TO THE CHIEF GEOLOGIST:

Supposed Oil Seepage
Hd. Mayurra. Geltwood Beach

The area was inspected on 8/6/60 and 9/6/60 in company with Mr. R. Twist of Geosurveys, Mr. D. Schultz of Rendelsham and a Mr. Legget.

Location:

The floating oil was reported to have been observed some sixty feet offshore (high water) from a point ½ mile south of the Mayurra-Rivoli Bay hundred boundary, or, more precisely 150 yards south of Pether's rocks (local name).

General:

The alleged seepage has recently been observed by several residents covering an area of up to half an acre with a dense black film which did not appear to move greatly during the period of observation.

No indications of the floating oil were seen on either of the visits made, but evidence of its presence was found along the beach for a distance of 200-250 yards south of Pether's Rocks in the form of numerous blobs of dark brown greasy material occurring along the high tide mark on the beach. These had been deposited within the last two weeks (and probably quite recently), as extremely rough seas and high tides at the time of the Pacific tidal wave activity would have removed any pre-existing deposits of this nature. Some blobs which had apparently been inspissated were found further up on the beach, presumably driven there by storms.

Samples of both types of material were taken and tested under a Fluoroscope, but no fluorescence could be observed. An attempt was made to burn the material, and despite the presence of water ~~oil~~ in the samples, they burned fairly readily with a sputtering flame strongly reminescent of pitch.

Several local residents were interviewed with regard to wrecks in the immediate vicinity of the alleged seep, and the closest reported wreck is that of the sailing ship "Geltwood" some three miles further south along Geltwood Beach. Other wrecks have occurred but all have been at least 5 miles from the seep. The volume of oil involved and the shallow depth of water tend to reduce the likelihood of a sunken ship being the source of oil, but this could only be accurately determined by submarine investigation.

The alternative of the material being crude oil which has floated ashore from tankers or oil burners, is considerably reduced by the constant location of reported appearances. The distribution of seaweed, driftwood and shells along Geltwood Beach is fairly uniform, and it would seem indeed fortuitous if floating oil happened to arrive at the same location on each occasion.

Some difficulty may be encountered in future investigation as the track across the sandhills into Geltwood Beach is fairly rough and may become almost impassable in summer. In addition, the beach itself is reported to be dangerous to small craft at most times, and as the intermittent occurrence of the floating oil is

mainly during periods of rough sea, examination of the sea floor at such times is likely to prove hazardous.

Conclusions:

The present evidence strongly favours the existence of a genuine oil seep, and further observation with a view to collecting some of the floating material is recommended.

G.J. Crawford,
Geologist
HYDROLOGY

GJC:PAL
17/6/60

TO THE SENIOR GEOLOGIST, URANIUM & FUEL.

Oil Occurrence - South East.

Mr. E.G. Tims.

Following a letter to the Premier from Mr. E.G. Tims regarding a supposed oil occurrence at Salt Creek in the South East, he and his sister Mrs. R. Gall have been contacted.

Mrs. Gall was visited at her residence, 133, North Parade, Underdale, and related the following information. Mrs. Gall is 86 years of age, and she and her late husband once owned a property at Salt Creek. The oily material, found lying on the surface and in mud cracks, is golden brown in colour and greasy, and can be burnt on a camp fire. An American company brought out expensive drilling equipment 54-55 years ago and after drilling left suddenly and plugged the hole. The drilling plant and their silver cutlery was left behind. Mr. Gall had given £500 or £5,000 to this company which is supposed to have left because Australia was buying petroleum from the United States. The location of the drilling equipment or remains is near Salt Creek shack behind a dry lagoon about two miles east of the Coorong road. In 1939 an American named Hautpick (spelling not sure) spent some time at Salt Creek and in trying to raise money to release a drilling plant held by the Customs. He was unsuccessful in raising the money and shot himself on North Terrace. Mrs. Gall has a convictic which she claims to share with people in the "South East" that oil can definitely be found at Salt Creek.

Bulletin No. 22 entitled "The Search for Oil in South Australia" by L. Keith Ward refers to seven bores near Salt Creek.

The bore which Mrs. Gall mentions as having been sunk 54-55 years ago could quite possibly be the one mentioned by Ward as drilled in 1892. This bore passed through 365 feet of Tertiary beds and continued to 922 feet bottoming in Precambrian marble. The bore was sunk by the Salt Creek Petroleum Company in an area where masses of coorongite were found as long ago as 1852. In 1922 the Coorong Oil Company sunk a bore to 924 feet which bottomed in Precambrian slate. In 1924 three holes were drilled to 650 feet, 656 f and 710 feet respectively. One entered phyllite at about 190 feet, aft traversing Tertiary sediments. The other two appear to have been abandoned while still in Tertiary sediments. A thin film of oil is reported to have been seen on the water coming from 352 feet to 385 feet in the deepest of the three holes.

In 1932 and 1933 two boreholes were drilled by Enterprise Oil Prospecting Company to depths of 606 feet and 450 feet. Both entered slate and schist bedrock at depths of 518 feet and 400 feet respectively.

Conclusion.

The golden brown material to which Mrs. Gall makes reference is probably the coorongite of algal origin and is a superficial deposit correlated to natural petroleum.

