

DEPT. NAT. RES & ENV
PE905767

VELOCITY SURVEY
OF
FLAXMAN'S NO. 1
VICTORIA, AUSTRALIA

FOR
FROME BROKEN HILL CO, PTY. LTD.

BY
ROBERT H. FLAY SERVICE COMPANY, INC.
HOUSTON, TEXAS

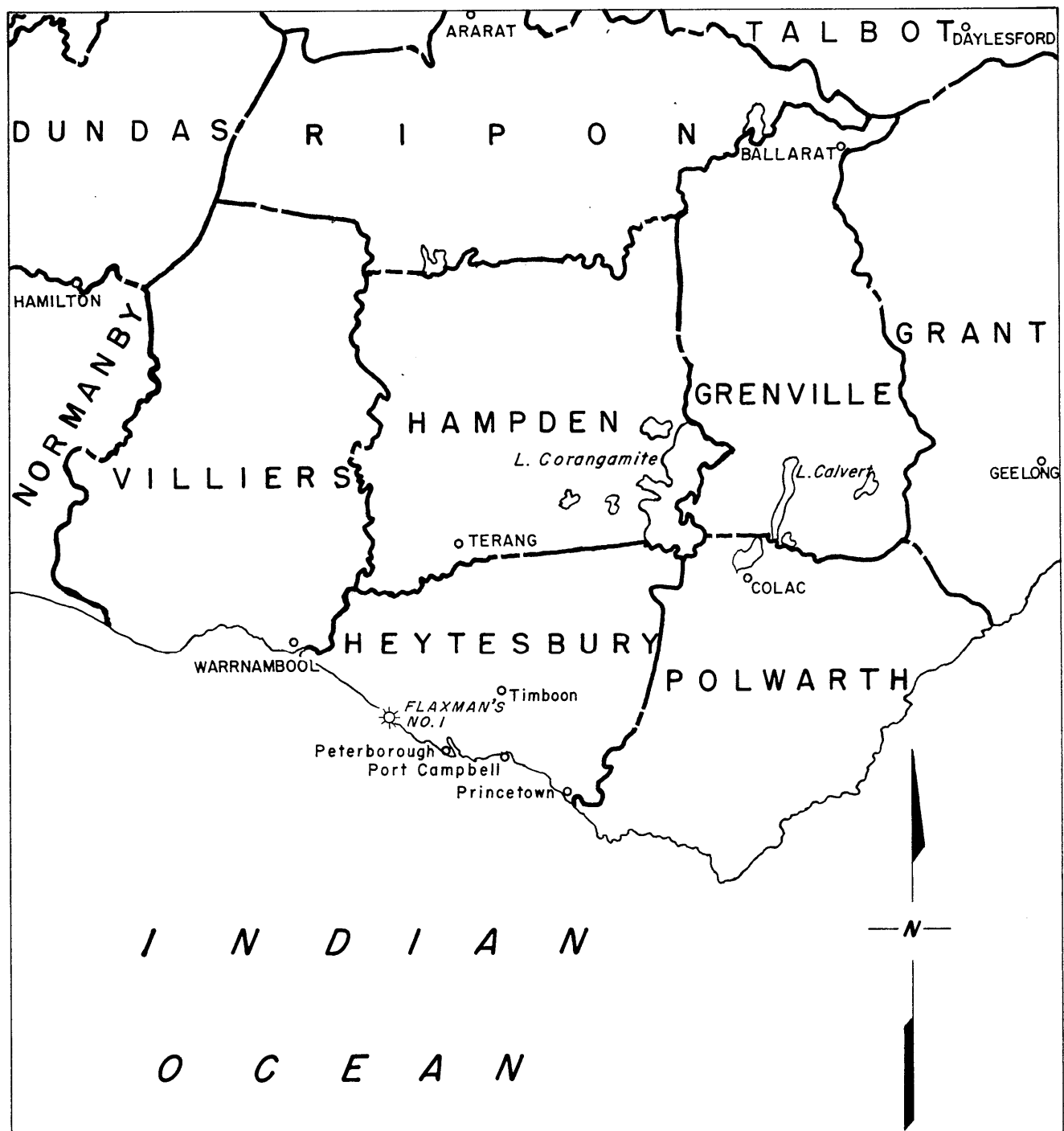


ATTACHMENT TO WCR
FLAXMAN'S-1
(W466)

FLAY SERVICE COMPANY
HOUSTON, TEXAS

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(from spreads shot near the bore)**
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LOCATION MAP
 OF
FLAXMAN'S No.1
 VICTORIA, AUSTRALIA
 FOR
 FROME-BROKEN HILL CO. PTY. LTD.
 AUGUST, 1961

Velocity Survey of Flaxman's No. 1

A velocity survey of Flaxman's Hill No. 1, a deep test drilled by Frome-Broken Hill Co. Pty. Ltd. on the southwest coast of Victoria about eight miles west of Peterborough, has been conducted along principles and standards outlined by the Southern Well Shooting Association. This procedure was modified as required by conditions encountered during the course of the survey. The procedure used is shown graphically by the layout diagram in this report.

The survey was accomplished in two stages during the drilling of the hole; first, on June 20, when the hole had been drilled to 7000 feet before 9 5/8" casing was set to 6996 feet, and again on August 25 and 26 when the hole had been completed to 11529 feet.

