PR-SAXON 78 (1) A.

#### **1978 EXPLORATION ASSESSMENT REPORT**

FOR

SAXON COAL LIMITED

OPEN FILE

GOLD COMMISSIONER
RECEIVED and RECORDED
JAN 1 2 1979
M.R. # Victoria, e.C.

RECEIVED FOR

filing MAY 23, 1979.

DENISON MINES LIMITED VANCOUVER, B.C.

December 1978

GEOLOGICAL BRANCH ASSESSMENT REPORT



## PREFACE

The 1978 Saxon Exploration Assessment Report is comprised of two parts: the main text which is a description of some of the more physical aspects of the programme and various appendices which comprise an addendum to the geology of the Saxon East area.

Volume I contains the main text of the report along with Appendices I and II: the written portion of the geological addendum and a set of maps, cross-sections, correlation charts and columnar logs, respectively. Appendix III comprises the descriptive geological logs of the diamond drill and rotary drill holes which are presented in Volume II, Parts A and B. Volume III contains the geophysical logs which form Appendix IV.

# TABLE OF CONTENTS - VOLUME I

.

		Page
I	INTRODUCTION	1
2	GEOLOGICAL MAPPING	2
3	SURVEYING	3
4	DIAMOND DRILLING	6
5	ROTARY DRILLING	7
6	GEOPHYSICAL LOGGING	8
7	COAL ANALYSIS	9
8	TRENCHING	12
9	ROAD CONSTRUCTION AND MAINTENANCE	13
10	FIELD CAMP	14
11	RECLAMATION	15
12	ACKNOWLEDGEMENTS	16

## LIST OF TABLES ~ VOLUME I

3.1	SURVEY CONTROL POINTS used for the SAXON 1978 SURVEY PROGRAMME	. 4
3.2	SAXON 1978 DRILL HOLE COORDINATES	5

## LIST OF FIGURES - VOLUME I

.

# 7.1 SAXON DRILL CORES 1978 - STANDARD ANALYSIS PROCEDURE 10

.

(ii)

LIST	0F	FIGURES	(cont)
L L V I	<b>U</b> 1	I I GONGO	

				Page	
vete	DDOCEDUDE	END	חססם	11	

7.2	SAXON DRILL	CORES	1978 -	ANALYSIS	PROCEDURE	FOR	POOR	11
	RECOVERY SAI	MPLES						,

## LIST OF APPENDICES

Ι	GEOLOGICAL SUMMARY	Volume	Ι
II	MAPS, CROSS-SECTIONS, CORRELATION CHARTS AND COLUMNAR LOGS	Volume	I
III	DESCRIPTIVE LOGS (PARTS A and B)	Volume	II
IV .	GEOPHYSICAL LOGS	Volume	III

## 1 INTRODUCTION

The 1978 Saxon field programme was carried out between the beginning of June and the end of September.

The opening and maintenance of the main access road to the Saxon camp commenced on June 2 and a 50-man camp was operational by June 19. The exploration programme was confined to diamond and rotary drilling, mapping and hand trenching within the Saxon East area while reclamation was undertaken in areas of disturbance related to this programme and earlier exploration activities. Drilling ceased on September 16 while remaining geological activities concluded on September 20. Reclamation continued until September 25 when the camp was closed.

- 1 -

#### 2 GEOLOGICAL MAPPING

The geological mapping undertaken during the 1978 Saxon exploration project was accomplished by four 2-man teams supported by a Hughes 500 helicopter. The mapping was primarily within the Saxon East area. Data collection was undertaken at a scale of 1:2500 and this information was later transferred to 1:5000 scale base maps. Control of traverse lines was achieved using chain and compass, corrected for slope variation. Data points were plotted directly onto 1:2500 maps in the field by orienting the maps with a Silva compass on a portable map board. Points such as creek confluences or survey control points shown on the base maps were used to locate the beginning and end of each traverse.

A compilation of all the geological mapping carried out during 1978 and previous years was prepared at a scale of 1:5000 for Saxon East. This map plus a 1:25,000 scale regional geological compilation is presented in the pocket which accompanies this volume.

- 2 -

#### 3 SURVEYING

During late summer, a 2-man crew using truck and helicopter undertook survey control work throughout the Saxon East area. Points surveyed included all 1978 drill holes with occasional "check" surveys on pre-1978 holes. In addition to this, eleven new survey control points were established in the Saxon East area. Survey control points used in the survey programme are presented in Table 3.1.

Drill holes and local survey control points were tied-in to existing Provincial Triangulation Stations. Instruments used for the surveying included a Hewlett-Packard 3808 for measurements of angles and short distances and, theodolites and a Tellurometer CA 1000 for the measurements of angles and longer distances respectively. Vertical angles were measured simultaneously at both ends of the measured distance.

Coordinates and elevations for diamond and rotary drill holes are given in Table 3.2 . All coordinates are on the Universal Transverse Mercator Grid.

- 3 -

# TABLE 3.1

# SURVEY CONTROL STATIONS USED FOR THE SAXON 1978 SURVEY PROGRAMME

<u>Station</u>	Elevation	<u>Northings</u>	<u>Eastings</u>
"CAP" (#2373) Bdy Mon 61-4	2306.12	6017254.45 6019574.39	686893.44 695266.62
HVĞ	1869.2	6023766.6	690017.7
SC6	1462.7	6022549.4	689354.7
SC13	1673.53	6023004.76	689791.10
610	1940.27	6020763.87	693997.85
64C	1560.40	6015803.22	692912.89
60C	1457.86	6019383.28	693933.11
SC8	1440.28	6019348.45	693795.56
63C	1979.13	6019539.65	695172.43
610	1722.71	6020754.23	693039.84
<b>#7</b> 0	1644.60	6019680.85	694361.30
620	1644.19	6019680.76	694361.24
860	1646.83	6023115.51	689205.24

Note: All coordinates are referred to the Universal Transverse Mercator Grid.

ц¢.

Elevations are in metres.

