

GSA Data Repository item 2003069

Wells, S.G., Brown, W.J., Enzel, Y., Anderson, R.Y., and McFadden, L.D., 2003, Late Quaternary geology and paleohydrology of pluvial Lake Mojave, southern California, *in* Enzel, Y., Wells, S.G., and Lancaster, N., eds., *Paleoenvironments and paleohydrology of the Mojave and southern Great Basin Deserts*: Boulder, Colorado, Geological Society of America Special Paper 368, p. 79–114.

**TABLE 6**  
**LITHOLOGIC DESCRIPTION OF AN OUTCROP IN THE SILVER LAKE QUARRY**

UNIT NO.	DESCRIPTION OF SILVER LAKE QUARRY - OUTCROP SIL-0-2
L	0-20cm SOIL HORIZON, coarse sand with cobbles and pebbles. Fragments of TUFA. Overall unit is friable. Unit color changes from 5/6 10yr (M) at bottom to 4/4 10yr (M) at top.
K	20-37cm COARSE SAND WITH COBBLES AND PEBBLES. Coarse material is strongly weathered and can be cut with a knife. Minor CaCO <sub>3</sub> disseminated in sand. Fragments of TUFA. Friable nature. 5/6 7.5yr (M). Sharp lower boundary.
J	37-74cm GRAVEL, cobbles to pebbles with broken TUFFA fragments in addition to coatings on clasts. Coarse sand matrix 5/6 10yr. Reddens upward and shows some evidence of weathering
I	74-84cm SILTY CLAY, indurated. Minor pelecypod and gastropod SHELLS.
H	84-96cm GRAVEL. Same as unit 3, except for smaller size clasts (fewer cobble-sized clasts and more pebble sized clasts).
G	96-102cm SAND, coarse with approximately 5% fine gravel. 7/2 5y color. Moderately indurated. Contains abundant pelecypod and gastropod SHELLS.
F	102-150cm GRAVEL, cobbles to pebbles with coarse sand matrix. Subangular to subrounded, moderately to strongly weathered clasts (cannot cut with a knife). ALL clasts have TUFA coating. Unit is approximately 90% gravel. Lower boundary sharp.
E	150-167cm SAND, Well sorted and moderately indurated. Contains ABUNDANT Pelecypod and gastropod SHELLS.
D	167-241cm GRAVEL, angular to subrounded pebbles to cobbles clasts are strongly weathered (can be cut with a knife). Coarse sand matrix with SHELL (pelecypod) fragments. Many gravels have TUFA coatings. Sand content increases towards top of unit. Upper boundary is sharp. Lower boundary is gradational
C	241-271cm TRANSITIONAL UNIT angular to subrounded gravel clasts up to 1cm in size comprising about 30-40% of unit. Gravel is dominantly of dioritic composition and minor granite and has no visible tufa coatings. Matrix is composed of fine to medium-grained, green, unstratified quartz-rich sand (5y5.5/6 (d), 5y4/4 (d)) with abundant ostracodes.
B	271-346cm SAND, fine to medium grained, Ostracode-bearing (5y5.5/6 (d), 5y4/4 (d)) with minor diffuse patches of slightly oxidized (reddened) nature. No visible sedimentary structures, massive in nature. Lower boundary is slightly gradational.

**TABLE 6 (continued)**

**LITHOLOGIC DESCRIPTION OF AN OUTCROP IN THE SILVER LAKE QUARRY**

- A      346-359+cm GRAVEL, angular to subangular. poorly sorted in nature with stage 3 pedogenic carbonate coatings. Oxidized, slightly reddened color. No visible lacustrine influences.

Described by W. Brown, J. Knight, B. Harrison, and Y. Enzel

**TABLE 8**  
**LITHOLOGIC DESCRIPTION OF TWO OUTCROPS EXPOSED IN THE**  
**BAKER DUMP QUARRY, NORTHERN SODA LAKE.**

UNIT NO.      DESCRIPTION OF OUTCROP - SOD-0-5

- 
- |   |   |
|---|---|
| 5 | <b>BEACH RIDGE (INNER) UNIT</b><br>Medium to coarse sand. Moderate to moderately well sorted quartz-rich sand with poorly stratified to non-stratified nature. Locally unit contains well-stratified lenses of well sorted, moderately well rounded sand. Trace pelecypod shell fragments. 5y6.5/3.5 (dry) 5y6.5/3 (wet). Several thin nearly horizontal beds of green sand containing secondary carbonate and possible evaporite minerals (thenardite?)  |
| 4 | <b>BEACH RIDGE/BAR (OUTER) UNIT</b><br>Very fine sand to coarse sand/granules . Moderate sorting with moderate to strong stratification. Dominantly grus with locally abundant well-preserved pelecypod shells and shell fragments. Locally the unit contains subrounded pebbles in lenses.   |
| 3 | <b>TRANSITIONAL UNIT</b><br>Poorly sorted sandy clay to pebble sized gravel. The finer fraction is composed almost totally of grus and quartz. The coarse fraction contains clasts of diorite, limestone and minor amounts of sub-rounded volcanics (Cima?) Overall this unit fines upward. Some pelecypod shell fragments and locally abundant ostracodes near top of unit. Sand-sized fraction gives unit its color 5y 5/3 (wet or dry). Beginning of Lake. Sharp lower boundary; gradational upper boundary. Base of unit contains <i>L. ceriotuberosa</i> . |
| 2 | <b>ALLUVIAL FAN UNIT</b><br>Fine sand to pebbles. Poorly sorted, moderately stratified nature with bedding about 4-5 cm thick. Composed dominantly of grus. Localized lenses of limestone and diorite pebbles. Some eolian fine-medium sand layers at top of sets. Most of unit 7.5yr 5/8 (dry) 8.75yr 5/4 (wet). Stage 1 to 1+ CaCO <sub>3</sub> development. (same as unit 1).  |
| 1 | <b>EOLIAN UNIT</b><br>Medium-poorly sorted sand. Moderately poor to poorly laminated. Less than 5% silt in matrix. Two distinct horizons.<br>320-350+ cm - 10yr 7/4 (dry) 10yr 3/3 (wet)<br>285-320 cm - 10yr 5/5 (dry) 10yr 3/3.5 (wet).<br>Both horizons have a 1 cm thick CaCO <sub>3</sub> horizons (non-continuous) and CaCO <sub>3</sub> nodules as well. Upper contact sharp and very slightly wavy (erosional).   |

