

ObserverGW

Depth Interval 1 7 0 4 1 8 cm to 1 7 0 5 6 7 cm

Box 291, Section 4

LITHOLOGY-PETROGRAPHY

Continues U.291.1

Gray-green, highly altered aphyric basalt, brecciated with basalt matrix. Between 1704.50 and 1704.80 core occurs to be massive (?) and blueish-green.

Below 1707.80 zone of highest alteration (yellow-green).

Below .90 zone similar to .50 - .80 (s.o.) grading into grey-green brecciated basalt similar to uppermost part of the section.

(Fragments of breccia \$\phi\$ 5 cm to 4 cm).

Internal brecciated lava flow.

STRUCTURE

Brecciated sometimes massive.

VESICLES/AMYGDALES

Some of the fragments filled with epidote, silica, rare chlorite.

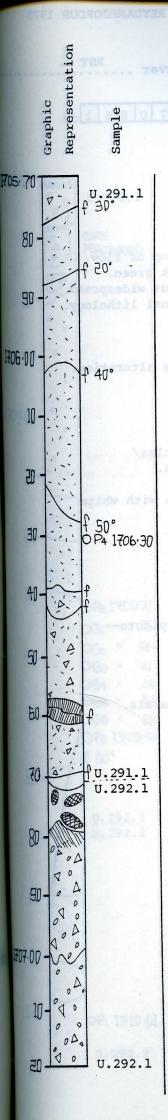
FRACTURES - VEINS - BRECCIA

Moderately fractured.

ROCK ALTERATION

Highly to very high alteration.

Between .80 and .90 zone of highest alteration.



Visual Core Description Observer ..

Observer

Depth Interval 1 7 0 5 6 7 cm to 1 7 0 7 2 0 cm Box 292, Section 1

LITHOLOGY-PETROGRAPHY

Continues U.291.1

Highly altered greenish-gray, aphyric basalt. Appears to be massive.

1706.05 - 1706.30. Appearance mottled with dark - light patches \sim 5 mm in size. Alteration.

Bottom U.291.1 Transition within 1 cm from massive, dense green basalt to friable green clay.

U.292.1 Core fractured-green friable clay passing into highly altered amydoloidal basalt.

STRUCTURE

U.291.1 Massive

U.292.1 Highly altered brecciated lava flow top.

VESICLES/AMYGDALES

U.291.1 Some open cavities, ? calcite and ? quartz. < 1-2 mm ?quartz epidote.

1706.20-1706.68 ? chlorite or green clay filled amygdales.

U.292.1 Abundant green-clay amygdales are interlocking --lighter green matrix. (1706.68-1706.92).

1706.92-1707.20 Epidote abundant. Quartz amygdales < 5 mm. Cavities filled with epidote crystals.

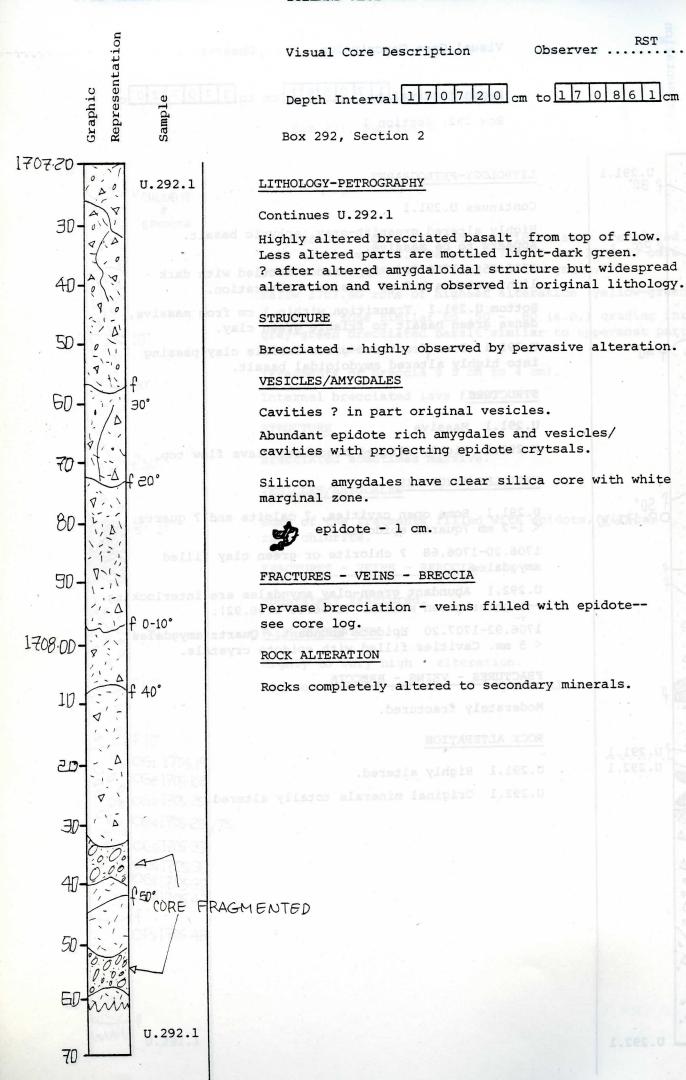
FRACTURES - VEINS - BRECCIA

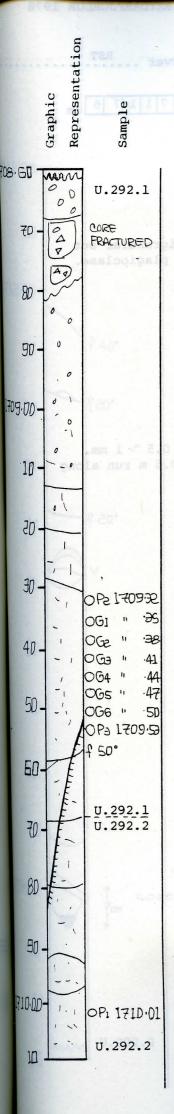
Moderately fractured.

ROCK ALTERATION

U.291.1 Highly altered.

U.292.1 Original minerals totally altered.





Observer

Depth Interval 1 7 0 8 6 1 cm to 1 7 1 0 1 4 cm

Box 292, Section 3

LITHOLOGY-PETROGRAPHY

Continues U.292.1

Highly altered brecciated basalt flow top of U.292.1. See earlier.

1708.81 More massive central portion of flow. Here is highly altered-mottled green-purple or dark green aphyric basalt. Mottling covers equal portions of section.

1709.20 (same flow) Massive light green aphyric basalt \sim 10-20% dark green. Amydales and cavities of ? chlorite.

1708.68 (Mean portion of contact).

U.292.2 Fine-grained, basaltic dyke chilled against lava flow. Fine ? silica vein (<<1 mm) developed along and around contact, chilled zone extent 1-2 cm from contact and shows sharp or rapidly transitional change to unchilled basalt with < 5 mm. Some irregular ? silicious patches near to this transition.

STRUCTURE

U.292.1 1708.61-1708.81 Structure obscured by alteration.

1709.81-1709.20 Mottled appearance may reflect 1° vesicles and cavities.

U.292.2 Some cavities -- not 1° - see lithology.

FRACTURES - VEINS - BRECCIA

U.292.1 1708.61-1708.81 Veins and irregular fracture filled with epidote.

U.292.2 Contact. Some fine veins containing green clay or chlorite and calcite? Cut dyke.

