20-25 Second class Mine managers and more than 100 mining engineers / mechanical engineers some of whom are post graduates from reputed institutes.

All our learnings, trainings, skills, commitments and dedication put to test by means of the scale, quality and speed of mining, crushing and rock excavation required to accomplish the task.

Few projects, which are worth mentioning here due to their intrinsic toughness either in terms of timescale or technical challenges, are:

1. Asia’s largest LPG storage cavern built 200 m below at Visakhapatnam called for expertise in shaft sinking, tunneling, and installation and operations of underground crushing systems. To overcome sound and fragmentation issues, adopted successfully SMS explosives matching the rock face characteristics, a first time experiment.

2. Cross-country pipelines for conveying petrochemical products between Jamnagar and Loni, and Siddhpur and Sanganer called for hard rock excavation in immediate vicinity of houses, rail tracks and other sensitive structures. The biggest challenge was another live pipeline carrying petro products as close as 5m from blasting site over a considerable length of the alignment. Sticking to basics and at the same time, innovative blasting and charging designs made this project a big success and received applause in the USA at International Society of Explosives Engineers’ Conference held in 2005 where the mining fraternity from more than 50 countries participated.

3. Project Seabird, India’s first and only port dedicated to Indian Navy required more than 13 Mt stone products of size varying from zero to 20 t. Not only a mammoth quantity was to be handled for this project, technical challenges were also many in form of drill and blast design as the purpose of the blasting here was not fragmentation; it was to produce stones of about 10-15 different sizes and that too by engineering, not by chance. With the guidance from NIRM, an improvised version of geological mapping, which we knew as face-mapping, was applied to solve this problem. A highly motivated team armored with a breakthrough technique and that too engineered in house, which further fueled the motivation levels of the team – made the impossible possible and a huge 13.5 million tons of rock mass was brought on ground and woven into the Arabian Sea to construct two of the world’s longest breakwaters and that too ahead of the scheduled completion date.

4. A marvelous and world class construction of Terminal 3 and new runway at IGI Airport, New Delhi was yet another important project. It started in 2007 and the new runway, one of the world’s longest and widest runways, was supposed to be commissioned by end 2008 with a net available execution time of a year and half. Due to specific quality, we needed to produce 600,000t...
5. Blasting of hard rock in foundations of Hyderabad Metro Rail Project was a big challenge as the alignment was passing through domestic and commercial areas and ever running state and national highways. Foundations, at places, were placed as close as 5 m form multistoried buildings, hospitals, religious structures and glass buildings. Some foundations were even accommodating piers of some previously existing bridges. We started executing blasting in November 2013 have so far conducted close to 5000 blasts enabling 140 odd foundations ready to accommodate permanent structures. This feat becomes even greater by the very fact that no external guidance was sought from academic and research institutions and the task was done by in house technical expertise and re-engineering on some of the parameters – again an in house innovation.

6. From 2004 through 2015, in all, approximately 200 Mt crushed aggregates produced to cater to a league of projects meant to build national highways, ports, airports, dams, power projects, buildings and the likes. Right selection of quarry has a very strong correlation with overall success of the project and with time being essence of all infrastructure development projects, no organization can afford selecting a wrong quarry and then spending valuable time in discussing and sorting out the problems. It not only helped us keep the project on schedule but also resulted in scientific winning of our natural wealth.

7. Reserve estimation in a stone quarry in India remains a thumb-rule driven process. Since selecting a wrong quarry could be detrimental for the progress of the projects, we went for scientific methods to ascertain reserves in our stone quarries and probably we were the first in this country to adopt new age geophysical investigation methods like seismic refraction and electrical resistivity tests to name a few, in addition to the classical method of core drilling. The geophysical studies helped us in two ways. Firstly, untoward surprises regarding reserves in quarries at an advanced stage of project execution eliminated and secondly, it allowed us plan and design our stone quarries very scientifically.

8. Stone quarries continue to operate in most unscientific manner in our country leading to accidents (which mostly goes unreported) and pollution. As a responsible organization, we brought all our stone quarries under purview of the Mines Act 1952. It was a decision, which helped a long way in developing people to qualify for appearing statutory examinations. One of our graduate engineer trainees made history of sorts by passing first class mines managers exam in the first attempt at the age of 25 solely based on his experience in our stone quarries.

9. Mining activities and local problems go hand in hand, especially in Indian context and our operations were not an exception to it. On most of the occasions, the local agitation was psychologically driven but there also were few cases where technical parameters were to be blamed. We sought the expert services of NIRM, CIMFR to resolve these technical problems. Academic institutions like Anna University also consulted. We were not only able to resolve the issues but also enjoy a very good relationship with these institutions. This association helps our young engineers to stay technologically abreast and nurture a problem solving mindset.

10. L&T has very high regards and concerns for environment, health and safety. We were first in India to introduce dry air classifiers as the last stage of our crushing circuits, which rendered crushed sand equivalent river sand thus reducing river sand consumption significantly.

11. We believed in the fact that the biggest catastrophe to the process of learning is not absence of resources but absence of aptitude for learning. We have developed and mentored few young engineers who live by this philosophy. These youngsters are working on some themes, which are seemingly impossible today but may come true one day. Few of these themes are: a carbon credit exchange for small scale mining sector to check carbon emission, engineering changes in few tools effective for soft rock mining like eccentric rippers to make it suitable for hard rock, crushing waste concrete debris to manufacture aggregates for reuse, prospective technologies to eliminate or substantially reduce consumption of explosives in our stone quarries, to name a few.

No honor can be more cherishing for a leader than to witness the implementation of and acting on the principles he or she propound. My team has been able to not only follow wholeheartedly what went into their trainings, but they also have re-engineered many things and steered through even tougher tasks when they were given assignments in the capacity of project managers for quarrying, crushing and rock excavation works. Today when I look back to nineties when I joined the organization and compare it with what it is today, there is a difference of worlds. This difference is mainly on account of commitment to the job and passion to create a better working environment for all stakeholders.

My thanks go to Mr. Abhishek Sharma and Mr. R. Venkatramanan for their assistance in developing this article.
If you can’t grow it or hunt it, you have to mine it.

If it is not a plant or an animal then it is a mineral. Mining provides the raw materials and energy resources needed to sustain modern civilization. Environmentally responsible mining is vital to a nation’s economy and for a better quality of life. MSPL has been mining and processing iron ore for over five decades.

MSPL LIMITED
Baloda Enclave, Abhiraj Baloda Road, Hosapete - 583 203, Karnataka, India.
Ph.: +91 8394 232002, 233001
www.baldota.co.in
RECOVERY OF LIGNITE FROM CLAY LIGNITE INTER BURDEN WASTE

A.K. Jaiswal¹ and Dr. P.K. Bhargava²

Abstract

Lignite, a Brown coal, is extensively available in Rajasthan & being mined mainly for thermal power generation by open pit mining. Lignite is always found with inter-bedded carbonaceous clay (Clay Lignite Inter Burden Waste –CLIW) in alternate layers. The carbonaceous clay has very low calorific value ranges from 1000-2000 kcal/kg and has no commercial value & is occurring 30-40% by weight of lignite. It can be converted to lignite rich and mineral rich (Clay) fractions of marketable quality through separation of cost effective sustainable technology which involve physical disintegration & wet screening & flotation process. An assessment of lignite for Separation of lignite rich and mineral rich (Clay) fractions has been attempted based on samples from mines in the districts of Barmer. The evaluation, based on organic geochemical studies, indicates that CLIW contains a mixture organic matter & clay which can be source of lignite & clayey material & can be separated using its physical property. The study indicates moderate potential for recovery of lignite up to 62 % by weight with up gradation of 1500 kcal/kg material to around 2800 kcal/kg. This paper deals all these aspects.

Keywords: Lignite, organic matter, Clay-Lignite-Inter-Burden Waste, Calorific value, specific gravity.

Introduction

Sustainable economic development is the order of the day’s need for the world community. For improved quality of life and socio-economic development, energy is an important potential source. Energy can be produced through various sources viz., hydro, nuclear, petroleum products, coal and from non-conventional energy sources. Of all coal plays a primary role in the generation of commercial energy in India and as well as in the world. Coal accounts for about 24% of Global Primary Energy consumption compared to 35% from oil 21% from gas and rest from others. Continued exploration and use of coal as a major energy source is a better option and coal will continue to play the major role in the future Global Energy demand. India is the third largest coal producer after China and USA. Coal in electricity generation in India is about 60%. Installed capacity by source in India¹ is Coal: 194,402.88 MW (59.1%) Large Hydro: 44,594.42 MW (13.5%) Small Hydro: 4,379.86 MW (1.3%) Wind Power: 32,279.77 MW (9.8%) Solar Power: 12,288.83 MW (3.7%) Biomass: 8,311.78 MW (2.5%) Nuclear: 6,780 MW (2.1%) Gas: 25,329.38 MW (7.7%)

The Integrated Energy Policy report has projected that the coal required for power generation would then be 1659 Mt per annum by 2031-32. The coal requirement excludes the non-power use of coal to the extent of 684 Mt per annum. Thus the total coal demand in 2031-32 adds upto 2343 Mt which includes lignite anticipated to be consumed that year is about 120 Mt². Another 30 Mt of lignite would be consumed in industries of non-power uses. Hence a total of 150 Mt of lignite will be required to meet the total demand.