# TABLE 3.2

# 1978 SAXON DRILL HOLE COORDINATES

# Diamond Drill Holes

- -- · --

Hole	Elevation	<u>Northing</u> s	Eastings
<ul> <li>SD 7801</li> <li>SD 7802</li> <li>SD 7803</li> <li>SD 7804</li> <li>SD 7805</li> <li>SD 7806</li> <li>SD 7807</li> <li>SD 7808</li> <li>SD 7809</li> </ul>	1302.85 1417.24 1723.11 1747.95 1283.42 1644.01 1647.20 1290.70 1617.43	6021128.86 6022286.80 6020759.79 6020307.29 6021311.65 6019674.15 6023121.86 6020661.22 6023616.27	691724.60 689828.63 693037.49 693529.16 691229.36 694354.52 689208.29 691926.62 688450.99
Rotary Drill Holes			
SR 0178 SR 0278 SR 0378 SR 0478 SR 0578 SR 0578 SR 0673 SR 0778 SR 0778 SR 0978 SR 0978 SR 1078 SR 1078 SR 1178 SR 1278 SR 1278 SR 1378 SR 1478	1320.30 1275.91 1271.95 1463.89 1457.59 1363.92 1367.17 1357.14 1235.24 1238.71 1404.13 1362.55. 1394.83 1445.22	6021406.90 6021492.47 6021582.54 6021318.45 6021268.86 6021262.85 6021262.85 6021464.23 6021917.24 6021529.49 6021166.48 6021367.66 6021192.19 6021153.40	691720.12 691563.05 691571.11 692279.90 692290.10 691839.36 691916.49 691916.54 691007.12 691375.01 692150.53 692066.65 692078.56 692260.74

#### 4. DIAMOND DRILLING

Diamond drilling was undertaken by Canadian Longyear Drilling Limited of Vancouver, British Columbia. All drilling was carried out in the Saxon East area where a total of 3474 metres (H.Q.) was drilled. The drilling was performed by two skid-mounted Longyear 44 wireline rigs, complete with 10 foot and 5 foot triple tube core barrels. The rigs were equipped with lightweight skids and could be easily dismantled to facilitate their being moved by helicopter as well as tractors.

All holes were cased to bedrock, completely cored and were geophysically logged. The drill core was logged by a geologist who recorded basic lithologies, sedimentary structures, fossiliferous zones and identified marker horizons and any structural features, particularly folds and faults. Coal seams along with roof and floor lithologies were logged in great detail with close reference to the detailed geophysical logs. Descriptive core logs are presented in Appendix II (Parts A and B).

Diamond drill hole locations are shown on the detailed geology map and structure contour maps which are presented in the pocket, along with drafted columnar logs.

- 6 -

### 5 ROTARY DRILLING

Rotary drilling was carried out by Garritty and Baker Drilling Company of Edmonton, Alberta. The drilling was confined to a samll area with most of the holes being located just to the southeast of the camp. A "Mayhew 1000 Special" rotary drill was adapted to utilize a Mission Megadrill downhole hammer while support for the drill rig was provided by Westinghouse LeRoy Compressor and a 750 gallon Watercarrier. The drill, compressor, and water tank were each mounted on "R.N. 110 Nodwell" tracked vehicles.

A total of 929 metres was drilled and all holes apart from SR 1178, which was abandoned due to poor hole conditions, were geophysically logged. A complete sequence of cuttings were obtained from all but three holes, although the coal cuttings from these holes were retained. The cuttings were logged for basic lithologies; descriptive core logs are presented in Appendix II (Part B).

Rotary drill hole locations are shown on the detailed geology map and structure contour maps which are presented in the pocket, along with drafted columnar logs.

- 7 -

#### 6 GEOPHYSICAL LOGGING

The geophysical logging of drill holes was carried out by B.P.B. Instruments Limited of Calgary, Alberta. A sidewall multisonde, capable of producing gamma-ray, long-spacing density, bed resolution density and caliper logs was used together with a sonde for high resolution density logs. In addition focussed electric and sonic logs were run in a few selected diamond and rotary drill holes. All log information was stored in digital form on cassette tape for subsequent reprocessing onto computer tape into a time and depth format.

All drill holes, except SR 1178, were logged at 5 centimetres to 10 metres (1:200) general scale for long-spacing density, gamma ray, caliper and for some drill holes focussed electric and sonic. This was supplemented by detailed logs run at 5 centimetres to 1 metre (1:20) for long-spacing density, bed resolution density, gamma ray and caliper over economic coal seam intervals. Water levels were recorded and logging was not carried out through the drill rods unless poor hole conditions required it. The geophysical logs for holes drilled in the 1978 Saxon exploration programme are presented in Appendix III.

- 8 -

### 7 COAL ANALYSIS

Core and coal samples from the 1978 programme are in the process of being analyzed by Superintendence Company (Canada) Limited of Vancouver, British Columbia. Dependent upon core recovery, the analysis of the coal core samples follows one of two different procedures. The majority of the samples follow the standard analysis procedure (see Figure 7.1), while those with less than 40% core recovery follow a reduced procedure (see Figure 7.2). The samples from the rotary drill holes are undergoing proximate analysis and testing for F.S.I., phosphorus and sulphur only. No washing will be done on these samples. Selected samples were also taken from coal core obtained from diamond drill holes to test for methane content.

The standard analysis procedure was designed to maximize the quantity of clean coal which would later be used for additional analysis and blending. The product clean coal will be obtained by cutting the various size fractions at predetermined cut points. These cut points were determined when 1976 Saxon drill core and adit data were fed into a computer simulated wash plant and cut to achieve a 7.5% ash product.

No analytical data relating to coal samples obtained in the 1978 exploration programme is presented here as the results so far are preliminary and incomplete.

#### - 9 -



figure 7.1



### 8 TRENCHING

During the 1978 Saxon exploration programme, all trenches were constructed by hand. This hand trenching, undertaken within the Saxon East area, was carried out by crews of two or three working with a geologist or geological assistant. A total of 80 trenches were dug although not all of these trenches successfully exposed major seams.

Hand trenches were constructed both in alpine terrain and below treeline. The crew was moved by helicopter and by foot. The trenches were unshored, so safety considerations usually limited their depth to around 1.5 metres. As a result, seams could not always be exposed in areas where there was a thick cover of soil, talus, or coal spoil.

Detailed pictorial logs of trench sections are presented in the pocket.

