

IODP Expedition 389 VCD

Site: M0103A

Hole M0103A

Region: Hilo
Water Depth: 404.5 m

Depth (mbsf)	Core recovery	Curated sections	XCT scan image	Line scan image	Facies	IODP samples	Grain size	Fossils	Taphonomy	Color	Visual core description
0.0						◆		Coralline algae;Foraminifera;Bivalve;Gastropod;BRYO	encrustation - multilayered;bioerosion	10YR 7/4;10YR 8/2	Cobble- to pebble-sized rhodoliths, with CCA and FCA. Piece of grainstone at the top. Some bioclastic sediment .
0.5											
1.0								Coralline algae	encrustation - multilayered;bioerosion	10YR 8/2;5Y 7/2	Cobble- to pebble-sized rhodoliths, with CCA ..
1.5						◀		Coralline algae;Montipora-branching;Cyphastrea-encrusting;BRYO;Foraminifera	encrustation - multilayered;bioerosion	10YR 8/2;5Y 7/2	Cobble- to pebble-sized rhodoliths, with CCA and FCA., some heavily bored. Bioclastic sediment.
2.0						◆		Coralline algae;Montipora-branching;BRYO;Foraminifera	encrustation - multilayered;bioerosion	10YR 8/2;5Y 7/2	Cobble- to pebble-sized rhodoliths, with CCA , bryozoans and encrusting foraminifers, some heavily bored. Coalesced nodules. Bioclastic sediment.
2.5											
3.0					Coralline						

VCD legend	Core recovery	Facies	IODP Samples
<ul style="list-style-type: none"> Core recovered No recovery Wash bore High disturbance 	<ul style="list-style-type: none"> FRW-CorAlgBound FRW-CorAlgMicrobBound FRW-MicrobAlgBound FRW-MicrobBound 	<ul style="list-style-type: none"> FRW-AlgBound RDST/FLST-Rhodoliths DET-Consolidated DET-Unconsolidated FALL 	<ul style="list-style-type: none"> Dating GEOCHEM IWRH MAD/PW PMAG

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3.0		5R-1						algae;Foraminifera;Mollusc;Homotrema;Coral-undetermined;BRYO	encrustation - multilayered;bioerosion	10YR 8/2;5Y 7/2	Strongly fragmented, pebble to cobble size rhodoliths, with CCA , bryozoans and encrusting foraminifers, some heavily bored..
3.5											
4.0											
4.5		6R-1						Coralline algae;BRYO;Foraminifera;Mollusc;Cyphastrea-undetermined	encrustation - multilayered;bioerosion	10YR 8/2;5Y 7/2	Strongly fragmented rhodoliths, with CCA , bryozoans and encrusting foraminifers, some heavily bored..
5.0											
5.5											
6.0		7R-1						Coralline algae;Cyphastrea-encrusting;Homotrema;BRYO;Foraminifera	encrustation - multilayered;bioerosion	N9	Heavily fragmented Rhodolith facies with encrusting corals, bryozoa, and forams.. Major minerals: aragonite;calcite

VCD legend	Core recovery	Facies	IODP Samples												
	<ul style="list-style-type: none"> █ Core recovered □ No recovery ▨ Wash bore ▨ High disturbance 	<table border="1"> <tr> <td>FRW-CorAlgBound</td> <td>FRW-AlgBound</td> <td>Mixed-carb/vol</td> </tr> <tr> <td>FRW-CorAlgMicrobBound</td> <td>RDST/FLST-Rhodoliths</td> <td>VOL-Clast</td> </tr> <tr> <td>FRW-MicrobAlgBound</td> <td>DET-Consolidated</td> <td>VOL-Basalt</td> </tr> <tr> <td>FRW-MicrobBound</td> <td>DET-Unconsolidated</td> <td>FALL</td> </tr> </table>	FRW-CorAlgBound	FRW-AlgBound	Mixed-carb/vol	FRW-CorAlgMicrobBound	RDST/FLST-Rhodoliths	VOL-Clast	FRW-MicrobAlgBound	DET-Consolidated	VOL-Basalt	FRW-MicrobBound	DET-Unconsolidated	FALL	<ul style="list-style-type: none"> ◀ Dating □ GEOCHEM ○ IWRH + ◆ PMAG
FRW-CorAlgBound	FRW-AlgBound	Mixed-carb/vol													
FRW-CorAlgMicrobBound	RDST/FLST-Rhodoliths	VOL-Clast													
FRW-MicrobAlgBound	DET-Consolidated	VOL-Basalt													
FRW-MicrobBound	DET-Unconsolidated	FALL													