Occurrence of lignite in India, which is a LVCF (calorific value range – 2000 to 3000 kcal/kg) is confined to the States of Tamilnadu, Gujarat, Rajasthan, Pondicherry, Jammu & Kashmir and Kerala where the coal is almost completely absent. In view of rapidly increasing demand for energy, non availability of coal deposits for exploitation in the states of Tamil Nadu, Gujarat and Rajasthan, problems faced in the transportation of coal from far off coal fields and high transportation cost involved in transporting coal over a long distance, it is considered necessary that the lignite deposits available in these states are exploited for power generation which would be the best economic and viable option and 5.5% of coal production in terms of coal equivalent thermal value.

The total geological reserves of lignite in India have been estimated are 51.09 billion tonnes. However, recoverable are only 40.62 billion tonnes. So far 5 billion tonnes lignite reserves have been estimated in India & Rajasthan have 0.60 billion tonnes recoverable reserves from proved category. Lignite is always found along with inter-bedded with carbonaceous clay in alternate layers. This interburden carbonaceous clay have very low calorific value ranges from 1000-2000 kcal/kg has no commercial value & it is available in almost equal ratio of the total recoverable reserves

¹Head (Geology & Planning), 2 Head (Laboratory), SBU-LS, Rajasthan State Mines & Minerals Limited, Jodhpur-342001, Rajasthan
E mail: Jaiswal- ashjais.64@gmail.com , Bhargava- peen_10@yahoo.co.in

(Manuscript received: 10-7-2017; Peer reviewed and accepted: 29-7-2017)
in Rajasthan. Lignite with C.V. more than 2500 kcal/kg is directly saleable. Thus, the disposal of such huge quantum is requiring a good planning & huge expenditure.

Each mines have Mine waste, which is the soil or rock that mining operations generate during the process of gaining access to an ore or mineral body, and includes the overburden/Interburden consolidated or unconsolidated material overlying the mined area from surface mines and other waste rock including the rock inter-bedded with the ore or mineral body. The particle size of mine waste ranges from small clay particles (0.002 mm diameter) to boulders (0.3 m diameter).

After the ore is mined, the first step in beneficiation is generally grinding and crushing. The crushed ores are then concentrated to free the valuable mineral and metal particles (termed values) from the matrix of less valuable rock (called gangue). Beneficiation processes include physical/chemical separation techniques such as gravity concentration, magnetic separation, electrostatic separation, flotation, ion exchange, solvent extraction, electro winning, precipitation, and amalgamation. The choice of beneficiation process depends on properties of the metal or mineral ore and the gangue, the properties of other minerals or metals in the same ore, and the relative costs of alternative methods. All processes generate tailings, another type of waste.

A study was conducted in Giral Lignite block of the western part of Rajasthan in district Barmer. This mine is operating for lignite, which having CV ranging from 2500-3500 & mainly being consumed by lignite based power plant at Barmer. This deposit is having intercalation of carbonaceous clay & termed as Clay Lignite Inter Burden Waste (CLIW). This clay lignite inter burden is presently considered rejected as waste and demanding cost for its eco-friendly disposal. Thus, this starting material bears a negative cost. To overcome the problem of economical viability and eco-friendly disposal of waste, especially the clay lignite Inter-burden waste needs beneficiation to produce value added product the clay and lignite. Separation of lignite rich and mineral rich (Clay) fractions of marketable quality through development of cost effective sustainable technology was the objective of investigation. Following investigations in order to separate lignite and clay from inferior grade CLIW of Giral block was studied:

- Physical method of separation – Wet Sieving
- Sink and float experiment.
- Flocculation.
- Oil agglomeration.

Sink and float experiment with Dense Media Separation method found successful in separating the precious mineral out of the mining waste with negative value. The degree of beneficiation as well as the yield will depend upon initial calorific value of CLIW and specification of clean lignite. If the calorific value of CLIW is in the range of 2000 – 2100 kcal/kg we can use 1.45 specific gravity dense media solution for the separation of prime grade lignite (sub bituminous coal) with 30% yield with CV around 3200 kcal/kg and 1.65 specific gravity bath for prime grade lignite with 65% yield with CV around 2700 kcal/kg. Other methods were not so encouraging with respect to increase in value of CV after separation from CLIW.

**Classification of Coal**

Coal is a readily combustible rock containing more than 50 percent by weight of carbonaceous material, formed from compaction and indurations of variously altered plant remains similar to those in peat. After a considerable amount of time, heat, and burial pressure, it is metamorphosed from peat to lignite (Figure 1). Lignite is considered to be “immature” coal at this stage of development because it is still somewhat light in color and it remains soft.

Lignite increases in maturity by becoming darker and harder and is then classified as sub-bituminous coal. After a continuous process of burial and alteration, chemical and physical changes occur until the coal is classified as bituminous - dark and hard coal. Anthracite coal is the last classification, the ultimate maturation.

**Lignite - An Emerging Energy Source for State of Rajasthan**

Lignite often referred to as brown coal is the lower rank coal used almost exclusively as a fuel for thermal power generation. The lignite occurrence in India is mostly constrained to the districts of Tamil Nadu, Rajasthan, Gujarat, Jammu & Kashmir and Kerala where the tertiary sedimentation is mostly predominant. Tamil Nadu alone constitute 30275.0 Mt sharing 87.1% of the total Indian Lignite resources, while Rajasthan and Gujarat having 2382.0 Mt, 1870.0 Mt shares 6.8% and 5.4% respectively. Other occurrences in the states J&K 128 Mt and Kerala 108 Mt constitute a fraction of Indian resources. Total Indian reserve of lignite is estimated about 34.7 Bt (Figure 2).
Coal and petroleum are the key sources of energy production but these sources are insufficient in developing nation like India for a vast population of above 100 crore. Rajasthan, the biggest state in western part of India Union is fighting against energy crisis and Lignite becomes one of the potential minerals. Recent discoveries of large lignite deposits in Bikaner, Nagaur and Barmer district with total estimates potential of 4263 Mt.

Importance of Rajasthan Lignite

In the three districts of the state viz. Bikaner, Nagaur and Barmer, geological reserves of more than one billion tonnes have been confirmed so far by exploratory drilling. Beside, deep seated reserves of lignite suitable for underground lignite gasification and development of Coal Bed Methane projects are also planned in the state. The lignite resources of Rajasthan has calorific value on Insitu basis varies from 2,000 to 4,000 kcal/kg, and 30-45% Insitu moisture with 10-30% Ash content, 15-25% fixed carbon and 20-30% volatile matter

- Less cost than the landed cost of coal transportation from distant place of Bihar, M.P. etc.
- Associated with soft rock formation like sand, Bentonite Lime Kankar, Clay etc., which are easier to mine. In addition, these rock formations are valuable minerals, and can be mined along with lignite.
- Since it is desert area, and thinly populated, there would be very little environmental problems.
- Less problem of underground water in mining as compared to Gujarat and Tamilnadu
- The low anticipated mining cost.

Study Area

The present study mainly restricted to Giral mines in Barmer district of western Rajasthan.

At Giral mine, which is being operated through open pit mining by state PSU have three carbonaceous horizons can be identified – top, middle and bottom, each comprising a number of bands of lignite and carbonaceous clay, besides the greenish-grey clay present as partings. The proximate and ultimate analysis and distribution of sulphur of a raw lignite sample of Giral block samples collected from the mines is shown in Table-1.

<table>
<thead>
<tr>
<th>% Moisture</th>
<th>% Volatile Matter</th>
<th>% Ash</th>
<th>% Fixed Carbon</th>
</tr>
</thead>
<tbody>
<tr>
<td>26.10</td>
<td>30.50</td>
<td>20.60</td>
<td>22.80</td>
</tr>
</tbody>
</table>

Table 1. Proximate and ultimate analysis and distribution of sulphur of a raw lignite sample of Giral block

<table>
<thead>
<tr>
<th>Ultimate Analysis</th>
<th>Carbon</th>
<th>Hydrogen</th>
<th>Sulphur</th>
<th>Nitrogen</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>42.07</td>
<td>2.60</td>
<td>6.07</td>
<td>0.55</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Distribution Of Sulphur</th>
<th>Calorific Value</th>
<th>Sulphate sulphur</th>
<th>Pyretic sulphur</th>
<th>Organic sulphur</th>
<th>3395 kcal/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.15</td>
<td>3.15</td>
<td>1.77</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
This particular part has been referred as Clay Lignite Inter Burden Waste (CLIW) in present investigation. This CLIW constitute a major portion of gross reserves of Giral block given in Table 2 & 3 and require up gradation.

Lignite with C.V. more than 2500 kcal/kg is directly saleable. If we analyze the above figures we will find that majority of reserves are below this category.