### 9 ROAD CONSTRUCTION AND MAINTENANCE

Road construction and maintenance was carried out by Tompkins Contracting Limited of Fort St. John, British Columbia. The main access road was opened at the beginning of June and other access roads in the Saxon East area were opened by early July. In the Saxon South area, the main access road was opened in late June to permit access for reclamation purposes. Several weeks were spent in the earliest portion of the programme up-grading the main access road to the Saxon property in an effort to improve drainage and eliminate soft road-bed conditions. Several new roads and cat-trails were established and these have been fully described in the report entitled "Saxon Coal Limited 1978 Reclamation Report".

#### - 13 -

## **10** FIELD CAMPS

Room and board was supplied by Denison from a 50-man trailer camp situated where the main access road through the property crosses Saxon Creek. The camp was located just east of the previous site in an effort to relocate the sump farther away from Saxon Creek. The old site was used as a helicopter staging area.

The camp was rented from Territorial Leasing Limited and catered by Westcamp Construction Catering Limited both of Edmonton, Alberta.

## 1] RECLAMATION

A detailed report on the reclamation carried out by Denison on areas disturbed during the 1978 and 1977 Saxon exploration programmes has already been prepared and presented to the Government of British Columbia (Saxon Coal Limited 1978 Reclamation Report). The reclamation of the Saxon coal licences is at a current status.

#### 12 ACKNOWLEDGEMENTS

- 16 -

## 12.1 CONTRACTORS

The following table summarizes the major contractors employed by Dension Coal Limited on the Saxon project during the 1978 program and their areas of responsibility under Denison's supervision:

Tompkins Construction Ltd.

Day Isley and Sons Ltd. Quasar Helicopters Ltd. Associated Helicopters Ltd. Okanagan Helicopters Ltd. Westcamp Construction Catering Ltd. Territorial Leasing Ltd. B.P.B. Instruments Ltd. Bowmac Truck Rentals Ltd. Canadian Longyear Drilling Ltd. Garritty and Baker Superintendence Company (Canada) Ltd. drill site preparation and road construction reclamation chartered aircraft chartered aircraft chartered aircraft catering field camp rental geophysical logging truck rental diamond drilling rotary drilling coal core testing

### 12.2 EXPLORATION PROGRAMME PERSONNEL

During the 1978 exploration programme for Saxon Coal Limited, technical supervision and data analysis was carried out by the staff of Denison Mines Limited, Coal Division with assistance from personnel from Montan Consulting and Mitsui Mining. The professional staff involved are listed below:

## 12.2 (cont)

DENISON MINES LIMITED

Mr. Gordon P. GormleyMr. John H. PerryMr. Wade PlachnerMr. Frank TumatoMr. Roger Shields

Exploration Manager Project Geologist Senior Geologist Geologist Geological Technician (Camp and Reclamation Manager)

Extremely valuable assistance was also provided by a team of technically qualified geological assistants.

### MONTAN CONSULTING

Mr. Ralph Schlueter
Dr. Manfred v. Sperber

Consultant Geologist Consultant Geologist

## MITSUI MINING

Mr. Tom Shima

Consultant Geologist

APPENDIX I

GEOLOGICAL SUMMARY

# (I-i)

# APPENDIX I

# GEOLOGICAL SUMMARY

		Page
I.1	Introduction	I-1
I.2	Stratigraphy	I-2
1.3	Structure	1-3

#### GEOLOGICAL SUMMARY

I.1 INTRODUCTION

The geology of the Saxon property has been described in detail in the 1977 Exploration Assessment Report for Saxon Coal Limited (Denison Mines Limited, November 1977). A summary of the geology is presented below:

> " The Saxon property lies within Lower Cretaceous strata of the Rocky Mountain foothills of British Columbia, adjacent to the Alberta provincial boundary.

The stratigraphic sequence on the property is bounded at the top by Shaftesbury Formation sediments and at the bottom by rocks of the Nikanassin Formation. A complete sequence from Cadomin conglomerate through Gething Formation, Moosebar and Commotion Formation has been deposited upon the Nikanassin sediments. The Commotion Formation contains three defineable members on the property: the Gates, Hullcross and Boulder Creek Members.

The non-marine sediments of the Nikanassin Formation, Gething Formation and Boulder Creek Member all contain coaly horizons. However, the work to date has defined only the seams of the Gates Member as having sufficient thickness and lateral extent as well as the required quality to allow them to be considered for extraction.

The strata on the Saxon property have been folded and thrust to form a major complex syncline trending along the property in a north westerly direction. The syncline plunges from both the northern and southern ends of the property towards the centre.

The central syncline is flanked to the east by well exposed westerly dipping sediments which include the Gates Member coal seams. These consistently dipping strata form panels which are suitable for mining by underground hydraulic methods. On the southwest flank of the central syncline a complex faulted anticlinorium again exposes Gates Member sediments and forms a structure suitable for mining by surface methods. In Saxon East three Gates Member coal seams, numbered 1, 2 & 4 from the base up, can be considered for mining, while in Saxon South six mineable seams numbered 1 to 5 and No. 10 have been defined, although even in this area seams 1, 2, & 4 provide over 85% of the reserves.

While geological structures are a major factor on the Saxon property in so far as defining mining areas is concerned, they will not have a large effect on mining within each block, although some selectivity will be required."

#### **I.2** STRATIGRAPHY

No significant changes in the general stratigraphy of the Saxon East area were recorded during the 1978 exploration programme. Correlations of the major coal seams are, for the most part, consistent with what was expected from pre-existing data. The thickness of the mining sections of these seams fall within or close to the previous range.

Rotary and diamond drilling near the proposed plant site at Saxon East has helped delineate the facies change suggested in 1977 for the strata of the seam no. 1 to seam no. 2 sequence. Diamond drill holes nos. SD 7801, 7620, 7803 and 7702 and rotary drill holes nos. SR 0878 and SR 1278 have a greatly thickened coal section and/or several coal splits in this interval, while the noncoal sediments display a significantly retarded development. The facies changes are quite rapid as can be seen, for example, in SR 0878 and SR 1278. In these drill holes, which are 180 metres apart, seam 1 varies from a 4.38 metre seam with two substantial rock partings to a relatively clean seam 9.98 metres in thickness. The interseam thickness between seam no. 2 and seam no. 1 in these two holes is 9.48 metres and 1.77 metres respectively. The development of seam 1 is again seen to be retarded in SR 0578 and the seam is considered to be absent in drill hole SR 0478. Within a number of the drill holes listed above, seam no. 2 develops an upper and a lower split. The lower split is the one considered to represent seam no. 2 and to extend throughout the area, while the upper split is restricted to the area of rapid facies change in the north-eastern portion of Block 1.

