

Süreli Yayınlar

Mining Magazine

JULY 1990

- 5 Panorama
Ten successful years for Missouri's largest coal producer; San Cristobal, Chile, moves towards construction; Ausmelt produces metals from wastes; Coal gasification seminar in Montreal.
- 12 Lac Knife
The Lac Knife graphite deposit in Quebec, Canada, is to be brought into production by mid-1991. The authors describe the deposit and the plans for mining, processing.
- 20 Tube Mills
In this two-part article, design concepts are given for tube mills used in mineral processing; in Part I, the particular importance of bearing design for these machines is emphasized.
- 28 Heap Leaching
Jonathan Worstell discusses the problem of clay agglomeration, which can lead to unprofitable operation of precious - metal heap leaching.
- 34 Isasmelt
A new smelting technology offers the significant advantages of high intensity furnace reactions and advanced emission control.
- 41 Gold Projects
Mining Journal Research Services, listing of current gold mining projects and expansions.

AUGUST 1990

- 82 Panorama
Mined land restoration in the West Midlands, U.K.; Opportunities for joint ventures in the U.S.S.R.; Formation of "Eurominerals"; Interesting geology at Pea Ridge; Underground in situ gasification experiment in Belgium; Update on Mt. Miligan, B.C.; Flowsery Mine, Nevada.

- 90 CVRD in Carajés
Andy Shaw describes operations at Brazil's major iron ore mining complex and points out that there is more to Carajás than iron ore, highlighting CVRD's projects for the mining of copper, manganese and gold.

- 98 The Navi-Drill + Velnav
A pilot hole for a 400 m raise at Australia's Elura mine presented a challenge
- Maynard Stenberg explains how it was kept on course.

- 102 GoleGohar
DR. M.T. Banki describes the development of a project to mine iron ore in Iran, due to come on-stream shortly.

- 106 Cr and PGMs in NW Spain
A major exploration programme has given, for the first time, clear indications of Cr and PGM mineralization in northwestern Spain.

- 111 Mining Data Processing
Jacques Deraisme points out that the use of a computer greatly facilitates optimization of mine planning.

SEPTEMBER 1990

- 142 Panorama
Possible expansion for Rio Blanco mine, Andina; Avocet acquires Pahang gold concession; Migratory birds — a problem in Nevada; Massive iodine — nitrate project, Chile; BGS names Kingsley Dunham Centre.
- 150 Mining in Chile
A round-up of current activity and production.
- 155 Copper and Gold Deposits
Merwin Bernstein looks at the geology of Chilean copper and gold.
- 173 Escondida
An up-to-date report on this major copper project soon to go on stream.

- | | | | |
|-----|---|-----|--|
| 182 | Carolina de Michilla
A successful 'medium' sized Chilean copper producer. | 204 | Underground Support Vehicles
A review by Geoff Pearse of the latest equipment available. |
| 190 | The Lince Project
An open-pit, heap-leach copper project due on stream in 1991. | 210 | Roadheading in Poland
Methods used in the Lublin coal mines. |
| 195 | Los Bronces
Disputada's expansion plans: a new mill and an ore slurry pipeline. | 214 | World Coal Mining Industry
A review by John Spooner and John Chadwick. |
| 200 | Chuqui's New Mill
The latest enlargement of the concentrator at Chuquicamata. | | |

Mining Engineering

JULY 1990

- | | | | |
|-----|--|--|--|
| 640 | SME Salary Survey | | |
| 665 | Review of 1989 international mineral industry activities
<i>Charles LKimbell</i> | | |
| 676 | What it's worth: A review of mineral royalty information
<i>H. Lyn Bourne</i> | | |
| 681 | Geology, alteration, and mineralogy of Bond Gold's Bullfrog deposit
<i>D.K. Jorgensen, J. W. Rankin, and J. Wilkins, Jr.</i> | | |