On going through the details of reserves of Giral block it can be seen that around 30% of the reserves have calorific value between 1500-2000 kcal/kg. With the study of Clay Lignite Inter Burden Waste (CLIW) w.r.t geology of region, genesis of mineral, possibility of separation in lignite rich and mineral rich (Clay) fractions of marketable quality fit for utilization in appropriate industries, different option were studied to upgrade the ROM. The surface chemistry and chemical composition of clay lignite inter burden and over burden, low cost of mineral was also taken in consideration, consistent with current trends in beneficiation of lignite it has been decided to carry out the study.

Following investigations was studied to separate lignite and clay from inferior grade CLIW of Giral block -
- Physical method of separation – Wet Sieving
- Sink and float experiment.
- Flocculation.
- Oil agglomeration.

A few samples of over burden or inter burden were collected from Giral mines from different locations, depths, bore hole and from top and bottom part of the main seam & were analyzed having C.V. 1800 – 2000 kcal/kg for our beneficiation study. It is Hard, homogeneous and compact in nature. The colour of sample was black and the on air-dried it became soft and friable. At 35% moisture content, the proximate analysis of CLIW with Volatile Matter, Fixed Carbon, & Ash C.V. 19-22%, 5-13% , 31-40% and 1500-2100 kcal/kg respectively. The samples were subjected to air dried to reduce the moisture up to 5%. On sieve analysis of this material & them proximate chemical analysis results that the finer size is having higher calorific value, as the lignite being softer break down easily that is why the finer fraction is having higher CV. This gave the idea to disintegrate the ROM after drying & then separate lignite from clay using Dense Media Separation technology with different organic & inorganic solution to separate useful fraction out of the sink of different specific gravity bath ranging from 1.30 to 1.65.

Table 2. Categorization of lignite reserves of different carbonaceous horizons of Giral block, Barmer basin of Rajasthan.

<table>
<thead>
<tr>
<th>Constituents</th>
<th>% Moisture</th>
<th>% Ash</th>
<th>% Volatile Matter</th>
<th>% Fixed Carbon</th>
<th>C.V. (kcal/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbonaceous Clay</td>
<td>30.0 to 35.0</td>
<td>45.0 to 55.0</td>
<td>10.0 to 15.0</td>
<td>5.0 to 7.50</td>
<td>750 to 1000</td>
</tr>
<tr>
<td>Intercalation of lignite and Carbonaceous Clay</td>
<td>30.0 to 37.5</td>
<td>30.0 to 45.0</td>
<td>15.0 to 20.0</td>
<td>7.5 to 15.0</td>
<td>1001 to 2000</td>
</tr>
<tr>
<td>Lignite B</td>
<td>30.0 to 40.0</td>
<td>15.0 to 30.0</td>
<td>20.0 to 25.0</td>
<td>15.0 to 22.5</td>
<td>2001 to 3000</td>
</tr>
<tr>
<td>Lignite A</td>
<td>30.0 to 40.0</td>
<td>15.0 to 30.0</td>
<td>20.0 to 25.0</td>
<td>15.0 to 22.5</td>
<td>&gt; 3000</td>
</tr>
</tbody>
</table>

Table 3. Shows Gross reserves of different grade of lignite (Source-Mine Plan, RSMML)

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Grade (kcal/kg)</th>
<th>Gross reserves (% of total reserves)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1001 - 1500</td>
<td>2.49</td>
</tr>
<tr>
<td>2.</td>
<td>1501 - 2000</td>
<td>27.45</td>
</tr>
<tr>
<td>3.</td>
<td>2001 - 2500</td>
<td>53.99</td>
</tr>
<tr>
<td>4.</td>
<td>2501 -3000</td>
<td>15.07</td>
</tr>
<tr>
<td>5.</td>
<td>3001 - 3500</td>
<td>0.99</td>
</tr>
</tbody>
</table>

1001 and 2000 kcal/kg has no commercial value and can be treated as waste as shown in Table 1.

Utilization in appropriate industries, different option were studied to upgrade the ROM. The surface chemistry and chemical composition of clay lignite inter burden and over burden, low cost of mineral was also taken in consideration, consistent with current trends in beneficiation of lignite it has been decided to carry out the study.

Figure 3. Cross sectional view of lignite & carbonaceous clay in Giral Mines.
This experiment has been carried out to see the behavior of CLIW in inorganic solvents and further to establish that if we can separate any other useful fraction out of the sink of 1.56 specific gravity bath. For this set of experiment baths of inorganic liquids Phosphoric Acid and Water were used. The initial C.V. of the CLIW was 2165 kcal/kg. The CLIW is processed in the similar way as described earlier. Floats of different specific gravity were collected, dried, weighed and analyzed for proximate analysis. The weight distribution in float and sink separated, proximate analysis of both the fractions separated & cumulative of weight, ash and calorific values are given in Table 4-6.

Table 4. (-) 5 mm to (+) 3 mm fraction, air-dried, C.V. 2165 kcal/kg at 35% Moisture (values in %)

<table>
<thead>
<tr>
<th>Specific Gravity</th>
<th>Set -1 Weight</th>
<th>Set -2 Weight</th>
<th>Set -3 Weight</th>
<th>Av. Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.65 float</td>
<td>67.2</td>
<td>70.65</td>
<td>69.15</td>
<td>69.00</td>
</tr>
<tr>
<td>1.65 sink</td>
<td>32.8</td>
<td>29.35</td>
<td>30.85</td>
<td>31.00</td>
</tr>
</tbody>
</table>

Table 5. Proximate Analysis of Different Products

<table>
<thead>
<tr>
<th>Specific Gravity</th>
<th>% Moisture</th>
<th>% Volatile Matter</th>
<th>% Ash</th>
<th>% Fixed Carbon</th>
<th>C.V. kcal/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.65 float</td>
<td>35</td>
<td>21.41</td>
<td>23.7</td>
<td>19.89</td>
<td>2701</td>
</tr>
<tr>
<td>1.65 sink</td>
<td>35</td>
<td>15.51</td>
<td>46.1</td>
<td>3.39</td>
<td>1053</td>
</tr>
</tbody>
</table>

Table 6. Cumulative Values of C.V. and Weight % of Different Products

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.65 float</td>
<td>69.00</td>
<td>23.70</td>
<td>2701</td>
</tr>
<tr>
<td>1.65 sink</td>
<td>100</td>
<td>30.64</td>
<td>2190</td>
</tr>
</tbody>
</table>

Results

It is evident from the results reported in Table 6 that the overall recovery of lignite in the form of 1.65 specific gravity float is goes up to 69 % by weight, from 53.72% in the previous experiments, that means an increase of 15.28% in Yield. These results show that we have recovered 15% more energy value from the sink of 1.56 specific gravity.

The proximate analysis of above separated fractions as reported in Table 6 show that the Cumulative C.V. of 1.65 fraction is 2701 kcal/kg that means that it is acceptable as PSF. Whereas the C.V. of sink has goes down to 1053 kcal/kg from 1338 kcal/kg in the previous experiment. These results indicate that recovery of some more energy rich material (lignite) from the sink of 1.56 specific gravity.

Conclusion

It can be concluded from the available data that this method of Dense Media Separation is successful in separating the precious mineral out of the mining waste with negative value. The degree of beneficiation as well as the yield will depend upon initial calorific value of CLIW and specification of clean lignite. If the calorific value of CLIW is in the range of 2000 – 2100 kcal/kg, we can use 1.45 specific gravity dense media solution for the separation of prime grade lignite (sub bituminous coal) with 30% yield and 1.65 specific gravity bath can be used for PSF grade material with 65% yield & 2800 CV.

This study shows that the waste CLIW (Clay Lignite Inter Burden Waste) material being produced during mining of lignite in western part of Rajasthan can be upgraded for recovery of lignite up to marketable grade.

Advantage of this study

- Recovery of prime grade material from the CLIW, which can be sold to suitable consumers at higher cost.
- In comparison to wet sieving experiment the recovery is somewhat better in this process that shows separation of energy value to a greater extent in this process. In this way the quantity of rejects will reduce further so generation of waste will reduce.

Projection for future

The achievements of the study through physical methods of separation, wet sieving and dense media separation have been significantly improving the energy contents of the rejects of lignite mining in western Rajasthan and thus...
transforming the mining waste into a saleable product with more than fifty percent yield. Therefore, there is a vast scope for extensive studies involving pilot plant experiments for desired results. This will strengthen the state as well as nation's economy and also conserve the precious minerals.

Despite significant potential as a source of energy in Rajasthan, lignite entails challenges that include environmental concerns and economics of scale due to large overburden. As overburden/interburden of carbonaceous clay is a poor-quality, extracting lignite from it creates higher particularly CV & became marketable to use in thermal plant. While these issues are important, a discussion on them is beyond the scope of the present communication.

References

INVITATION OF GOVT. MINING INSTITUTE / GOVT. POLYTECHNIC, GUDUR, AP’S ALUMNI (MINING) ASSOCIATION GUDUR

The Executive Committee of the Association proposes to organize a special meeting of all the Alumni Members and old students of this prestigious institution to mark 60 years of the Institution’s successful functioning at Vanaja Krishna Kalyanamandapam, ICS Road, Gudur on 15.10.2017, 09.30 AM.