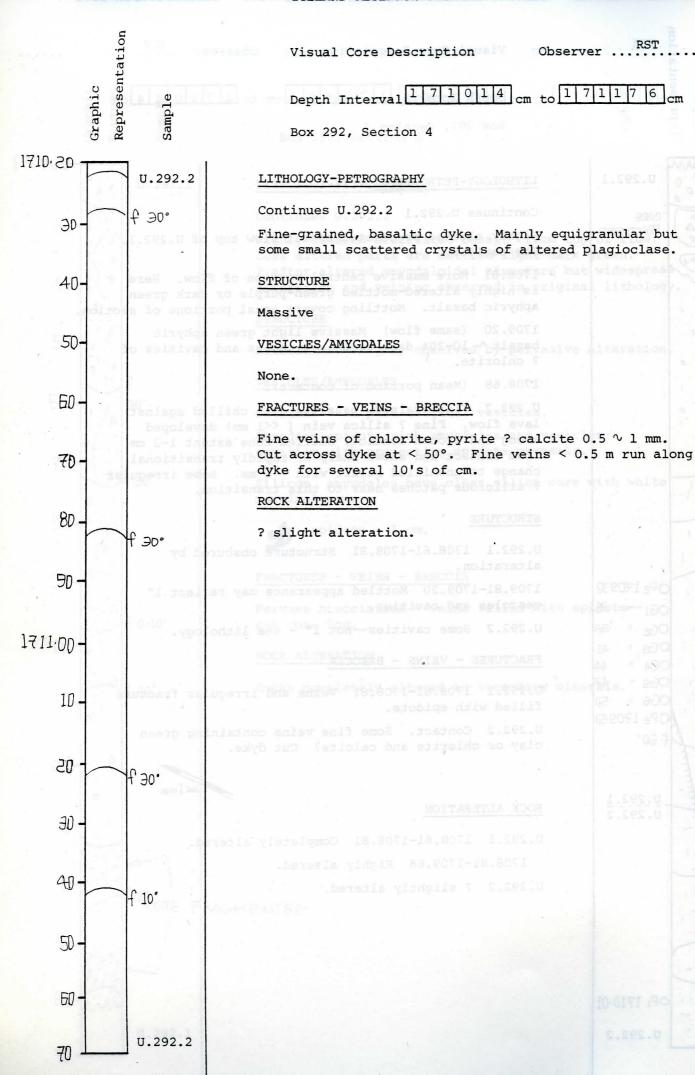
& I'mm

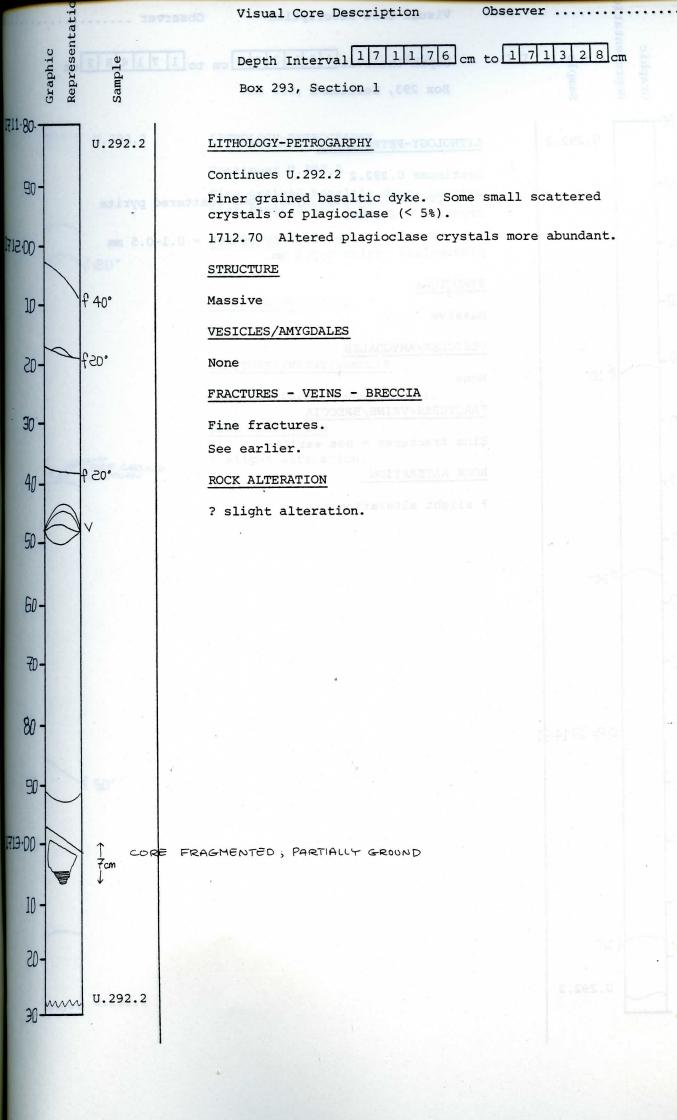
ROCK ALTERATION

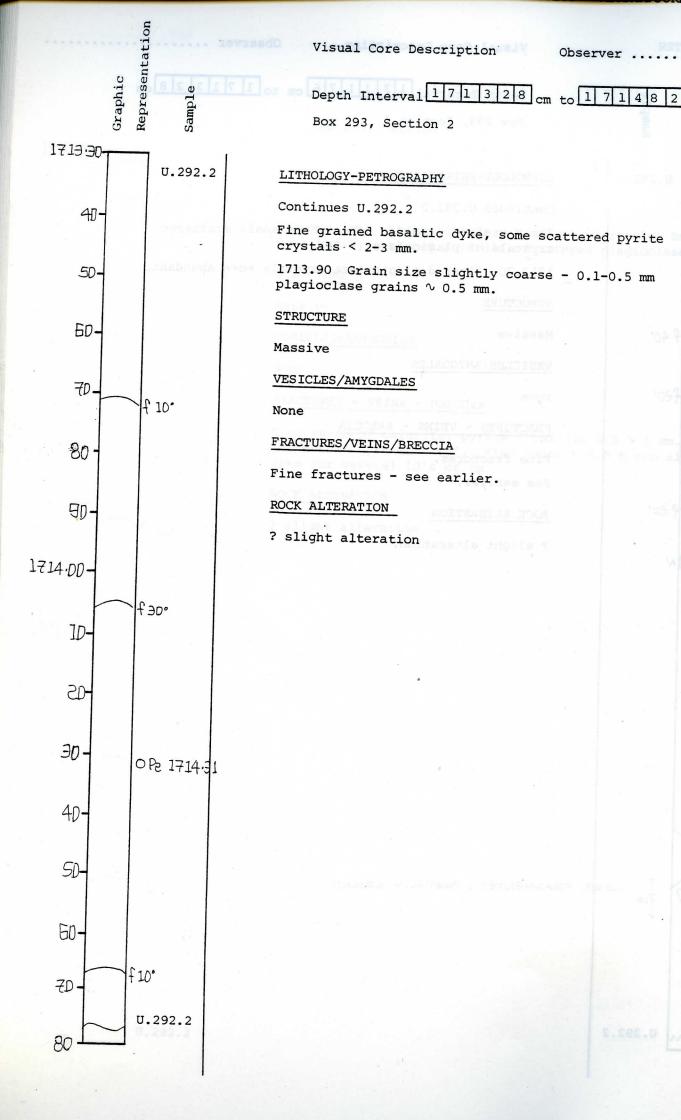
U.292.1 1708.61-1708.81 Completely altered.