AUGUST 1990

- | | | | |
|------|--|--|--|
| 974 | Mining software trends and applications
<i>Betty LGibbs</i> | | |
| 976 | Ore body modeling and mine planning software | | |
| 981 | SME/COGS computer bulletin board is open for business
<i>Betty LGibbs</i> | | |
| 984 | Bulletin board terminology | | |
| 985 | Public-domain software is helpful but has its limitations | | |
| 986 | Problem-solving computer applications | | |
| 997 | Characteristics of a four-leg shield design; A case study
<i>S.C. Gambrell, Jr. and LA. Morley</i> | | |
| 1002 | Non-intrusive safety - and - training sample strategy for the continuous miner worksite
<i>C.J. Bise</i> | | |

- | | | | |
|------|---|--|--|
| 1007 | Geology and gold mineralization of the Ortiz Mountains, Santa Fe County, New Mexico
<i>S.R. Maynard, C.J. Nelsen, K.W. Martin and J.L. Schutz</i> | | |
|------|---|--|--|

SEPTEMBER 1990

- | | | | |
|------|---|--|--|
| 1063 | Pacific Rim - scene of much cross-border minerals investment
<i>C. Richard Tinsley</i> | | |
| 1067 | Western Pacific precious metals projects updated
<i>A.J. Getz and R.J. Ward</i> | | |
| 1071 | Indonesia - an emerging world coal supplier
<i>J. Sulaiman Lubis</i> | | |
| 1075 | Developing Magma's tailings leech operation
<i>T. Mc Waters</i> | | |
| 1083 | Geostatistical approach to blending sodium in coal
<i>D.B. Jamison and R.C. Bryan</i> | | |
| 1088 | Remote placer drill and application for reconnaissance of marine precious metal placers
<i>J.R. Woolsey and B.G. Noakes</i> | | |
| 1091 | Solving mine ventilation networks with fixed and non-fixed branches
<i>Y.J. Wang</i> | | |
| 1096 | TECHNICAL NOTE: Intelligent decision-support system for mine managers
<i>D.R. Schricker, P.J.A. Lever, R.H. King and R.E. Cameron</i> | | |

Industrial Minerals

JULY 1990

21 Fluorspar markets in transition

Traditionally the metals and chemicals industries have been the major markets for fluorspar. The former continues to provide a steady outlet but increasing environmental pressure is making life tough in the chemicals sector. This article examines some market factors.

33 Industrial minerals of Eire Green light for production

With an economy traditionally based upon agricultural practices it is only over the past 20 years that Irish industry has seriously looked below the surface

55 Problems in the Chilean camp

In this article R.D. Crozier examines the background to some mineral operations in Chile and argues that reported results are perhaps not all they seem.

58 Industrial minerals of Vietnam

Following a turbulent recent past Vietnam is now seeking to develop its mineral resource potential. In this review Camillo Premoli describes the country's infrastructure, mineral wealth and assesses the potential for the future.

47 Modification of calcite & quartz grindability by surfactants

In this article G. Farkas, M. Katona, and J.Fodor of Romania examine the breaking kinetics of solids with the aim of modifying grinding rates using chemical additives

SEPTEMBER 1990

21 Fine carbonate fillers PCC breaks ground in paper

The carbonate fillers industry is one of the most competitive of industrial mineral sectors, where demand for consistent high-purity products is paramount. This article reviews both PCC and ground carbonate producers and markets in Europe and the USA and looks at the inroads made by PCC in the paper market.

45 Refractories and ceramics Reshaping for the future

Peter Skinner provides a personal reminiscence on the factors that have affected refractory consumption in recent times and summarises some of the current trends in refractory usage and the impact these are having on raw material demand.

AUGUST 1990

21 Feldspar & nepheline syenite At the mercy of glass markets

Recent times have seen producers consolidating operations and new players entering the field. Market share is often a factor of price and reliability as much as physical and chemical characteristics. This article examines the current industry dynamics

35 Marine aggregates Money in the banks

Between them Japan and the UK account for about 85% of global marine aggregate output. While Japanese output remains relatively stable the UK industry has recorded steady growth over recent years.

55 Acid activated bleaching clays What's cooking in the oil industry?

The number of producers of acid activated clay serving the edible oils industry is growing. But, clay selection to meet requirements for oil refining is more of a science than ever. The article examines the current status of activated clay producers and the market conditions influencing demand.