On June 20 shooting was accomplished from six previously drilled eighty foot shot holes, three of which had been cased. These holes fell in groups of three at 550 feet N 50° W and S 50° E, respectively, from the well location. As shooting down the hole progressed the geophone breaks became increasingly weaker. Marginal quality data was secured at 5570 feet, Top of Belfast Mudstone, and deeper with shot hole charges of fifty, seventy-five and one hundred pounds. The shot holes caved badly after each shot. It became apparent that the broken limestone formation underlying this location had caused poor energy coupling. Since the drill site lies near a cliff overhanging the Southern Ocean an attempt was made to lower

a charge into the water for experimental purposes. The nature of the edge of the cliff did not permit this operation to be carried out successfully but resulted in broken shot lines and charges hung on the face of the cliff.

Following the June 20 velocity survey a mechanical arrangement to lower charges to the ocean floor at the foot of the cliff was set up. This consisted of a supporting cable anchored across and at either side of an indentation in the coast line with a pulley for placing of charges at proper locations under the water. This device later proved successful and permitted the prompt loading of charges up to twenty-five pounds.

The survey of the test hole was continued on August 25. Two deep shot holes had been drilled at a point 600 feet southeast of the location, each being loaded with fifty pounds at 230-250 feet. A shot was taken from one of these holes with the well geophone at 5570 feet. A weak break resulted which could not be considered reliable. Twenty-five pounds were lowered over the cliff and the previous depth repeated for comparison. This shot produced a strong geophone break and ten pound charges were subsequently used for most shots as being ample. However, as the survey continued, leakage developed in the recording system. Since the geophone checked out satisfactory when brought to the surface it was decided that the leakage was in the cable and head connections. After the cables were checked out to a satisfactory condition the survey was continued on August 26. Difficulty with high leakage again developed at depth;

the well geophone appeared to be faulty and the survey was concluded with the data that had been secured, namely, usable information at 10,000 ft., 8500 ft., 7330 ft., 5570 ft. in addition to the shot taken at shallower depths.

A sonic log had been run between 7000 and 10000 feet. Since the survey data has tied into the sonic log and no formation change occurs in the Otway between 10000 and 11529 feet, T. D., it is believed that sufficient velocity information has been secured.

The plot of velocities shows a fairly uniformly increasing velocity with depth without sudden increases in interval velocities. The Otway Formation velocity is seen to be around 14000'/second and increases slightly with depth.

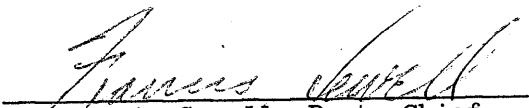
Respectfully submitted,

APPROVED:

RAY GEOPHYSICS (AUSTRALIA) PTY. LTD.



W. C. Clark, Supervisor



Francis Sewell, Party Chief

August, 1961

VELOCITY SURVEY

FLAXMAN'S NO. 1

FROME-BROKEN HILL CO. PTY. LTD.

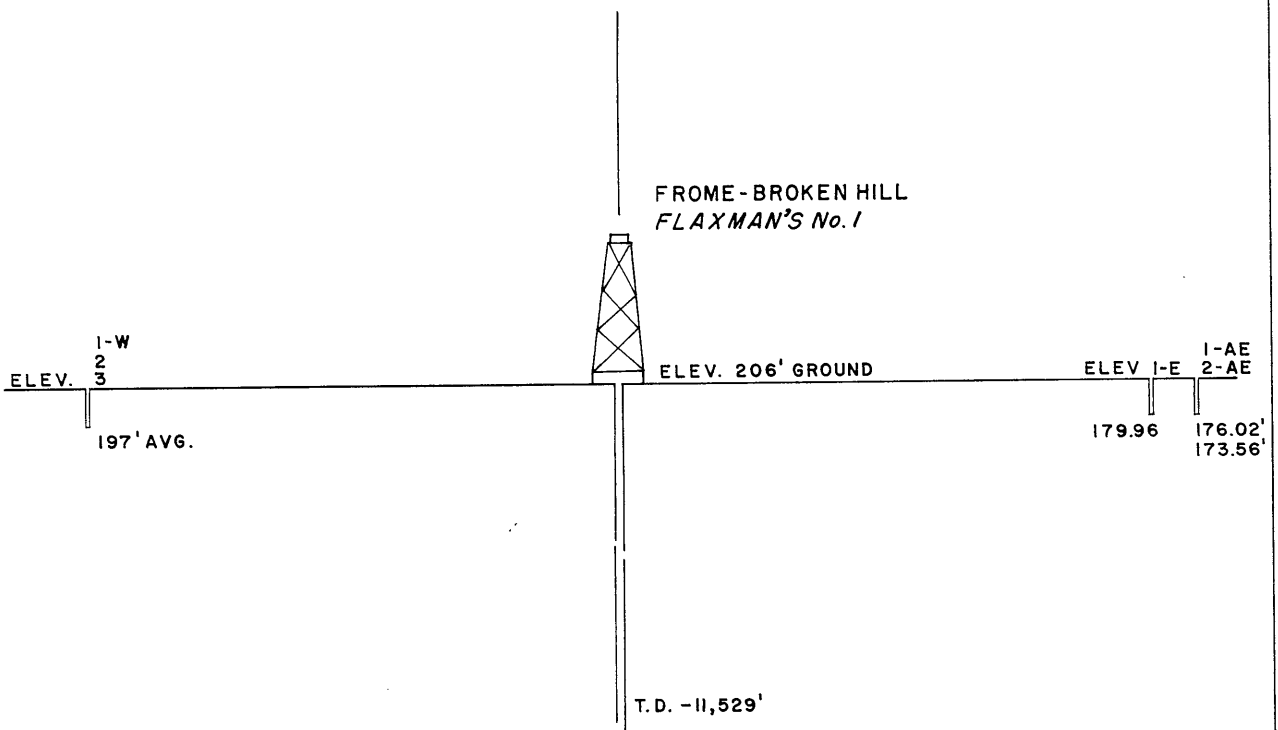
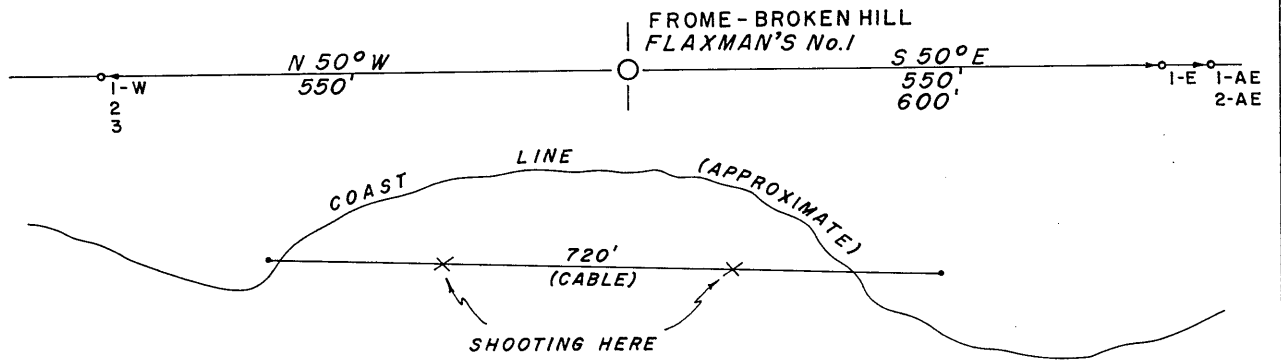
ROBERT H. RAY SERVICE COMPANY, INC.