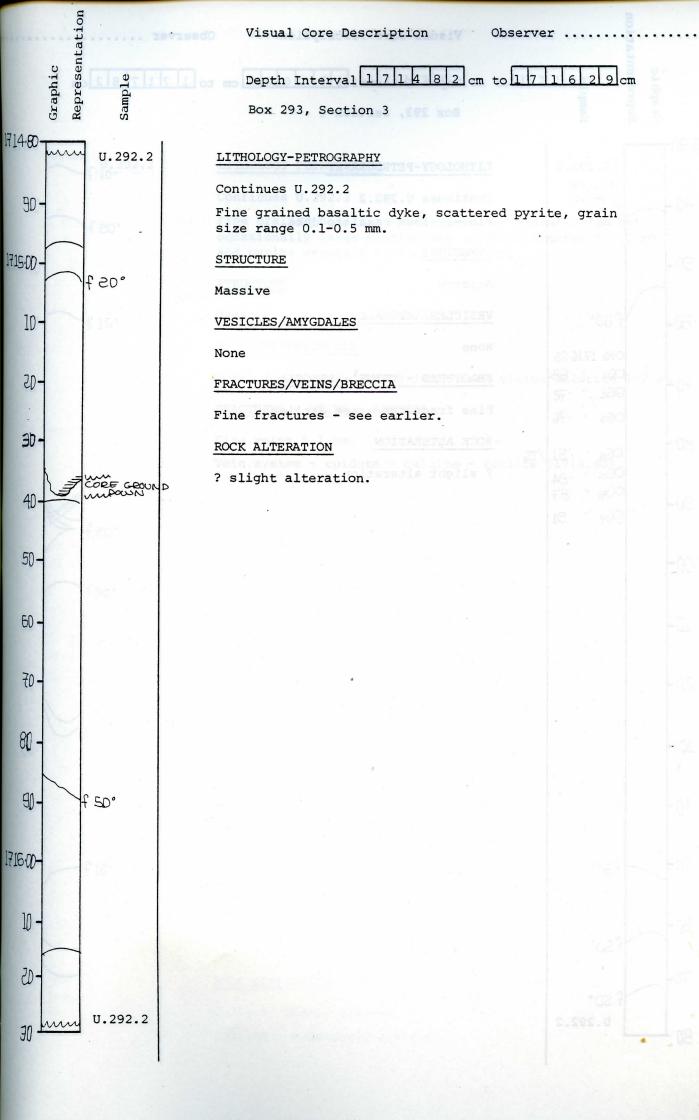
1708.81-1709.68 Highly altered.

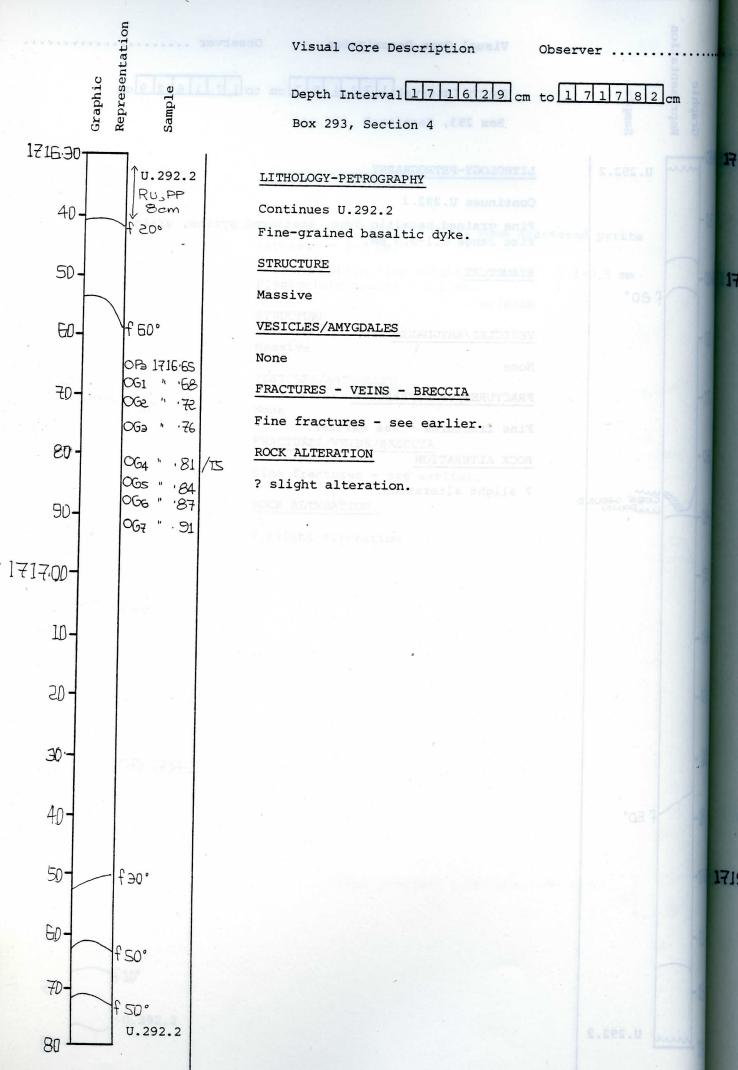
U.292.2 ? slightly altered.

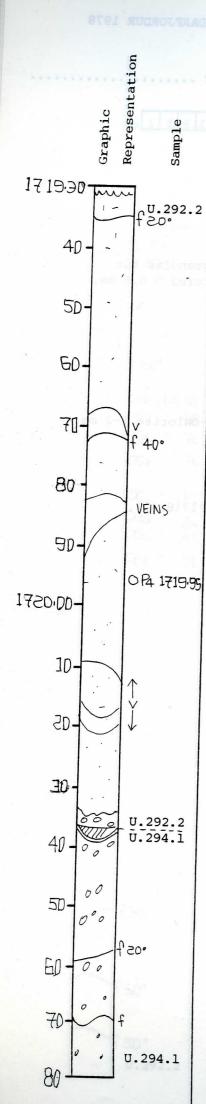












Observer

Depth Interval 171931 cm to 172083 cm

Box 294, Section 2

LITHOLOGY-PETROGRAPHY

Continues U.292.2

U.292.2 Fine grained basaltic dyke. Generally equigranular scattered pyrite crystals.

Bottom of U.292.2 Fine grey - light green contact of dyke exposed on fracture surface. Contact slightly irregular but form obscured by fracture.

U.294.1 Greenish-grey, highly altered, aphyric amygdaloidal basalt lava.

1720.60-1720.75 Well-formed, rounded amygdales - chlorite, epidote or quartz in core.

STRUCTURE

U.292.2 Massive

U.294.1 Massive

VESICLES/AMYGDALES

Vesicles - None.

Amygdales - None, some chlorite or green clay in cavities.

U.294.1 Occasional cavities incompletely filled. (vesicles).

Amygdales - Abundant, generally 0.5-2 mm filled with green ? chlorite epidote and quartz. Range from small chloritic amygdales to large (chlorite-epidote) amygdales and cavities.