64 The Perlite Institute Annual meeting & conference

This article by Mike Allen gives an insight into the workings of the Perlite Institute and reviews the most recent gathering in Athens

Institution of Mining and Metallurgy

MAY-AUGUST 1990

A65 Automatic optimization of rotary drilling parameters

P.J. Rowsell and M.D. Waller

A73 Review of ventilation and refrigeration in deep, hot and mechanized mines in Australia

M.J. Howes

- A85 Exposure to radon daughters in Cornish tin mines
M.J. Howes

- A91 Developments in soft-ground drilling, sampling and in-situ testing
C.N.D. Manby and T.R.M. Wakeling

- A98 Comparison of results from diamond and percussion drilling at Abu Marawat, Egypt
P.S. Bridges, C.McGann and D.J. Hall

- A105 Shallow offshore drilling
M. Rampley

- A110 Technical note
 Importance of borehole surveying for mineral exploration, borehole planning and prospect evaluation
R. W. Braithwaite

MAY - AUGUST 1990

- B59 Economic minerals in carbonatites and associated alkaline igneous rocks
A.J.G. Notholt, D.E. Highley and T. Deans

- B81 Strata-bound scheelite in metacarbonate rocks - example from Lower Austroalpine Klamm Alm mineralization, Navis, Tyrol, Austria
J.G. Raith

- B91 Platinum-group minerals and hydrosilicate "alteration" in Wedza - Mimosa platinum deposit, Great Dyke, Zimbabwe - genetic and metallurgical implications
M.D. Prendergast

- B106 Intrusive-hosted gold mineralization at Hare Hill, Southern Uplands, Scotland
AM. Boast, M.Harris and D. Steffe

- B113 Fluorite mineralization at Beckermet iron ore mine, Cumbria, north England
D.C. Goldring and DA. Greenwood

- B120 Pressure-dependence of wolframite solubility for hydrothermal vein formation
D.A. Polya

MAY - AUGUST 1990

- C71 Kinetics of elution of gold from activated carbon by Zadra method
M.D. Adams

- C80 Formation of complex calcium ferrite bonding phases from magnetite during sintering
L.Yang, C.E. Loo and J. Ostwald

- C87 Extraction of lithium from spodumene by high-temperature ion exchange
P.Mahi and D.J. Fray

- C93 Reduction of cassiterite concentrates by solid carbon in reverberatory tin smelting
R.H. Parker, A.R. Mitchell and P.F. Lai

- C100 Study of the reaction of molybdenum disulphide with lime and carbon at plasma temperatures
C.Johnston and C.A. Pickles

- C105 Production of magnesium by vacuum carbothermic reduction of calcined dolomite
ft Winand et al.

- C113 Technical notes
 Selective separation with formaldehyde of sphalerite from Deri ore, Rajasthan, India
D.M.R. Sekhar and C. Chiranjeevi

- C115 Pilot flotation-column test of nitrogen flotation of pyrite in pyrite/sphalerite separation
C.J. Martin, J.A. Finch and S.R. Rao

CIM Bulletin

JULY 1990

- 79 Performance Improvement at the Bell Mine;
M.C. Ethier and A.L. Laramie,

38

- 84 The future of AC static drive systems on open cast mining machinery;
T.W. Sullivan,
- 89 Tailings Engineering at Syncrude;
Larry T. Yano, and Gerald T. Handford

- 92 Boiler tube failure mechanism recognition - an expert system;
P. Mayer,
- 96 Stacking of potash mill tailings;
G.A. Maki and R.G. Roden,
P.J. Full man,
- 99 Balmer's in-pit coal conveyor: improving haulage efficiency;
C.H. van Eendenburg,
- 103 Exploration drilling of evaporites; procedures developed in eastern Canada;
D.C. Carter, J. P. Änderte

AUGUST 1990

- 45 Improving mine safety through perimeter blasting at Inco Limited's Thompson T-3 Mine;
M.Sutherland,
- 49 Mine roof bolt load determinations utilizing ultrasonic measurement systems;
S.C. Tadolini,
- 55 Feasibility of long-term ground control with stainless steel friction rock bolts;
P.K. Kaiser, S.M. Maloney, S.P. Singh.
- 61 Fracture characterization in granite using ground probing radar;
A.L Holloway and James C. Mugford,
- 71 A blast design model using the inherent fragmentation of a rock mass;
B.C. Maynard,
- 78 Cape Breton Development Corporation: an overview;
R.G. Cooper and J. Kochhar,
- 81 Phalen Colliery: production and productivity;
G.R. White