Over the last 60 years, this institution has rolled out many eminent Mining Engineers who have cut out their own laudable niche and social status in the Mining Industry in India and abroad. Some have become owners of mines/ quarries; some have gone up the ladder to become Directors, Vice Presidents, General Managers and the like. All of us are truly proud of the achievements of our classmates and friends, even if we do not know them personally. It will be a celebration of all our achievements, individually and collectively. On this day, we remember our gurus like S N Ramanathan, Prof. Subramanyam, Durgaprasada Rao, Ramakrishna Rao, Ramachandra Rao, Rama Rao, GVS Rama Rao, BC Subramanyam, Aswatha Narayana, Ram Subba Reddy, Bulliah, C Krishna Murthy, Chandrasekhar Reddy, K Venkateswara Rao, Srinvasa Reddy and all others. Who can forget all those who have painfully laid the foundations of our careers? It is their pupils who have gone on to uplift the mining industry in the years that followed.

All this is to remind you of the nostalgic memories of GMI / GP and the source of inspiration for celebrating the 60 glorious years.

For whatever reasons, it is indeed unfortunate that we do not have the addresses, present status and other details of some of our Alumni Members. Despite our best efforts we have not been able to reach all the mining engineers who have come out from the institution in flying colours. All the Alumni members requested to treat this as a personal invitation and to make it convenient to attend the celebrations. We also request the members to spread the message to those old boys who may not have access to this magazine and impress upon them also to participate. All are requested to confirm participation with the General Secretary or the Vice president.

S Vijaya Sekhar, President
(1980 Batch)

D Venkataramana, Vice President
(1987 Batch)
9490167233
dampetlav@gmail.com

C. Sarat Chandra Babu, General Secretary
(1963 Batch)
9963287930
saratchandrachalasani@gmail.com
with Best Wishes from

B L MARBLES

Mines Owner and Supplier

of

Marble Blocks and Khandha

Office : 5, Roopbaas Road
Alwar - 301001
with Best Wishes from

KARAN YADAV
B.E. (Civil)

ENGINEERS
CONTRACTORS
AND EARTH MOVERS

‘AA’ CLASS CONTRACTOR

PWD, WATER RESOURCES, RAILWAYS

Mobile: +91 9414018200
Address: Alwar (Raj)
I am grateful and obliged to the members of MEAI for showing faith in me and giving the responsibility as MEAI President for the term 2017-19. I shall try my level best to meet the expectations and dignity of MEAI. This is only possible with your active contribution & support.

For effective functioning of our organization, we have to delegate responsibilities to our esteemed members for immaculate planning & impeccable execution of different activities. Keeping in view the proper implementation of objects of MEAI, I hereby constitute following Committees for the term 2017-19:

1) **International Affairs Committee**
   - Shri. T.Victor, Immediate Past President – Chairman
   - Shri. R.H.Sawkar, Council Member – Member
   - Dr. P.V.Rao, Editor MEJ – Member
   - Dr. Abani Ranjan Samal – Member

2) **Resource Mobilization Committee**
   - Shri. B.R.V.Susheel Kumar, Chairman Hyderabad Chapter – Chairman
   - Shri. D.S.Maru, Council Member – Member
   - Dr. Meda Venkataiah, Past President – Member
   - Shri. O.P.Gupta, Chairman Rajasthan Chapter Jaipur – Member

3) **Program Committee**
   - Dr. N.K.Nanda, Co-opted Council Member – Chairman
   - Shri. Rajendra Singh Rathore, Council Member – Member
   - Shri. C.H.Narsimulu, Secretary Hyderabad Chapter – Member
   - Shri. V.S.Rao, Past President – Member

4) **Membership Committee**
   - Dr. S.S.Rathore, Chairman Rajasthan Chapter Udaipur – Chairman
   - Shri. Dilip Saxena, Council Member – Member
   - Prof. Bhabesh C.Sarkar, Dhanbad – Member
   - Shri. P.N.Rao, Chairman Ahmedabad Chapter - Member

5) **Constitution Amendment Committee**
   - Shri. T.V.Chowdary, Past President - Chairman
   - Shri. T. Victor, Immediate Past President – Member
   - Shri. V.S.Rao, Past President – Member
   - Shri. M. Fasihuddin, Past President
   - Shri. BRV Susheel Kumar,

6) **Website Renovation Committee**
   - Shri. Deepak Gupta, Council Member – Chairman
   - Shri. Anil Mathur, Vice Chairman Rajasthan Chapter Jaipur – Member
   - Prof. Sushil Bhandari, Council Member – Member
   - Shri. C.S.Dhaveji, Council Member - Member

7) **New Building Project Committee**
   - Shri. T.V.Chowdary – Chairman
   - Shri. B. Ramesh Kumar – Treasurer
   - Shri. T.Victor, Immediate Past President – Member
   - Shri. S.K.Pattnaik, VP-I – Member
   - Shri. K.Madhusudhana, VP II – Member
   - Shri. S.N.Mathur, VP-III - Member
   - Shri. B.R.V.Susheel Kumar, Chairman Hyderabad Chapter – Member
   - Dr P.V.Rao, Editor – Member
   - Shri. K.U.Rao, Council Member – Member
   - Shri. M.Chakradhar, Jt-sec- cum-treasurer - Member

8) **Legal issues resolving Committee**
   - Shri. Vijay Singh A.R, Council Member – Chairman
   - Shri. P.C.Bakliwal, Secretary Rajasthan Chapter Jaipur – Member
   - Shri. Prakash, Chairman Huetti-Kalaburagi Chapter – Member
   - Shri. S. C. Suthar, Council Member - Member

1. In all above committees President & Secretary General shall be ex-officio members.
2. Chairman of committee can co-opt any member of MEAI in his committee for betterment of work, intimating the President and Secretary General of MEAI on Email.
3. First meeting of committee can be held within 15 days at a suitable place or on telephonic/Email route & decide the budgetary requirement for the year 2017-18 for their effective functioning. They must intimate the requirement to Secretary General so that the amount can be included in budgetary provision for approval from council in first council meeting.

   - President, MEAI

**BARAJAMDA CHAPTER**

**Workshop on Safety Management Plan (SMP)**
A technical paper presentation cum workshop on Safety Management Plan (SMP) was organized under the banner of Mining Engineers Association of India (MEAI), Barajamda Chapter at JRDTTI, Noamundi, Tata Steel on August 4, 2017.
Formal commencement of meeting cum workshop was inaugurated by lightening the lamp by the dignitaries on dais. Welcome address was given by Mr. H. Mojumdar, Vice Chairman, MEAI Barajamda Chapter.

Mr Pankaj Kumar Satija, General Manager (Ore Mines & Quarries), Tata Steel and Chairman, MEAI Barajamda Chapter delivered the Presidential address. He stressed about the importance of safety in mining industry and emphasized on the welfare and safety of employees. He also said that safety is everybody’s responsibility and emphasised on behavioural safety. He expressed his views on the key role of frontline supervisors in making SMP and ensuring safety at workplace. He invited all MEAI members for the upcoming workshop and expressed his commitment for organising regular workshops and seminars by MEAI Barajamda Chapter.

Mr P Damodar, Deputy Director of Mines Safety (Electrical) gave keynote address on the occasion and appreciated the efforts of MEAI Barajamda Chapter team to bring together mining professionals.

Mr Satish Kumar, Director of Mines Safety, Chaibasa Region appreciated the efforts of MEAI in organising regular workshops/seminars on different subjects to enhance the professional knowledge of mining community as well as sharing best practices/technology in mining industry. He requested all members present to take benefit of presence of Dr. Ashim Kumar Sinha, DDGMS, an eminent mining engineer with vast experience of OHS, regulation, and member of task force for review of national policy on safety, health and employees welfare.

Dr. Ashim Kumar Sinha talked about the long journey of safety management system in Indian mining industry. He explained about the benefits of implementing the system and how the same has reduced the number of incidents and improved safety at workplace. He explained in detail the process to be adopted for successful implementation of the system. He stressed upon self-regulation model of SMP over the prescriptive regulatory model and adoption of digital model for making SMP where the details will be made available online. He urged all mine managers to complete the process and submit the SMP on time.

Around 200 participants including the MEAI members along with mine managers, engineers and agents from various mines attended the meeting. Tata Steel, Essel Mining, and Rungta Mines presented papers covering subjects like hazard identification, risk assessment, hazard control plan & audit and review. The objective of the workshop was to improve safety at workplace by involving mine management and employees performing the job.

Formal vote of thanks and concluding remarks were delivered by Mr R. P. Mali, Member, MEAI Barajamda Chapter.
workshops/seminars on different subjects to enhance the knowledge of mining community as well as sharing of best practices/technology by the mining fraternity. He said that today’s seminar on innovative practices on dust suppression for mining industry is a key concern and miners should ensure implementation of different new practices for dust suppression.

Around 150 participants including the MEAI members along with mine managers and agents from various mines attended the meeting.

The details of presentations made in the seminar given below:

1. Presentation by Mr Saket Bharti, DDMS, Chaibasa Region was on awareness on silicosis and control measures. He explained the details of regulation on dust control and medical examination of persons employed in mines.