Outcrop described by: W.J. Brown and Y. Enzel



**TABLE 8 (continued)**  
**LITHOLOGIC DESCRIPTION OF TWO OUTCROPS EXPOSED IN THE**  
**BAKER DUMP QUARRY, NORTHERN SODA LAKE.**

UNIT NO.      DESCRIPTION OF OUTCROP - SOD-0-6

- 
- |   |   |
|---|---|
| 5 | 0-60cm. BEACH RIDGE (INNER) UNIT<br>Medium to coarse sand. Moderate to moderately-well sorted quartz-rich sand, poorly stratified to non-stratified in nature. Locally unit contains well-stratified lenses of well sorted, moderately well rounded sand. Trace pelecypod shell fragments. 5y6.5/3.5 (dry) 5y6.5/3 (wet). Several thin near horizontal beds of green sand/silt containing secondary carbonate and possible evaporite minerals (thenardite?). Same as unit 5 in Outcrop SOD-0-5. |
| 4 | 60-150cm. BEACH RIDGE. Cross bedded coarse sand with lesser amounts of granules to pebbles. Moderately well sorted. Very minor amounts of Pelecypod shell fragments.  |
| 3 | 150-250cm. BEACH RIDGE/BAR (OUTER) UNIT<br>Fine sand to coarse sand, granules and pebbles. Moderate sorting with moderate to strong stratification. Dominantly grus with locally abundant well-preserved pelecypod shells and shell fragments. Locally the unit contains subrounded pebbles in lenses. Many thin horizontally continuous green fine sand/silt layers with CaCO <sub>3</sub> and Thenardite(?). Same as unit 4 in outcrop SOD-0-5, except overall coarser in nature.             |
| 2 | 250-275cm. ALLUVIAL FAN UNIT<br>Fine sand to granules and minor pebbles. Poorly sorted, moderately stratified nature with bedding about 4-5 cm thick. Composed mainly of grus. Localized lenses of limestone and diorite pebbles. Some eolian fine-medium sand layers at top of sets. Most of unit 7.5yr 5/8 (dry) 8.75yr 5/4 (wet). Stage 1 to 1+ CaCO <sub>3</sub> development. Soil development in this unit penetrates into lower eolian unit. Same as unit 2 in outcrop SOD-0-5.           |
| 1 | 275-360+cm. EOLIAN UNIT<br>Fine to medium well sorted sand. Moderately poor to poorly laminated. Less than 5% silt in matrix. Two distinct horizons. Both horizons have a 1 cm thick CaCO <sub>3</sub> lamination (non-continuous) and CaCO <sub>3</sub> nodules as well. Upper contact sharp and very slightly wavy (erosional). Same as unit 1 in SOD-0-5.  |