The bore sunk in 1892 could be the one referred to by Mrs. Gall as the age is in closer agreement to her brother's estimate of 60 to 70 years.

The considerable oil search activity in the Salt Creek area has been based entirely on the presence of superficial coorongite. Precambrian rocks are found at shallow depth below the Tertiary sedimentary cover and no further.investigation is considered warranted.

13/7/59
ERH:IDP

GEOLOGICAL ASSISTANT.
URANIUM & FUEL.

TO THE CHIEF GEOLOGIST:

Mr. Hillwood's report on his interview with Mrs. Gall and Mr. E.G. Timms is forwarded. I concur with his views and recommendation that no further action is required.

WJ:IDP
13/7/59

SENIOR GEOLOGIST.
URANIUM & FUELS SECTION.

One Copy

D.M. 1464 5E

TO THE CHIEF GEOLOGIST:

Supposed occurrence of oil seepage

Geltwood Beach

Geltwood Beach was inspected on 10/2/59 with Mr. M.C. Schinkel of Millicent and a Mr. Schulz of Rendelsham.

According to both gentlemen the seepage has been sighted at intervals along a mile of beach, commencing approximately ½ mile to 1 mile south of the boundary between the Hundreds of Mayurra and Rivoli Bay.

The coastline here consists of sandy beach alternating with stretches of low cliff carved in Recent to Pleistocene aeolianite and backed by active recent dunes. At places wave cut benches have been eroded in the aeolianite and low stacks protrude above high water mark.

No absolutely convincing seepage was observed at the time of the visit. A persistent brown staining was observed at one spot approximately 50 feet offshore. This did not move during the period of 1 hour for which it was observed. A number of blobs of black soft grease like material with a greasy odour were picked up on the beach, and further inland, where they had been driven, presumably by winter storms.

The brown staining could not be explained by reference to seaweed as this was present all along the coast, nor does it seem likely that it was oily residues drifted in from the open ocean, as otherwise it would have shifted during the period of observation.

While not a confirmation of the presence of a genuine oil seep, the present observation, taken in conjunction with earlier reports, particularly that of J. O'Mara of the Frome Broken Hill geological exploratory team, does indicate the need for further careful investigation.

The alleged seep is reputed to be more active in rough weather and is intermittent, and it is suggested that the most effective way of checking on the authenticity of the seep would be for a competent observer to camp on the beach for one or two weeks in rough weather. This could be better left for the oil exploration licence holder to do as the presence of an oil seep would vitally affect exploration programmes in the area.

In the meantime it has been arranged that any member of this section travelling to the South-East will visit the occurrence as opportunity offers.

My present opinion is that the evidence favours a genuine seep occurring in the sea off Geltwood Beach.

W. Johnson
Senior Geologist
FUEL & URANIUM SECTION

WJ:AGK
17/2/59

Copy for General Exploration Co of Aust. c/o Geosurveys

EAB 20.4.59

Telephone:
UX 1662

Oil Geneva

SOUTH AUSTRALIA

Quote please
281/58

DEPARTMENT OF MINES

RDA 1033/58
A 1591

RESEARCH AND DEVELOPMENT BRANCH

Flemington Street, Parkside, S.A.

20th October, 1958.

Chief Geologist,
Government Offices,
Rundle Street,
ADELAIDE.

The Sample marked A 1916/58 has been submitted to examination. It consists of black semisolids probably of mineral origin. There is some evidence to suggest that the material is a refinery residual which is commercially used as a heavy fuel oil.

Locality: Grease sample from beach at high tide level, Geltwood Beach, 12 miles S. of Rendelsham. Hundred: Mayurra.

Source: W. Johnson, Mines Department (Ex: M.C. Schinckel, Emily Street, Millicent)

Thomas R. Frost.

CHIEF ANALYST.

DEPARTMENT OF MINES, ADELAIDE

Office Use Only
Sample No. A/9161
Reference
19

Application for Examination of Specimens or Samples

DESCRIPTION AND MARK Grease sample Gellwood Beach

LOCATION: County Distance, direction and name of nearest
Hundred Mayurra town or station 12 m S of Kendelabaum
Section No. — No. of Claim or Lease —

Pastoral Lease (if out of Hundreds)

METHOD OF COLLECTION: *Representative or picked material.

*Taken from surface, open working, prospecting shaft, underground working, borehole, etc. Beach at high tide level

ESTIMATED SIZE OF OCCURRENCE

HAS THE MATERIAL BEEN PREVIOUSLY EXAMINED? Yes? Ref RDA 641/56

NAMES OF KNOWN PURCHASERS

INFORMATION REQUIRED Determine if crude petroleum derivative or a refined product.

NAME M.C. Schinckel

ADDRESS Emily St Millicent

Please forward to:—
The Director,
Department of Mines,
31 *Flinders Street,*
ADELAIDE, S.A.

Signed W Johnson

Date 3.10.58

* Strike out whichever does not apply.

OFFICE USE ONLY

Approved for submission to:—

Assay Department for

Geological Laboratory for

Other Departments

Remarks

Entered P/side
1033

Director of Mines.