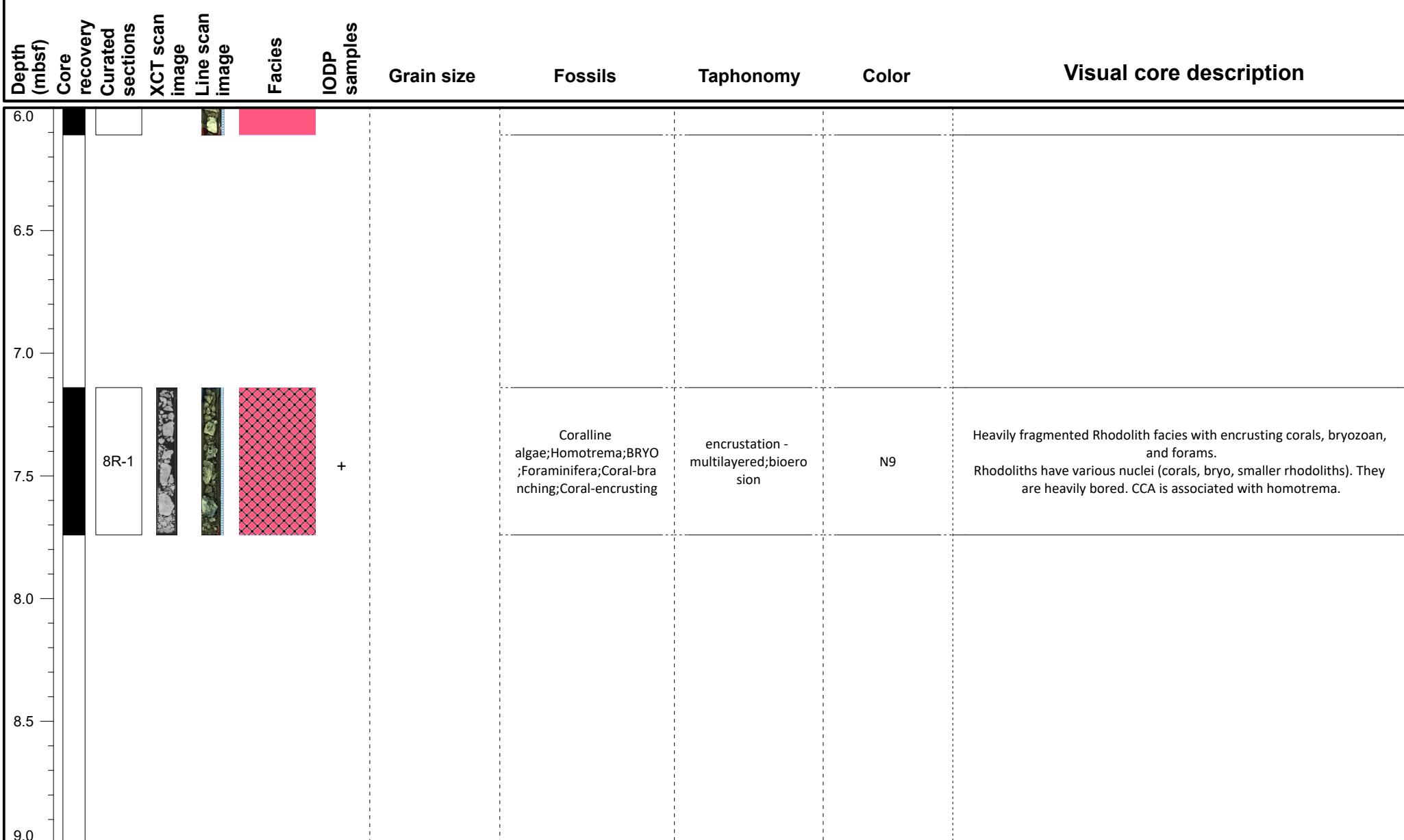
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- █ FRW-CorAlgMicrobBound
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Facies

