

SAICE GEOTECHNICAL DIVISION

Minutes of the Annual General Meeting held at Kelvin House, Johannesburg, on Tuesday 15th November 1983 at 18h00.

1. ATTENDANCE

Mr G A Jones (Chairman of the Division) plus 29 members and one visitor.

Apologies

Mr D R East.

2. MINUTES OF THE 1982 ANNUAL GENERAL MEETING

The Minutes were read by the Hon. Secretary and were accepted as an accurate record of the proceedings.

3. MATTERS ARISING FROM THE MINUTES

Dr F Wagener asked whether there had been any progress in the discussions on fees for geotechnical consulting services. The Chairman replied that the matter was still under negotiation and being discussed. A sub committee of the Divisional committee was dealing with the matter.

4. TREASURER'S REPORT

Mr J A Wates presented a summarised Treasurer's Report. He noted that the total assets of the Division at present were approximately R21 750, of which R10 000 was in the fixed deposit No. 1 account, R2 000 fixed deposit No. 2 account (J E Jennings award), R5 000 was deposited in the SAICE special purposes reserve fund, R 4 200 was in a special savings account and R550 in the current account.

The Division had sponsored several overseas lecturers during the past year and would make a deficit of approximately R2 000 for the year before including the profits from conferences and courses which would still be brought to account. Ground Profile had broken even with expenses and income both close to R2 900. The accounts would be concluded to the end of November and a summary of the financial statement as at that date would be published in Ground Profile in due course.

5. CHAIRMAN'S REPORT

Mr Jones presented the annual report of the Geotechnical Division for the 1983 year. The full report would be published in Ground Profile. He highlighted the following aspects:

Activities for the year

There had been a full programme of conferences and courses, several of which had overseas speakers. The courses included: "Geotechnics and the Environment" in February, "Probability in Geotechnics" in June, "Grouting" in July, and the "Engineering Geology of the Karoo Sequence" at the end of July together with the AEG. The Division had also assisted the Witwatersrand Branch with their annual courses presenting several courses on geotechnical aspects. Furthermore, the Division had presented several courses at the Institution's Quinquennial Convention in Cape Town.

The committee

Mr Jones thanked the outgoing members of the 1983 committee and announced the names of those elected to the committee of 1984. He called for graduates interested in serving on the committee to come forward. He also congratulated the editors of Ground Profile, J A Wates and T R Giddings, and called for contributions from the membership to Ground Profile.

The J E Jennings award

Mr Jones reminded those present that nominations for the Jennings award for 1983 are due by 31st January 1984.

Conferences

The 8th Regional Conference for Africa of the International Society of Soil Mechanics and Foundation Engineering would be held in Harare from June 4th to 7th 1984. No problems were expected with attendance from South Africa. Attendants to all ISSMFE conferences go as individuals and not as official representatives of any national delegation. Papers are being processed at present. The 11th International Conference on Soil Mechanics and Foundation Engineering is to be held in San Francisco in 1985. Paper summaries must be received by the Committee by 29th February 1984 and complete papers by 31st May.

6. GENERAL

Mr C Stevenson enquired about the procedures of acknowledging membership of the Division. His application for graduate membership will be investigated.

Mr K Schwartz proposed a vote of thanks to G A Jones, Chairman, and R J Scheurenberg, Secretary, for the past year.

Formal proceedings of the AGM were concluded at 18h25.

7. ADDRESS BY PROF. E A NOWATSKI ON "THE ROLE OF MECHANISMS IN SOIL MECHANICS."

Prof. Nowatski was introduced by Mr B P Wrench. He showed a number of slides to illustrate geotechnical projects with which he has been involved and where mechanisms play a part. He started by discussing the design of the lunar landing platform for the first Apollo landing on the moon. He then gave several examples of damage caused in the neighbourhood of swimming pools in Arizona due to collapsing or expansive soils. Finally he gave two examples of damage to houses in the Johannesburg area where active expansive clays could be present.

Mr R J Scheurenberg proposed a vote of thanks to Prof. Nowatski.

The meeting finished at 19h30.

NOTICES

INTERNATIONAL CONFERENCE ON GEOMEMBRANES
Denver, Colorado, USA. 20-24 June 1984.

International Conference on Geomembranes
IFAI
345 Ceder Street, Suite 450
St. Paul, Minnesota 55101 USA

INTERNATIONAL CONFERENCE IN SITU SOIL AND ROCK REINFORCEMENT
Paris. 9-11 October 1984.

Conference "In situ Soils and Rocks Reinforcement"
ENPC/DFCAI
52 Rue Madame
75006 Paris
FRANCE

NOMINATIONS FOR AWARD FOR MOST OUTSTANDING CIVIL
ENGINEERING ACHIEVEMENT FOR 1983

Nominations are invited for the above award. Your nomination should be forwarded to the SAICE before 31 March, 1984. Each nomination must be comprehensively motivated and include:

- a) a signed statement from the owner that the material may be used without restriction for publication,
- b) a 500 word Press Release in English and Afrikaans,
- c) photos suitable for publication.

FORWARD TO: Secretary, SAICE
P.O. Box 61019, MARSHALLTOWN, 2107.