——/——/19

2M—3.55 6161

CLASSIFICATION UNCLASSIFIED

DEPARTMENT OF MINES
SOUTH AUSTRALIA

BRANCH GEOLOGICAL SURVEY

G.S. 29
REPORT No. 37/43

SUBJECT:— INSPECTION OF ALLEGED OIL SEEPAGE AREA AT ROBE, SOUTH AUSTRALIA

D.M. 214/1954. SECURITY FILE

by

K. R. MILES

SENIOR GEOLOGIST

ENGINEERING GEOLOGY & MINERAL RESOURCES SECTION

COPY No. 2 OF 7 COPIES

5M—2.54 8513

Copy No. 2 of 7 Copies.

D.M. 214/54.

UNCLASSIFIED.

DEPARTMENT OF MINES

South Australia

INSPECTION OF ALLEGED OIL SEEPAGE AREA AT ROBE, SOUTH AUSTRALIA.

I N T R O D U C T I O N

Following representations from a Mr. W. Featherstone, the writer arranged to inspect, in that gentleman's company, a section of the coastline near Robe, where a seepage of oil was said to have been seen. Mr. Featherstone, who is a very old gentleman (86 years) remembers that when a small school boy living at Robe, he was in the habit of playing along the sea front east of the main strip of beach facing the harbour. On occasions, when the sea was calm and the tide high he had seen an iridescent film floating out to sea in a narrow strip emanating from near the shore. His father had told him that this was an oil seepage.

He had left Robe as a lad but he reports revisiting the town for its Centenary celebrations, about 7 years ago, when he again saw "the colours on the water". Although he appears somewhat hazy about the details of this visit, he recollects that the water was rather rough.

P R E S E N T I N S P E C T I O N.

Mr. Featherstone arrived at Robe on the afternoon of 8th March, 1954 and the writer joined him on Wednesday, 10th March, at about 10.30 a.m. During the previous day and early on Wednesday morning, Mr. Featherstone had made repeated visits to the headland overlooking his recollected site of the "oil seepage" but could find no trace of the "colours".

The writer accompanied him late in the morning of the 10th March, and searched along the headland over a distance of about 300 yards but could find no trace of any "colours" or seepage. The sea was particularly calm at the time and conditions were "ideal", according to Mr. Featherstone, for sighting the seepage, if it occurred. Although the cliffs, which consist of current bedded aeolianite (Pleistocene) standing about 15 ft. above the beach, have been undermined and have collapsed so that their present configuration has probably changed somewhat during the last 70 - 80 years, Mr. Featherstone seemed reasonably confident that the location of the seepage of colours of his boyhood days was indeed within the area visited by us. This area is the strip of coast line immediately north of the recreation ground in the Robe township.

C O N C L U S I O N S

Whilst not doubting the sincerity of Mr. Featherstone's motives in reporting this seepage, the writer is convinced that if there had been, as claimed, a continuous seepage of iridescent film on the water at the locality indicated, or even an intermittent significant seepage over the intervening years since his boyhood, the place is so close to habitations of the township that its occurrence would have been common knowledge and it would have been reported long ago. There are a number of possible explanations of the occasional presence of an iridescence upon the sea water. There is nothing to indicate that an iridescence such as reported was produced by mineral oil seeping from a subterranean fracture and emerging into the sea in this locality.

It is recommended that no further action be taken.

(K.R. Miles)

SENIOR GEOLOGIST

ENGINEERING GEOLOGY & MINERAL RESOURCES SECTION

KRM:CO

11th March, 1954.

D.M. 840 57

TO THE DEPUTY DIRECTOR OF MINES:

Supposed oil occurrences Kangaroo Island,

reported by J.W.S. Mitchell

Mr. Hiern's report on his inspection of the supposed oil occurrences on Kangaroo Island is forwarded. I concur in his conclusions and it is considered that no further action is necessary other than forwarding the report to the Minister of Mines for information.

W. Johnson
SENIOR GEOLOGIST
FUEL & URANIUM SECTION

WJ:AGK
20/2/58

Section file.

D-5-5.

DEPARTMENT OF MINES

SOUTH AUSTRALIA

Report on

INSPECTION OF SUPPOSED OIL OCCURRENCE

KANGAROO ISLAND

(J.H.H. Mitchell)

by

M.N. Hiern
Geologist

URANIUM & FUEL SECTION
GEOLOGICAL SURVEY

CONTENTS

MAP REFERENCE

Plan No.	Title	Scale
S 1715	Reputed Oil Occurrences - Kangaroo Island	Approx. 8 miles to 1".

Rept. Bk. No. 46/47
G.S. No. 909

D.M. 840/57

20th February, 1958.

Section Report No. 7.

D.M. 840/57

INSPECTION OF SUPPOSED OIL OCCURRENCES KANGAROO ISLAND

(J.W.S. Mitchell)

1. ABSTRACT

Mr. J.W.S. Mitchell of Henley Beach has volunteered information about seepages of asphaltic material known to his ancestors. Some asphaltic material was found, but this could not have originated from the outcropping rocks. Deposition by the tide from a distant source is postulated.

2. INTRODUCTION

In an interview with the Director of Mines, Mr. J.W.S. Mitchell of Henley Beach reported that his ancestors, who were whalers on Kangaroo Island, used to obtain supplies of an asphaltic material, for caulking boats, from a natural seepage near False Cape. This cape is shown on plans to be on the south coast of the island towards the eastern end, but Mr. Mitchell seemed to think that the False Cape to which he referred was situated along Antechamber Bay. The asphaltic material was reported to be issuing from the sand at low tide but the exact location was kept a family secret.