HOUSTON, TEXAS

Provisional Lithologic
and
Stratigraphic Log

FLAXMAN'S NO. 1
Ground Elevation--206 feet above Sea Level

AGE	FORMATION	LITHOLOGY	DEPTH
Miocene- Oligocene	Heytesbury Group	Limestone and clay marl, sandy and silty in parts	0 - 2008
Eocene- Upper Cretaceous	Wangerrip Group	Sand, sandstone, silt- stone and conglomerates	2008 - 4833
Upper Cretaceous	Paaratte Formation	Sandstones, siltstone, mudstone	4833 - 5570
Upper to Lower Cretaceous	Belfast Mudstone	Mudstone, siltstone	5570 - 6430
	Un-named formation (Basal Belfast?)	Sandstone, siltstone mudstone	6430 - 6878
	Waare Formation	Porus sandstone, siltstone and mudstone with pyrite and coal	6878 - 7330
Cretaceous- Jurassic	Otway Group	Felspathic sandstone, arkose, mudstone and conglomerates	7330 - 11,529



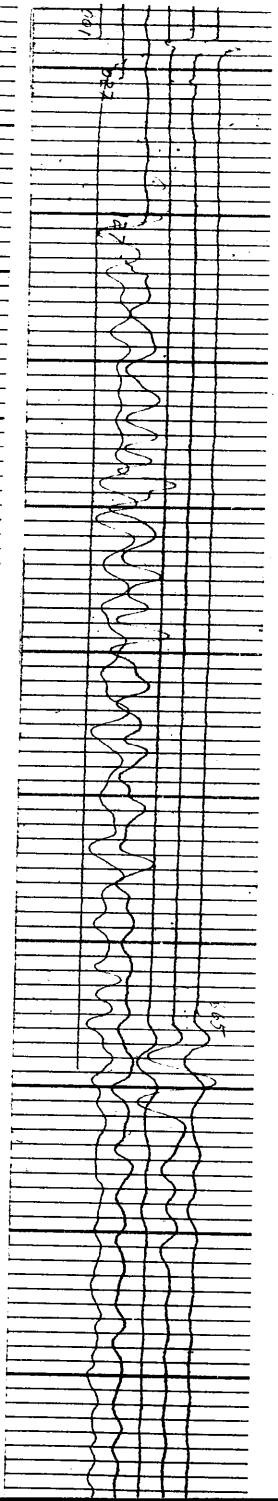
LAYOUT AND DIAGRAM
OF THE
VELOCITY SURVEY
OF
FLAXMAN'S No.1
VICTORIA, AUSTRALIA

FOR

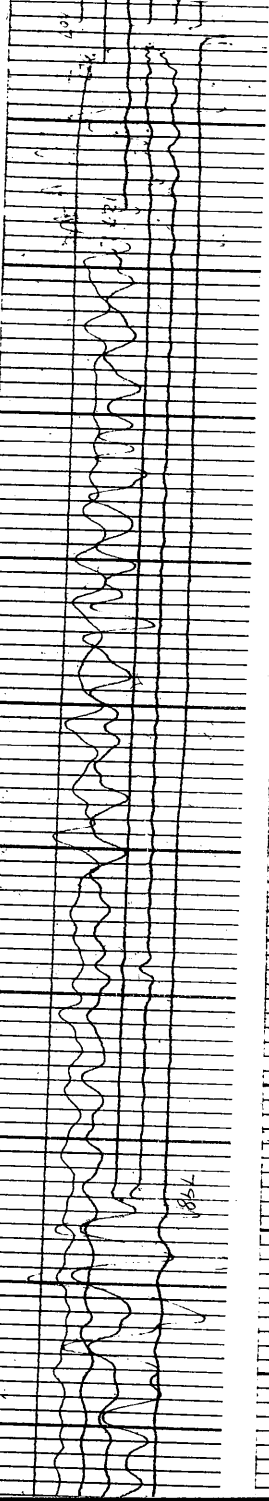
FROME-BROKEN HILL CO. PTY. LTD.