Outcrop described by W. J. Brown and Y. Enzel

# FENCE DIAGRAM OF BAKER DUMP QUARRY

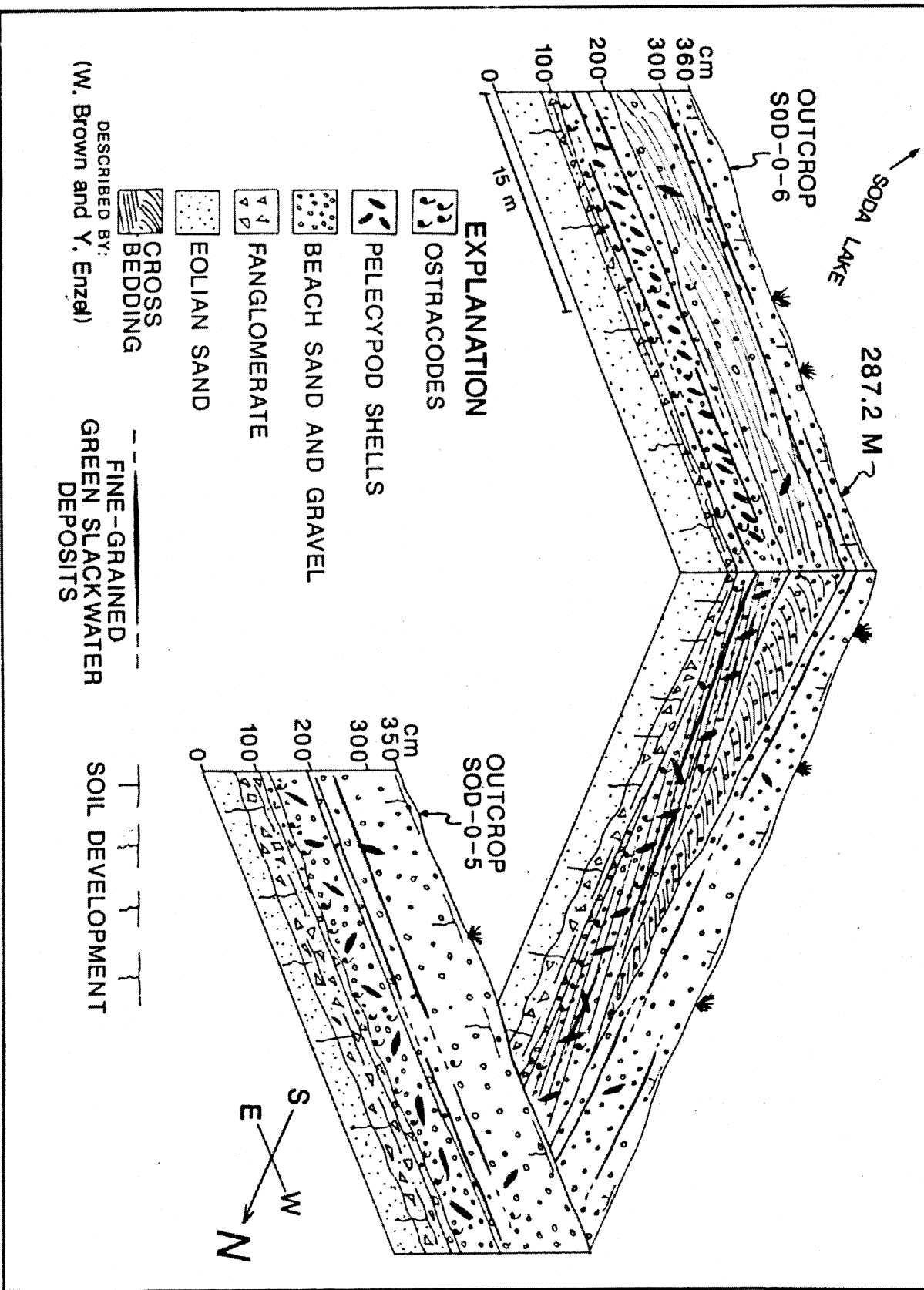


Figure 20. Fence diagram of sediments exposed in the Baker Dump quarry, A-shoreline beach ridge, northern Soda Lake playa, based on exposed stratigraphy and two detailed outcrop descriptions (see table 8) at the site.