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IODP Samples

- ◀ Dating
- GEOCHEM
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Depth (mbsf)	Core recovery	Curated sections	XCT scan image	Line scan image	Facies	IODP samples	Grain size	Fossils	Taphonomy	Color	Visual core description
9.0											
9.5											
10.0											
10R-1	+							Coralline algae;Homotrema;Foraminifera;Coral-branching;Coral-encrusting;Cyphastrea-encrusting;Coral-undetermined	encrustation - multilayered;bioerosion	N9	Heavily fragmented Rhodolith facies with encrusting corals, and forams. Rhodoliths have various nuclei (corals, bryo, smaller rhodoliths). They are heavily bored. CCA is associated with homotrema.
10.5								Coralline algae;Homotrema;Coral-branching;Coral-encrusting;Cyphastrea-encrusting;Coral-undetermined	encrustation - multilayered;bioerosion	N9	FCA and CCA Rhodolith with encrusting corals and forams. Rhodoliths have various nuclei (corals, smaller rhodoliths). They are heavily bored. CCA is associated with homotrema
11.0								Coralline algae;Coral-undetermined;Coral-branching		N9;5Y 7/2	One solitary coral with the crust.
11.5								Coralline algae;Coral-undetermined;Coral-branching	encrustation - multilayered;bioerosion	N9;5Y 7/2	Algal boundstone with algal crusts, fruticose rhodoliths - Presence of fruticose algal crusts possibly encrusting corals. Major minerals: aragonite;calcite
12.0								Coralline algae;Homotrema;Coral-branching;Coral-encrusting	encrustation - multilayered;bioerosion	N9	Algal boundstone with algal crusts, fruticose rhodoliths - Presence of fruticose algal crusts possibly encrusting corals. Major minerals: aragonite;calcite
											FCA and CCA Rhodolith with encrusting corals and forams. Rhodoliths have various nuclei (corals, smaller rhodoliths). They are heavily bored. CCA is associated with homotrema.

VCD legend	Core recovery	Facies	IODP Samples
	<ul style="list-style-type: none"> █ Core recovered □ No recovery ▨ Wash bore ▨ High disturbance 	<ul style="list-style-type: none"> █ FRW-CorAlgBound █ FRW-CorAlgMicrobBound █ FRW-MicrobAlgBound █ FRW-MicrobBound █ FRW-AlgBound █ RDST/FLST-Rhodoliths █ DET-Consolidated █ DET-Unconsolidated 	<ul style="list-style-type: none"> ◀ Dating □ GEOCHEM ○ IWRH ✚ MAD/PW ◆ PMAG

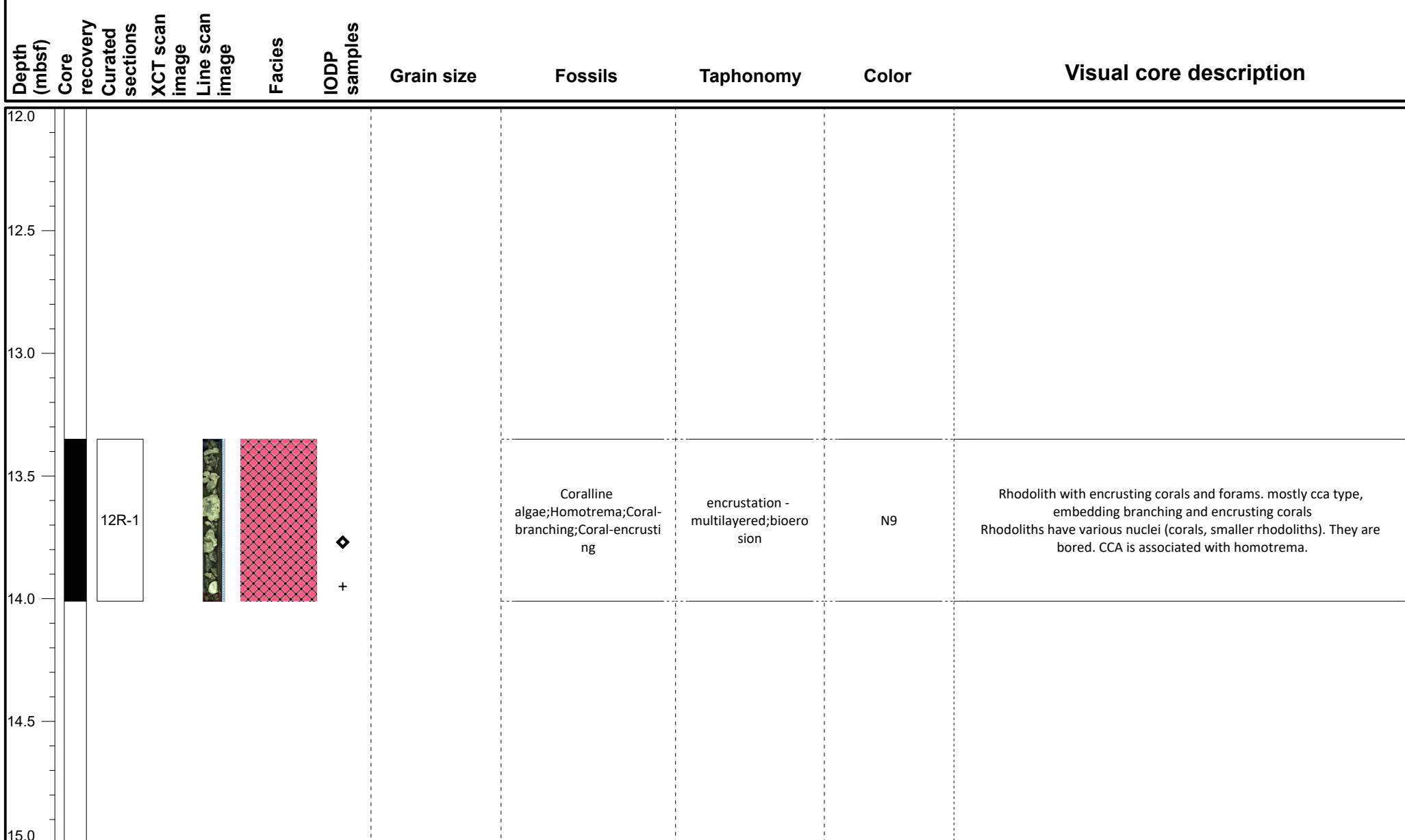
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- █ FRW-CorAlgBound
- █ FRW-CorAlgMicrobBound
- █ FRW-MicrobAlgBound
- █ FRW-MicrobBound