2. Presentation by Australian experts from Dustwork was on the use of additives as measure for dust suppression. During the presentation, different innovative ideas for haul road dust suppressant, rail wagon veneer dust suppressant, stockpile and exposed ground crushing agent etc. were discussed in detail.

3. Presentation by BEML was mist spray and conversion kit for existing dumpers. They presented on the effective measures taken in development of new sprinklers which will lead to reduction in the total requirement of water and improvement in the effectiveness of dust control.

4. Presentation by the team from Quality Circle MIOM was on in-house interlocking arrangement of drill machine for wet drilling. The kaizen was done by one of the improvement groups to ensure the wet drilling in DTH drill machine.

The workshop was interactive and participants raised questions after each presentation to obtain further details on commercial aspects of projects for implementation in mines.

Concluding speech was delivered by Mr Rajesh Kumar, Joint Secretary cum Treasurer of MEAI Barajamda Chapter. Formal vote of thanks was proposed by Mr I VA Raju, General Manager, Kiriburi Iron Ore Mine, SAIL.

Mr Pankaj Satija, Chairman Barajamda Chapter speaking on Chapter future programs

(L-R): Mr I V A Raju, Mr Saket Bharti, Mr Satish Kumar, Mr Pankaj Satija, Mr Nicholas and Mr Martin

Mr Satish Kumar, DMS addressing the audience

BELLARY-HOSPET CHAPTER

One-day Seminar, Executive Committee & AGM Meeting

One-day seminar, Executive Committee Meeting and AGM, Installation of Office Bearers (2017-19) of Bellary-Hospet Chapter was held on July 29, 2017 from 9.00 am to 5.30 pm in MGVTC Sandur. Sri. Manish Eknath Murkute, Director of Mines Safety, Bellari Region; Dr Meda Venkataiah, MSPL ED; Sri. K. Madhusudhana, Vice president II, MEAI; Sri M S Raju, Council member; Dr. TN Venugopal, Chairman, Banglore Chapter; Sri. H. Yellappa, Chairman and Sri. P. Sreenivasa Rao, Secretary, Bellary-Hospet Chapter and other guests and invitees were present during the meeting.

Sri. H. Yellappa welcomed the gathering and conducted the meeting as per the Agenda.

1) Secretary Report: Sri. P. Sreenivasa Rao submitted brief report about the Chapter activities for the year 2015-17

2) Submission of Audited Report: Sri K. Prabhakar Reddy, Jt. Secretary cum Treasurer presented audited accounts for the period 2016-17 and the same was approved

3) Election of office bearers: Sri K. Madhusudhana appreciated the efforts in conducting regular meetings at difficult times and announced the Office bearers & Executive Committee for 2017-19 as per the recommendations of outgoing Executive committee. The members discussed at length and unanimously elected the new team as follows.
Chairman: Sri. B. Sahoo, Vice Chairman: Sri. T.L. Yogananda, Secretary: Sri. K. Prabhakar Reddy, Jt. Secretary cum treasurer: Sri. R. Prakash Babu


Installation of the new Office Bearers (2017-19) was conducted in an appropriate manner.

Sri. K. Madhusudhana, requested all members to work towards achieving the following:

1) Enrolment of New members: 100 Members for this year
2) Rising of Funds individual/company wise
3) Conducting of training sessions
4. Technical Session: One-day seminar was organized on recent Legislation changes like MMRD, DMF, NMET, Mineral auction Rules etc. Dr. T N Venugopal, Sri. Vijay Singh and Sri. S. Nayak presented papers on the topic. Mr. Rakesh Presented on “MAGMA The Miners Anatomy” Mobile App.

There was an Open discussion on “online filing Star rating Application and its difficulties”.

5. Any other point with permission of chair: Sri. B. Sahoo, General Manager, NMDC expressed thanks to all the members for electing him as the Chairman of Bellary-Hospet Chapter and presented his activity plan of the Chapter. All the members present actively participated in the discussions and expressed thanks to the outgoing Chairman and his team. Dr. Meda Venkataiah and Sri. M.S. Raju spoke on the activities of Chapter and gave advice for further improvement. Sri. Manish Eknath Murkute has presented his experiences and shared live examples for betterment of members.


Felicitation to Past President Dr. Meda Venkataiah

Presentation on Mineral Auction, Evidence, DMF and NMET by Sri Sabyasachi Nayak

Rajasthan Chaprer-Jaipur

A workshop on auction of new mining leases as per the Rajasthan Minor Mineral Concession Rules, 2017 was organized jointly by the Mines and Geology Department, Rajasthan, Rajasthan Stone Crusher Association, and Rajasthan Small Mines (Chejja Pathar) Lease Holders Association at Mining Welfare Centre, Mansarovar, Jaipur at 2.00 pm on August 10, 2017 in association with MEAI Rajasthan Chapter-Jaipur.

Presentations were made by Shri D.P. Gaud, SME, Jaipur Circle of DMG, Rajasthan and Dy. Manager Shri Dinesh Meel of MSTC, the service provider for the Auctioning of Minor Minerals in Rajasthan. The entire process ‘starting from the registration to final bidding’ was presented through Power Point and the speakers clarified the queries raised. Shri O.P. Gupta, Chairman, Rajasthan Chapter- Jaipur appealed to all the leaseholders to contribute from their CSR fund for the development of this Centre. Around 150 delegates attended the workshop, which was followed by high tea, also arranged by the associations.
TAMIL NADU CHAPTER
22nd Annual General Meeting
The 22nd Annual General Meeting of Tamil Nadu Chapter was held on August 2, 2017 at Hotel Sivaraj Inn, Salem. The selection of new Executive Committee members was deliberated in the meeting and then selected the following Office bearers and Executive body along with 21 Special invitees for 2017-19:

Office bearers
Mr P Ramasami - Chairman
Mr M Ifthikhar Ahamed – Vice Chairman
Mr M Mayil Rajan – Secretary
Mr E Vasudevan – Jt Secretary
Mr M Ramesh - Treasurer

Executive body Members
Mr S Venu Gopal
Mr M S Pavel
DR G R Senthil Kumar
Mr Pradeep Sahoo
Mr E Krishnan
Mr D Asirvatham
Mr Jabu Abraham
Mr E Ganesan
Mr Hemanth Kumar

The new Executive body was then installed by handing over the shield to Chairman, Vice Chairman and Secretary by the outgoing Chairman, Vice Chairman and Secretary respectively. Mr M James, presented mementos to the outgoing office bearers & executive committee members.

Senior members and special invitees viz Mr K Gowrappan, K S Anandan & S Kumarasamy attended the meeting.

RAJASTHAN CHAPTER-UDAIPUR
Annual General Body Meeting was held on August 13, 2017 in the Institution of Engineers Hall, Udaipur. The following members were present:

S/Sri A.K. Kothari, President, MEAI, R.P. Gupta, Patron, Akhilesh Joshi, Patron, Dr. S.S. Rathore, Chairman, MEAI Udaipur Chapter, L.S. Shekhawat, Vice Chairman, Udaipur Chapter, and Dr. S.C. Jain, Secretary, Seminar Committee.

Besides these persons, several other members of the Association viz. S/Sri Narayan Rajak, Dy. Director General Mines Safety, Udaipur Zone, T.K. Rath, Controller of Mines, IBM, Udaipur and B.K.P. Sinha, Ex-Director, H.Z.L. also attended the meeting.
At the outset, Dr. S.S. Rathore welcomed all the members present on this occasion and elaborated in detail about the various programs of the chapter and activities undertaken by the Chapter.

Thereafter, Sri. R.D. Saxena, Secretary of the Chapter, placed before the members the minutes of 18th General Body Meeting held on July 24, 2016 for approval, which were approved by the general body. He then presented a detailed report of the various activities undertaken by the Chapter in the year 2016 -2017.

Dr. S.C. Jain submitted audited accounts in the absence of Jt. Secy. & Treasurer Sri M.S. Paliwal. The accounts were passed by the house.

Thereafter, the Chairman sought the views of the dignitaries & members present. The summary of discussion is as follows:

Sri. T.K. Rath suggested that students awareness programme in Mining & Environment should be conducted in various colleges.

Sri. Narayan Rajak suggested that various activities carried out on Socio Economic Aspects in mining areas should emphasize on the upliftment of poor children of the area.

Sri. S.K. Vaishtha A.G.M. (Geology) Hindustan Zinc Ltd. suggested conducting monthly talk either at the project site or in Udaipur. He further felt that world class professionals are available in India and hence no need of engaging any foreign experts to address every small mining problem.

Sri Akhilesh Joshi said that the Chapter should prepare both five years & three year calendar of its activities and programmes and accordingly preparatory work should be initiated well in advance.

He further emphasized that FIMI is a body of Mine Owners whereas MEAI is a body of mineral industry Professionals. In view of repository of professional expertise available with MEAI, it should remain ahead of FIMI in making suggestions on various Acts, Rules and Regulations to both Central & State Governments.

Sri R.P. Gupta, Former President of MEAI, suggested that efforts should be made to enroll more members including Institutional Members.