The results of the 1978 drilling programme have also clarified the relationship between seam nos. 3 and 4 within the Saxon East area. Throughout Block 2, seam no. 3 lies approximately 25 to 30 metres below seam no. 4. As Block 1 is approached, seam no. 3 climbs through the stratigraphy until it merges with seam no. 4 in hole SR 1478. Throughout most of Block 1 seam no. 3 is either separated from seam no. 4 by a thin rock band, or is incorporated into seam no. 4 itself.

#### I.3 STRUCTURE

The broad structure of the Saxon East area was primarily confirmed by the data recorded during the 1978 exploration programme. The only change in the structural interpretation concerns the lateral extent of a thrust fault which, on the basis of 1977 and earlier data, was considered to cut the Block 1 mining area. Further drilling and detailed mapping has shown that what was thought to be one continuous structure is, in fact, a series of three thrusts having less significant

(1-3)

vertical displacement than that previously interpreted.

The most southeasterly of these faults has been drilled by SD 7806 and, together with a folded sequence, has been mapped in the creek immediately to the west of that drill hole. In SD 7806 seam no. 2 is repeated, indicating a throw of approximately 27 metres on the fault. Other minor folds, of a scale similar to those mapped in the creek, have been found in the roof of seam no. 2 and seam no. 4 to the east of SD 7806. Structures of this type have not been encountered further to the northwest and are considered to be restricted to this northeastern portion of Block 1.

A thrust fault was intersected in SD 7620 and observed in outcrop immediately to the north of this drill hole. The fault lies at approximately the same structural level as the one previously described. Although these structures are not considered to be extensions of each other, zones of disturbance and faults with minor displacements were recorded at similar structural levels in drill holes SD 7803 and SD 7804. The thrust is interpreted to die out to the northwest in hinge of a fold. This fold, although not mapped, is an interpretation based on surrounding outcrop information and nearby drill hole data.

The greatest amount of disturbance is recorded in drill holes SD 7001 and SD 7708 where seam no. 1 exhibits a throw of approximately 50 metres. The data available from SD 7708 indicates that the thrust fault consists of two confining planes, enclosing folded and intensely deformed strata. Data available at present indicates that these two planes converge at higher stratigraphic elevations, accompanied

(1-4)

by a reduction in the amount of tectonic disturbance. As no evidence of this structure has been found in outcrop the thrust is considered to die out below the present erosion level. This zone of thrusting lies at a higher structural level than the two which have been described above and the northern and southern limits are defined by SD 7802 and SD 7805 respectively.

## APPENDIX II

# MAPS, CROSS-SECTIONS, CORRELATION CHARTS AND COLUMNAR LOGS

## LIST OF DRAWINGS WHICH COMPRISE APPENDIX II

1	Geological Compilation Map (1:25,000)
1	Saxon East Geology Map (1:5000)
57	Saxon East Geological Cross-Sections (1:5000)
3	Saxon East Structure Contour Maps (Seams 1, 2 and 4) (1:5000)
9	Diamond Drill Hole Columnar Sections (1:200 and 1:50)
14	Rotary Drill Hole Columnar Sections (1:200 and 1:50)
3	Mining Section Correlations (Seams 1, 2 and 4) (1:50)
41	Trench Logs (pictorial) (1:50)

• All of the above are unbound and contained within the box which comprises Volume I.



STRIKE AND DIP OF SEAM BEARING OF TRENCH PLUNGE OF TRENCH

134 142 SW C N090 230

Vacufulle daire pre



# 1978 SAXON TRENCH SECTION 778-1-2

DRAWN BY:	R.Z.	DATE : NOV. 78	SCALE: 1:50
PREP'D BY:		DATE :	DRAWING NUMBER:
APPR'D BY:		DATE:	SXON 78-0815-R01



BEARING NO90 PLUNGE 3°

X PR- SAXON 78(2)A. SAXON COAL LIMITED PREPARED BY: 4 DENISON MINES LIMITED 1978 SAXON TRENCH SECTION T78-1-3 DRAWN BY: R.Z. DATE : NOV. 78 SCALE: 1:50 PREP'D BY: DATE : DRAWING NUMBER: SXON 78-0815-R01 APPR'D BY: DATE:



ROOF: NOT IN CONTACT, STRIKE/JIP TAKEN 40 A FROM TOP END OF TRENCH 125/530 SV

COAL - VEATHERSD

FLOOR : NOT IN CONTACT STRIKE/DIP NOT AVAILABLE

BEARING NITO PLUNGE 0°

X PR- SAXON 78 (2)A. SAXON COAL LIMITED PREPARED BYS 4 DENISON MINES LIMITED 1978 SAXON TRENCH SECTION T78-1-4 DRAWN BY: R.Z. DATE : NOV. 78 SCALE: 1:50 PREP'D BY: DATE : DRAWING NUMBER:

DATE:

APPE'D BY:

SXON 78-0815-R01





ROOP: NOT AVMLABLE. STRIKE/DIP TAKEN 1. TA FROM TOP OF TRENCH. SANDSTONE FINE TO MED. GRAIN. FRESH SURFACE RED BROWN. VEATHERED SURFACE, OCC. X-BEDDING. 132/38°SU, 134/41°SU

HARD COAL

CLAYSTONE COAL - WEATHERED WITH OCC. STIALL PIECES OF COAL (DL.) INTERMINED CLAYSTONE

HARD COAL

CLAYSTONIE

HARD COAL

CLAYSTONE

COAL - MEATHERGD

FLOOR : SILTY CLAYSTONE .