- 85 Disseminated flake graphite and amorphous graphite deposit types: an analysis using grade and tonnage models;
D.M. Sutphin and J.D. Bliss,
- 90 Valuation of mineral properties which do not contain exploitable reserves;
L.C. Kilburn

SEPTEMBER 1990

- 43 Variation of gold content with depth in the San Antonio gold mine;
B.H. Whiting, and A.J. Sinclair
- 47 Kinematic analysis of auriferous veins at the Sigma-2 gold mine, Louvincourt Township, Quebec;
C. Giguere, and J. Beland,
- 53 Bralorne; a mesothermal, shield, type vein gold deposit of Cretaceous age in southwestern British Columbia;
C.H.S. Leitch,
- 81 Control of sodium-rich brine inflows at Central Canada Potash - Part I: Rehabilitation, diamond drilling, grouting and backfilling;
A.M. Coode, and E.M. De Souza,
- 87 Control of sodium-rich brine inflows at Central Canada Potash - Part 2: Rock mechanics, instrumentation and results;
E.M. De Souza and A.M. Coode,
- 93 Les revêtements céramiques: procédés actuels et futurs développements;
S. Dallaire,
- 111 The wear of materials sliding against road surfaces;
M.Fiset, D. Belley.

International Journal of Mineral Processing

AUGUST 1990

- 1 The removal of zinc from solutions by foam separation, II. Precipitate flotation of zinc hydroxide
K. Jurkiewicz
- 17 Electrochemical control of chalcocite and covellite - xanthate flotation
J.R. Roos, J.P. Cells and A.S. Sudarsono

- 31 The effect of solid parameters in a pinched sluice concentrator
B. Jeyadevan, G.K.N.S. Subasinghe
- 51 A numerical model for the inviscid flow of a fluid in a hydrocyclone to demonstrate the effects of changes in the vorticity function of the flow field on particle classification
M.D. Braysaw

- 77 Importance of oxygenation of pulps in the flotation of sulfide ores
R. Houot and D. Duhamet
- 89 Xanthate adsorption on selected sulfides in the virtual absence and presence of oxygen,
 Part I
M.C. Fuerstenau and R.M. Rowe
- 99 Separation of pentlandite and nickel arsenide minerals by aeration conditioning flotation
Wang Qun and W.K. Heiskanen
- 111 Xanthate adsorption on selected sulfides in the virtual absence and presence of oxygen,
 Part 2
M.C. Fuerstenau, M. Misra and B.R. Palmer
- 121 Laboratory studies on ball wear in the grinding of a hematite - magnetite ore
G.S. Gundewar, K.A. Natarajan, U.B. Nayak and K. Satyanarayana
- 141 Technical Note
 Gas holdup versus gas rate in the bubbly regime
J. B. Yianatos and J.A. Finch

OCTOBER 1990

- 149 Circuit analysis: optimizing mineral processing flowsheet layouts and steady state control specifications
J.C. Yingling
- 175 Effect of electrochemical interactions among sulphide minerals and grinding medium on the flotation of sphalerite and galena
M.K. Yelloji Rao and K.A. Natarajan
- 195 Natural oleophilicity/hydrophobicity of sulphide minerals, I. Galena
D. Kocabag, H.I. Shergold and G.H. Kelsall
- 211 Natural oleophilicity / hydrophobicity of sullphide minerals, II. Pyrite
D. Kocabag, H.I. Shergold and G.H. Kelsall
- 221 Energy-size relationship for breakage of single particles in a rigidly mounted roll mill
P.C. Kapur, K. Schoenert and D.W. Fuerstenau
- 235 On the prediction of terminal settling velocity of solids in liquid-solid systems
U.P. Ganguly
- 249 Simulation - the modern cost-effective way to solve crusher circuit processing problems
R.P. King
- 267 The formation of layered hydrotalcite-like compounds by coprecipitation of Co(II) with Al (III) in aqueous ammoniacal solutions
E. Narita, T. Yamagishi, K. Aizu and K.N. Han
- 279 A study on the removal of fine particles by liquid fluidized beds
K.N. Han, R. Sathyamoorthy and M.C. Fuerstenau
- 289 Distribution of Cu, S, O and minor elements between silica - saturated slag, matte and copper - experimental measurements
F.J. Tavera and E. Bedolla