**DRILL HOLE: SIL-E**

**TYPE OF DRILLING: HAMMER CORING**

**GENERAL LOCATION: EXTREME NORTHERN SILVER LAKE**

**EXACT LOCATION: SEE LOCATION MAP**

**GROUND ELEVATION: ~276.0 masl**

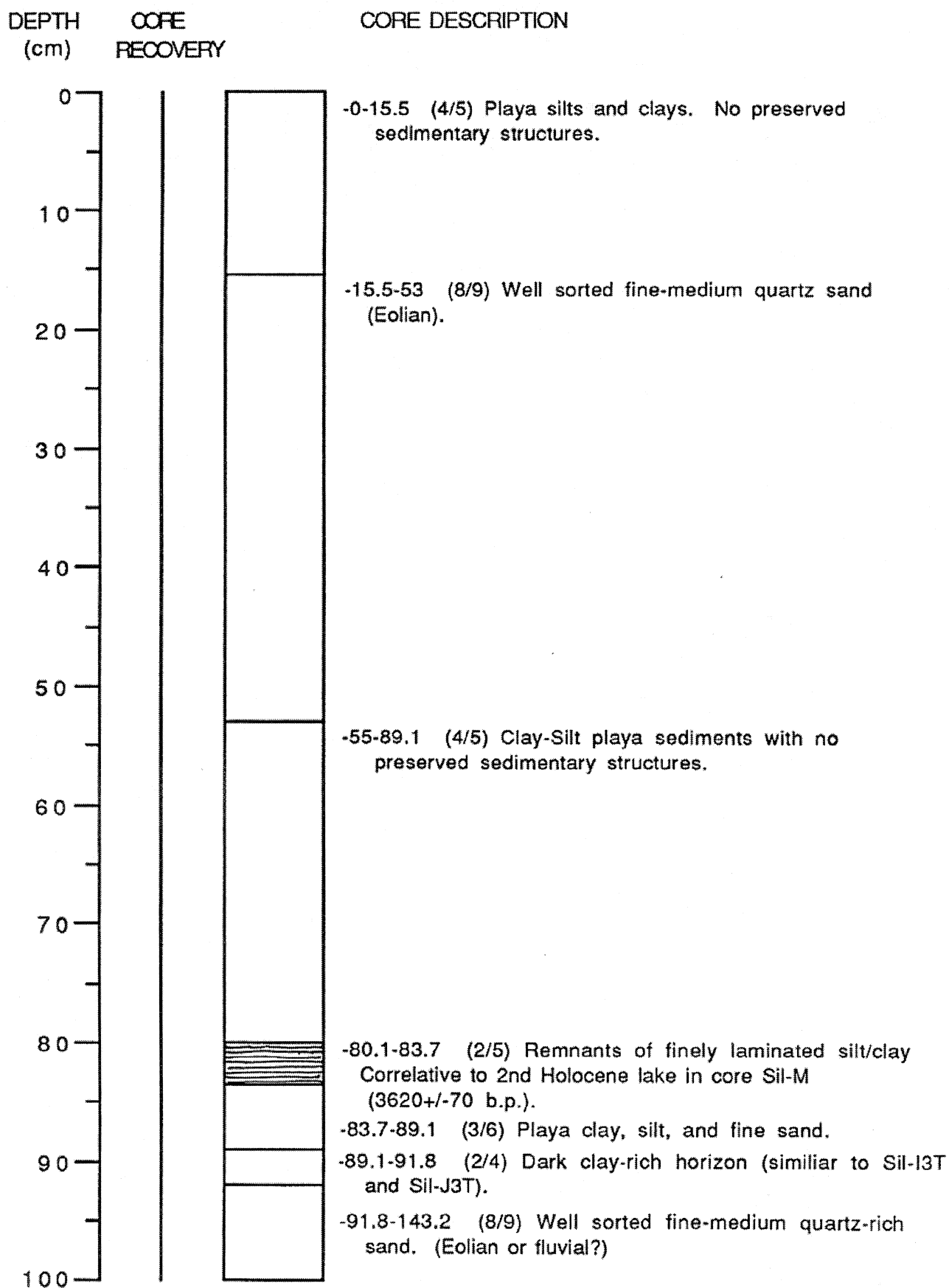
**SIZE OF HOLE: 3.8 cm**

**DRILLER: B. ALLEN, J-L MIOSSEC, W. BROWN, C. RENAULT**  
**LOGGER: W. BROWN and C. RENAULT** R. GREAVES.

**DEPTH TO WATER TABLE: NOT ENCOUNTERED**

**DRILLED DURING THIS STUDY (JAN. and MARCH 1987)**

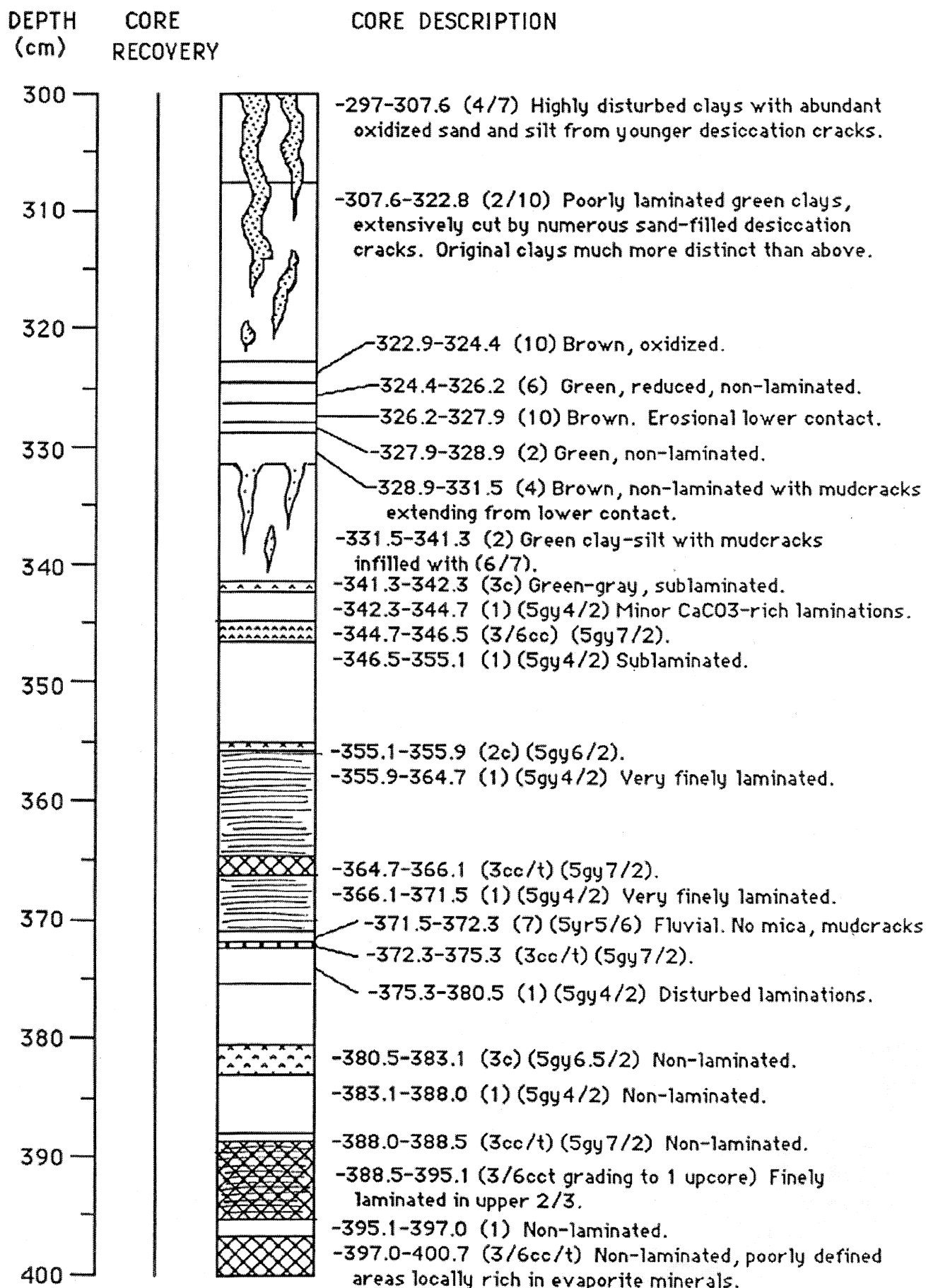
# SILVER LAKE CORE SIL-E



# SILVER LAKE CORE SIL-E

DEPTH (cm)	CORE RECOVERY	CORE DESCRIPTION
200		-200-205 (8/9/10) Coarse- to fine-grained sand composed mainly of grus and quartz (brown). (Local flood event/fan incursion on playa).
210		-205-272 (4/8/9) Mixed playa silt-clay and eolian fine-medium sand (brown).
220		
230		
240		
250		
260		
270		-272-297 (6/7) Sand, brown with clay-silt matrix. Abundant evaporite salts from 279-297 (6/7t)
		-274 (10/11) Local flood event. Pebbles up to 7mm. Grus and quartz.
280		-279 (10/11) Local flood event. Pebbles up to 5mm. Grus and quartz.
290		
300		-297-326 (2/4) Playa silt-clay (brown) with diffuse, poorly defined mudcracks infilled with sand-sized particles.