Facies

- █ FRW-AlgBound
- █ RDST/FLST-Rhodoliths
- █ DET-Consolidated
- █ DET-Unconsolidated

- █ Mixed-carb/vol
- █ VOL-Clast
- █ VOL-Basalt
- █ FALL

IODP Samples

- ◀ Dating
- ─ GEOCHEM
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15.0								Coralline algae;Homotrema;Coral-branching;Coral-encrusting	encrustation - multilayered;bioerosion	N9	Rhodolith (20-40 cm diameter) with occasional encrusting corals and forams. mostly cca type, embedding branching and encrusting corals Rhodoliths have various nuclei (corals, smaller rhodoliths). They are bored. CCA is associated with homotrema.
15.5								Coralline algae;Homotrema;Coral-branching;Coral-encrusting;Poritidae-branching; Cyphastrea-undetermined	encrustation - multilayered;bioerosion	N9	Rhodolith (20-40 cm diameter) with dominantly coral nuclei and forams. mostly cca type, embedding branching and encrusting corals Rhodoliths are bored. CCA is associated with homotrema.
16.0											
16.5											
17.0											
17.5											
18.0											

VCD legend	Core recovery	Facies	IODP Samples
	<ul style="list-style-type: none"> █ Core recovered □ No recovery ▨ Wash bore ▨ High disturbance 	<ul style="list-style-type: none"> █ FRW-CorAlgBound █ FRW-CorAlgMicrobBound █ FRW-MicrobAlgBound █ FRW-MicrobBound █ RDST/FLST-Rhodoliths █ DET-Consolidated █ DET-Unconsolidated 	<ul style="list-style-type: none"> █ FRW-AlgBound █ VOL-Clast █ VOL-Basalt █ FALL █ MAD/PW █ GEOCHEM █ PMAG █ IWRH