The coastline along Antechamber Bay and at False Cape was inspected by the writer in November, 1957.

3. ACKNOWLEDGEMENTS

In a search such as this, local knowledge of the area concerned is a valuable aid. Appreciation is expressed to many local residents who readily gave information and in particular to Mr. Bert Wilson, of Grassy Flat, who acted as guide on the visit to False Cape.

4. PREVIOUS REPORTS

References to the occurrence of asphaltic and bituminous material on the coastline of Kangaroo Island are found in the following publications.

Mining Review 32 p. 40.

Mining Review 35 p. 64

Mining Review 51 p. 62.

Bulletin 2 of the Geological Survey of South Australia pp. 13-15.

Bulletin 22 of the Geological Survey of South Australia p. 11.

5. GENERAL GEOLOGY

The reader is referred to the Kingscote 4 mile geological sheet of the Geological Survey of South Australia.

In the eastern portion of the island, where the inspections were made, the basement rocks consist of quartzites and schistose slates of the Kanmantoo Group (lower Palaeozoic) and strike N.E. and dip at moderate to steep angles to the S.E. Inland these rocks are almost entirely covered by Pleistocene consolidated dune limestones and Recent sands but are well exposed along portions of the coast. A lower Palaeozoic granite outcrops in the vicinity of Cape Willoughby.

6. THE SUPPOSED OIL OCCURRENCES

6.1. Antechamber Bay

The bay itself is made up of Recent beach sands and inland dunes. Rock outcrops occur only at the northern and southern ends and comprise steeply dipping beds of dark compact quartzite and flaggy quartzite which are traversed by numerous small quartz and pegmatite veins.

The only trace of petroliferous material was a small patch (about the size of 3/-) of hard black material found adhering to a rounded boulder lying on the beach to the west of Cape

St. Albans. The boulder was situated between low and high water mark.

No evidence of a natural seepage of the asphaltic material was seen; in fact the nature of the rocks exposed suggested an extraneous origin.

6.2. South Coast

Many local residents of Pennesheu spoke of an oil seepage at the base of the Coastal cliffs in Section 330, Hd. Dudley. This is described by Dr. Ward on page 15 of Bulletin 2. His comments were as follows

" ..... is situated at a distance of a mile and a half to the westward of the mouth of the Hog Bay River. (Wilson River) At this place the bed rock outcropping on the shore is an exceedingly dense dark coloured quartzite and above this foundation are 70' - 100' of calcareous sand in a state of semi-coherent aggregation. A bore has been drilled through these beds of sand, but no information other than that afforded by the cliff sections in the vicinity has been obtained. It is claimed now that the bore was a failure because it stopped at bedrock. The texture of the latter is by no means such that it might be regarded as a possible reservoir of petroleum. The outcrop on the shore has long been wave beaten and the joint planes have weathered superficially into defined crevices. It seems reasonable to infer that the idea of a supposed asphaltic spring arose from the discovery of a stranded mass of asphaltum, which under the influence of the hot sun at low water become plastic and gradually adapted itself to the form of the crevice. Such a mass might then appear to be "oozing out of the rock" instead of into it, as would really be the case."

This occurrence was visited and the views of the writer, with one small variation, are in agreement with those of Dr. Ward.

The inspection was made on a warm to hot November day in mid afternoon, but the asphaltum was of the consistency of solidified tar - difficulty was encountered in scraping off a sample. Other writers have expressed the view that the asphaltum, when fresh from the sea, contains volatiles and would thus be less viscous. It is possible then, that on the retreat of the sea which deposited the asphaltum, it ran down the rock to its present form and on exposure to the sun the volatiles were driven out and the asphaltum hardened.

A sketch from a colour transparency of the occurrence is shown below. The transparency itself is filed in the Records Section

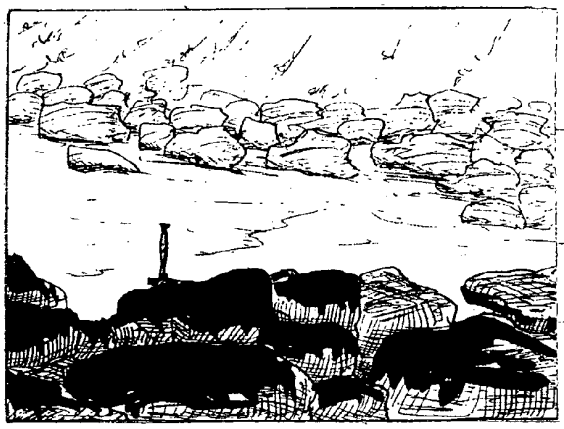
Sketch from colour transparency
by C. von der Borch.

False Cape was also inspected. The only means of reaching this is by an old track (now overgrown and found by Mr. Wilson after some difficulty) to the coast at a point about a mile west of False Cape and thence by foot along the beach. This beach

is backed by high dunes and showed no sign of asphaltic material above or below high water mark. Mr. Wilson recalled that about 20 years ago a quantity of this material (about ½ a four gallon drum) was found on the beach.