SCALE: 1" = 200'
AUGUST, 1961

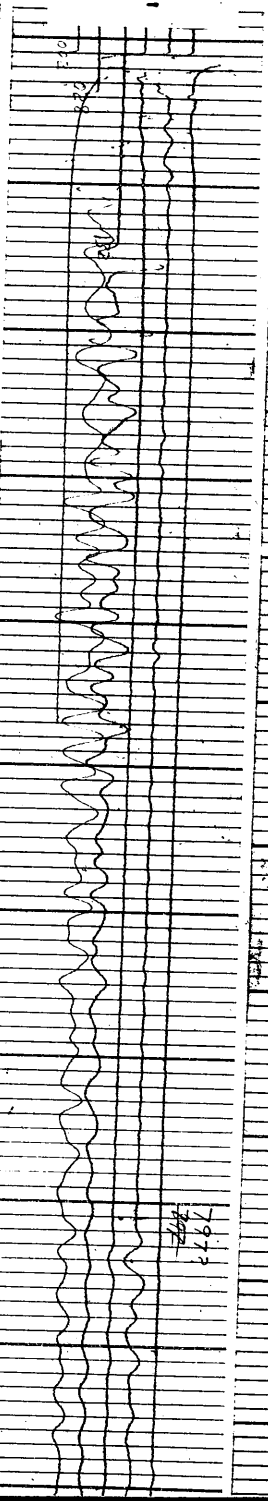
Velocity Survey
FLAXMAN'S HILL NC. 1
Shot 6 2 East 50 lbs. 62-74'
Well Geophone: 5570 ft.
June 20, 1961



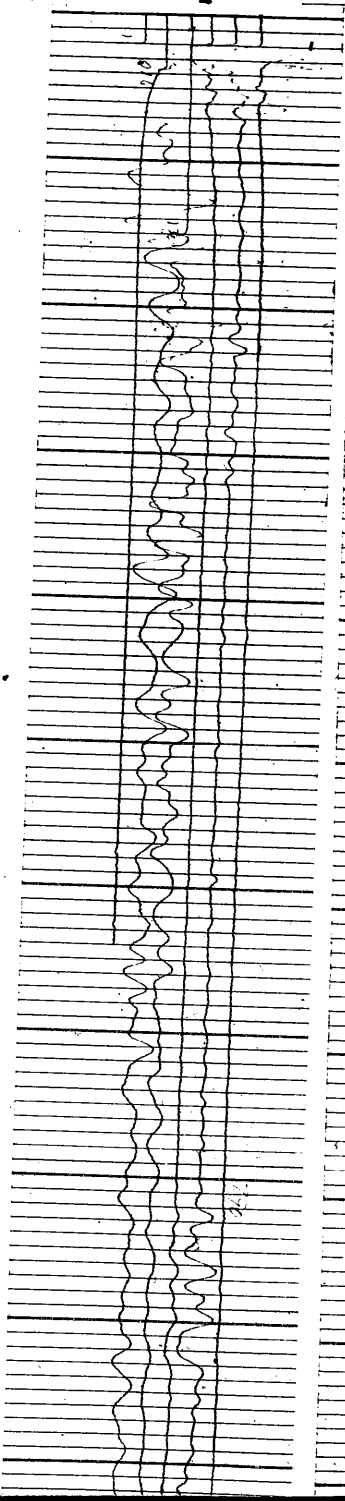
Velocity Survey
FLAXMAN'S HILL NC. 1
Shot 7 2 East 75 lbs. 68-74'
Well Geophone: 6986 ft.
June 20, 1961



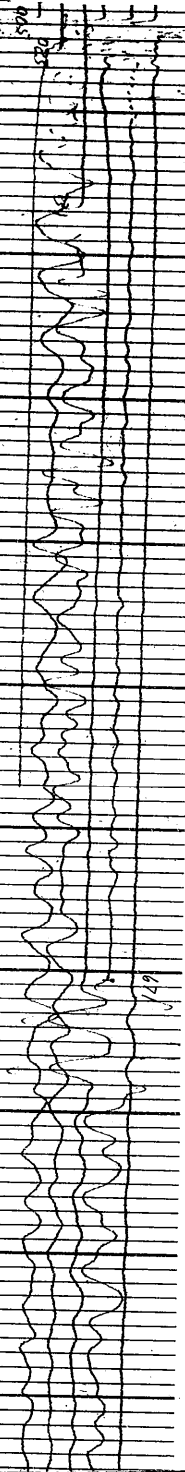
Velocity Survey
FLAXMAN'S HILL NO. 1
Shot 8 1 West 50 lbs. 54-74'
Well Geophone: 6962 ft.
June 20, 1961



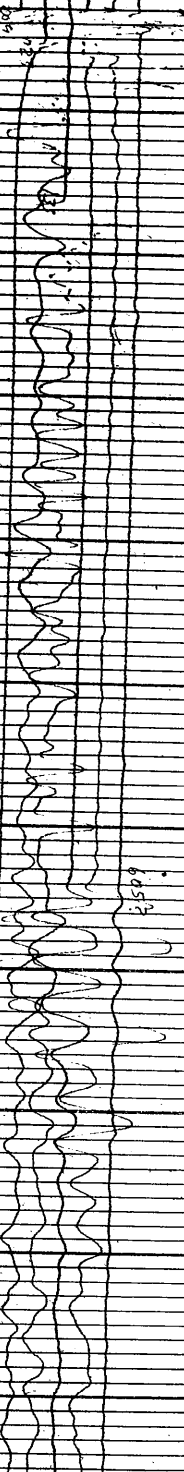
Velocity Survey
FLAXMAN'S HILL NC. 1
Shot 9 2 West 100 lbs. 38-78'
Well Geophone: 6878 ft.
June 20, 1961