Dr. S.S. Rathore, Chairman & Convener Seminar explained in detail about the activities and financial component of the Seminar held from July 7-9, 2017. He was delighted to announce that a large number of Council members attended that Seminar and Council meeting.

~Sri. A.K. Kothari, President of MEAI appraised the house about his meeting with the Mines Secretary and other Mines officials. It is quite heartening to note that the Ministry of Mines has a positive view in associating MEAI in its various committees. He also informed the house about his future plans & steps for ameliorating the Association during his two-year tenure.

The following members and guests were felicitated for their excellent contribution in successfully organizing the National Seminar at Udaipur.


CTAE: Dr. P.K. Singh, Dr. Deepak Sharma, Dr. (Mrs) Gayatri Tiwari, Er. Govind Singh, Sri F.L. Suthar.

The following women were felicitated for their involvement during National Seminar:

This was followed by felicitation of Shi A.K. Kothari on assuming the August office of the President of MEAI wherein he was lavishly garlanded by all present.

Shi L.S. Shekhawat proposed vote of thanks.
SME NEWS
THE MINING ENGINEERS ASSOCIATION OF INDIA (MEAI) SIGNS AGREEMENT WITH THE SOCIETY FOR MINING, METALLURGY, AND EXPLORATION (SME) FOR MUTUAL BENEFIT OF THE MEMBERS OF BOTH THE PROFESSIONAL ORGANIZATIONS

By Dr. Abani R Samal, Principal, GeoGlobal, USA
Email: arsamal@gmail.com

The Mining Engineers’ Association of India (MEAI) MEAI is the leading professional body representing mineral industry professionals in India. MEAI has been in the service of the nation for more than 50 years. The Society for Mining, Metallurgy & Exploration Inc. (SME) is one of the most internationally recognized professional societies in the mining industry with membership exceeding 13,000 worldwide. The SME recognizes the Mining Engineers Association of India (MEAI) as a prominent professional organization for the mining industry in India with nearly 5,000 professional members. The SME is expanding its footprint in South America and other parts of the world. Currently, SME has 70 individuals in India as well as four student chapters at the following academic institutions: Indian Institute of Technology (ISM) Dhanbad (formerly India School of Mines), Indian Institute of Technology, Kharagpur, Indian Institute of Technology (BHU) Varanasi (formerly Banaras Hindu University) and University of Petroleum & Energy Studies, Dehradun.

Keeping the future of the mining industry in both USA and India in consideration a meeting between high level delegates of SME and MEAI was conceptualized, coordinated and organized by Dr Abani Samal (Life member of MEAI since 1997 and a registered member of SME) during SME Conference in February 2016. The MEAI was led by its elected president Mr T Victor, who traveled to USA in February 2016 to renew the collaboration with SME for a strategic long-term benefit of both professional organizations and industry as a whole. Dr. PV Rao (Editor of MEJ and past Honorary Secretary of MEAI) and Dr Abani Samal were the other team members of MEAI. The SME delegation was led by Dave Kanagy (Executive director) and represented by Steve Gardner (past President of SME 2015-16), Tim Arnold (President of SME 2016-17), John Mansanti (President of SME, 2017-18). The meeting was also attended by other prominent SME members such as Dr Madan Singh, Dr Manoj Mohanty and Dr Harry Parker (Past Chair of CRIRSCO and a Co-Chair of the SME’s Resource Reserve Committee).

Following this meeting various rounds of discussions and presentations were held between both sides. Notable, Dr Samal presented to the BoD of SME during the midyear meeting held in Las Vegas in September 2016. Later a high level meeting was held between leadership of SME and MEAI during SME annual conference at Denver in February 2017 leading to final drafting of the agreement. Dr Abani Samal coordinated the meeting. Prof A Srikant represented the MEAI council in the meeting. Mr Dave Kanagy, Mr John Mansanti and Barbara Arnold (incoming president of SME) were present at this meeting.

While MEAI is looking at this opportunity to enhance its international profile, the SME sees this as an opportunity to expand brand awareness in India. SME and MEAI will explore possibilities of collaborating on joint technical programming in India. In this background, SME and MEAI agreed to establish a strategic partnership between SME and MEAI for mutual benefits and signed a joint agreement on 1st June 2017. Mr T Victor, Mr Arun Kothari and Dr PV Rao are signatories on behalf of MEAI, and Mr John Mansanti and Mr Dave Kanagy signed the document from SME side. Upon activation of this agreement, the MEAI members can now access the Mining Engineering magazine, and SME eNews, a bi-monthly electronic newsletter. The MEAI members will also have an opportunity to collaborate and interact with SME members through the ‘SME Community’. Additionally, the MEAI members can also avail the member pricing for conferences, webinars and books. The MEAI will explore possibility of partnership with SME in designing and hosting largescale expositions & highlevel technical conference in India. Potentially this agreement will lead MEAI towards becoming the leading professional organization for mining industry professionals in SE Asia.

Thanking the SME leadership for ‘renewing the relationship between the two professional bodies’, Mr T Victor wrote: ‘A historical event has taken place on this day, the 1st June 2017’. Mr Dave Kanagy responded: ‘I’m also very pleased that we were able to find a working relationship that begins a new relationship between MEAI and SME. The new agreement gives us a foundation to continue to work together and find common ground to support the professionals in the mining industry in all aspects of their careers.’
CRIRSCO NEWS

ASSOCHAM endorsement to IMIG

Mr DS Rawat, Secretary General, The Associated Chambers of Commerce and Industry of India (ASSOCHAM), in a letter written on 9th August 2017 to Mr Ian Goddard, Chairperson, CRIRSCO concurred its support to the draft Indian Mineral Industry Guide (IMIG) prepared by the National Core Committee for Reporting Exploration Results, Mineral Resources and Reserves in India (NACRI).

In his endorsement letter, he wrote, “ASSOCHAM believes that the IMIG will assist the mining industry in India in preparation of public reports that present information needed by the stakeholders that is material, transparent and prepared by Competent persons that are members of self-regulating professional organizations with enforceable code of ethics. Such reporting will help mineral based and mining companies raising capital from the Indian stock markets and abroad.”

The services of Mr Deepak Rathod, one of the founder members of NACRI, in coordinating with the management ASSOCHAM and getting its endorsement letter to IMIG are highly appreciated.

Presentation on ‘CRIRSCO developments in India’ by Mr Deepak Rathod in ASSOCHAM Summit

ASSOCHAM had organized with the support of Ministry of Mines and Steel “India Mining Summit –Enabling Policy Framework “on August 04, 2017 in New Delhi. Shri Arun Kumar IAS, Secretary Ministry of Mines Government of India delivered the Inaugural Address at the Conference.

In the inaugural session, the Mines Secretary conceded that there is a need to focus more and speed up exploration; and government is serious to accelerate exploration and address any deficit. The issues related to auction and pricing of blocks were discussed. Government has set itself a target of 100 blocks for auctioning subject to states’ response, as the ministry has identified the most-potential district in the states that have not rolled it out in the desired manner and has deputed GSI and IBM officers to sit in those districts and make out blocks.

The second Session on ‘Technologies and Infrastructure & other concerns’ was moderated by Shri S. Vijay Kumar, distinguished Fellow, TERI. Shri Milan Mukhopadhyay, Co-chairman, ASSOCHAM National Council on Mines and Minerals, Shri Deepak Rathod, GM (Technical Services), Trimex Sands Pvt Ltd, Shri Indranil Som, Senior Principal (Value Engineering) SAP India, Shri Punnet Narula, General Manager-Equipment Sales, Normet India Pvt. Ltd, Shri Basab Mukhopadhyay, Director (G), Geological Survey of India were the panellists. Important aspects like SDG in the mining sector along with technological advancements in underground mining were deliberated upon in this session.

Shri Deepak made a presentation entitled “CRIRSCO initiative in India: It’s benefits and future outlook’ on behalf of NACRI that was well received and appreciated by the delegates, and panellists alike. Congratulations to Mr Deepak Rathod.

Obituary

Late Shri Rajesh Suwalka

Mr. Rajesh Suwalka left this world on 13th November 2016. He was a Life Member of the Association since inception of the Jodhpur Chapter, with membership No. LM-2799/ RAJ-JOD. Mr. Rajesh Suwalka S/o Shri Bheru Lal Suwalka was born on 22nd October 1974 at Bhilwara in Rajasthan.

He obtained Diploma in Mining Engg. & Mine Surveying from College of Technology & Agriculture Engg., Udaipur and acquired qualification of AMIE later on. He served initially at Ambuja Cement, Rajasthan; then from year 2000 to April 2010 at Binani Cement and later on Aditya Cement, Chittorgarh.

He suffered from the rare incurable disease MND in year 2011 and ultimately succumbed to it. He is survived by his wife Mrs Divya Suwalka and two twin sons Masters Aayush & Anshul (DOB 8th July 2003). His family resides with parents at their hometown Bhilwara.