In a small cove, immediately west of False Cape, the beach contains a number of rounded boulders of Kamaatoo Group quartzite. On these at and below normal high water mark, a thin black scale, which in places was peeling off, was observed.

A sketch of this from a colour transparency is shown below.



Sketch from colour transparency
by C. von der Borch.

False Cape itself is made up of steeply dipping dark coloured compact quartzites which are cut by thin quartz stringers. These rocks are most unfavourable for the occurrence of petroleum.

7. CONCLUSIONS

The writer found no evidence to contradict the generally accepted theory that the asphaltum occurring on Kangaroo Island has been deposited by the sea. The variety of rock types, ranging from Pre-Cambrian to Recent on which this material is found in South Australia and the position of the occurrences between high and low water mark are irrefutable evidence for a tidal means of deposition from a distant source.

In this instance, the rocks are dense quartzites of the unfossiliferous Kanmantoo Group which have undergone some metamorphism and have been intruded by quartz veins.

Such geological conditions are most unfavourable for the accumulation of oil.

M.N. Hiern
GEOLOGIST

MNH:AGK
20/2/58

S.A. DEPARTMENT OF MINES

LOCALITY MAP

REPORTED OIL OCCURRENCES

KANGAROO ISLAND

Approved

Director

Drn.

Tcd. R.W.

Ckd. R.R.

Exd.

Scale Approx 5 to 1 M

5 1/7/15

Date 14.2.58

To accompany report by M.N. Higgs

SCALE

2 1 0 2 4 6 8 10 MILES

Main roads only are shown.

LOCALITY PLAN

Yorke Peninsula

ADELAIDE

GULF ST. VINCENT

ALTHORPE Is.

INVESTIGATOR STRAIT

KINGSCOTE

KANGAROO Is.

SOUTHERN OCEAN

0 10 20 30 40 50 MILES

CAPE JERVIS

KINGSCOTE

PENNESHAW

CAPE BORDA

ANTECHAMBER BAY

CAPE ST. ALBANS

WILLSON RIVER

FALSE CAPE

Sec. 330 Hd. BUDLEY

ROCKY RIVER

Deptl. Sample No. P. 517/57,
P. 518/57 & P. 519/57.

PETROLOGICAL REPORT

Description of Sample(s) Bituminous Matter.

Marks or Nos. K.I. 6, K.I. 13, K.I. 15.

Locality etc. K.I.6 - Section 94, Hundred of Menzies;
K.I. 13, Section 330 - Hundred of Dudley;
K.I. 15 - Section 432, Hundred of Dudley.

Submitted by M.N. Hiern, Uranium & Fuel Section.

P. 517/57 - K.I. 6
The pitch shows inclusions of shells. It was probably washed ashore (from a ship?) in fairly soft condition and in rolling it picked up shell debris etc. After being lodged on exposed rocks of the shore, it melted, flowed and hardened.

P. 518/57 - K.I. 13
This may represent flows of melted and re-hardened pitch.

P. 519/57 - K.I. 15
There is no evidence of bituminous matter. The dark film on the rock consists probably of algol remains or seaweed.

Examined by : H. W. Fander.

A. W. Whittle,
CHIEF MINERALOGIST AND
PETROLOGIST.

7/1/58.

Here samples submitted to
E. Bousfield for chemical analysis
Feb. 1958

Deptl. Sample No. P. 516/57.

.....

.....

PETROLOGICAL REPORT

Description of Sample(s) Rock.

Marks or Nos. K.I. 16.

Locality etc. Section 330; Hundred of Dudley.

Submitted by M.N. Hiern, Uranium & Fuel Section.

This rock is a quartzite (sensu stricto) whose principal constituents are quartz, biotite, felspar and accessory apatite. The quartz occurs as large angular grains showing "strain-shadows" and as smaller grains with mosaic-texture in the matrix. Some wuartz, particularly the larger grains, shows sieve-structure and secondary growth. The brown biotite occurs as small stubby laths in rough lineation. Sodic plagioclase occurs as ill-defined anhedral patches, some showing sieve-structure. There are also occasional patches of graphically-intergrown quartz and felspar. Weathering of biotite and felspar would render the rock permeable, but the main body of the rock is very fresh and compact.

Examined by : H. W. Fander.

A. W. Whittle,
CHIEF MINERALOGIST AND
PETROLOGIST.

21/1/58.

DEPARTMENT OF MINES, ADELAIDE

Office Use Only
Sample No. PS16/57
Reference
19

Application for Examination of Specimens or Samples

DESCRIPTION AND MARK K1. 16.

LOCATION: County ____ Distance, direction and name of nearest
Hundred Dudley ____ town or station ____
Section No. 330. ____ No. of Claim or Lease ____

Pastoral Lease (if out of Hundreds) ____

METHOD OF COLLECTION: *Representative or ~~picked material.~~

*Taken from surface, open working, prospecting shaft, underground working, borehole, etc. ____

ESTIMATED SIZE OF OCCURRENCE ____

HAS THE MATERIAL BEEN PREVIOUSLY EXAMINED? ____

NAMES OF KNOWN PURCHASERS ____

INFORMATION REQUIRED Petrological description + evaluation of porosity.

NAME M. N. HIERN

ADDRESS URANIUM & FUEL SECTION.

Please forward to:—
The Director,
Department of Mines,
~~31 Flinders Street~~,
ADELAIDE, S.A.