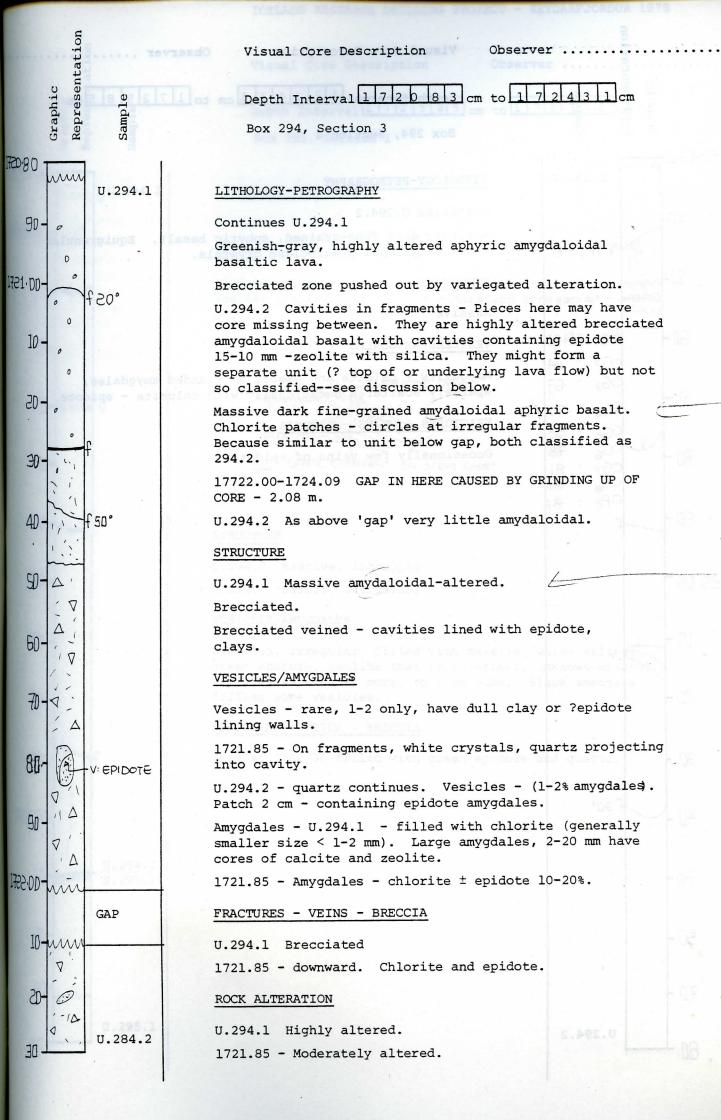
FRACTURES - VEINS - BRECCIA

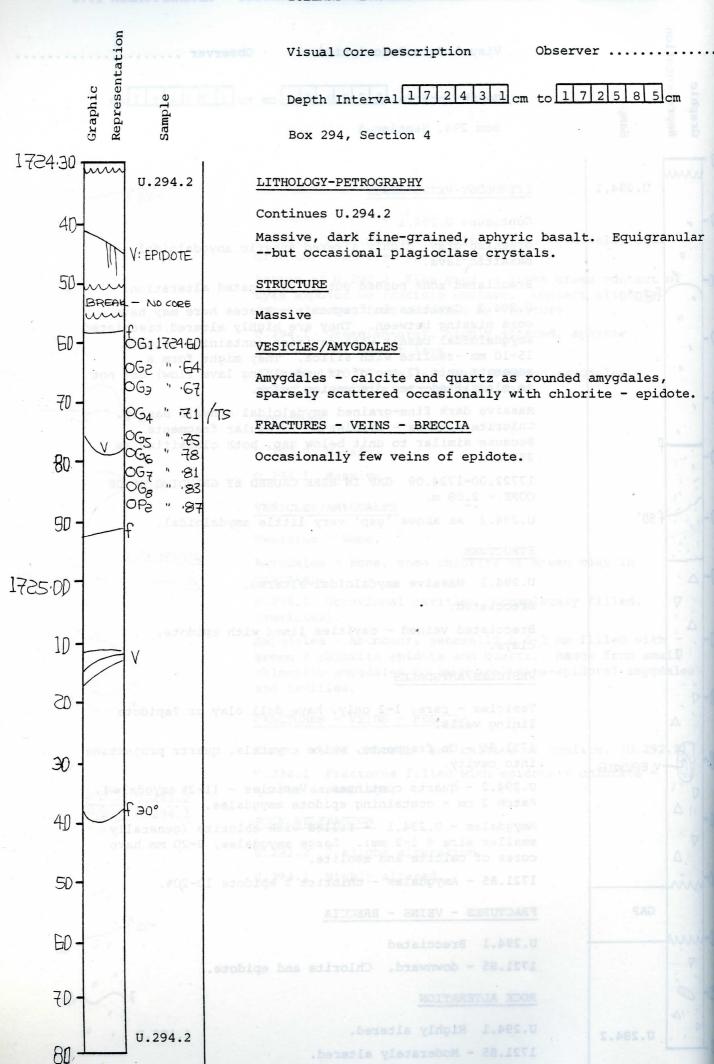
Fine - veins chlorite and calcite or zeolite. (U.292.2)
U.294.1 Fractures filled with epidote - chlorite quartz assemblage.

ROCK ATLERATION

U.292.2 ? slight alteration.

U.294.1 Highly altered.





1725.90 U.294.2 1726.0D-0 3D-----40 50-E0 FD 80 90 FZZ-DD. U.294.2 10 - minimum U.295.1 20 30 June U.295.1 40

Visual Core Description

Observer

Depth Interval 1 7 2 5 8 5 cm to 1 7 2 7 3 1 cm

Box 295, Section 1

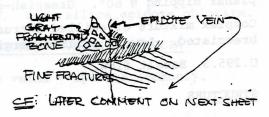
LITHOLOGY-PETROGRAPHY

Continues U.294.2

Greenish-gray, holocrystalline, medium-grained, aphyric, basalt.

1727.10 Fine-grained material, possibly chilled against coarser grained rock or just alteration zone.

U.295.1



STRUCTURE

U.294.2 Massive, isotropic

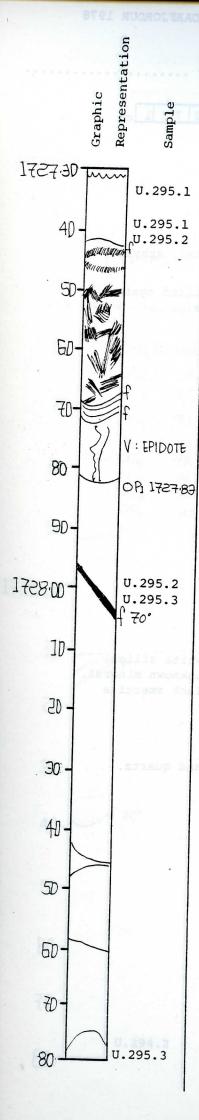
U.295.1 Basalt, Intrusion?

VESICLES/AMYGDALES

Vesicles, irregular, filled with massive, white silica, green epidote, zeolite that is colorless, unknown mineral. Vesicles as wide as core, to 1 mm wide. Black smectite filling some vesicles.

FRACTURES - VEINS - BRECCIA

Vein at 1726.30 filled with green epidote and quartz.



Observer

17:

Depth Interval 1 7 2 7 3 1 cm to 1 7 2 8 8 1 cm

Box 295, Section 2

LITHOLOGY-PETROGRAPHY

Continues U.295.1 Greenish gray, equigranular aphyric basalt.

U.295.2 In this section there is irregular, well defined intrusions of lighter color plagioclase-phyric rock with the dyke. They form sharp sided veins filling cracks in some places--irregular margins--mixtures with basalt in others. Might be hybrid or mixture of different material within same unit. Near it at 70 - two dark units are smeared together forming complex unit with well defined planar dipping @ 60°. Greenish-gray basalt.

Complex mixture of chilled intrusive vein, locally brecciated. Lowest chilled margin.

U.295.3 Basalt flow.

STRUCTURE

U.295.1 Massive

U.295.2 Complex basalt intrusion. Massive

VESICLES/AMYGDALES

U.295.1 Occassional chlorite, quartz.