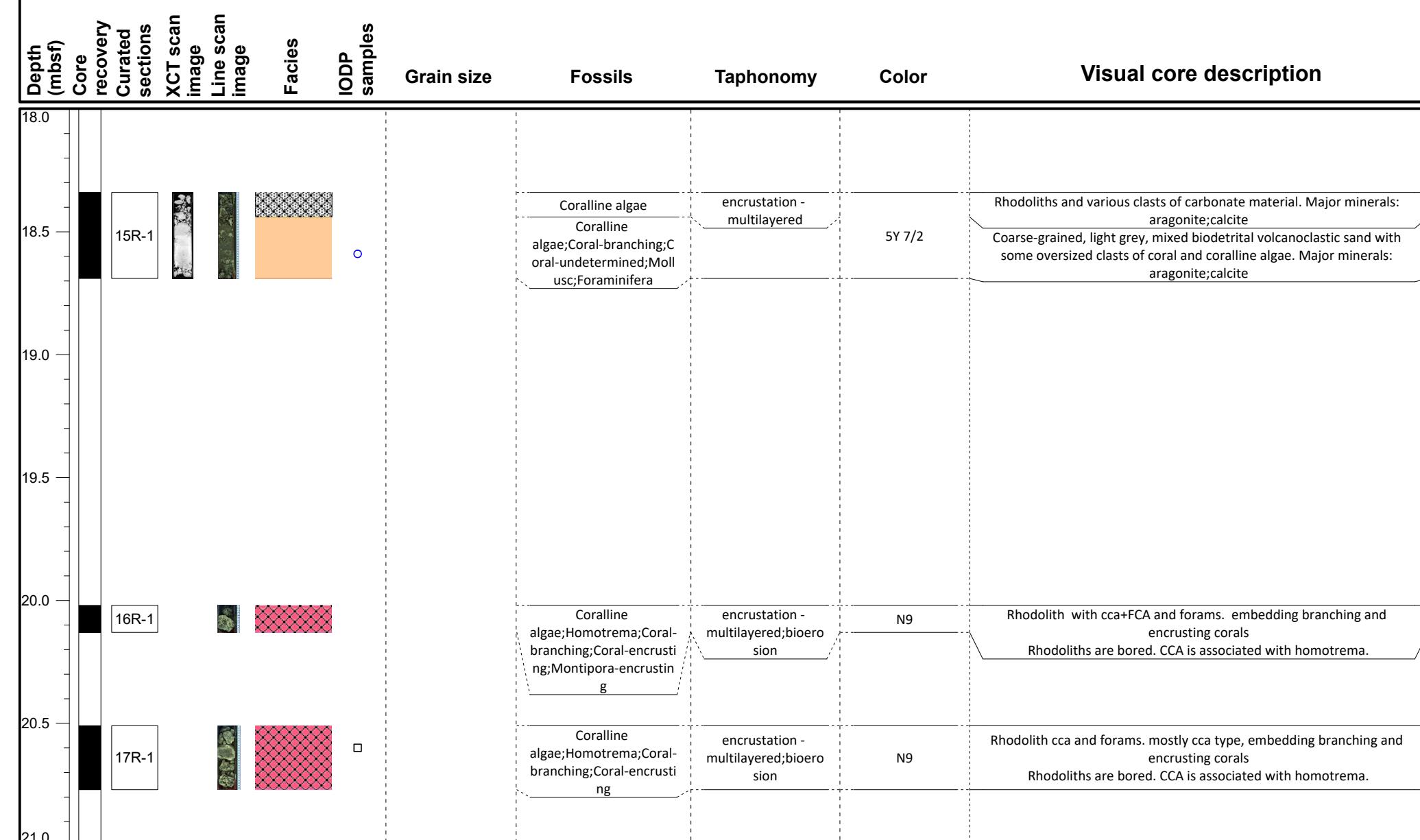
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- █ FRW-CorAlgBound
- █ FRW-CorAlgMicrobBound
- █ FRW-MicrobAlgBound
- █ FRW-MicrobBound
- █ FRW-AlgBound
- █ RDST/FLST-Rhodoliths
- █ DET-Consolidated
- █ DET-Unconsolidated

- █ Mixed-carb/vol
- █ VOL-Clast
- █ VOL-Basalt
- █ FALL

IODP Samples

- ◀ Dating
- +
- MAD/PW
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VCD legend

Core recovery

- Core recovered
 - No recovery
 - Wash bore
 - High disturbance

Facies

- The legend identifies six geological units and their characteristics:

 - FRW-CorAlgBound** (Green)
 - FRW-AlgBound** (Blue)
 - FRW-CorAlgMicrobBound** (Cyan)
 - RDST/FLST-Rhodoliths** (Pink)
 - FRW-MicrobAlgBound** (Purple)
 - DET-Consolidated** (Brown)
 - FRW-MicrobBound** (Teal)
 - DET-Unconsolidated** (Orange)

IODP Samples

-  Dating  MAD/PW
 GEOCHEM  PMAG
 IWRH

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24.0								Coralline algae;Homotrema;Coral-bran	encrustation - multilayered;bioero	N9	Rhodolith cca+FCA and forams, embedding branching corals Rhodoliths are bored. CCA is associated with homotrema.
24.5								Coralline algae;Homotrema	encrustation - multilayered;bioero	N9	Loose Rhodolith cca+FCA and forams Rhodoliths are bored. CCA is associated with homotrema.
25.0								Coralline algae;Homotrema;Coral-bran	encrustation - multilayered;bioero	N9	Rhodolith cca+FCA and forams, embedding branching corals Rhodoliths are bored. CCA is associated with homotrema Some soft biotrital sediment at the base .
25.5								Coralline algae;Coral-bran	encrustation - multilayered;bioero	N9	Rhodolith cca and forams, embedding branching corals Rhodoliths are bored. CCA is associated with homotrema.
26.0								Coralline algae;Gastropod	10YR 8/2		Fall in
26.5								Coralline algae;Coral-bran;Foraminifera;Mollusc;Cor al-undetermined	10YR 8/2;5Y 7/2		Top core disturbed. - with dark grey piece of burned carbonate.. Rhodolith bounded by algal crusts with packstone matrix inter-layered with loose rhodoliths. Possibly some matrix dark grey grains could be volcanoclastics (?) Nuclues of rhodolith is coral in some instances
27.0											

VCD legend	Core recovery	Facies	IODP Samples
	<ul style="list-style-type: none"> █ Core recovered □ No recovery ▨ Wash bore ▨ High disturbance 	<ul style="list-style-type: none"> █ FRW-CorAlgBound █ FRW-CorAlgMicrobBound █ FRW-MicrobAlgBound █ FRW-MicrobBound █ FRW-AlgBound █ RDST/FLST-Rhodoliths █ DET-Consolidated █ DET-Unconsolidated █ Mixed-carb/vol █ VOL-Clast █ VOL-Basalt █ FALL 	<ul style="list-style-type: none"> ◀ Dating □ GEOCHEM ◆ PMAG ○ IWRH