Velocity Survey
 FLAXMAN'S HILL NO. 1
 Shot 10 2,3 West 100 lbs. 52-82'
 Well Geophone: 5570 ft.
 June 20, 1961



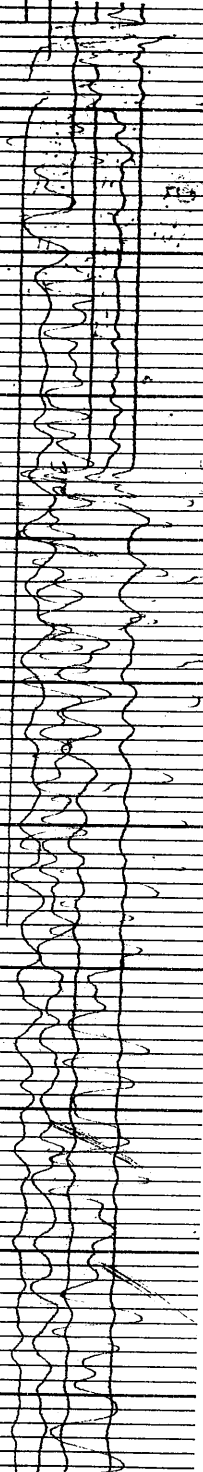
Velocity Survey
 FLAXMAN'S HILL NO. 1
 Shot 11 3 West 50 lbs. 60-70'
 Well Geophone: 4833 ft.
 June 20, 1961



Velocity Survey
 FLAXMAN'S HILL NO. 1
 Shot 12 3 West 40 lbs. 54-64'
 Well Geophone: 3180 ft.
 June 20, 1961



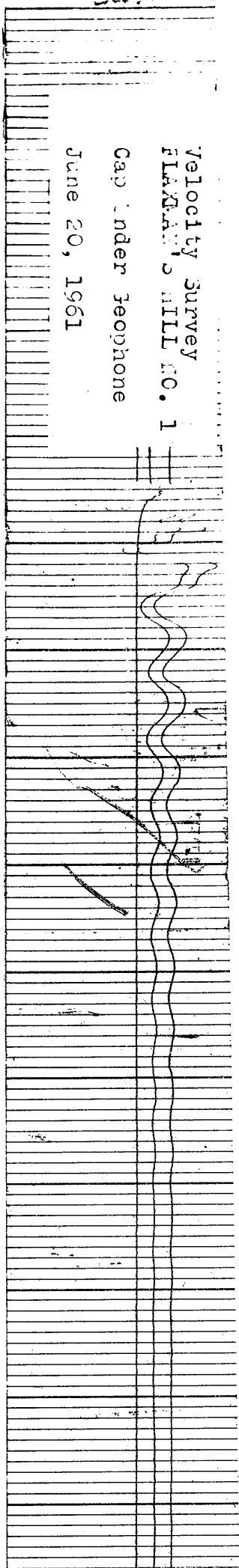
Velocity Survey
 FLAXMAN'S HILL NO. 1
 Shot 13 3 West 25 lbs. 58-64'
 Well Geophone: 2008 ft.
 June 20, 1961