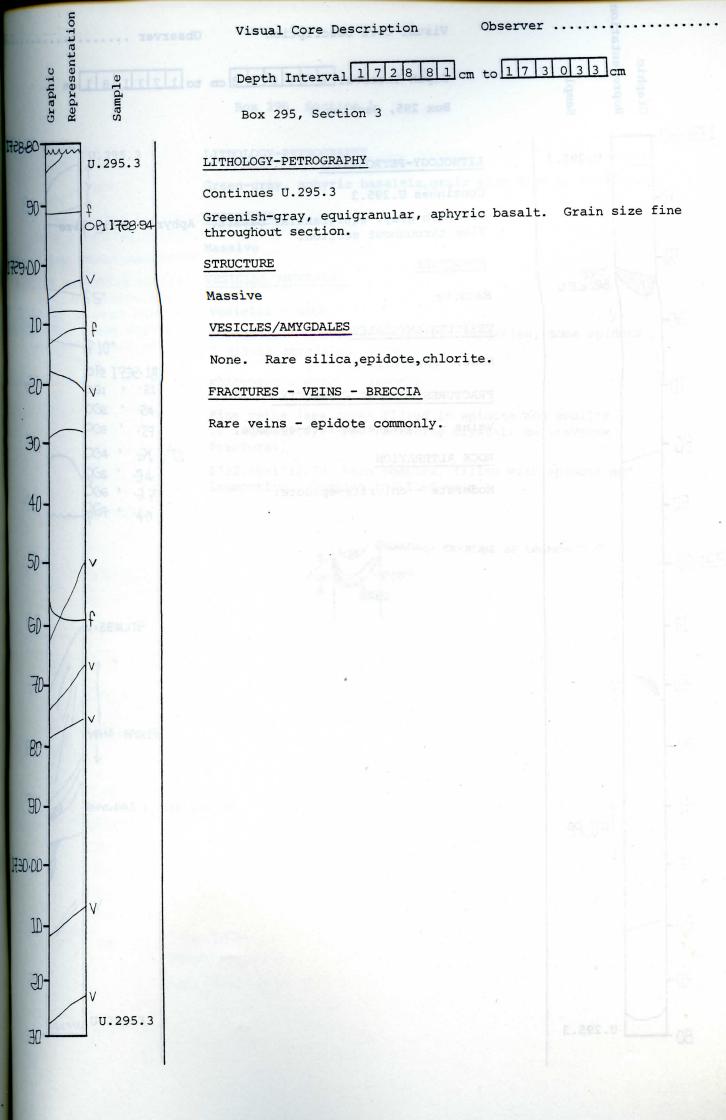
FRACTURES - VEINS - BRECCIA

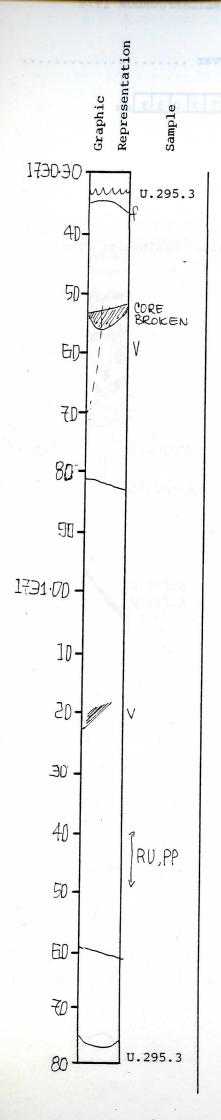
U.295.1 Veins with epidote, calcite, pyrite.

U.295.2 Parallel fracture and flow - 70°.

ROCK ALTERATION

Moderate. Chlorite - epidote alteration.





Observer

Depth Interval 1 7 3 0 3 3 cm to 1 7 3 1 8 1 cm

Box 295, Section 4

LITHOLOGY-PETROGRAPHY

Continues U.295.3

Greenish-gray, equigranular basalt. Aphyric grain size fine throughout section.

STRUCTURE

Massive

VESICLES/AMYGDALES

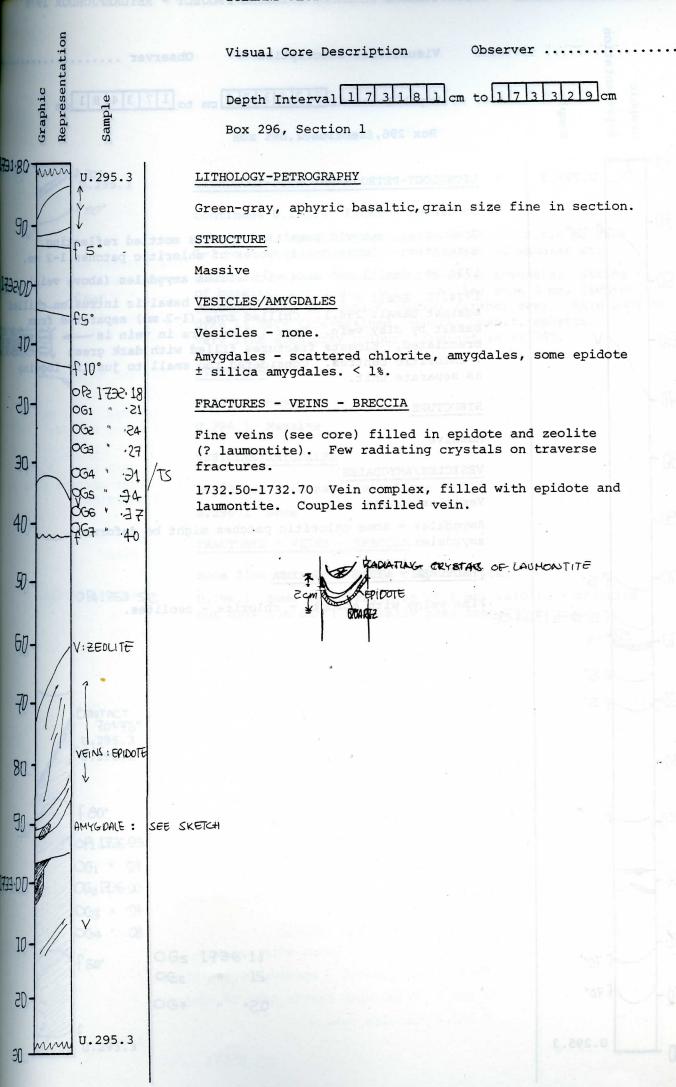
None. Rare-silica.