MEAI condoles his untimely demise, and conveys profound condolences to his wife and other members of his family.
Mr Deepak Gupta, MEAI Life Member was nominated by MEAI President to represent MEAI in a Preparatory meeting held on 1st August, 2017 (Tuesday) at 3.00 pm in Aluminium Room, Ministry of Mines, Shastri Bhavan, New Delhi for the 6th meeting of India- Russia Sub-Group on Mining to be held at Moscow, Russia during September 15-16, 2017.

He suggested that Ministry may propose to Russian side that Associations of Professionals in India like MEAI would like to connect with Russian counterparts for exchange to information on a regular basis.

He learnt during the meeting that participation in the next meeting in Russia will be limited to Government and PSU officials only but Private sector may flag areas of interest and MoM will consider about raising it before Russian side.

The following Life Members have generously contributed to MEAI Fund.

Dr. S.S. Rathore Rs 21,000
Department of Mining Engineering
College of Technology and Engineering
Maharana Pratap University of Technology
UDAIPUR - 313 001, Rajasthan
Mob: 098290 41632
Email: ssrathore58@yahoo.co.in

Shri. D.S. Maru Rs 21,000
Director, Department of Mines and Geology
Khanij Bhavan, Shastri Circle
UDAIPUR - 313 001, Rajasthan
Mob: 09829230652
Email: dsmaru2011@gmail.com

Shri. R.D. Saxena Rs 21,000
Consulting Mining Engineer
12, Vinayak Nagar
Near Bohar Ganesh ji
UDAIPUR – 313001, Rajasthan
Mob: 093525 05728
Email: rd_saxena@yahoo.co.in

Shri. R.P. Gupta Rs 1,00,000
Sudarshan Minerals & Chem. Industries
425, Sector -11, Hiran Magri
UDAIPUR – 313002, Rajasthan
Mob: 093529 50025
Email: sudarsh_rpg@yahoo.com

The President, on behalf of the MEAI, wish to acknowledge their contribution and thank each of the above four members for their generosity and solid commitment towards building a financially resilient Association.

CONTRIBUTORS TO MEAI

MEAI PARTICIPATION IN MoM MEETING

The following Life Members have generously contributed to MEAI Fund.

Dr. S.S. Rathore Rs 21,000
Department of Mining Engineering
College of Technology and Engineering
Maharana Pratap University of Technology
UDAIPUR - 313 001, Rajasthan
Mob: 098290 41632
Email: ssrathore58@yahoo.co.in

Shri. D.S. Maru Rs 21,000
Director, Department of Mines and Geology
Khanij Bhavan, Shastri Circle
UDAIPUR - 313 001, Rajasthan
Mob: 09829230652
Email: dsmaru2011@gmail.com

Shri. R.D. Saxena Rs 21,000
Consulting Mining Engineer
12, Vinayak Nagar
Near Bohar Ganesh ji
UDAIPUR – 313001, Rajasthan
Mob: 093525 05728
Email: rd_saxena@yahoo.co.in

Shri. R.P. Gupta Rs 1,00,000
Sudarshan Minerals & Chem. Industries
425, Sector -11, Hiran Magri
UDAIPUR – 313002, Rajasthan
Mob: 093529 50025
Email: sudarsh_rpg@yahoo.com

The President, on behalf of the MEAI, wish to acknowledge their contribution and thank each of the above four members for their generosity and solid commitment towards building a financially resilient Association.

MEAI PARTICIPATION IN MoM MEETING

Mr Deepak Gupta, MEAI Life Member was nominated by MEAI President to represent MEAI in a Preparatory meeting held on 1st August, 2017 (Tuesday) at 3.00 pm in Aluminium Room, Ministry of Mines, Shastri Bhavan, New Delhi for the 6th meeting of India- Russia Sub-Group on Mining to be held at Moscow, Russia during September 15-16, 2017.

He suggested that Ministry may propose to Russian side that Associations of Professionals in India like MEAI would like to connect with Russian counterparts for exchange to information on a regular basis.

He learnt during the meeting that participation in the next meeting in Russia will be limited to Government and PSU officials only but Private sector may flag areas of interest and MoM will consider about raising it before Russian side.
PARIAN MARBLE AND GRANITE

Manufacturer and Supplier of all kinds of

Marble – Lavender, Indo, Italian Brown Type etc.

Granite – Tiger, Tan Brown, Golden Galaxy, Rosy Pink, Cheema, Ocean Brown, Blue Pearl, Green Pearl, Black Pearl, Telephone Black, Antique Pink, Raj. Cat Eyes, Steel Grey etc.

Contact : +91 9214040396, 9760020396, 9829097764
Mines : Near Village Khoh, Teh. Rajgarh
Alwar (Raj)

Assoc. Firms : Pramod Marbles
              Goyal Milling Industries
              Palpur Mining Company
CONFERENCES, SEMINARS, WORKSHOPS ETC.

INDIA

21 - 25 August 2017; 27 Nov-1 Dec 2017: A National workshop on Slope Stability is scheduled to be held on in the Department of Mining Engineering, IIT (BHU) Varanasi for practicing engineers and scientists. The workshop will address the issues on slope stability, exchange views on best practices and state of the art slope stability technologies, design implementation and performance monitoring. Contact email: rajeshrai.min@iith.ac.in, http://www.iith.ac.in/min/slope.html

11 - 12 November 2017: National Conference on "Mining Industry-Vision 2030 and Beyond" to be organized by Mining Engineers' Association of India, Nagpur Chapter at Nagpur. For details contact Sri Sharad Sapkal, Secretary, Secretary, Mob no: 77090 29211, Email: sharadsapkal42@yahoo.co.in

18 - 21 January 2018: Rajasthan’s First International Exhibition on Minerals, Mining & Construction Machines, GMME - 2018, supported by UCCI. For details contact: India International Exhibition Organising Company, Address: 11, Royal Complex, Delhi Gate, Udaipur (Rajasthan)-313 001, Mr.Vijay Kumar, Mob: 099289 11119, 090760 03100, 0294-5107869, Email: info@gmmeindia.com, Web: www.gmmeindia.com

ABROAD


11 - 12 September 2017: MetPlant 2017, Perth, Western Australia, Metallurgical Plant Design and Operating Strategies - World’s Best Practice, Contact: Rachel Magill, Telephone: +61 3 9658 6128


22 - 26 October 2017: Sustainable Industrial Processing Summit- Exhibit, Cancun , Mexico, http://www.flogen.org/sips2017


Professional Development training course: by Optiro Optiro’s training and mentoring, at Perth Australia, takes you step-by-step through the technical processes using real-life data sets. Optiro courses form part of The AusIMM 2017 Professional Development Training Program. All our courses can be delivered at either your operation or at Optiro office. If you are unable to leave site to attend public training courses, please contact Diana Titen, Training Manager, to discuss live interactive On-line training. Email: training@optiro.com. For more information or to book online, please visit www.optiro.com/training.

21 - 25 August 2017; 27 Nov-1 Dec 2017: Resource Estimation and Evaluation. A$ 6250 + GST. This practical 5-day course uses a real-life data set to cover the entire resource estimation and evaluation cycle and its requirements - from data collection and quality assurance through to classification. These concepts are reinforced through a large number of practical activities, all of which focus around the same real-life data set.

26 - 28 October 2017: A National workshop on Slope Stability is scheduled to be held on in the Department of Mining Engineering, IIT (BHU) Varanasi for practicing engineers and scientists. The workshop will address the issues on slope stability, exchange views on best practices and state of the art slope stability technologies, design implementation and performance monitoring. Contact email: rajeshrai.min@iith.ac.in, http://www.iith.ac.in/min/slope.html

12 August 2017; 27 Nov-1 Dec 2017: Getting the most out of QAQC Data. A$ 2650 + GST. This 2-day course covers the QAQC life cycle: from planning the types and frequencies of QAQC data to be collected; the mechanics of collecting, transporting and submitting the samples; analysing to reveal systematic and trending errors; deciding what is and what isn’t a failure; and to making the changes in the resource database.

18 August 2017; 10 Nov 2017; 15 Dec 2017: Reconciliation - getting it right the first time. A$ 1400 + GST. Reconciliation of resource and reserve models, grade control models, mine production data and plant tonnage and grade is one of the most vital functions in the mining cycle. Not only does it serve to validate (or not) the Mineral Resources and Ore Reserves, the reconciliation can highlight any issues in the reserve to production process and in the ore tracking and stockpiling systems.

11 - 12 Sept 2017; 7-8 Dec 2017: Recoverable Resources- getting to the high grade. A$ 2650 + GST. This 2-day course demystifies and solves one of the great paradoxes of project evaluation – how to do more with less information. During the early stage of a mining project drill holes invariably sit on a relatively large grid, which is generally sufficient for estimating tonnes and grades into large blocks whose dimensions reasonably conform to the drill spacing. However, such drill spacing is insufficient for the estimation of the recoverable resources required to properly assess mining projects at the stage of selective mining, yet an evaluation of the likelihood of production is required.

Optional: If you would like to receive a CERTIFICATE OF ASSESSMENT for the course you have attended, you can choose to write an open-book exam in your own time. Great addition to your professional development plan and CV.