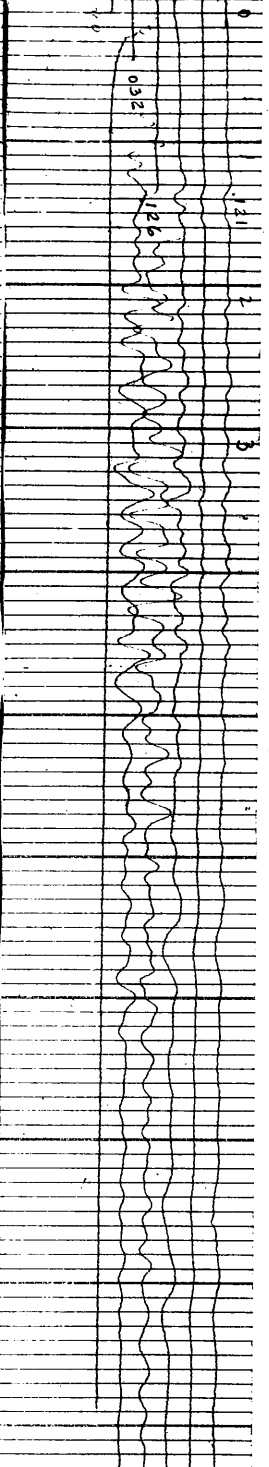
Velocity Survey
FLAXMAN'S HILL NO. 1

Cap Under Geophone

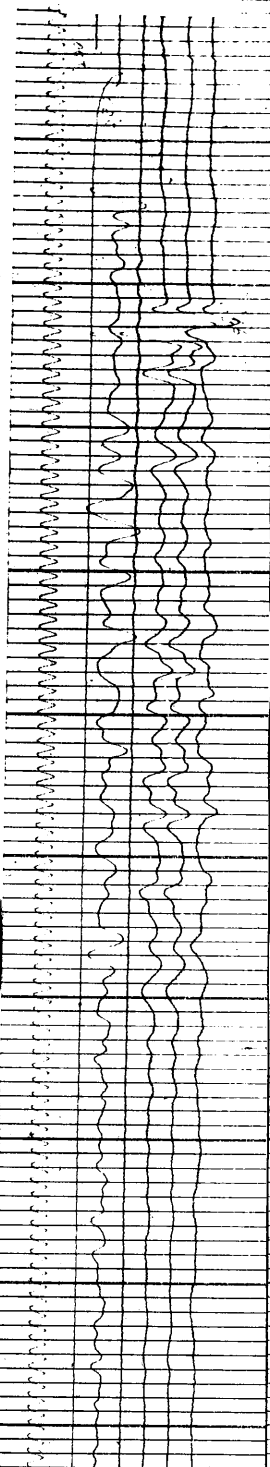
June 20, 1961



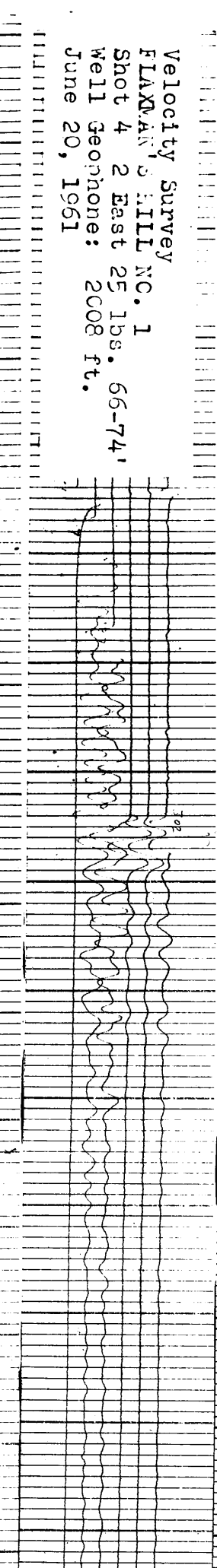
Velocity Survey
FLAXMAN'S HILL NO. 1
Shot 2 3 East 10 lbs. 80-84'
Well Geophone: 500 ft.
June 20, 1961



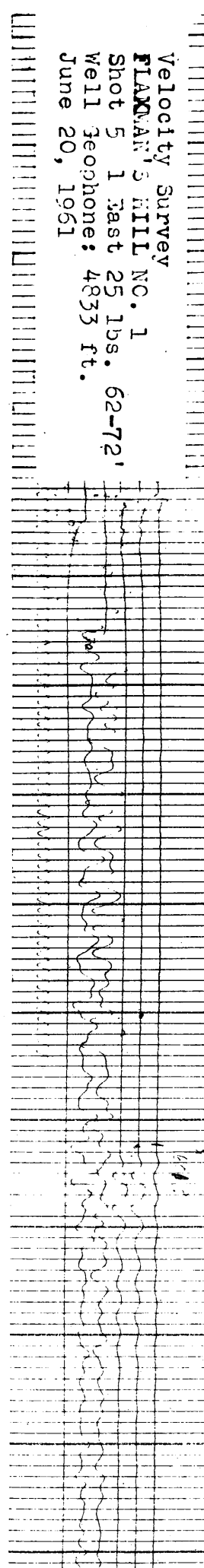
Velocity Survey
FLAXMAN'S HILL NO. 1
Shot 3 1 East 25 lbs. 64-74'
Well Geophone: 1050 ft.
June 20, 1961



Velocity Survey
FLAXMAN'S HILL NO. 1
Shot 4 2 East 25 lbs. 66-74'
Well Geophone: 2008 ft.
June 20, 1961



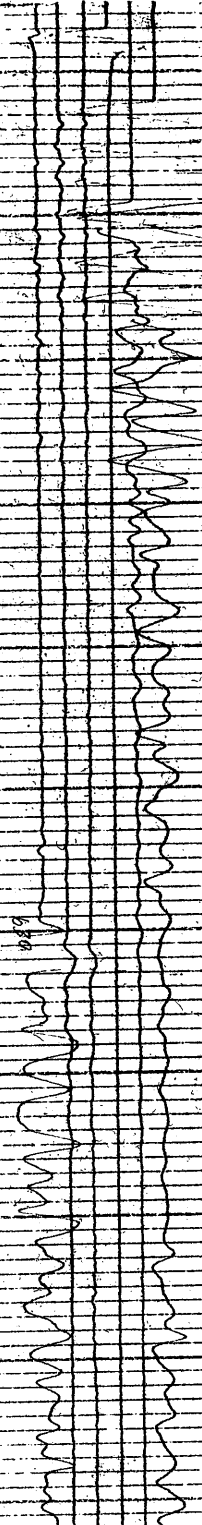
Velocity Survey
FLAXMAN'S HILL NO. 1
Shot 5 1 East 25 lbs. 62-72'
Well Geophone: 4833 ft.
June 20, 1961



Velocity Survey
FLAXMAN'S HILL NO. 1
Cap Under Geophone
August 25, 1961



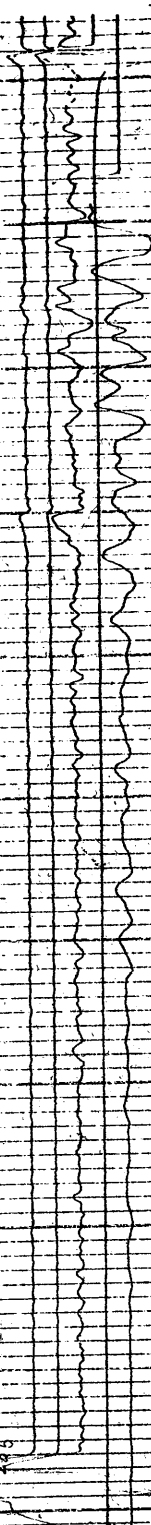
Velocity Survey
FLAXMAN'S HILL NO. 1
Shot 1 1A East
50 Lbs. 230-250'
Well Geophone: 5570 ft.
August 25, 1961