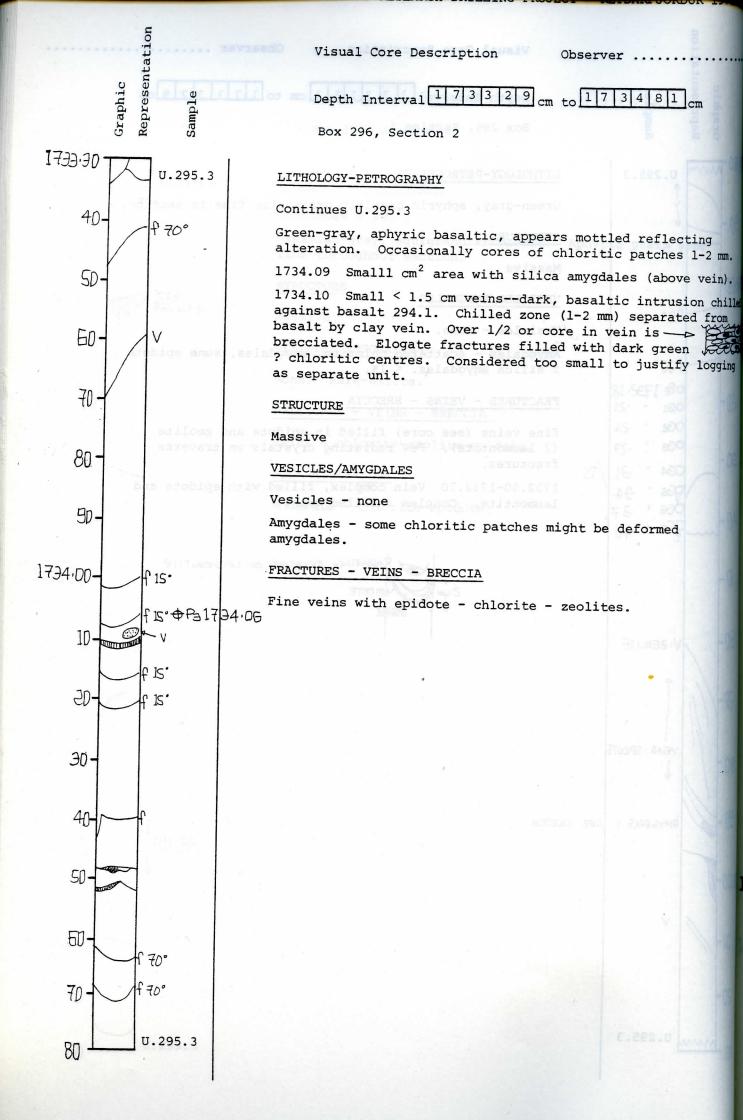
FRACTURES - VEINS - BRECCIA

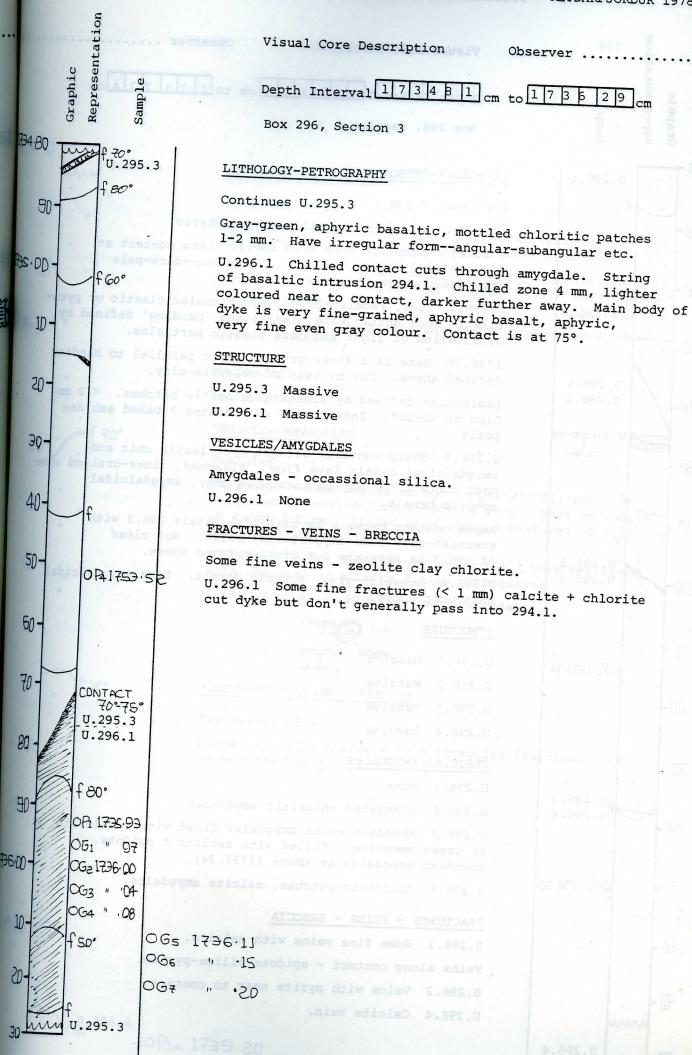
Veins - chlorite-zeolite-epidote.

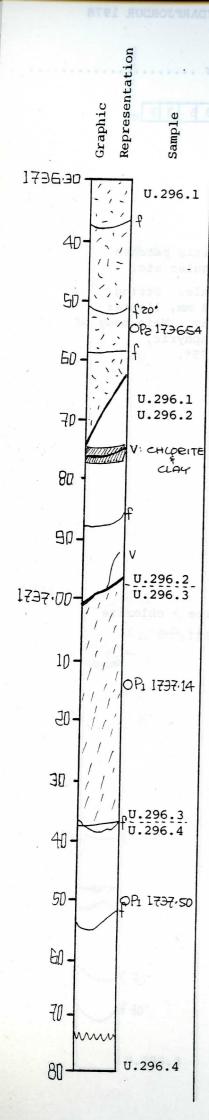
ROCK ALTERATION

Moderate - chlorite-epidote.









Observer ...

Depth Interval 1 7 3 6 2 9 cm to 1 7 3 7 7 4 cm

Box 296, Section 4

LITHOLOGY-PETROGRAPHY

Continues U.296.1

Fine-grained, dark, basaltic dyke, aphyric.

Chilled contact of dyke with 296.2. Like contact at 1735.76 ∿1/2 finely chilled. From dyke--dark-pale grey-green zones to actual contact.

U.296.2 Fine, reddish-brown, equigranular clastic or pyroclastic rock unitl Fine, indistinct 'banding' defined by orientation of light and dark clastic particles.

1736.75 Here is a finer grained layer parallel to banding defined above. Cut by vein of chlorite-clay.

Lamination defined by elongate chloritic patches. < 2 mm. Dips at 10-20°. Interpreted as indented ? baked ash deposit.

U.296.3 Sharp contact, between pyroclastic unit and amygdaloidal basalt lava flow. Bleached, finer-grained zone near contact. ? May be intrusive gray, amygdaloidal aphyric basalt.

Rapid contact between amygdaloidal basalt 296.3 with greenish-gray less amygdaloidal below. Not clear if 296.3 is separate but distinguished above.

U.296.4 Greenish-gray, aphyric basalt. Less amygdaloidal than unit above.

STRUCTURE

U.296.1 Massive

U.296.2 Massive

U.296.3 Massive

U.296.4 Massive

VESICLES/AMYGDALES

U.296.1 None

U.296.2 Elongated chloritic amygdales

U.296.3 Abundant white amygdales lined with ? chlorite or green smectite. Filled with zeolite ± epidote. Abundant amygdales as above (1737.34).

U.296.4 Chloritic patches, calcite amygdales.

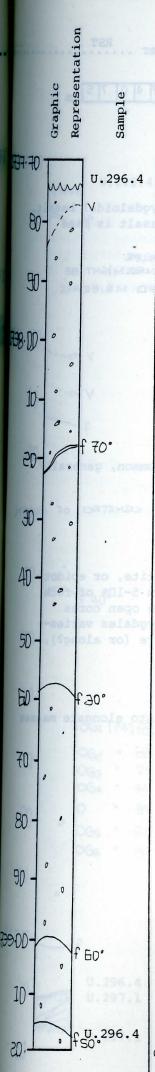
FRACTURES - VEINS - BRECCIA

U.296.1 Some fine veins with calcite.

Veins along contact - epidote-silica-pyrite.

U.296.2 Veins with pyrite near to contact.

U.296.4 Calcite vein.



Observer

Depth Interval 1 7 3 7 7 4 cm to 1 7 3 9 2 2 cm

Box 297, Section 1

LITHOLOGY-PETROGRAPHY

Continues U.296.4

Gray-green, aphyric, amygdaloidal basalt with major variation in abundance with distribution of amygdales.

1738.00-1738.30 Water absorbed rapidly into rock in this region. Rock is similar but lighter color - dark flecks in groundmass.

Matrix of rock slightly lighter--but grey-green aphyric basalt as above.

STRUCTURE

Massive

VESICLES/AMYGDALES

Vesicles -

Amygdales - Some amygdales not completely filled. Scattered amygdales form 10-20% of rock. Size generally in range 1-5 mm. Filled with complex mixtures of chlorite zeolite. Calcite clays.