16 - 17 October 2017: Cash Flow Evaluations for Mining Projects and Operations, Toronto, Canada, Registration Fee: CAD 1650; http://www.edumine.com/courses/short-courses


22 - 26 October 2017: Sustainable Industrial Processing Summit- Exhibit, Cancun , Mexico, http://www.flogen.org/sips2017


14 - 18 October 2018: Australian Geoscience Council Convention (AGCC18), Adelaide, Australia. AGCC 2018 will focus on the Asia Pacific region and supported by all eight Member Organisations of the Australian Geoscience Council. For details contact AGCC 2018 Secretariat, agcc@ccm.com.au or +61 7 3368 2644
An Exciting Announcement

Members of MEAI are aware that we have entered into a strategic partnership with Society for Mining, Metallurgy & Exploration Inc. (SME-USA), through a joint Agreement signed on 1st June 2017.

1. Under this agreement MEAI has become an ‘Association-level Member’ of SME.
2. Association-level Membership of SME offers the following benefits to MEAI Members -
   - Online access to Mining Engineering Magazine
   - Member price for conferences, webinars and books
   - Access to the SME online community
   - eNews
   - Use of the SME logo at mutually agreed upon MEAI events
3. Larger benefits to MEAI in future:
   - Becoming an International level professional organization.
   - Organising major events such as International level EXPO in India in collaboration with SME.
4. Immediate action:
   - SME has created and launched a professional web page highlighting SME’s new partnership with MEAI at www.smenet.org/meai

All Life Members and Fellow Members of MEAI can open the ‘landing page’ and complete the ‘sign in process’ through the above website.

NOTE: After the initial trial of the ‘sign in process’ by few senior members, a feedback has been given to SME. Rectification / correction / improvement of the web page is in progress by SME. On completion of all these the website will be officially launched by SME in a couple of days time.

I am delighted to make this important announcement.

T. Victor
Immediate Past President &
Chairman, International Affairs
MINING ENGINEERS’ ASSN OF INDIA

18 August 2017

INFORMATION:
SEMINAR ON ADVANCEMENT IN MINING OF OIL AND SOLID FUELS
15-17 December, 2017 at Mining Welfare Centre, Mansarovar, Jaipur-302020
Organised and hosted by MEAI, Rajasthan Chapter-Jaipur
The broad topics for deliberation include: Geological setting of reservoirs for oil and gas fields, exploration techniques of different hydrocarbons, advancements in production/mining technology for oil and gas; coal fields, coal bed methane and shale gas in India.
Call for Papers: Papers on any above themes may please be submitted through e-mail, to the Organizing Secretary on or before November 15, 2017. The submissions are to be in the ‘Word file’ only and plates & figures in jpg files.

Sponsorship and promotional Opportunities

<table>
<thead>
<tr>
<th>Category</th>
<th>Sponsorship</th>
<th>Free Delegates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diamond Sponsorship</td>
<td>₹ 7 lakh / US$ 15,000</td>
<td>Five</td>
</tr>
<tr>
<td>Gold Sponsorship</td>
<td>₹ 5 lakh / US$ 10,000</td>
<td>Four</td>
</tr>
<tr>
<td>Event Partner Sponsorship</td>
<td>₹ 4 lakh / US$ 8,000</td>
<td>Three</td>
</tr>
<tr>
<td>Lunch/ Dinner Sponsorship</td>
<td>₹ 2 lakh / US$ 3,000</td>
<td>Two</td>
</tr>
<tr>
<td>Kit Sponsorship</td>
<td>₹ 1.5 lakh / US$ 2,500</td>
<td>Two</td>
</tr>
<tr>
<td>Memento Sponsorship</td>
<td>₹ 1 lakh / US$ 2,000</td>
<td>One</td>
</tr>
<tr>
<td>Lanyard Sponsorship</td>
<td>₹ 1 lakh / US$ 2,000</td>
<td>One</td>
</tr>
</tbody>
</table>

Registration Fee (including 18% GST)

<table>
<thead>
<tr>
<th>Category of delegates</th>
<th>Registration Fee (per delegate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian delegates</td>
<td>₹ 5,000 / on spot ₹ 6,000</td>
</tr>
<tr>
<td>Overseas delegates</td>
<td>US$ 250</td>
</tr>
<tr>
<td>MEAI members</td>
<td>₹ 1000 / on spot ₹ 1,500</td>
</tr>
</tbody>
</table>

All payments are to be made favoring “Mining Engineers’ Association of India”

For online payments:
Account Name: Mining Engineers’ Association of India
Bank Name: ICICI Bank
Account Number: 4182010200270
IFSC Code: ICIC0006786

Note: The surplus funds generated, if any, from the Seminar, shall be utilised for completion of the Mining Welfare Centre of MEAI at Jaipur.

For further details please contact:
Shri P.C. Baidiwal, Secretary, MEAI, Rajasthan Chapter-Jaipur, Mining Welfare Centre, Off Shipra Path, Mansarovar, Jaipur-302020
Mobile: 09828668764
E-mail: pc_baidiwal@yahoo.co.in and meaijpr2010@gmail.com
SEMINAR ON ADVANCEMENT IN MINING OF OIL AND SOLID FUELS

15-17 December, 2017 at Mining Welfare Centre, Mansarovar, Jaipur-302020

Organised and hosted by MEAI, Rajasthan Chapter-Jaipur

The broad topics for deliberation include: Geological setting of reservoirs for oil and gas fields, exploration techniques of different hydrocarbons, advancements in production/mining technology for oil and gas; coal fields, coal bed methane and shale gas in India.

Call for Papers: Papers on any above themes may please be submitted through e-mail, to the Organizing Secretary on or before November 15, 2017. The submissions are to be in the 'Word file' only and plates & figures in jpg files.

Sponsorship and promotional Opportunities

<table>
<thead>
<tr>
<th>Category</th>
<th>Sponsorship</th>
<th>Delegates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diamond Sponsorship</td>
<td>£7 lakh/ US$ 15,000</td>
<td>Five</td>
</tr>
<tr>
<td>Gold Sponsorship</td>
<td>£5 lakh/ US$ 10,000</td>
<td>Four</td>
</tr>
<tr>
<td>Event Partner Sponsorship</td>
<td>£4 lakh/ US$ 8,000</td>
<td>Three</td>
</tr>
<tr>
<td>Lunch/Dinner Sponsorship</td>
<td>£2 lakh/ US$ 3,000</td>
<td>Two</td>
</tr>
<tr>
<td>Kit Sponsorship</td>
<td>£1.5 lakh/ US$ 2,500</td>
<td>Two</td>
</tr>
<tr>
<td>Memento Sponsorship</td>
<td>£1 lakh/ US$ 2,000</td>
<td>One</td>
</tr>
<tr>
<td>Lanyard Sponsorship</td>
<td>£1 lakh/ US$ 2,000</td>
<td>One</td>
</tr>
</tbody>
</table>

Registration Fee (including 18% GST)

<table>
<thead>
<tr>
<th>Category</th>
<th>Fee (per delegate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian delegates</td>
<td>₹5,000 on spot</td>
</tr>
<tr>
<td>Overseas delegates</td>
<td>US$ 250</td>
</tr>
<tr>
<td>MEAI members</td>
<td>₹1,000 on spot</td>
</tr>
</tbody>
</table>

All payments are to be made favoring “Mining Engineers’ Association of India”

For further details please contact:
Shri P. C. Bakliwal, Secretary, MEAI, Rajasthan Chapter-Jaipur, Mining Welfare Centre, Off Shipra Path, Mansarovar, Jaipur-302020
Mobile: 09828668764
E-mail: pc_bakliwal@yahoo.co.in and meaijpr2010@gmail.com

An Exciting Announcement

Members of MEAI are aware that we have entered into a strategic partnership with Society for Mining, Metallurgy & Exploration Inc., (SME-USA), through a joint Agreement signed on 1st June 2017.

1. Under this agreement MEAI has become an ‘Association-level Member’ of SME.
2. Association-level Membership of SME offers the following benefits to MEAI Members -
   • Life Members and Fellow Members of MEAI :
     • Online access to Mining Engineering Magazine
     • Member price for conferences, webinars and books
     • Access to the SME online community
     • eNews
     • Use of the SME logo at mutually agreed upon MEAI events
3. Larger benefits to MEAI in future :
   • Emerging as International level professional organization.
   • Organising major events such as International level EXPO in India in collaboration with SME
   • Becoming part of the international group of professional societies which allows MEAI members to access world’s largest library for mining industry ‘Onemine.org’, when qualified.
4. Immediate action :
   SME has created and launched a professional web page highlighting SME’s new partnership with MEAI at www.smenet.org/meai
   All Life Members and Fellow Members of MEAI can open the ‘landing page’ and complete the ‘sign in process’ through the above website.

NOTE:
After the initial trial of the ‘sign in process’ by few senior members, a feedback has been given to SME. Rectification/correction/improvement of the web page is in progress by SME. On completion of all these the website will be officially launched by SME in a couple of days time.

I am delighted to make this important announcement—
T. Victor
Immediate Past President & Chairman, International Affairs
MINING ENGINEERS’ ASSN OF INDIA
18 August 2017