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Facies

-

IODP Samples

-  Dating  MAD/PW
 GEOCHEM  PMAG
 IWRH

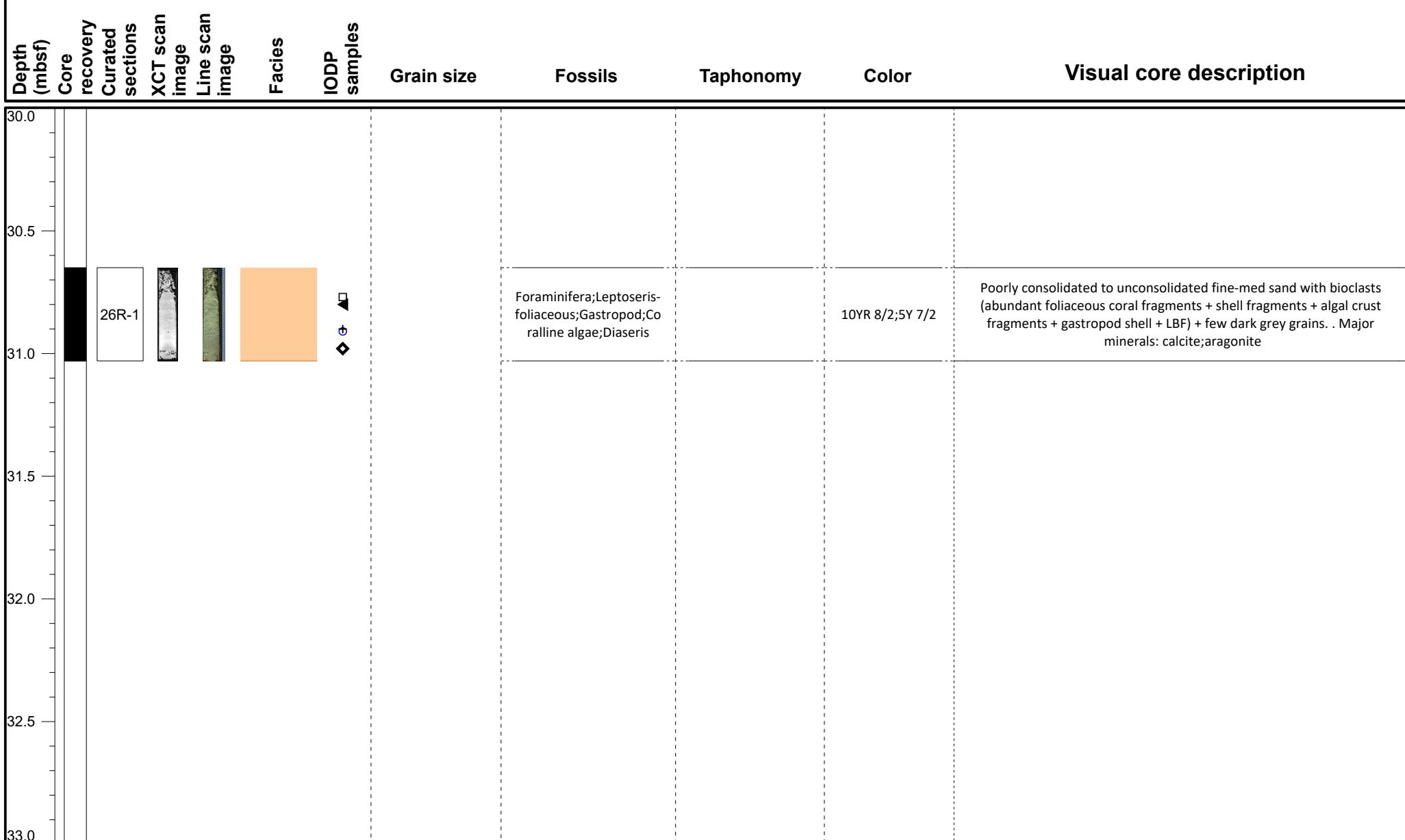
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VCD legend

Core recovery

- █ Core recovered
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- ▢ High disturbance

- █ FRW-CorAlgBound
- █ FRW-CorAlgMicrobBound
- █ FRW-MicrobAlgBound
- █ FRW-MicrobBound

Facies

- █ FRW-AlgBound
- █ RDST/FLST-Rhodoliths
- █ DET-Consolidated
- █ DET-Unconsolidated