1738.00-1738.30 Some larger amygdales \angle 5-10 mm. lined with chlorite or epidote filled with quartz.

5-10% of rock is chlorite-quartz amygdales.

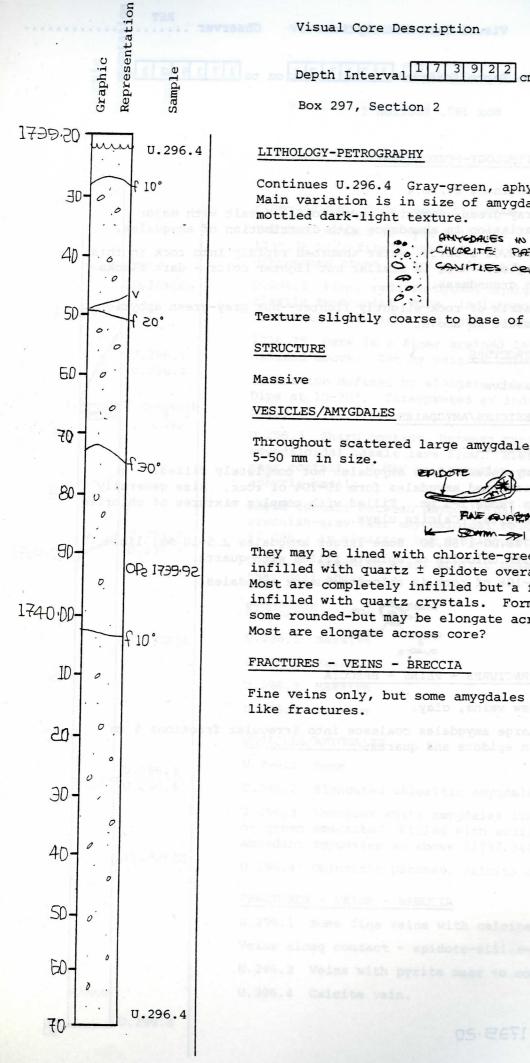


FRACTURES - VEINS - BRECCIA

Few veins, clay.

Large amygdales coalesce into irregular fractions 5 cm in epidote and quartz.

0P1A 1735.20



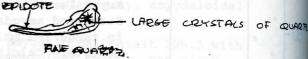
Observer

Continues U.296.4 Gray-green, aphyric, amygdaloidal basalt. Main variation is in size of amygdales. Basalt is fine

AMY COMES IN COME SHALLER CHLORITE PATCHES IN MASSIMICHT BE CANTLES OR ALTERED HINERALS.

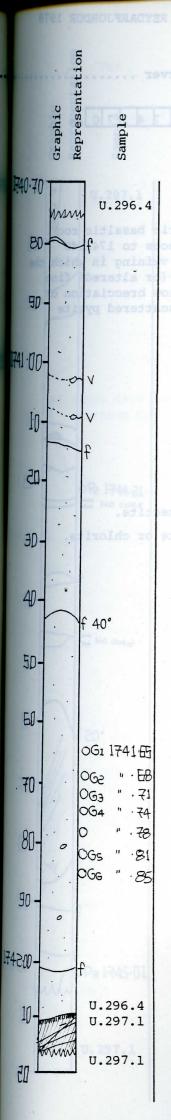
Texture slightly coarse to base of core.

Throughout scattered large amygdales are common, generally



They may be lined with chlorite-green smectite, or epidote infilled with quartz ± epidote overall form 5-10% of rock. Most are completely infilled but a few have open cores infilled with quartz crystals. Form of amygdales variessome rounded-but may be elongate across core (or along?).

Fine veins only, but some amygdales pass into elongate masses



Observer

Depth Interval 1 7 4 0 7 5 cm to 1 7 4 2 1 7 cm

Box 297, Section 3

LITHOLOGY-PETROGRAPHY

Continues U.296.4

Green-gray, aphyric basalt, amygdaloidal. Major changes in abundance of amygdales but texture is slightly coarser than higher sections—steady but slight coarsening downwards.

Basaltic rock coarsens slightly towards contact.

Texture picked out in green-light contrast.

U.297.1 Fine chilled contact of intrusion against lava. Chill has dark basalt 2 mm light green, 2 mm thin, fine-medium basaltic rock.

STRUCTURE

Massive

U.297.1 Massive

VESICLES/AMYGDALES

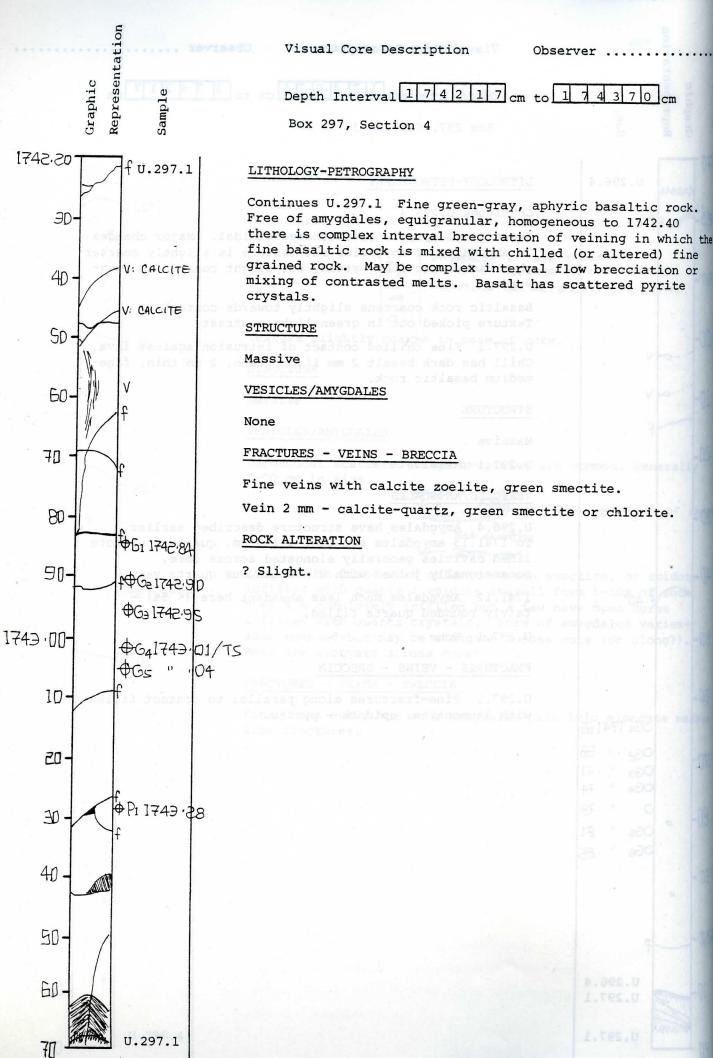
U.296.4 Amygdales have structure described earlier. To 1741.15 amygdales abundant \angle 1-3 cm, quartz \pm epidote lined cavities generally elongated across core, occassionally joined with discontinuous quartz vein.

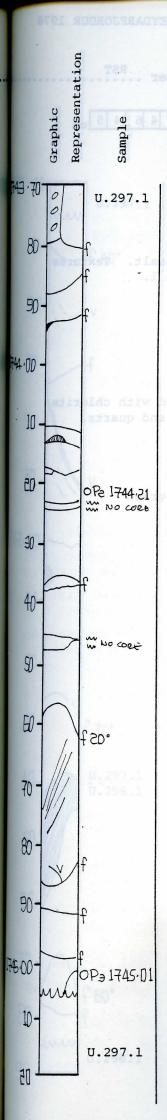
1741.12 Amygdales much less abundant here (< 5%) - fairly rounded quartz filled.