Signed M N Hiern

Date 16-12-57.

PLEASE NOTE NEW ADDRESS
Government Offices (3rd Floor)
Cnr. Rundle and Pulteney Streets
ADELAIDE
Tel. W 0461

*Strike out whichever does not apply

OFFICE USE ONLY

Approved for submission to:—

Assay Department for ____

Geological Laboratory for ____

Other Departments ____

Remarks ____

Director of Mines.

____/____/19

3M—2.57 389

U. F. Sect.

Rept. Bk. 51/117
G.S. 1860
D.M. 1532/60
U&F. 68

DEPARTMENT OF MINES
SOUTH AUSTRALIA

BITUMEN OCCURRENCE - COULTA AREA

HUNDREDS OF KIANA & ULIPA.

INTRODUCTION:

Samples of bitumen were collected by Mr. C. W. Foster of Coulta along the coast at various places between Point Drummond and Mount Greenly a distance of approximately 12 miles. The main occurrence is in a small bay about 2½ miles south east of Point Drummond and adjacent to Section 60, Hundred of Kiana. Smaller quantities were observed on the coast west of Mount Greenly.

Mr. Foster reports that he has not observed any bitumen further north in Hall Bay or south of the entrance to Coffin Bay. Several areas where bitumen occurs along the coast were examined on 31/10/60.

The occurrence of bitumen near Mount Greenly is reported in Bulletin 22, page 26.

GENERAL GEOLOGY:

Archaean rocks outcrop prominantly along the coast in the vicinity of Point Drummond and near Mount Greenly and consist of coarse grained gneiss with numerous amphibolite dykes and quartz-felspar-tourmaline pegmatites. Massive white quartzite outcrops at Mount Greenly and the Frenchman several miles further south and also along the adjacent coast.

Overlying Archaean bedrock is aeolianite which is capped by dense travertine, and has a maximum thickness of 50-70 feet. Recent sand dunes, derived by erosion of the aeolianite, fringe the coast south of Point Drummond. These dunes are more than a mile wide in places and are gradually moving further inland.

There is no evidence of any marine sediments in this area either as outcrops along the coast or from borehole information.

BITUMEN OCCURRENCE:

The main occurrence is as small rounded fragments at high water level in several small bays south east of Point Drummond. The bitumen is mixed with seaweed, shells and sand and lies along the line of extreme high tide. No samples were observed beyond the tide range apart from several small specimens which were apparently thrown up by waves in rocky areas.

According to Mr. Foster the bitumen was washed ashore during a period of rough weather and high seas. Calmer weather and moderate high tides are reported to yield only small quantities. This was confirmed by examination of the previous high tide strand line where only a few small scattered fragments were found.

When freshly deposited the bitumen is in the form of soft plastic rounded fragments. On exposure to the sun they become flattened by partial melting and the more volatile portion soaks into the sand, leaving a black residue. Eventually all that remains visible is a light brown rounded patch in the sand. Beneath the surface the sand may be impregnated with bitumen to a depth of several inches, depending on the size of the original fragment.

Where the bitumen has been deposited on rock surfaces, it has melted and flowed, generally not more than a few inches.

CONCLUSIONS:

The bitumen occurring on the coast from Point Drummond to Mount Greenly has been deposited by the sea. It occurs only in the tidal zone along the strand line and cannot have been derived from the rocks outcropping locally. Shallow bedrock of Archaean age occurs in the area and probably extends some distance to the west beneath the sea. Although the restricted