APPR'D BY:

STRIKE DIP TAKEN FROM SST. 126/48 ° 54 124/45° 54

N:041 BEARING PLUNGE 150

Χ PR- SAXON 78 (2)A. SAXON COAL LIMITED ......... .... 9 DENISON MINES LIMITED 1978 SAXON TRENCH SECTION T78-1-6 DATE : NOV. 78 SCALE: 1:50 DRAMM BY: R.Z. PROP D BY: DATE : DRAWING NUMBER:

DATE:

SXON 78-0815-R01



BEARING NO84 4° PLUNGE

>

Х


ROCK COAL 0.48 0.04 0.04 0.08 0.12 0.07 0.30 0.94 0.19 1.13



ROOF : NO STRIKE DIP AVAILABLE, IN CONTACT CLAYSTONE - BROKEN AND MIKED WITH G.S.P.

COAL - WEATHERED

CLAYSTONE COAL - LIEATHERED CLAYSTONE COAL - VEATHERED COAL - LIEATHERED

FLOOR: SANDSTONE - EXTREMELY BROKEN IN CONTROF STRIKE/DIP TAKEN ISM FROM TRENCH 141/43° SU

0.19 .94

1,13

BEARING N 199 PLUNGE 50

Х PR-SALON 28(2)A. SAXON COAL LIMITED PREPARED BYS 4 DENISON MINES LIMITED 1978 SAXON TRENCH SECTION T78-1-12 DRAIN BY: R.Z. DATE : NOV. 78 SCALE: 1:50 PREP'D BY: DATE : DRAWING NUMBER: SXON 78-0815-R01 APPR'D BY: DATE:



BEARING N 235 PLUNGE 4°





778-1-13

DRAWN ST: R.Z.	DATE : NOV. 78	SCALE: 1:50
FREP'D BY:	DATE :	DRAWING NUMBER:
APPR'D BY:	DATE:	SXON 78-0815-R01



BEARING N 234 PLUNGE 90

Pn - SAXON 28 (2)A. SAXON COAL LIMITED PREPARED BYS Ţ DENISON MINES LIMITED 1978 SAXON TRENCH SECTION T78-1-15 DRAWN BY: R.Z. DATE : NOV. 78 SCALE : 1: 50 PREP'D BY: DATE : DRAWING NUMBER: SXON 78-0815-R01

DATE:

APPR'D BY:



PR - SAXON 78(2)A. SAXON COAL LIMITED PREFARED BYS Ð DENISON MINES LIMITED 1978 SAXON TRENCH SECTION T78-1-16 SCALE : 1: 50 DRAWN BY: R.Z. DATE : NOV. 78 PREP'D BY: DATE : DRAWING NUMBER: SXON 78-0815-R01

DATE:

APPR'D BY:



ROOF: CLAYSTONE - PARTLY BROKEN AND WEATHERED IN CONTACT: NO STRIKE/DIP AVAILABLE, TAKEN 1.2 m FROM TOP OF TRENCH 134/34 ° SW COAL - WEATHERED NARD COAL - MAINLY DULL WITH OCC. PIECES D.L. CLAYSTONE MARD COAL - MAINLY DULL CLAYSTONE COAL - WEATHERED WITH MANY PIECES DULL HARD COAL HARD COAL - DULL
COAL - WEATHERED NARD COAL - MAINLY DULL WITH OCC. PIECES D.L. CLAYSTONE MARD COAL - MAINLY DULL CLAYSTONE COAL - WEATHERED WITH MANY PIECES DULL MARD COAL HARD COAL - DULL
NARD COAL - MAINLY DULL WITH OCC. PIECES D.L. CLAYSTONE MARD COAL - MAINLY DULL CLAYSTONE COAL - WEATHERED WITH MANY PIECES DULL HARD COAL HARD COAL - DULL
CLAYSTONE MARD COAL - MAINLY DULL CLAYSTONE COAL - WEATHERED WITH MANY PIECES DULL HARD COAL HARD COAL - DULL
COAL - WEATHERED WITH MANY PIECES DULL HARD COAL HARD COAL - DULL
HARD COAL - DULL
COAL - WEATHERED WITH MANY SMALL PIECES OF JULL AND JULL HARD COAL
HARD COAL - MAINLY DULL WITH SOME PIECES DULL COAL
COAL - BONEY COAL - WEATHERED WITH OCC. PIECES OF DULL HARD
COAL CLAYSTONE
HARD COAL -} DULL HARD COAL -} DULL
HARD COAL - MAINLY DULL WITH OCC. PIECES DULL HARD COAL CLAYSTONE
COAL - VEATHERED WITH MANY NECES BULL HARD COAL
CARD. LLAYSIONE COAL - HEATHERED
CLATSTONE COAL - WEATHERED
CARB. CLAYSTONE COAL - VEATHERED
FLOOR: SILTY (LAYSTONE - VERY BROKEN AND NEATHERED. STRIKE/DIP NOT AVAILABLE. IN CONTACT

BEARING NOSI, N233"

PLUNGE 6°, 11°



DENISON MINES LIMITED

# 1978 SAXON TRENCH SECTION 778-1-18

Ţ

.

DRAWN BY: R.Z.	DATE : NOV. 78	SCALE: 1:50
PREP'D BY:	DATE :	DRAWING NUMBER:
APPR'D BY:	DATE:	SXON 78-0815-R01







BEARING N 175 PLUNGE 8°

PR - SALON THINSA SAXON COAL LIMITED PREPARED BY -4 DENISON MINES LIMITED 1978 SAXON TRENCH SECTION T78-2-5 DRAWN BY: R.Z. DATE : NOV. 78 SCALE: 1:50

DATE :

DATE:

DRAWING NUMBER: SXON 78-0815-R01

PREP'D BY:

APPR'D BY:





ROOF: CLAYSTONE - WEATHERED AND BROKEN, NO AVAILABLE STRIKE/DIP

HARD COAL - DULL

COAL - WEATHERED W/MANY PIECES OF DULL HARD COAL

CLAYSTONE HARD COAL - DULL CLAYSTONE - WEATHERED

HARD COAL - DULL, WEATHERED AND BROKEN

CLAYSTONE

COAL - WEATHERED FLOOR: CLAYSTONE 119/49 SW

AVE. STRIKE AND DIP OF SEAM 119/49° SW BEARING OF TRENCH NO38 PLUNGE OF TRENCH 5°

PR- SAXON -24(2)A. SAXON COAL LIMITED PREPARED BY: 4 DENISON MINES LIMITED 1978 SAXON TRENCH SECTION T78-2-7 DRAWN BY: R.Z. DATE : NOV. 78 SCALE : 1: 50 PREP'D BY: -DATE : DRAWING NUMBER: SXON 78-0815-R01 APPR'D BY: DATE:





BEARING OF TRENCH PLUNGE OF TRENCH N 001 6°

12 78 (2)A YON SAXON COAL FD PREPARED BY Ŧ

DENISON MINES LIMITED

1978 SAXON TRENCH SECTION

T78-2-12

DRAWN BY: R.Z.	DATE : NOV. 78	SCALE: 1:50
PREP D BY:	DATE :	DRAWING NUMBER:
APPR'D BY:	DATE:	SXON 78-0815-R01







ROOF: NOT IN CONTACT. STRIKE DIP TAKEN 2.50M FROM TOP OF TRENCH 123/56°5W

COAL - VEATNERED SILTY CLAYSTONE COAL - VEATNERED CLAYSTONE

COAL - WEATHERED

GLAYSTONE

COAL - WEATHERED

FLOOR: STRIKE/21 125/32 SU, TAKEN 1.60 m FROM END OF COAL

BEARING NOSS PLUNGE 5°



DRAWN BY: R.Z.	DATE : NOV. 78	SCALE: 1:50
PREP'D BY:	DATE :	DRAWING NUMBER:
APPR'D BY:	DATE:	SXON 78-0815-ROI



ROOF: NO ROOF AVAILABLE DUE TO OVERBURDEN THICKNESS. STRIKE AND DIP TAKEN 5.50 m FROM THE TOP OF TRENCH, 136/35° 54.

COAL - WEATHERED (80%) AND MIXED WATH SOME TALUS (20%)

COAL - WEATHERED WITH OLL PIECES OF HARD COAL

OVERSURDEN - SOME LARGE SANDSTONE BOULDERS WITH VERY LITTLE CER. CONSIDERED TO DE COAL (FROM DRILL HOLE CORRELATION CHARTS)

COAL - WEATHERED WITH OCC. PIECES OF HARD COAL

FLOOR: NO FLOOR AVAILABLE, STRIKE AND DIP TAKEN FROM SST. 40 m FROM BASE OF TRENCH

BEARING	N 350
PLUNGE	260

PR. SAXON 78 (2)A SAXON COAL LIMITED PREPARED BY: 4 DENISON MINES LIMITED

# 1978 SAXON TRENCH SECTION T78-4-1

DRAWN BY: R.Z.	DATE : NOV. 78	SCALE: 1:50
PREP'D BY:~	DATE :	DRAWING NUMBER:
APPR'D BY:	DATE:	SXON 78-0815-RO





ROOF: SILTY CLAYSTONE - PLANT FRAGMENTS, THINLY BEDDED, MIDDLE O.OIM SHEARED STRIKE/DIP TAKEN FROM OVERLYING SST. 126/46°SW COAL - WEATHERED (O.14) WITH ROCK DANDS (O.13) O.06 M THICK COAL - WEATHERED COAL - WEATHERED COAL - WEATHERED COAL - DULL AND SLIGHTLY WEATHERED COAL - WEATHERED WITH A FEV STALL PIELES HARD COAL HARD COAL COAL - WEATHERED MARD COAL COAL - WEATHERED COAL - DULL LUSTROUS COAL - WEATHERED COAL - WEATHERED

COAL - WEATHERED

FLOOR: NOT AVAILABLE. NEAREST ATTITUDE TAKEN 35m FROM DASE OF T78-4-3 125/35°5W

BEARING N345

PLUNGE 6°

PR- 50XON 78 (2)A SAXON COAL TED 11 PREPARED BY 9 DENISON MINES LIMITED 1978 SAXON TRENCH SECTION

DRANN BY: R.Z.	DATE : NOV. 78	SCALE: 1:50
FREP'D BY:	DATE :	DRAWING NUMBER:
APPR'D BY:	DATE:	SJION 78-0815-ROI



BEARING NO35, N209 PLUNGE

11°, 25°

PR-SALON 78 (2)A SAXON COAL LIMITED PREPARED 87 -4

DENISON MINES LIMITED

# 1978 SAXON TRENCH SECTION

778-4-5

DRAWN BY: R.Z.	DATE : NOV. 78	SCALE: 1:50
PREP'D BY:	DATE :	DRAWING NUMBER:
APPR'D BY:	DATE:	SXON 78-0815-R01





# 637

 DRAWN BY:
 R.Z.
 DATE :
 NOV. 78
 SCALE :
 1 : 50

 PREP'D BY :
 DATE :
 DRAWING NUMBER :
 DRAWING NUMBER :

 APPR'D BY :
 DATE :
 SXON 78-0815-R01



APPR'D BY:

PREP'D BY: DATE : DRAWING NUMBER:

DATE:

SXON 78-0815-R01





PLUNGE 23°

PR- SAXON 78(2)A. SAXON COAL FN PREPARED BY 4 DENISON MINES LIMITED

## 1978 SAXON TRENCH SECTION

DRAWN BY: R.Z.	DATE : NOV. 78	SCALE: 1:50
PREP'D BY:	DATE :	DRAWING NUMBER:
APPR'D BY:	DATE:	SXON 78-0815-R01



AVE. STRIKE AND DIP OF SEAM	133/42°SW, 137/48°SW
BEARING OF TRENCH	NO31, NO22
PLUNGE OF TRENCH	4,°24°

PR. JAXON 78 (2)A. SAXON COAL LIMITED PREPARED BY: 4

DENISON MINES LIMITED

## 1978 SAXON TRENCH SECTION

778-4-14

DRAWN BY: R.Z.	DATE : NOV 78	SCALE : 1: 50
PREP'D BY:	DATE :	DRAWING NUMBER:
APPR'D BY:	DATE:	SXON 78-0815-R01



BEARING NO36 PLUNGE 2°



DENISON MINES LIMITED

# 1978 SAXON TRENCH SECTION

DRANN BY: R.Z.	DATE : NOV. 78	SCALE: 1:50
PREP'D BY:	DATE :	DRAWING NUMBER:
APPR'D BY:	DATE:	SXON 78-0815-R01
	L'ANTE:	



.

. .