FINANCIAL STATEMENTS FOR THE DIVISION
1.12.82 to 30.11.83
INCOME AND EXPENDITURE
General Administration Funds

<u>INCOME</u>		<u>EXPENDITURE</u>	
Received from SAICE general funds	824-03	Travelling expenses	280-00
Interest received	57-65	Stationary & Printing	487-71
Advertising in Ground Profile	2 935-00	Bank charges	13-65
Sale of Publications	12-00	Printing Ground Profile	2 974-64
		Surplus for period	72-68
	<u>3 828-68</u>		<u>3 828-68</u>

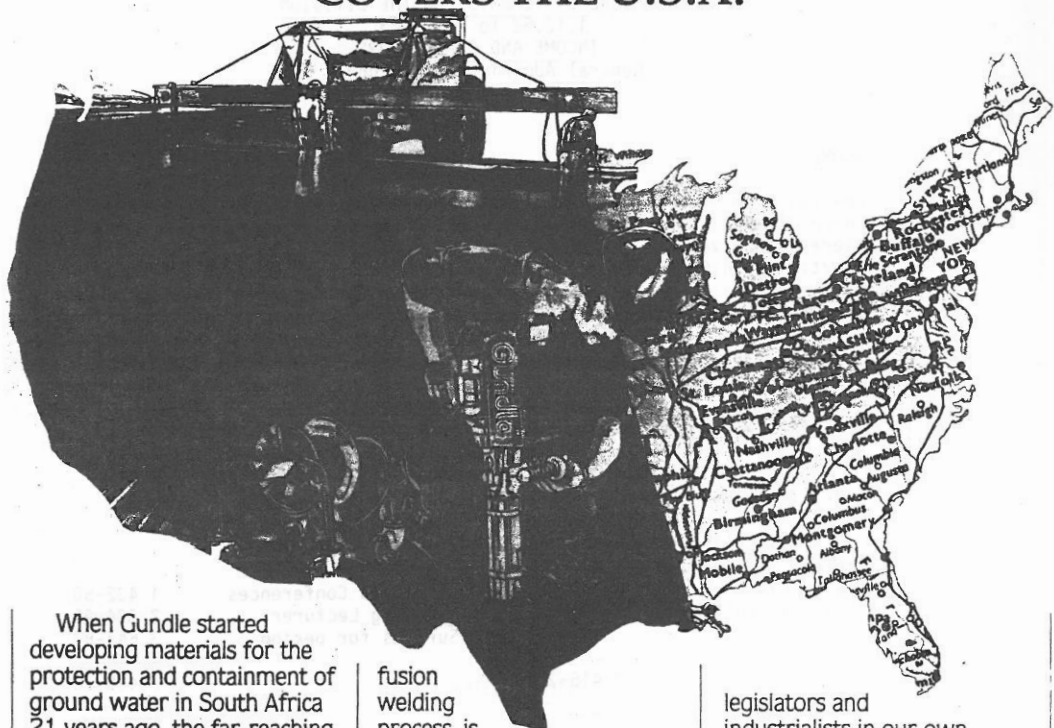
Special Purpose Funds

<u>INCOME</u>		<u>EXPENDITURE</u>	
Interest received on investments	2 528-50	Courses & Conferences	1 432-50
Courses & Conferences	4 886-78	Visiting Lecturer	2 334-95
		Surplus for period	3 647-83
	<u>7 415-28</u>		<u>7 415-28</u>

BALANCE SHEET AS AT 30/11/83

<u>Assets</u>		<u>Liabilities</u>	
Cash (current)	3 695-48	Reserves	27 486-08
Cash (savings)	6 790-60		
Fixed deposits	12 000-00		
Special Purposes Reserve Fund	5 000-00		
	<u>27 486-08</u>		<u>27 486-08</u>

WHEN IT COMES TO ENVIRONMENTAL PROTECTION, GUNDLE TECHNOLOGY COVERS THE U.S.A.



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FLOATING DECANT COLUMNS IN
GOLD AND URANIUM TAILINGS DAMS

by J.A. WATES*

Failure of decants in old gold and uranium dams is a common occurrence. In many cases corrosion of steel and concrete or decay of the wooden structures leads to collapse. In some instances the pipes fail under the load imposed by the overlying slime. The exact reason for the failures is however seldom known.

The failed decants are usually replaced by "floating" pipe columns either laid on, or buried in the surface of the dam. These pipes usually have to be installed rapidly since few mines operate sufficiently large and flexible tailings disposal dam systems to accommodate closure of any compartment or dam for long. In most cases two compartments are operated and all slime must be diverted to one of these during emergencies.

In our experience steel or plastic (HOPE, LDPE or PVC) pipes have proved to be the fastest replacements. Plastic piping is however seldom used since it is not strong or rigid enough to resist the imposed loads. Concrete pipes are difficult to handle owing to mass. The jointing systems are also such that large settlements could dislocate the pipe.

It is desirable that any floating decant should be installed with a positive gradient towards the outer wall of the dam. This is important since solids are often drawn off with the water and could settle out in the pipe and eventually block it. Ideally the slope should be such that the pipe is self cleaning i.e. the gradient should induce a velocity high enough to keep the coarser particles in suspension under free flow conditions.

It is difficult to achieve the desired slope for two reasons.

- i) Dams which have central decants slope toward the centre at gradients of between 1:150 and 1:400 depending on the water content of the slime and particle size distribution. Since the desired slope on the decant is in the opposite direction deep and time consuming excavations are required (see figure 1).
- ii) Settlement of the dam is larger towards the centre of the dam where the slime has not been overconsolidated by desiccation and is hence more compressible than that of the outer walls. This settlement therefore reverses the pipe gradient with increasing height of the dam.

* Director: Jones & Wagener Inc.