- SERAMİK
 - REFRAKTER
 - ÇİMENTO
 - PORSELEN
 - CAM
- Sanayileri ile, ilgili diğer sanayi dallarına

- Tüvenan (Ham cevher)
- Sınıflandırılmış
- Öğütülmüş-Zenginleştirilmiş

KİL, KAOLEN, FELDSPAT, FLOTE FELDSPAT, KUVARS , BENTONİT, FRİT, MANYEZİT, KALSİNE MANYEZİT

ve diğer endüstriyel hammadde ve işlenmiş ürün olanakları ile
hizmet vermektedir.

ESAN

Eczacıbaşı
Endüstriyel Hammaddele
Sanayi ve Ticaret A.Ş.

Bağdat Yolu Şafak Sok. No: 3 Kartal-Istanbul

Tel: 353 83 35 (4) Teleks: 29243 esha Tr Fax: 353 74 23

ESAN Eczacıbaşı End. Ham. ve Tic. A.Ş. bir Eczacıbaşı Topluluğu kuruluşudur

Cominco **Madencilik**
S a n a y i **A n o n i m** **Ş i r k e t i**



A Subsidiary of Cominco Resources Int. Ltd.

Farabi Sokak 3/3 06680 Çankaya-Ankara/TURKEY



EGEM ETAL MADENCİLİK A.Ş.

Krom ve Krom Konsantresi-
Manganez-Barit-Antimuan

CUMHURİYET CAD. 349/9-10 HARBİYE-İSTANBUL

Telex : 22471 MEŞE TR
22407 İMTO TR

Telefon : 131 15 85 (8 Hat)
P.K. 285 OSMANBEY-İSTANBUL

MADENCİLİK, HAFRİYAT VE İNŞAATTA GÜÇLÜ KURULUŞLAR

mil-ten
ŞİRKETLER TOPLULUĞU



SEDA MADENCİLİK ve TİC. LTD. ŞTİ.

Selin

AKARYAKIT TİCARETİ LTD. ŞTİ.



BİR İNSAAT
ve TİC. LTD. ŞTİ.

SERTEN
MADENCİLİK TİC. LTD. ŞTİ.

İştiraklerimiz:

YENİKÖY
MADEN İŞLETMECİLİĞİ TİC. LTD. ŞTİ.

DENİZ
KÖMÜR İŞLETMESİ TİC. LTD. ŞTİ.

Ferahevler Yeniyol Sok. No. 18
MİL - TEN Binası Tarabya - İST.
Tel: 123 05 02 - 7 Hat
Telex : 26 745 Okte Tr.
Fax : 162 50 52

İrtibat Bürosu:
Mazhar Öktel Sok. No. 13/1
Şişli - İstanbul
Tel: 146 33 22
131 12 99



KARADENİZ
BAKIR
İŞLETMELERİ A ^

SERMAYESİ 200.000.000.000.-TL.
ZİYA GÖKALP CAD. NQ.17-ANKARA

28.5.1968 tarihinde kurulan şirketin bugün
MURGUL, SÜRMENE, SAMSUN ve KÜRE'de
sahip olduğu işletme ve tesislerinde ;

Yılda Ortalama:

50.000	ton	Blister Bakır
380.000	ton	Sülfürik Asit
180.000	ton	Pirit Konsantresi

üretilmektedir.

BİNALARIN ISITILMASINDA YENİ BİR SİSTEM

• "UNITHERM Isı Üretim Sanayi Anonim Şirketi" Gagat Maden Ticaret ve Sanayi Limited Şirketi ve Türk-Alman müteşebbislerin ortaklığı ile "Mermer Isıtma Plakaları" üretmek üzere kurulmuştur.

Q Mermer Isıtma Plakalarının duvara monte edilip ısıtmada kullanılan "Mermer Radyatör" mutfak ve banyo gibi alanların taban ısıtmasında kullanılan "Mermer Yer Isıtma Ünitesi" adıyla üretilmektedir.