U.297.1 None

FRACTURES - VEINS - BRECCIA

U.297.1 Fine-fractures along parallel to contact filled with laumontite, epidote - pyrite.





Observer

Depth Interval 1 7 4 3 7 0 cm to 1 7 4 5 0 5 cm

Box 298, Section 1

LITHOLOGY-PETROGRAPHY

Continues U.297.1

Grey-fine grained, equigranular, aphyric basalt. Fine dark basalt at top of core, texture gradually changes to lighter coloured, slightly more medium grained--mottled or a very fine scale reflecting alteration.

STRUCTURE

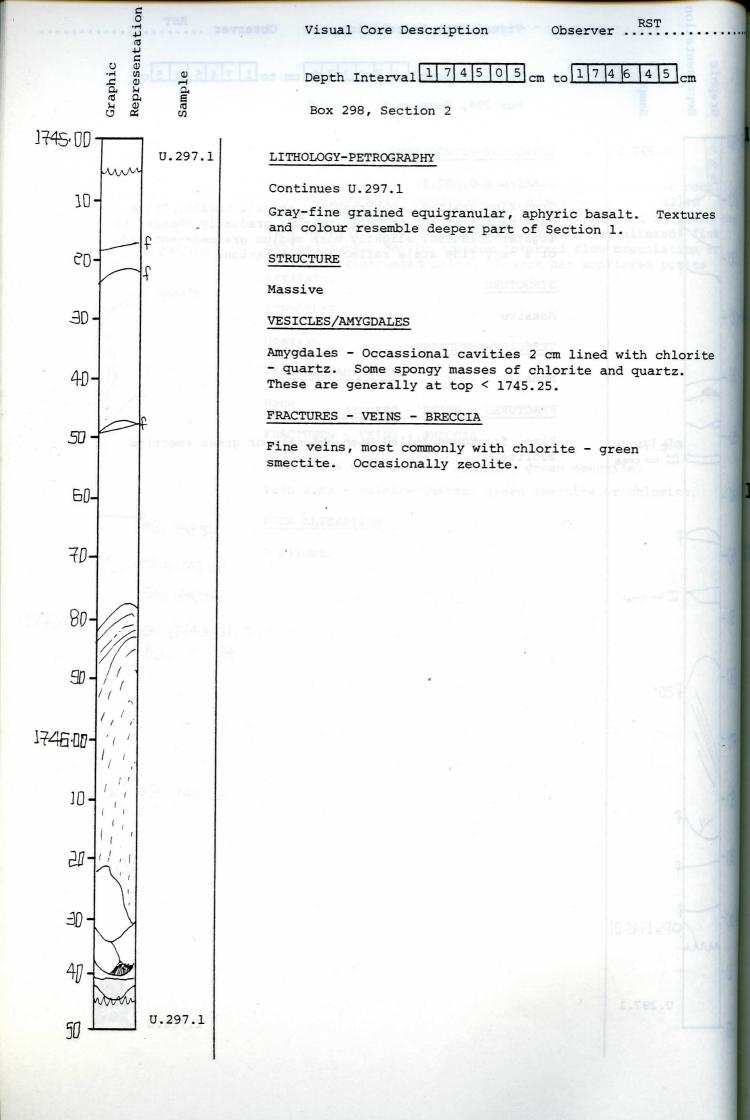
Massive

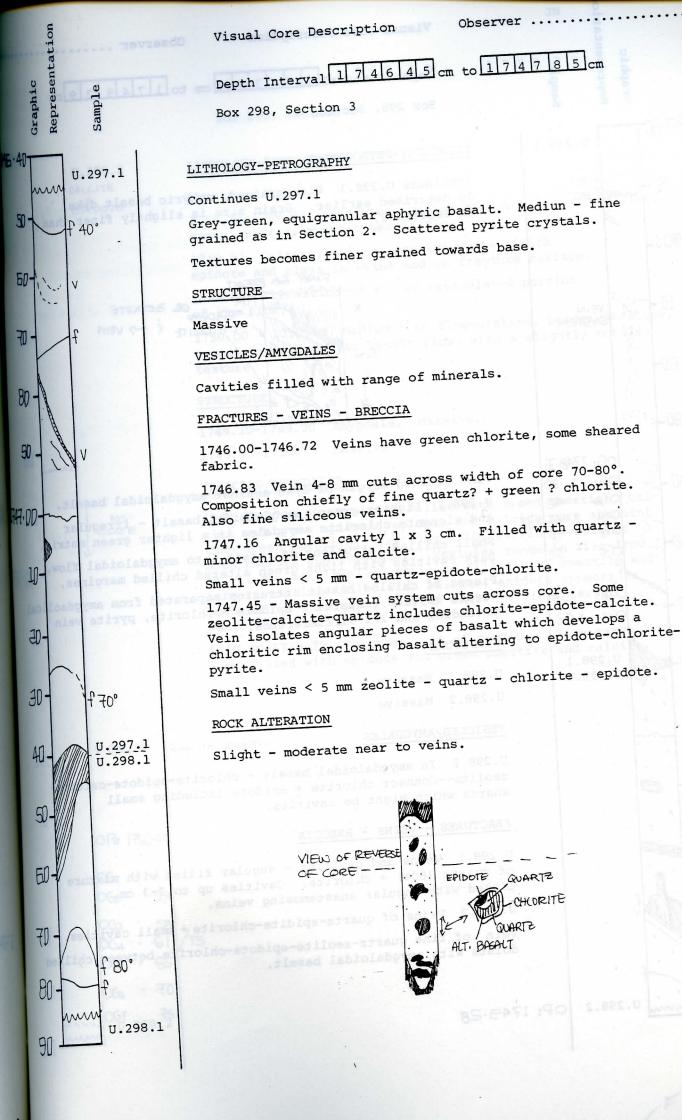
VESICLES/AMYGDALES

None

FRACTURES - VEINS - BRECCIA

Fine, fractures filled with chlorite or green smectite zeolite.





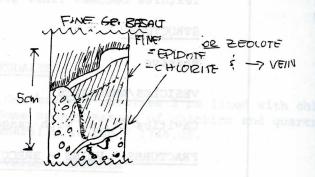
Observer

Depth Interval 1 7 4 7 8 5 cm to 1 7 4 8 2 9 cm

Box 298, Section 4

LITHOLOGY-PETROGRAPHY

Continues U.298.1 Fine-grained, aphyric basalt dyke. As described earlier. Grain size is slightly finer than in Section 2.



Fine grained margin of dyke against amygdaloidal basalt.

U.298.2 Lighter green, amygdaloidal basalt - irregular and elongate chloritic amygdales in a lighter green matrix.

Small chilled intrusions of basalt into amygdaloidal flow. Dark cavities with light green altered chilled margines.

Pieces of chilled basalt intrusion separated from amygdaolidal basalt to fine ? quartz - epidote - chlorite, pyrite vein extending and 2/3 circumference.

STRUCTURE

U.298.1 Massive

U.298.2 Massive

VESICLES/AMYGDALES

U.298.2 In amygdaloidal basalt - chlorite-epidote-calcite-zeolite--Connect chlorite + epidote including small shards which might be cavities.

FRACTURES - VEINS - BRECCIA

U.298.1 Veins and cavities - angular filled with mixture of quartz (80%) + chlorite. Cavities up to 2-3 cm. Linked with angular anastsmosing veins.

U.298.2 Veins of quartz-epidite-chlorite + small cavities.

Vein of fine quartz-zeolite-epidote-chlorite between chilled dolate with amygdaloidal basalt.