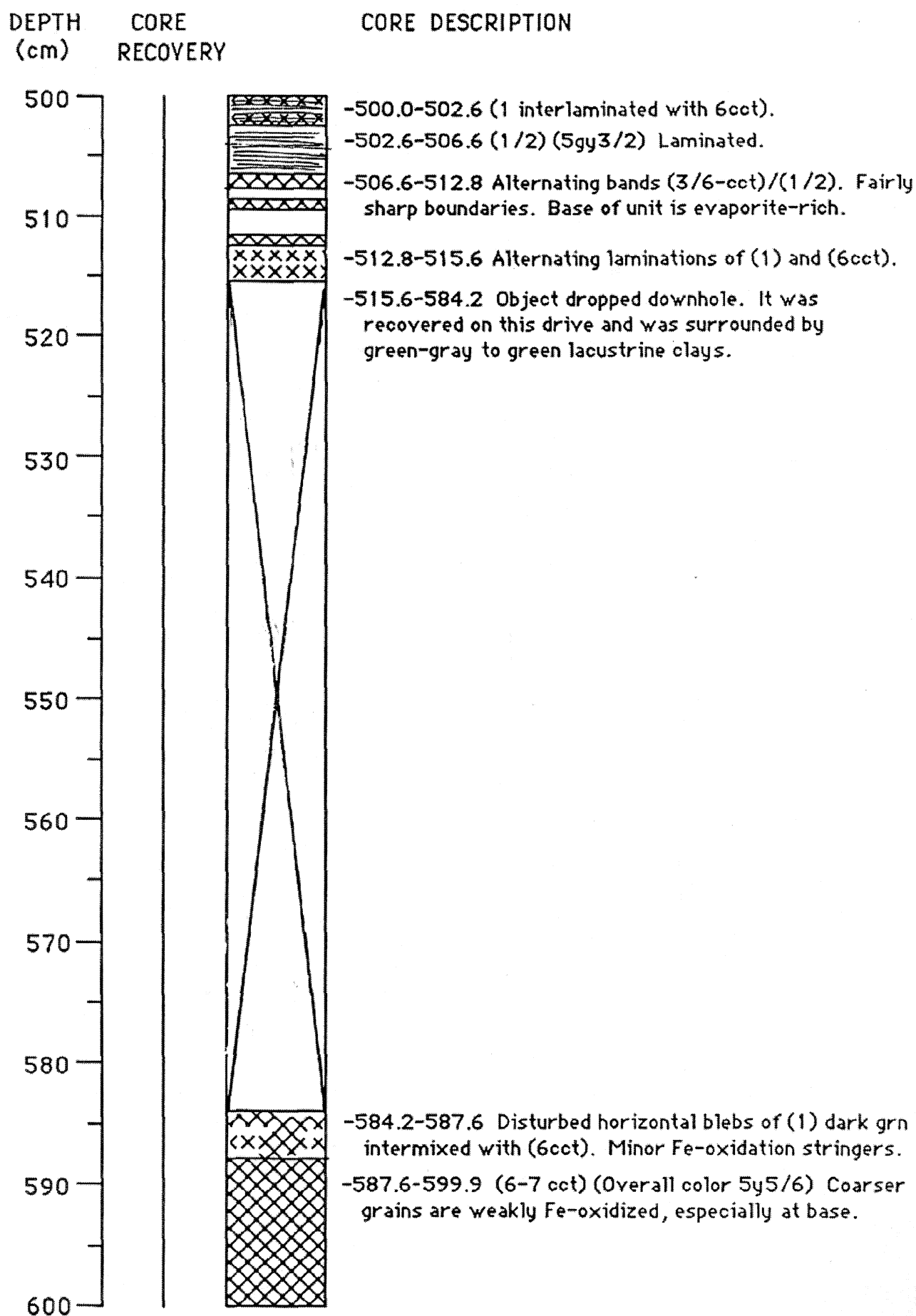
# SILVER LAKE CORE SIL-E



# SILVER LAKE CORE SIL-E

DEPTH (cm)	CORE RECOVERY	CORE DESCRIPTION
400		-397.0-400.7 (3/6-cct) Non-laminated. -400.7-405.2 (1) (5gy4/2) Poorly laminated.
410		-405.2-409.5 (3/6-cct) (5gy7/2) Non-laminated Basal mudcrack, infilled with evaporite. Total drying. -409.5-412.6 (1c) (5gy4.5/2) Laminated. -412.6-413.5 (3/6-cct) (5gy7/2) Grades into basal mudcrack.
420		-413.5-424.7 (1) (5gy5/2) Nicely laminated with very thin bands of CaCO <sub>3</sub> . 25 couplets near top averaged .94mm spacing. Very regular, especially near top. -424.7-425.9 (3/6-cct) Non-laminated. -425.9-430.2 (1) With small band of 3/6-cct near center of unit.
430		-430.2-432.9 (1c) (5gy5/2) Laminated. -432.9-436.8 (1) Laminated. Mudcrack from above (5gy4/4) infilled with sand at top; fining downwards. -436.8-441.6 (3/6-cct) With minor 1cm thick (1) Laminated.
440		-441.6-445.3 (3c) (5gy5/2) Sublaminated to laminated. -445.3-446.6 (3/6-cct) (5gy6.5/2) Non-laminated. -446.6-455.4 (1) (5gy5/2) Laminated but disturbed by mudcracks. 1.3 cm thick (1c) zone near bottom of unit.
450		-455.5-456.7 (3/6-cct) (5gy6.5/2) Non-laminated. -456.7-462.3 (1) Beautifully laminated green clays. -462.3-468.5 (3/6-cct) Weak but visible banding.
470		-468.5-473.6 (1 to 1c) (5gy3/2) Beautifully laminated green clays with very thin CaCO <sub>3</sub> laminae. Couplets very regular. Average thickness of 33 couplets = 1.55mm. -473.6-475.4 (3/6-cct) Non-laminated. -475.4-481.0 (1) (5gy3/2) Moderately laminated clays except in middle of unit with 2.8cm thick well-laminated CaCO <sub>3</sub> /clay couplets. Average thickness = 1.15mm.
480		-481.0-484.3 (3/6-cct) (5gy7/2.5) Drying event in middle of unit (weakly visible mudcrack). -484.3-488.9 (1) (5gy3/2) CaCO <sub>3</sub> laminations. -488.9-493.6 (3/6-cct) (5gy7/2.5) Non-laminated.
490		-493.6-497.2 (2) (5gy3/2) Thin CaCO <sub>3</sub> -rich bands in lower portion of unit that fade upwards to silt-clay. -497.2-500.0 (3/6-cct) Basal mudcracks infilled with evaporite minerals. Total drying event.
500		