• Mermer Radyatörler, mesken, bina ve işyerlerinin her türlü iklim şartlarında ısıtılması için başarı ile kullanılmaktadır.

• Mermer Radyatörlerin tesis maliyeti feuloillü veya kömürlü kaloriferlerin tesis maliyetinden ucuzdur.

Ü Elektrik enerjisiyle çalışan Mermer Radyatörleri çok geç soğuduğundan mermer radyatörlerin elektrik sarfiyat maliyeti, kömürlü kaloriferlerin kömür sarfiyat maliyetinden azdır.

• Mermer Radyatörlerin 30 cm x 30 cm x 3 cm. ebadından 50 cm x 120 cm x 3 cm ebadına kadar muhtelif çeşitleri vardır.

• 200 m²lik bir daireye Mermer Radyatörle ısıtma tesisi 2 saatte kurulabilir.

Q Mermer Yer Isıtma Üniteleri" banyo ve mutfakların tabanına döşenir ve taban ılıklığını devamlı muhafaza eder.

• "Mermer ve Isıtma Üniteleri" ile döşenen dairelere rahatlık ve konfor gelir.

• Mermer Isıtma Plakaları her renk mermerden yapılır. Salonunuza, odaniza, büronuza uygun çeşitli muhakkak vardır. Dekoratifdir.

• Unitherm A.Ş.'nin Mermer Isıtma Plakaları çevre kirliliğine de kesin çözümüdür.

• Unitherm A.Ş. Mermer Isıtma Plakaları işinsal sistemle ısıtılarından insana huzur ve mutluluk veren bir sıcaklığı olur.

• UNITHERM Isı Üretim Sanayi Anonim Şirketi" ürünü olan Isıtma Plakaları

* 20 yıldan beri Türk Madencilik Sektöründe hizmet veren "Gagat Maden Ticaret ve Sanayi Limited Şirketi" tarafından temin edilmektedir.

• Mermer Isıtma Plakaları Dünyada 4 yıldan beri kullanılan çağdaş bir ürün olup, Türkiye'de "UNITHERM Isı Üretim Sanayi Anonim Şirketi" tarafından Alman teknolojisi ile üretilerek yurt içi ve yurt dışı İnşaat Sektörü'nün hizmetine sunulacaktır.



TÜRKİYE KÖMÜR İŞLETMELERİ KURUMU GENEL MÜDÜRLÜĞÜ

"1990 YILINDA, 10 MÜESSESESİ İLE
LİNYİT KÖMÜRÜ VE ASFALTİTLÉ
42 MİLYON TON ÜRETİMİ VE
120 MİLYAR TL YATIRIMLARIYLA
YURT HİZMETİNDE"

TESHİN VE SANAYİ İHTİYAÇLARI İLE
TERMİK SANTRALLARIN
ENERJİ KAYNAĞINI TEMİN EDEN
EN BÜYÜK KURULUS.



Kömür bütün Türkiye'yi ihya edecek bir servettir.

K. Atatürk

T.T.K.

**TÜRKİYE'DE
METALURJİK ÖZELLİKTE TAŞKÖMÜRÜ ÜRETEN TEK KURULUŞ
TÜRKİYE TAŞKÖMÜRÜ KURUMU**

**YARATTIĞI İŞ HACMİ VE İSTİHDAM OLANAKLARI BAKIMINDAN
ÜLKEMİZİN EN BÜYÜK KURULUŞLARINDANDIR**

Adres : TTK GENEL MÜDÜRLÜĞÜ-ZONGULDAK/TÜRKİYE
Telefon : (9-381) 13521 (5 Hat)
Telex : 48536 TTKZ TR
Fax : (9-381) 11 900

TÜRKİYE TAŞKÖMÜRÜ KURUMU ANKARA İRTİBAT BÜROSU

Adres : GENÇLİK CAD. DÖNGEL SOK. NO: 119
ANITTEPE/MALTEPE
Telefon : (9-4) 231 93 82
Fax : (9-4) 231 93 82