- █ Mixed-carb/vol
- █ VOL-Clast
- █ VOL-Basalt
- █ FALL

IODP Samples

- ◀ Dating
- GEOCHEM
- IWRH
- +
- ◆ PMAG

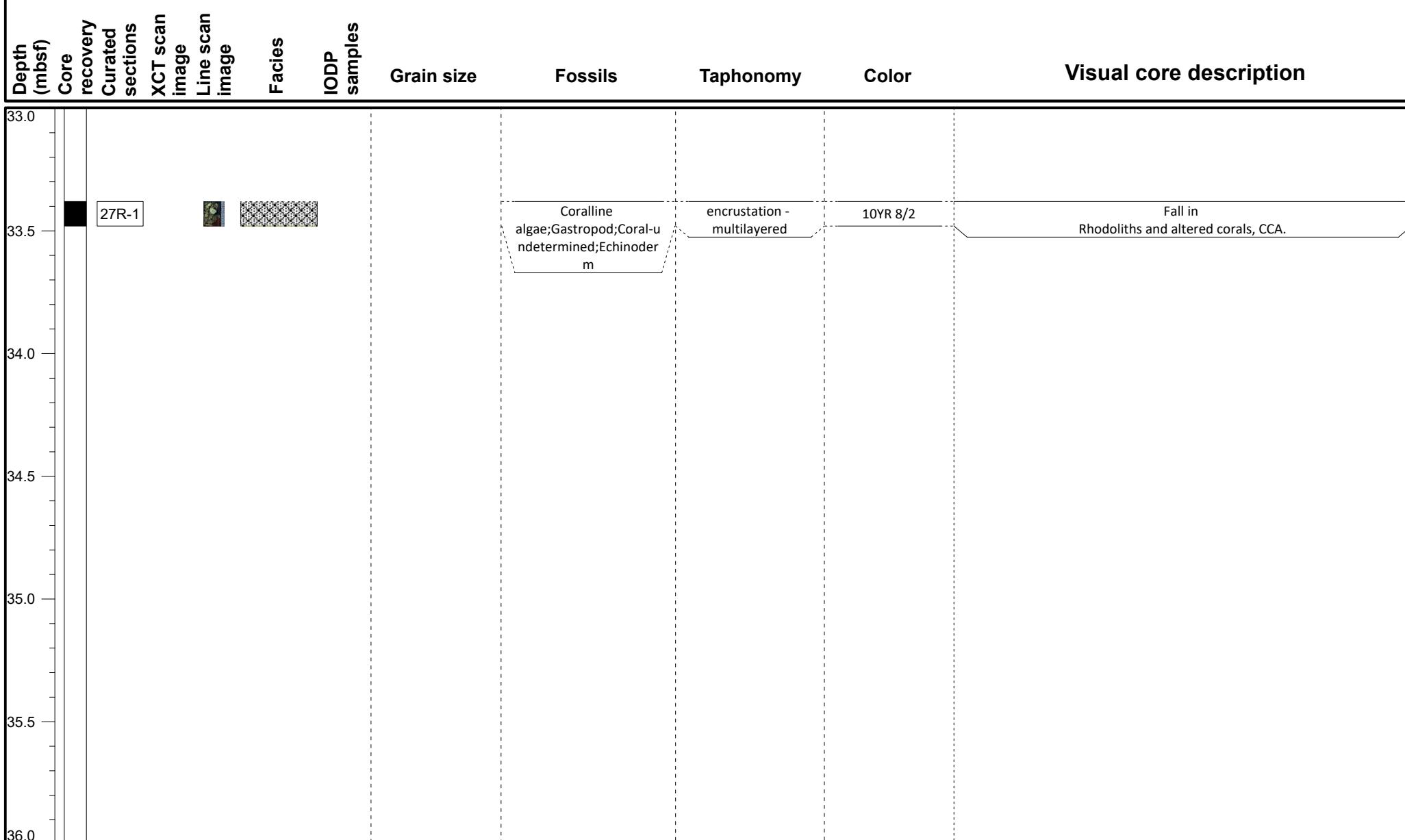
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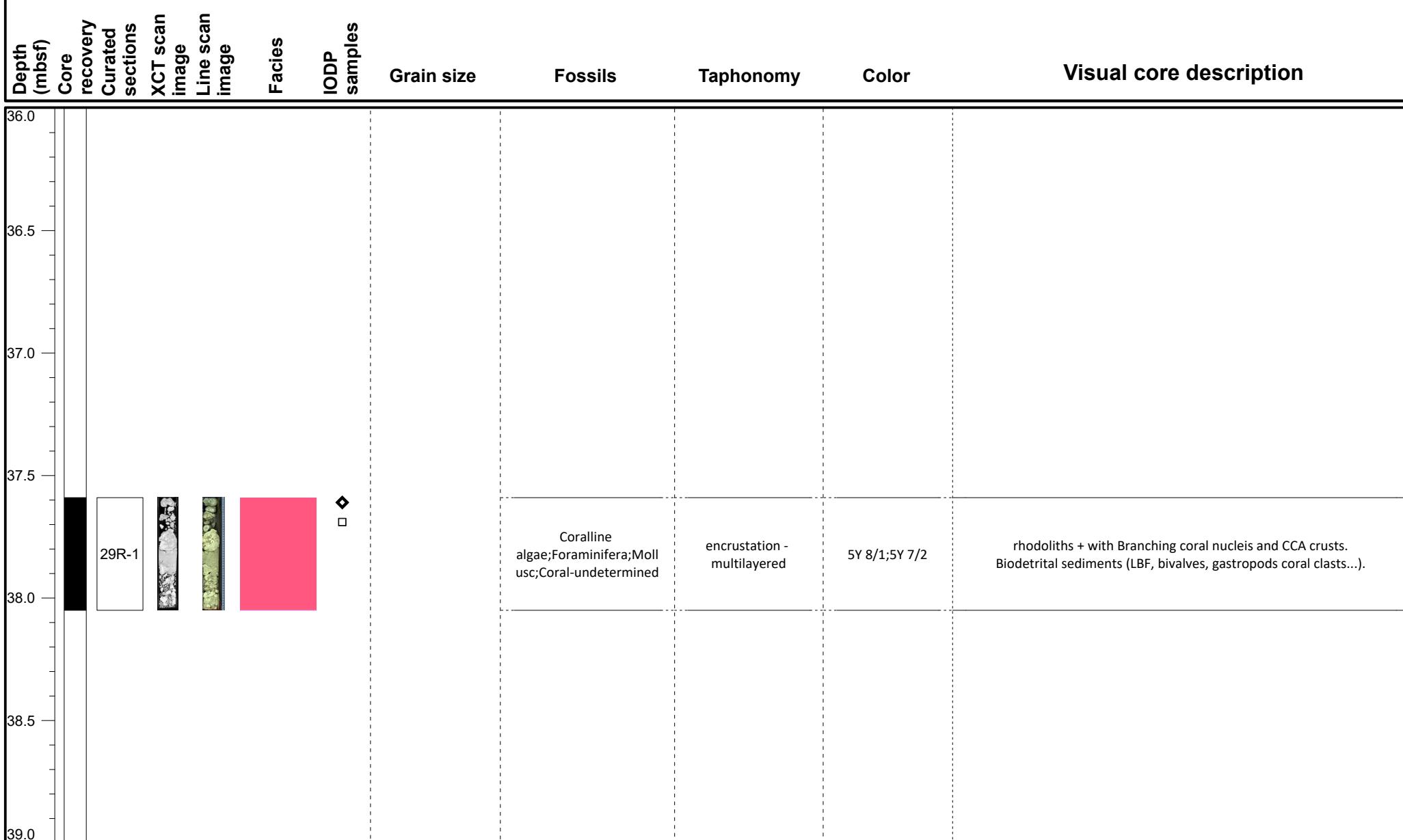
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-  FRW-MicrobAlgBound
-  FRW-MicrobBound