# SILVER LAKE CORE SIL-E





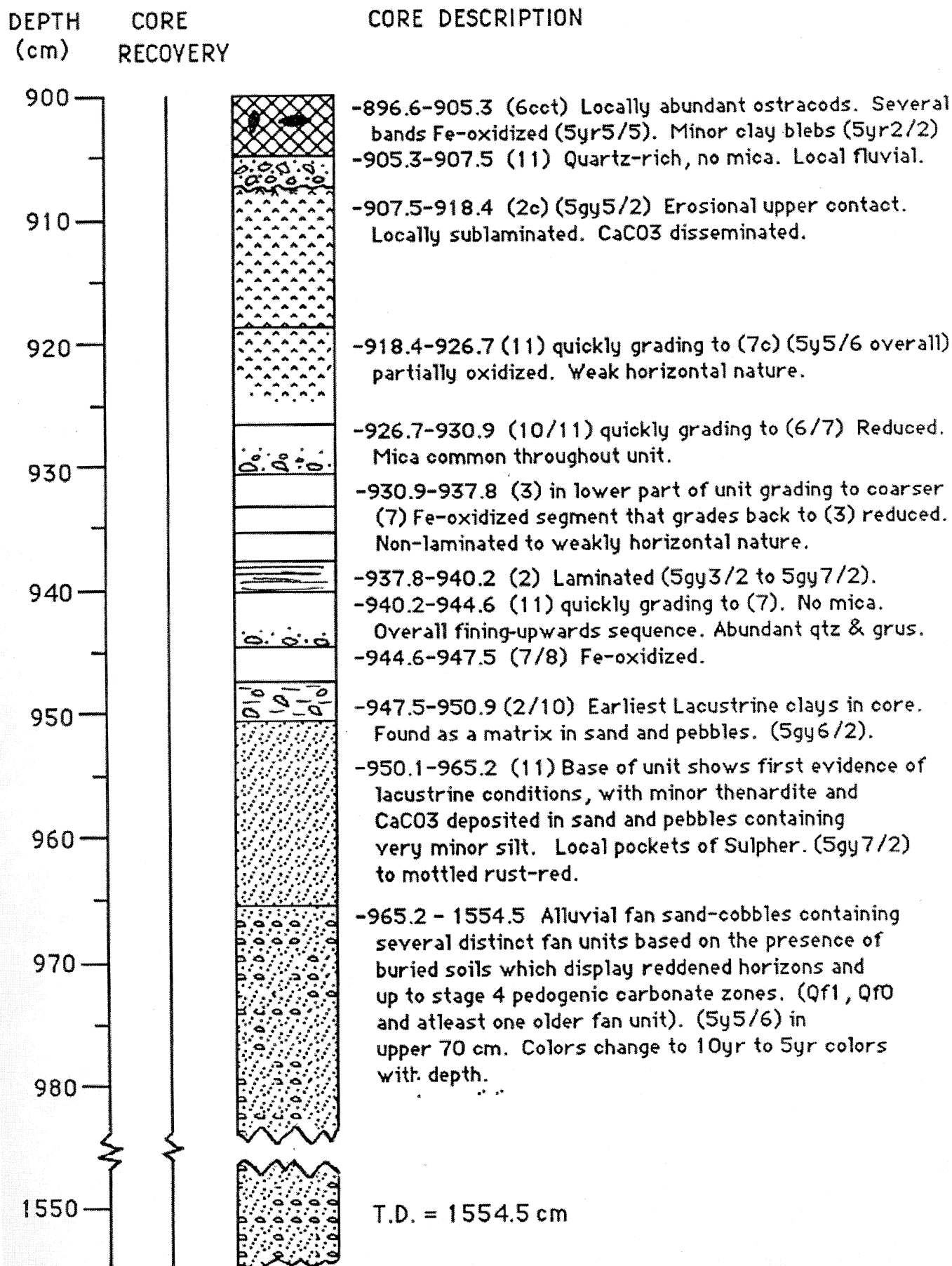
# SILVER LAKE CORE SIL-E

DEPTH (cm)	CORE RECOVERY	CORE DESCRIPTION
600		-599.9-605.4 (3/6c) Weakly laminated. Strongly oxidized in basal 5mm.
		-605.4-609.9 (2/3) (5gy5/2) Minor localized Fe-oxidation.
610		-609.9-612.2 (3cct) (5gy5-7/2) Non-laminated.
		-612.2-614.4 (2) Weakly laminated.
		-614.4-617.9 (3) Weakly laminated.
620		-617.9-620.4 (3c) grades to (6) in upper 1/3 of unit. Fe-oxidized in basal half.
		-620.4-626.3 (2c) (5gy5-7/2) Slightly more CaCO <sub>3</sub> in base; lessens with height.
		-626.3-626.6 (6cc) Thin white-green band.
630		-626.6-637.5 (1/2) (10y4/2) Sublaminated clay-silt with local disseminated CaCO <sub>3</sub> .
640		-637.5-643.0 (6c) Variegated to mottled reduced green-gray to Fe-oxidized rust colored horizontal banding.
		-643.0-646.0 (6cct) Reduced green.
		-646.0-651.1 (3/6c) Variegated to mottled reduced green-gray to Fe-oxidized rust colored horizontal banding.
650		-651.1-652.4 (2) (7.5y3/2 in lower 3/4 oxidized yellow-orange in top. (partial drying?))
		-652.4-657.3 (11 fining upward to 7c) Local flood.
		-657.3-657.8 (5cct) gray. Erosional upper contact.
660		-657.8-658.5 (2) Green clay-silt.
		-658.5-66.2 (3c-6c) Variegated reduced green-gray to Fe-oxidized rust colored horizontal banding. Thin (6cct) at base.
670		-666.2-671.5 (6c) (10yr6/6 overall) Oxidized/reduced in indistinct mottled fashion. 2mm CaCO <sub>3</sub> band at top.
		-671.5-675.2 (3cc) CaCO <sub>3</sub> especially abundant at base.
		-675.2-679.6 (1/2) (5gy5/2) Non-laminated. Gradational lower contact.
680		-679.6-729.1 (1/2) (5gy6/2) Sublaminated to locally laminated clay-silt. Very locally minor Fe-oxidation blebs. Laminations better in lower half. Black Mn? bands/blebs common.
690		
700		

# SILVER LAKE CORE SIL-E

DEPTH (cm)	CORE RECOVERY	CORE DESCRIPTION
700		
710		-679.6-729.1 (1/2) (5gy6/2) Sublaminated to locally laminated clay-silt. Very locally minor Fe-oxidation blebs. Laminations better in lower half. Black Mn? bands/blebs common. Color grades to 5gy7/2 in sublaminations and CaCO <sub>3</sub> content increases towards base.
720		
730		-729.1-737.2 (2/2c) (5gy5/2) Nicely laminated with CaCO <sub>3</sub> bands that form thickest couplets at base. 13 couplets ranging from 6.2mm-1.3mm thick. Appears to represent changes in lake salinity due to lowering.
740		-737.2-738.1 (3cc) Non-laminated. -738.1-746.5 (Alternating 2 and 6cct bands) Starting with 6c at base. Silt-clay locally well laminated.
750		-746.5-753.9 (Alternating 2 and 6cct bands) with clay-silt at base. Low water zones Fe-oxidized. Boundaries generally gradational between clays and overlying evaporites.
760		-753.9-754.8 (11c) Fining upward local flood event. -754.8-762.0 (6c at base grading to 3c in middle and 2c in upper half. Non-laminated. Thin CaCO <sub>3</sub> at base.
770		-762.0-763.3 (3c) (5gy6.5/2) -763.3-765.0 (2 with small 4c band in middle). -765.0-766.3 (6c) (5gy6.5/2) Non-laminated. -766.3-767.4 (2/3) Non-laminated. -767.4-768.5 (1/2) Gradational upper contact. -768.5-770.2 (2/3c) CaCO <sub>3</sub> laminations at base. -770.2-774.7 (6cct) (5u7/2) Minor Fe-oxidation.
780		-774.7-781.6 (2/3-6c) (7.5y4/3) Sublaminated with minor Fe-oxidation in diffuse bands.
790		-781.6-785.4 (1 grading to 2 grading to 6c) Overall lowering of the lake. Thin CaCO <sub>3</sub> laminations at base. -785.4-790.5 (6c quickly grading to 3) Clays have CaCO <sub>3</sub> laminations at about 4mm spacings.
800		-790.5-791.3 (3) Non-laminated. -791.3-797.4 (6c) (5y4/4) Very weak horizontal banding. 797.4-800.5 (2 with one band of 6c in center) Lower clay-silt has wavy Mn? dark gray laminations.