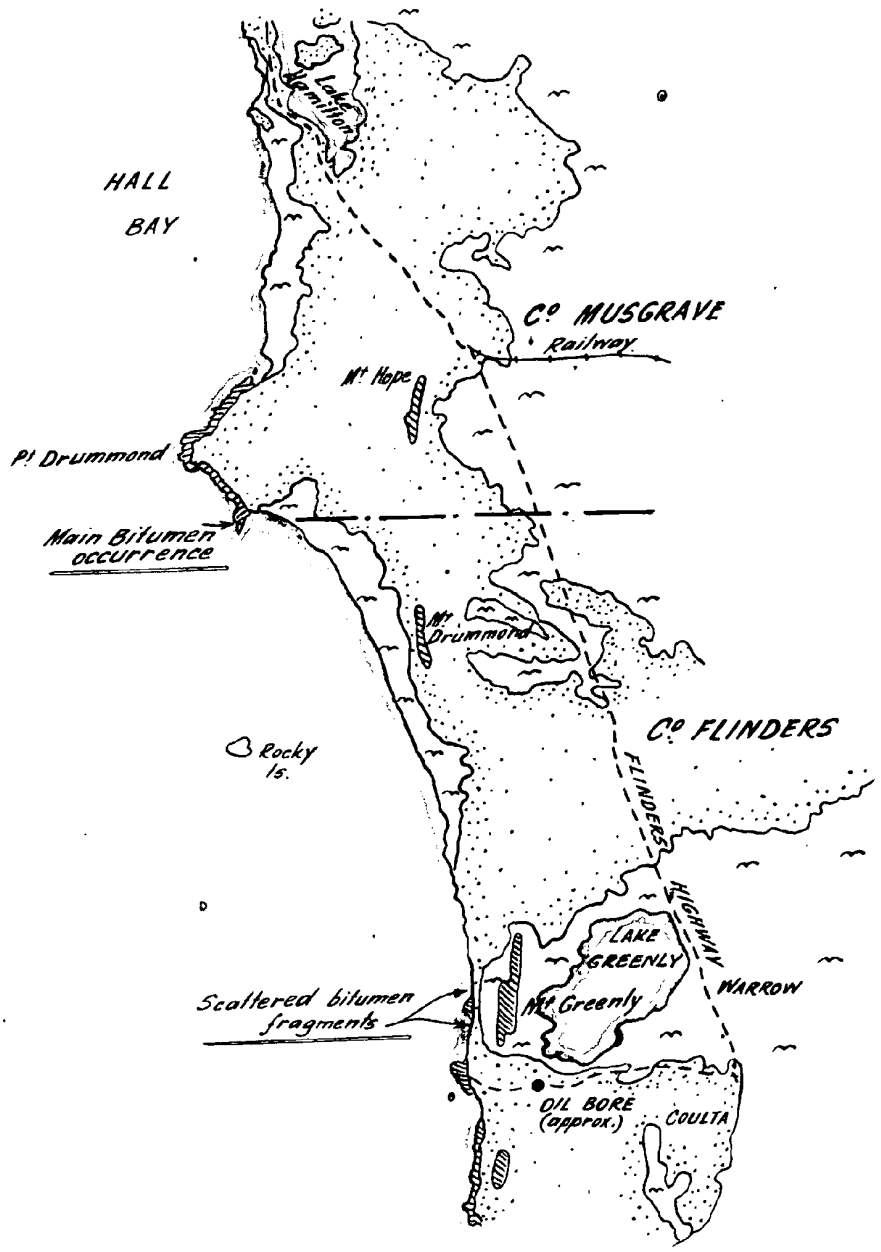
occurrence of the bitumen would seem to indicate a source nearby, its distribution would be dependent on ocean currents and it may have originated from some distant source.

R.C. Shepherd

R. C. SHEPHERD
GEOLOGIST

RCS:CERF
17/11/60

pp WG



RECENT
Alluvial sand, clay & gravel, coastal sand dunes. ----------

PLEISTOCENE
Calcareous aeolianite with travertine crust. ----------

ARCHAEAN
Augen gneiss, quartzite and amphibolite. ----------

To accompany report by R. G. Shepherd.

S.A. DEPARTMENT OF MINES

Approved / Director	Passed	Drn. / Tcd. / Ckd. / Exd.	BITUMEN OCCURRENCE COULTA AREA HDS KIANA & ULIPA	D.M. / Rcq.	Scale 4 Miles to 1 inch; S·2585; De + n; Date 17 11 60

TO THE CHIEF GEOLOGIST:

Inspection of reported Oil Occurrence,
Section 306, Hd. Adelaide.

At the request of Mr. A, Holland, an inspection of a bore was carried out at the home of Mr. A. Dalla Volle, Briar Road, Payneham.

The bore, 60' deep has been sunk from the bottom of a cement lined well, 9' below the surface. The bore is cased and the pump placed at a depth of 12'. The pump machinery has an abundance of lubricating oil and a considerable quantity of this oil is lying around the bore casing at the bottom of the well. The bore has penetrated Tertiary limestone.

Water is used for irrigating a market garden and is conducted along open channels through the garden. An oily film was observed on one of these channels after pumping had been in progress for ½ hour. No sample was taken during the inspection as Mr. Dalla Volle said that the film is sometimes much thicker. He was instructed on how to take a sample and asked to bring one into the Department when a better 'show' appears.

It is concluded that the most likely source of the oil film is from seepage of the excess lubricating oil around the casing into the bore. No further work is warranted other than an examination of the forthcoming sample from Mr. Dall Volle.

M.N. HIERN
GEOLOGIST

MNH:PAL
21/1/60

Office Copy

TO THE SENIOR GEOLOGIST:
URANIUM & FUEL SECTION:

Reported Oil Seepage at 340 Anzac Highway, Mornington, Mrs. B. H. Loveless.

A reported seepage of oil at the above residence was inspected on 10/6/59 following a direct telephone enquiry by Mrs. Loveless to Hon. Sir Lyell McEwin, Minister of Mines.

The "seepage" consists of several dark spots, none larger than 2" x 2", on the cement front verandah of the house. The spots appear oily and can be wiped off but reappear in a few days. Several spots were wiped to explore a small black spot from which the oily material was apparently seeping. The oily spots are confined to the cement front verandah and there is no suggestion of a groundwater seepage near the property.

The phenomenon of oily material seeping from concrete has no relation to natural petroleum or any connection to the soil below the cement. No explanation can be given by the author, although a cement manufacturer or building contractor if approached by Mrs. Loveless may offer a satisfactory explanation.

ERH:CERF
16/6/59

E. R. HILLWOOD
GEOLOGICAL ASSISTANT

TO THE CHIEF GEOLOGIST:

Reported Oil Seepage
Anzac Highway.

A report by Mr. Hillwood on a suspected oil seepage is forwarded for transmittal.

No further action is necessary.

MNH:CERF
16/6/59

M. N. HIERN
GEOLOGIST
URANIUM & FUEL SECTION

Section copy.