# 1978 SAXON TRENCH SECTION

DRAWN BY: R.Z.	DATE : NOV. 78	SCALE: 1:50
REP'D BY:	DATE :	DRAWING NUMBER:
APPR'D BY:	DATE:	SXON 78-0815-ROI





٩

#### BEARING NO19, N201 PLUNGE 6°, 14°



 DRAWN BY:
 R.Z.
 DATE :
 NOV. 78
 SCALE :
 1 : 50

 PREP'D BY:
 DATE :
 DEAWING NUMBER :
 DEAWING NUMBER :
 SXON 78-0815-R01

1978 SAXON TRENCH SECTION 7 78-4-23



AVE. STRIKE AND DIP OF SEAM 126/52"SW BEARING OF TRENCH PLUNGE OF TRENCH

N 214, NO20 6º. 1º

R-JAKON 78(2)A SAXON COAL LIMITED PREPARED BY: Ð

DENISON MINES LIMITED

# 1978 SAXON TRENCH SECTION T78-4-25

	DRAWN BY:
	PREP'D BY:
	APPR'D BY:

DRAWN BY: R.Z.	DATE : NOV. 78	SCALE: 1:50
PREP'D BY:	DATE :	DRAWING NUMBER:
APPR'D BY:	DATE:	SXON 78-0815-R01



BEARING	N020
PLUNGE	40

PR- SOXON Tr (2)A SAXON COAL LIMITED PREPARED BY: Ŧ

DENISON MINES LIMITED

1978 SAXON TRENCH SECTION T 78-4-26

DRAWN BY: R.Z.	DATE : NOV. 78	SCALE : 1: 50
PREP'D BY:	DATE :	DRAWING NUMBER:
APPE'D BY:	DATE:	SXON 78-0815-R01
	1	4. <u> </u>





AVE. STRIKE AND DIP OF SEAM 130/51° SW BEARING OF TRENCH N209, N034 PLUNGE OF TRENCH 1°, 1°

.

PR- SAXON 78(2)A SAXON COAL LIMITED PREPARED BY: Ŧ DENISON MINES LIMITED 1978 SAXON TRENCH SECTION T78-4-28 . SCALE: 1:50 DRAWN BY: R.Z DATE : NOV. 78

DATE :

DATE:

DRAWING NUMBER:

SXON 78-0815-R01

PREP'D BY:

APPR'D BY:



BEARING	N043
PLUNGE-	26°

PR- JAXON 78 (2)A SAXON COAL LIMITED PREPARED BY: 4 DENISON MINES LIMITED

# 1978 SAXON TRENCH SECTION

DRAWN BY: R.Z.	DATE : NOV. 78	SCALE: 1:50
PREP'D BY:	DATE :	DRAWING NUMBER:
APPR'D SY:	DATE	SXON 78-0815-101



AVE STRIKE AND DIP OF SEAM 121/36°SW BEARING OF TRENCH PLUNGE OF TRENCH

N 030 6°

PR-SAXON 78(2)A. SAXON COAL LIMITED PREPARED BY ÷ DENISON MINES LIMITED

1978 SAXON TRENCH SECTION T78-4-33



DRAWN BY: R.Z.	DATE : NOV. 78	SCALE: 1:50
PREP'D BY:	DATE :	DRAWING NUMBER:
APPR'D BY:	DATE:	SXON 78-0815-R01



ROOF: CLAYSTONE - BROKEN, ABUNDANT PLANT FRAGMENTS IN CONTACT, STRIKE AND DIP 114/38° SW COAL - WEATHERED CLAYSTONE- SLIGHTLY CARD.

COAL - NEATHERED COAL - BONEY, WEATHERED CLAYSTONE

COAL - WEATHERED

COAL - BONEY

COAL - WEATHERED

COAL - BONEY CLAYSTONE

COAL - WEATHERED

N 012

110

CLAYSTONE COAL - SHEARED FLOOR: CARB. CLAYSTONE - IN CONTACT, 120/29° SW

AVE. STRIKE AND DIP OF SEAM 117/34 SW BEARING OF TRENCH PLUNGE OF TRENCH

> PR- JAXON 78(2)A SAXON COAL LIMITED PREPARED BY: 4 DENISON MINES LIMITED 1978 SAXON TRENCH SECTION

DRAWN BY: R.Z.	DATE : NOV. 78	SCALE: 1:50
PREP'D BY:	DATE :	DRAWING NUMBER:
APPR'D BY:	DATE:	SXON 78-0815-R01





BEARING	N062
PLUNGE	15°

PR- JAYON 78 (2)A. SAXON COAL LIMITED PREPARED BY: 4 DENISON MINES LIMITED 1978 SAXON TRENCH SECTION T78-4-35

DRAWN SY: R.Z.	DATE : NOV. 78	SCALE: 1:50
PREP'D BY:	DATE	DRAWING NUMBER:
APPE'D BY:	DATE	SXON 78-0815-ROI






SD7704 0 SD7100 • SD 7619

**x** 

and the second descent second descent second and the second descent second and the second descent second descend and the second des



•

<sup>0</sup>SD7809











SD 7806 SD 7712 \_\_\_\_\_ ----35 |.49 |.84 27 0 186 1.86

LEGEND SANDSTONE SILTSTONE THICKNESS OF MIN. SECTION IN METRES MINING -----SILTY CLAYSTONE CARBONACEOUS CLAYSTONE ROCK COAL TOTAL \_ \_ ¥ \_ \_ \_ CLAYSTONE MISSING p PLANT FOSSILS COAL & ROCK BENTONITE COAL BRIGHT BRIGHT BANDED PR- SAXON TY (2)A. 6229 SAXON COAL LIMITED DULL & BRIGHT - Mula 2 2 Mar 76,77,78 Aug. 4.67 (27) 4.20 Dull BANDED76,77 Aug. 4.67 (27) 4.20 <math>4.33 76,77 Aug. 4.74 (13) 4.33Sheared Sheared DENISON MINES LIMITED PULVERIZED SAXON EAST BONEY / STONEY SEAM 1 MINING SECTION CORRELATION DRAWN BY:E. lothDATE:SCALE:1:50PREP'D BY:DATE:DRAWING NUMBER:APPR'D BY:DATE:SXON 77-0758-ROA

# SD7809 🖸 SD 7619

SD7703 the second se

> .60 6 14 6 74



 $\overline{}$ 

<u>34</u> 2.43 2.77

2.06 2.44 4.50







- DRAWN BY:E. lothDATE:Nov78SCALE:1:50PREP'D BY:DATE:DRAWING NUMBER:APPR'D BY:DATE:SXON 77 -0758 R04



![](_page_77_Figure_0.jpeg)

.