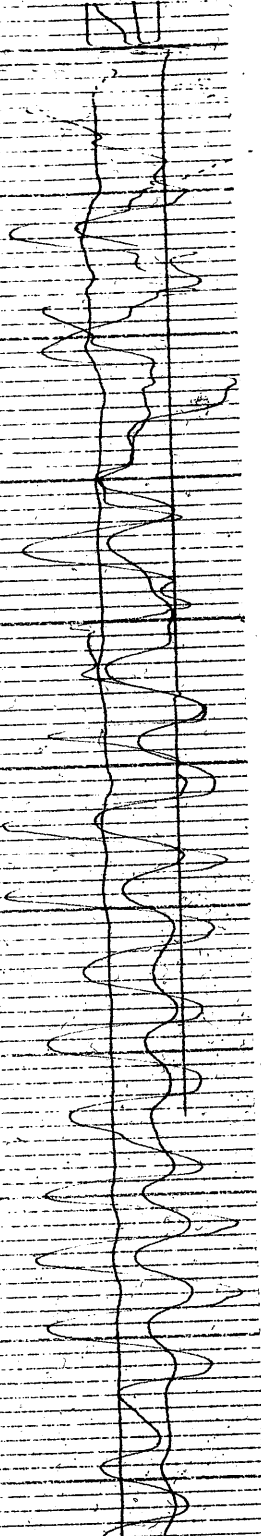
Velocity Survey
FLAXMAN'S HILL NO. 1
Shot 2 10 lbs. Sea
Well Geophone: 7330 ft.
August 25, 1961



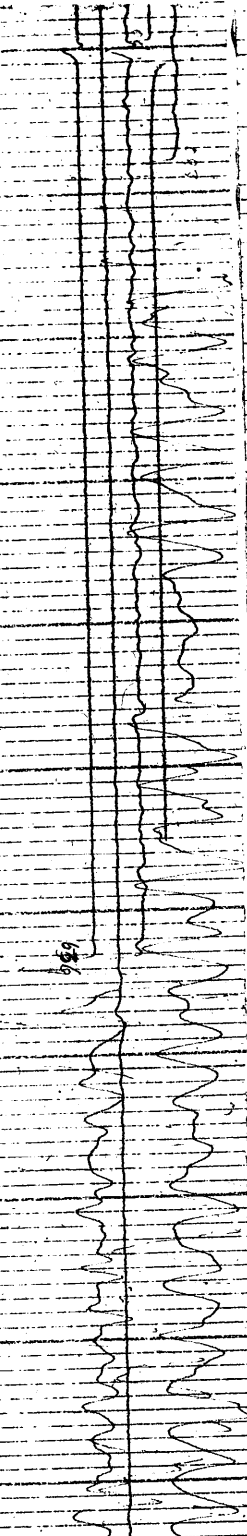
Velocity Survey
FLAXMAN'S HILL NO. 1
Shot 3 25 lbs. Sea
Well Geophone: 10,000 ft.
August 25, 1961



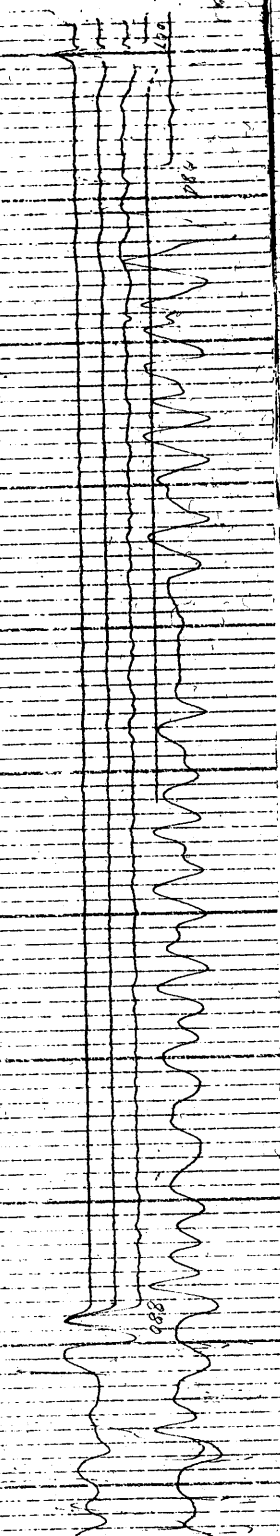
Velocity Survey
FLAXMAN'S HILL NO. 1
Cap Under Geophone
August 26, 1961



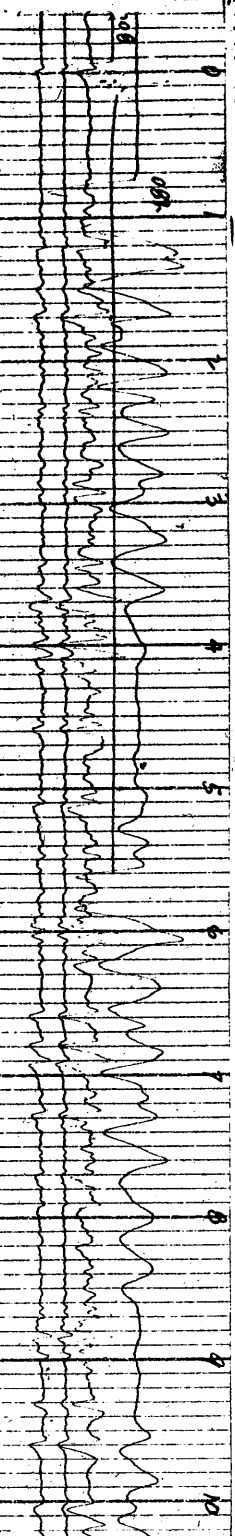
Velocity Survey
FLAXMAN'S HILL NO. 1
Shot 1 10 lbs. Sea
Well Geophone: 5570 ft.
August 26, 1961