DEĞİŞİK KARAKTERDEKİ KÖMÜRLERİN ÜRETİLDİĞİ MÜESSESELER

**ARMUTÇUK TAŞKÖMÜRÜ
İŞLETME MÜESSESESİ
(ARMUTÇUK LAVUARI)**

KRİBLE
18—50
10—18
0—10
ŞLAM

**KOZLU VE ÜZÜLMEZ TAŞKÖMÜRÜ
İŞLETME MÜESSESESİ
(ZONGULDAK LAVUARI)**

KRİBLE
18—50
10-18
0 - 10
6-10
MİKST
ŞLAM

**KARADON TAŞKÖMÜRÜ
İŞLETME MÜESSESESİ
(ÇATALAĞZI LAVUARI)**

KRİBLE
18—50
10-18
0-10
MİKST
ŞLAM

**AMASRA TAŞKÖMÜRÜ
İŞLETME MÜESSESESİ
(AMASRA LAVUARI)**

KRİBLE
18-50
10-18
0-10
TUVÖNAN

yurdumuzun sönmeyeń ocağı..

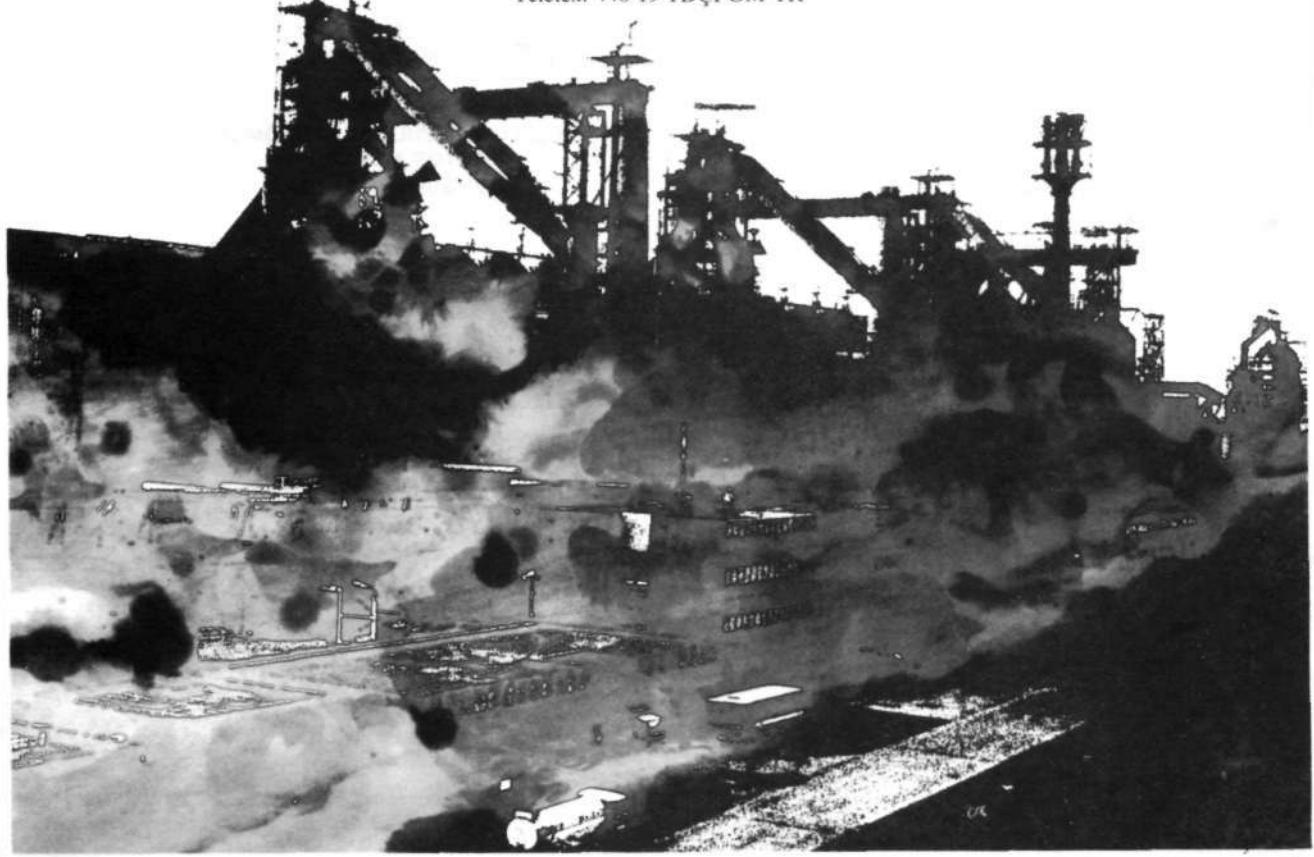
Sıcak haddelenmiş uzun ürünler
Blum, kütük, inşaat demirleri, köşebentler ve profiller,
demir-çelik ve demir dışı dökümler