Facies

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-  DET-Unconsolidated

-  Mixed-carb/vol
-  VOL-Clast
-  VOL-Basalt
-  FALL

IODP Samples

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Facies

- The legend identifies five geological units:

 - FRW-CorAlgBound** (Yellow-green)
 - FRW-AlgBound** (Light blue)
 - FRW-CorAlgMicrobBound** (Cyan)
 - RDST/FLST-Rhodoliths** (Pink)
 - FRW-MicrobAlgBound** (Purple)
 - DET-Consolidated** (Brown)
 - FRW-MicrobBound** (Teal)
 - DET-Unconsolidated** (Orange)

IODP Samples

- Dating MAD/PW
GEOCHEM PMAG
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42.0								d;Echinoderm;Porites-subermassive;Vermetidae Coralline algae;Coral-undetermined;Echinoderm	encrustation - multilayered	10YR 8/2;5Y 7/2 5Y 8/1 N1;5Y 8/4		fragments + shell fragments + algal crust fragments + gastropod shell + LBF) + few dark grey grains.. Algal crust + biodetrital sediment with some basalt clasts (4mm-1 cm)- angular to sub angular.. Angular to sub angular basalt clasts with carbonate matrix (mudstone to fine grainstone). from 56-62 - orange alteration observed (iron oxide?)..
42.5		31R-1										
43.0												
43.5		32R-1								N1	Angular to sub angular basalt clasts (+1 carbonate clast- fall in?).	
44.0												
44.5												
45.0		33R-1								N1	Angular to sub angular basalt clasts .	

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