DM 781 59

TO THE CHIEF GEOLOGIST:

Two reports by Mr. E. Hillwood, Geological Assistant, describing occurrences of oil like film in the vicinity of Greenock and Freeling are forwarded.

I concur with Mr. Hillwood's conclusions and submit these reports for transmittal to the persons concerned with a copy for Mr. Laucke, M.P.

MNH:IDP
8/6/59

for SENIOR GEOLOGIST.
URANIUM & FUEL SECTION.

DM 781 59

TO THE SENIOR GEOLOGIST, URANIUM & FUEL.

REPORTED OIL OCCURRENCE AT DAVEYSTON.
E. H. ZILM.

1. Introduction.

Following a request by Mr. Laucke, member for Barossa, on behalf of Mr. Edwin H. Zilm of Daveyston, Mr. Zilm has been contacted and the reported oil film on water has been inspected.

2. Inspection.

The occurrence of an oil like film on seepage water as reported by Mr. Zilm is situated on the roadside adjacent to his property, Sections 170 and 206, Hundred of Nuriootpa. The area has been mapped as part of the Kapunda 4-mile geological sheet, the rocks belonging to the Adelaide System, Torrensian Series shales and slates. The seepage was inspected with Mr. Zilm, who indicated small patches of oily film on still pools of water.

Mr. Zilm added that the film was usually more obvious and had been washed away by rain that had been falling all morning. The seepage extends for 100 yards along the roadside and the water issues from the surface soil. No outcrop is found near the seepage.

3. Conclusion.

The presence of Adelaide System rocks precludes the occurrence of natural petroleum with seepage water. The oily film can be attributed to hydrated iron oxide and is visible where the water is not running. No further action is warranted.

ERH:IDP
8/6/59

GEOLOGICAL ASSISTANT.

TO THE SENIOR GEOLOGIST, URANIUM & FUEL:

REPORTED OILY SUBSTANCE WITH OCHRE AT FREELING.
E. A. SCHIRMER.

1. Introduction.

As requested by Mr. Laucke, member for Barossa, on behalf of Mr.E.A. Schirmer, the area of the reported oily substance was visited in the absence of Mr. Schirmer.

2. Inspection.

Mr. Schirmer of Freeling, Section 15, Hundred of Light, could not be contacted on his property on the day of the inspection, and enquiries in Freeling as to his whereabouts revealed that Mr. Schirmer is a diviner and is known as the "oil man". The property lies within the area covered by the Kapunda geological sheet and is covered by alluvial deposits of Recent origin. Tertiary sandy limestones are exposed immediately to the east. The Recent and Tertiary sediments are probably underlain by Adelaide System, Torrensian Series rocks at a shallow depth.

3. Conclusion.

The reported ochre deposit could not be found on the above property and it is probable that the deposit, if it exists, lies elsewhere. A Mr. E. Schirmer died from influenza on or about 1st. June and although this has not been verified as the above Mr. E.A. Schirmer a further visit to the area is not warranted.

ERH:IDP
8/6/59

GEOLOGICAL ASSISTANT.

D.M. 196 59

TO THE CHIEF GEOLOGIST:

Mr. Hillwood's report is forwarded. I concur with his conclusions and recommendation.

W. Johnson
SENIOR GEOLOGIST
URANIUM & FUEL SECTION.

WJ:AG.
27/2/59.

TO SENIOR GEOLOGIST, URANIUM & FUEL:

REPORTED OCCURRENCE OF KEROSENE NEAR WILLIAMSTOWN.

1. INTRODUCTION

Following a report by Mrs. Hameister, her mother, Mrs. Bain, was contacted by phone, and during discussion it was stated by Mrs. Bain that her son, Mr. W. Tennant, knew the location of the "Kerosene bore" which had been visited by her husband about 25 years ago, who had reported that kerosene was recovered from it.

2. INSPECTION

Mr. W. Tennant was visited at his residence in Williamstown, and he stated that the bore was known locally as the "Kerosene bore" because at the time of drilling by an American company kerosene was poured down the bore, and as a result of this "salting" drilling sludges showed and smelt of kerosene. Details of this are lost in antiquity, as the bore was sunk at least 60 years ago and probably nearer 80 years.

2.1 Location: The author accompanied Mr. Tennant to an area ¼ mile below the Warren reservoir overflow and a brief inspection was made of the southern bank of the creek at the supposed location of the bore. Mr. Tennant pointed out that he had not visited the site for 20 years, and it would be difficult to find the exact bore site.

2.2 Geology: The Gawler sheet of the 1 mile series covers the area adequately. Muscovite and biatite schists of the Adelaide system outcrop extensively along both sides of the creek. The rocks belong to an aluminous metasomatic zone of the South Warren reservoir and sillinamite, kyanite, outile and garnet formations are developed locally.

3. CONCLUSION

The reported occurrence of kerosene can be explained by the reports of "salting" by kerosene as related by Mr. Tennant. The Proterozoic system of high grade metamorphic rocks precludes the occurrence of natural petroleum. No younger sediments are found in the area. Mrs. Bain could be informed of the inspection and that the reported occurrence does not warrant further investigation.

ERH:AG.
27/2/59.

E. R. Hillwood
GEOLOGICAL ASSISTANT.