<sup>O</sup>SD7809 Ó SD 7619

-

\$*D*7703 \_\_\_\_\_ 27 35/ 378

SD 7619 SD7704 

.78 2.01 2.7**9** .82 2.32 3.14

- c --- c ---

45 3./3 3.58

![](_page_78_Figure_7.jpeg)

![](_page_78_Figure_8.jpeg)

![](_page_78_Figure_9.jpeg)

![](_page_78_Figure_10.jpeg)

![](_page_78_Figure_11.jpeg)

![](_page_79_Figure_0.jpeg)

![](_page_79_Figure_5.jpeg)

![](_page_79_Figure_9.jpeg)

![](_page_80_Figure_0.jpeg)

σ 0.0.0 0 0 ö, . 0

0

G

-5

C. 9.0 . . . - 10° . ō 30 . 0 6 - - a -- 10° 40 15 50 60 .70 80 90

-100

Ċ, :0 ۰. . o jo.

ं

0

•

![](_page_80_Figure_10.jpeg)

![](_page_81_Figure_0.jpeg)

![](_page_82_Figure_0.jpeg)

![](_page_83_Figure_0.jpeg)

.

^ 35°

500

110

120

- 30° 1 500

0.0 0.00

![](_page_83_Figure_4.jpeg)

1

ROCK COAL 4 4 0.02 0.13 0.19 7.46 SEAM #4 . . . . , <sup>r</sup>

![](_page_83_Figure_7.jpeg)

2 -400 / 30° / 50° -410 ', • . 450 420 550 600 430 55 440 55 470 480 500 5014 T.D đ PR-SAXON -28(Z) + ٩. DESCRIPTION ΒY DAT E No. REVISIONS SAXON COAL LIMITED DENISON MINES LIMITED A S SAXON DRILL LOG SD 7805 ٠.

PREP'D BY: DATE APPR'D BY: DATE: .

DRAWN BY:

SCALE : / 200

DRAWING NUMBER:

SXON 78 - 0820-ROI

1:50

DATE : DEC 1978

![](_page_84_Figure_0.jpeg)

.

, ,

<u>a</u>y

![](_page_85_Figure_0.jpeg)

![](_page_86_Figure_0.jpeg)

. . . .

•

. . . .

![](_page_86_Figure_10.jpeg)

110\_

35

- 30

![](_page_86_Figure_12.jpeg)

![](_page_87_Figure_0.jpeg)

### SEAM DETAIL 1:50

![](_page_88_Figure_5.jpeg)

•

![](_page_88_Figure_6.jpeg)

![](_page_88_Figure_8.jpeg)

	REVISIONS SAXON COAL LIMITED			
		N MINES LIM	ITED 💆	
	SAXON DRILL LOG			
		SR 1378		
	DRAWN BY: R.C.	DATE : DEC '78	SCALE :1:50, 1:200	
	PREP'D BY:	DATE :	DRAWING NUMBER:	
	APPR'D BY:	DATE:	SXON 78-0821-R01	

![](_page_89_Figure_0.jpeg)

· ·	PR-3	AXON 78	(2)A	<u> </u>
	No. DES	CRIPTION	BY	DATE
		REVISIO	NS	
	SAX	ON COAL LI	MITED	
		N MINES LI	NITED	<b>3</b> (
	SAX	ON DRILL	LOG	
		SR 1478		
	DRAWN BY: R.C.	DATE : DEC '78	SCALE 1:50	,1:200
	PREP'D BY	DATE :	DRAWING	NUMBER:
	APPR'D BY:	DATE:	PAUN 78-1	VOZITKUL

![](_page_90_Figure_0.jpeg)

n maanan ka sadada da sada

![](_page_91_Figure_0.jpeg)

![](_page_92_Figure_0.jpeg)

![](_page_93_Figure_0.jpeg)

![](_page_94_Figure_0.jpeg)

![](_page_95_Picture_0.jpeg)

![](_page_96_Figure_0.jpeg)

![](_page_97_Figure_0.jpeg)

·	115			
	•			
•			•	
		No. DE	SCRIPTION REVISIO	BY DATE N S
		SA	XON COAL L	IMITED
		DENISC	N MINES LI	MITED 😼
• •		SA)	KON DRILI SR 0578	LOG
	629	DRÁWN BY: <b>R.C.</b> FREP'D BY: APPR'D BY:	DATE : DEC '78 DATE : DATE :	SCALE : 1:50 , 1:200 DRAWING NUMBER SXON 78-0821-RC
		•		y

![](_page_98_Figure_0.jpeg)

![](_page_99_Figure_0.jpeg)

![](_page_100_Figure_0.jpeg)

SEAM DETAIL 1:50
TRUE THICKNESS
1:200
TRUE THICKNE

4

こう うちをおする ちょう

÷

![](_page_101_Figure_1.jpeg)

. · ·			
·			:
			PR- SAXON -18(2)A
			No. DESCRIPTION BY DATE REVISIONS
			SAXON COAL LIMITED
			DENISON MINES LIMITED
	×		SAXON DRILL LOG SR 0178
		629	DRAWN BY: R. C.         DATE : DEC '78         SCALE : 1:50, 1:200           PREP'D BY:         DATE :         DRAWING NUMBER :           APPR'D BY:         DATE :         SXON 78-0821-R01

## L065 00629

### pr-saxon 78a

![](_page_103_Figure_0.jpeg)

![](_page_104_Figure_0.jpeg)

![](_page_105_Figure_0.jpeg)

![](_page_106_Figure_0.jpeg)

![](_page_107_Figure_0.jpeg)








"-" ·









r una ar anti----- · ·







----

. .....

-- -- ----



- --

- --- -

-----







.

تو - .



-----



------















- -----

- - - -

- -- -- -





- -- -- --

,


























Mill an and Millian



---- \_





······





.

-----













- market and the second s













## SAXON COAL LIMITED (1978)

VOLUME II - PART A

Appendix III - Descriptive Logs SD 7801 - SD 7804