Her cins tasarım, mühendislik ve danışmanlık hizmetleri
Çelik konstrüksiyon yapılarının imalat ve montajı
Ağır teçhizat, köprü, Radyo-TV anten direkleri
Makina ve teçhizat üretimi
Anahtar teslimi endüstriyel tesisler



TÜRKİYE DEMİR ve ÇELİK İŞLETMELERİ GENEL MÜDÜRLÜĞÜ

Ziya Gökalp Caddesi, No:80 Kurtuluş/ANKARA
Tel: (4) 135 49 00 (43 Hat) Fax: (4) 134 47 05-06
Telex: 443 67 sdc.tr. - 443 68 deis. tr.
Teletex: 446 19 TDÇİ GM-TR

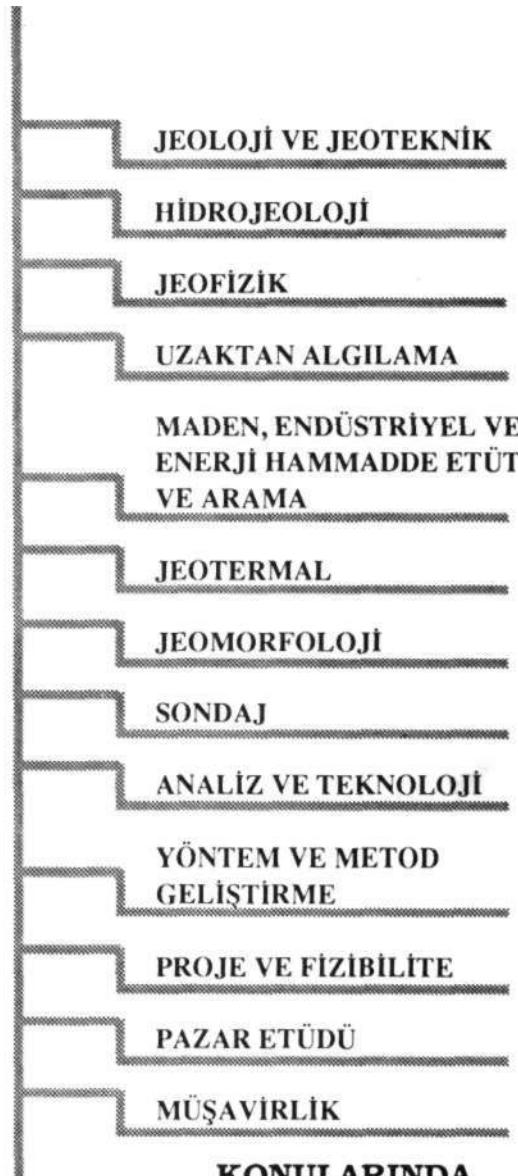


MADEN TETKİK VE ARAMA GENEL MÜDÜRLÜĞÜ

ALANINDA EN ESKİ VE EN BÜYÜK KURULUŞ



55
Yıllık
BİLGİ VE TECRÜBE BİRİKLİMİ



TEL:(90H4)-213 69 18
(90)-(4)-222 51 12

TLX:42741 - mta tr
42040 - mta tr
ANKARA

Fax: (90)-(4)-222 82 78



Ellibeş yıldır madenlerimizi gün ışığına çıkartarak dünyaya ulaştıran, tasarruflarınızı kârlı yatırımlara dönüştüren, başarısı dünyaca onaylanan, büyük ve güçlü kuruluş E T İ B A N K Türkiye için önemli bankadır.

• • E T İ B A N K

"güçlü kuruluş, güçlü bankacılık"