Velocity Survey
FLAXMAN'S HILL NO. 1
Shot 2 10 lbs. Sea
Well Geophone: 8500 ft.
August 25, 1961



Velocity Survey
FLAXMAN'S HILL NO. 1
Shot 3 10 lbs. Sea
Well Geophone: 11,527 ft.
August 26, 1961



PE905772

This is an enclosure indicator page.
The enclosure PE905772 is enclosed within the
container PE905767 at this location in this
document.

The enclosure PE905772 has the following characteristics:

ITEM_BARCODE = PE905772
CONTAINER_BARCODE = PE905767
NAME = Well Velocity Survey Summary Sheet for
Flaxmans-1
BASIN = OTWAY
PERMIT = PEP/5
TYPE = WELL
SUBTYPE = VELOCITY_CHART
DESCRIPTION = Well Velocity Survey Summary Sheet
(from Velocity Report--attachment to
WCR) for Flaxmans-1
REMARKS =
DATE_CREATED = 20/06/61
DATE_RECEIVED =
W_NO = W466
WELL_NAME = FLAXMANS-1
CONTRACTOR = ROBERT.H.RAY SERVICE CO. INC.
CLIENT_OP_CO = FROME-BROKEN HILL CO. PTY. LTD.

(Inserted by DNRE - Vic Govt Mines Dept)

PE905771

This is an enclosure indicator page.
The enclosure PE905771 is enclosed within the
container PE905767 at this location in this
document.

The enclosure PE905771 has the following characteristics:

- ITEM_BARCODE = PE905771
- CONTAINER_BARCODE = PE905767
 - NAME = Shothole Information Sheet for
Flaxmans-1
 - BASIN = OTWAY
 - PERMIT = PEP/5
 - TYPE = WELL
 - SUBTYPE = VELOCITY_CHART
 - DESCRIPTION = Shot Hole Information Sheet (from
Velocity Report--attachment to WCR) for
Flaxmans-1
- REMARKS =
- DATE_CREATED = 26/08/61
- DATE_RECEIVED =
 - W_NO = W466
 - WELL_NAME = FLAXMANS-1
- CONTRACTOR =
- CLIENT_OP_CO = FROME-BROKEN HILL CO. PTY. LTD.

(Inserted by DNRE - Vic Govt Mines Dept)

PE905769

This is an enclosure indicator page.
The enclosure PE905769 is enclosed within the
container PE905767 at this location in this
document.

The enclosure PE905769 has the following characteristics:

ITEM_BARCODE = PE905769
CONTAINER_BARCODE = PE905767
NAME = Velocity Survey/Time Depth Curve for
Flaxmans-1
BASIN = OTWAY
PERMIT = PEP/5
TYPE = WELL
SUBTYPE = VELOCITY_CHART
DESCRIPTION = Time Depth Curve (from Velocity
Report--attachment to WCR) for
Flaxmans-1
REMARKS =
DATE_CREATED =
DATE_RECEIVED =
W_NO = W466
WELL_NAME = FLAXMANS-1
CONTRACTOR = ROBERT.H.RAY SERVICE CO. INC.
CLIENT_OP_CO = FROME-BROKEN HILL CO. PTY. LTD.

(Inserted by DNRE - Vic Govt Mines Dept)

PE905768

This is an enclosure indicator page.
The enclosure PE905768 is enclosed within the
container PE905767 at this location in this
document.

The enclosure PE905768 has the following characteristics:

ITEM_BARCODE = PE905768
CONTAINER_BARCODE = PE905767
 NAME = Refraction Profiles for Flaxmans-1
 BASIN = OTWAY
 PERMIT = PEP/5
 TYPE = WELL
 SUBTYPE = VELOCITY_CHART
 DESCRIPTION = Refraction Profiles (from Velocity
 Report--attachment to WCR) for
 Flaxmans-1
 REMARKS =
 DATE_CREATED =
 DATE_RECEIVED =
 W_NO = W466
 WELL_NAME = FLAXMANS-1
 CONTRACTOR =
 CLIENT_OP_CO = FROME-BROKEN HILL CO. PTY. LTD.

(Inserted by DNRE - Vic Govt Mines Dept)

PE905770

This is an enclosure indicator page.
The enclosure PE905770 is enclosed within the
container PE905767 at this location in this
document.

The enclosure PE905770 has the following characteristics:

- ITEM_BARCODE = PE905770
- CONTAINER_BARCODE = PE905767
 - NAME = Velocity Survey Graph for Flaxmans-1
 - BASIN = OTWAY
 - PERMIT = PEP/5
 - TYPE = WELL
 - SUBTYPE = VELOCITY_CHART
- DESCRIPTION = Velocity Survey Graph (from Velocity
Report--attachment to WCR) for
Flaxmans-1
- REMARKS =
- DATE_CREATED =
- DATE_RECEIVED =
 - W_NO = W466
- WELL_NAME = FLAXMANS-1
- CONTRACTOR =
- CLIENT_OP_CO =

(Inserted by DNRE - Vic Govt Mines Dept)