# SILVER LAKE CORE SIL-E



**DRILL HOLE: SIL-F**

**TYPE OF DRILLING: AUGER CORING**

**GENERAL LOCATION: NORTHERN SILVER LAKE**

**EXACT LOCATION: SEE LOCATION MAP**

**GROUND ELEVATION: 275.9 masl**

**SIZE OF HOLE: 6.3 cm**

**DRILLER: KLEINFELDER AND ASSOC.**

**LOGGER: W. BROWN**

**DEPTH TO WATER TABLE: Not recorded.**

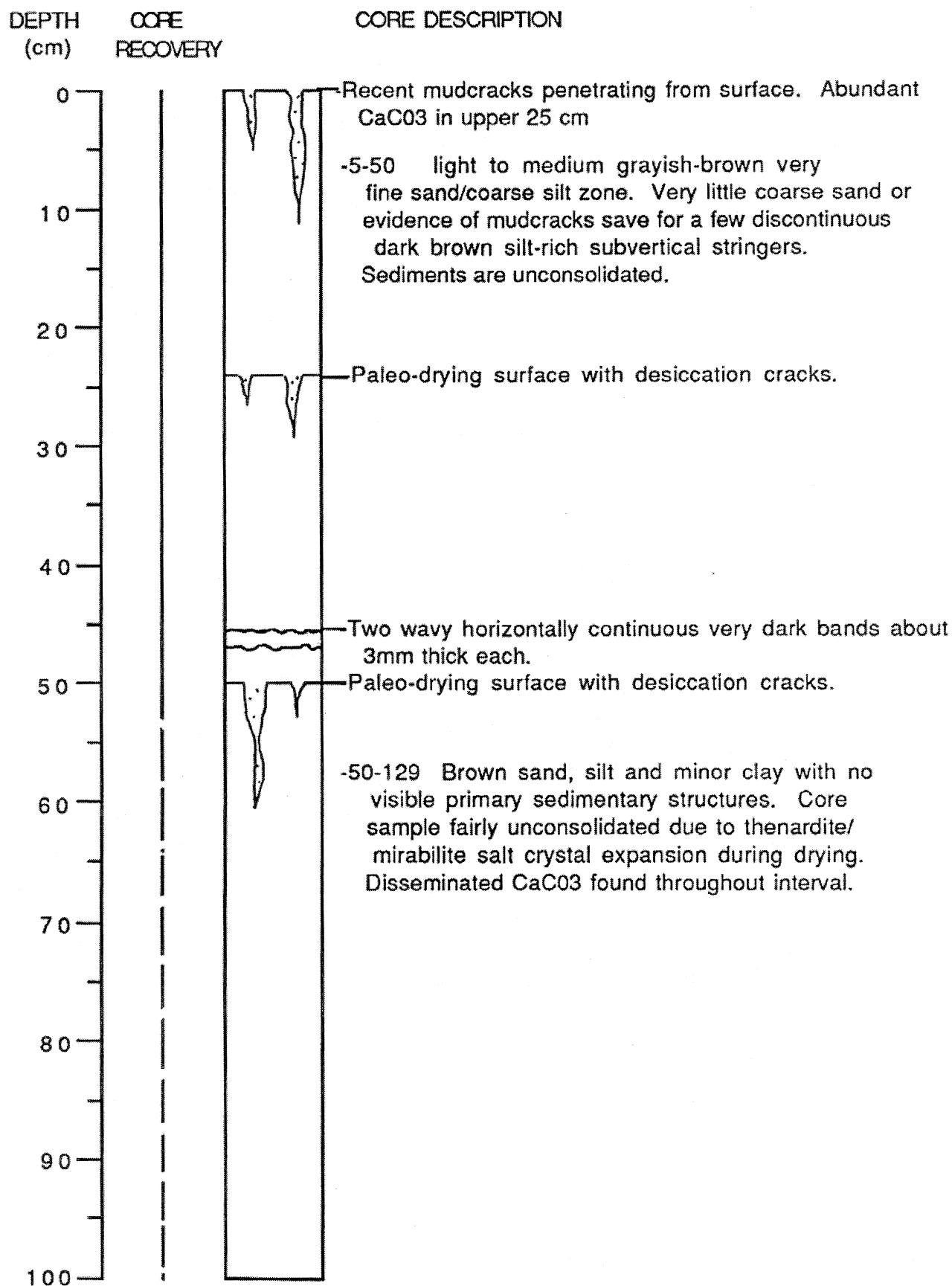
**DRILLED DURING THIS STUDY (MARCH, 1987)**

# DRILLING LOG - HOLE SIL-F

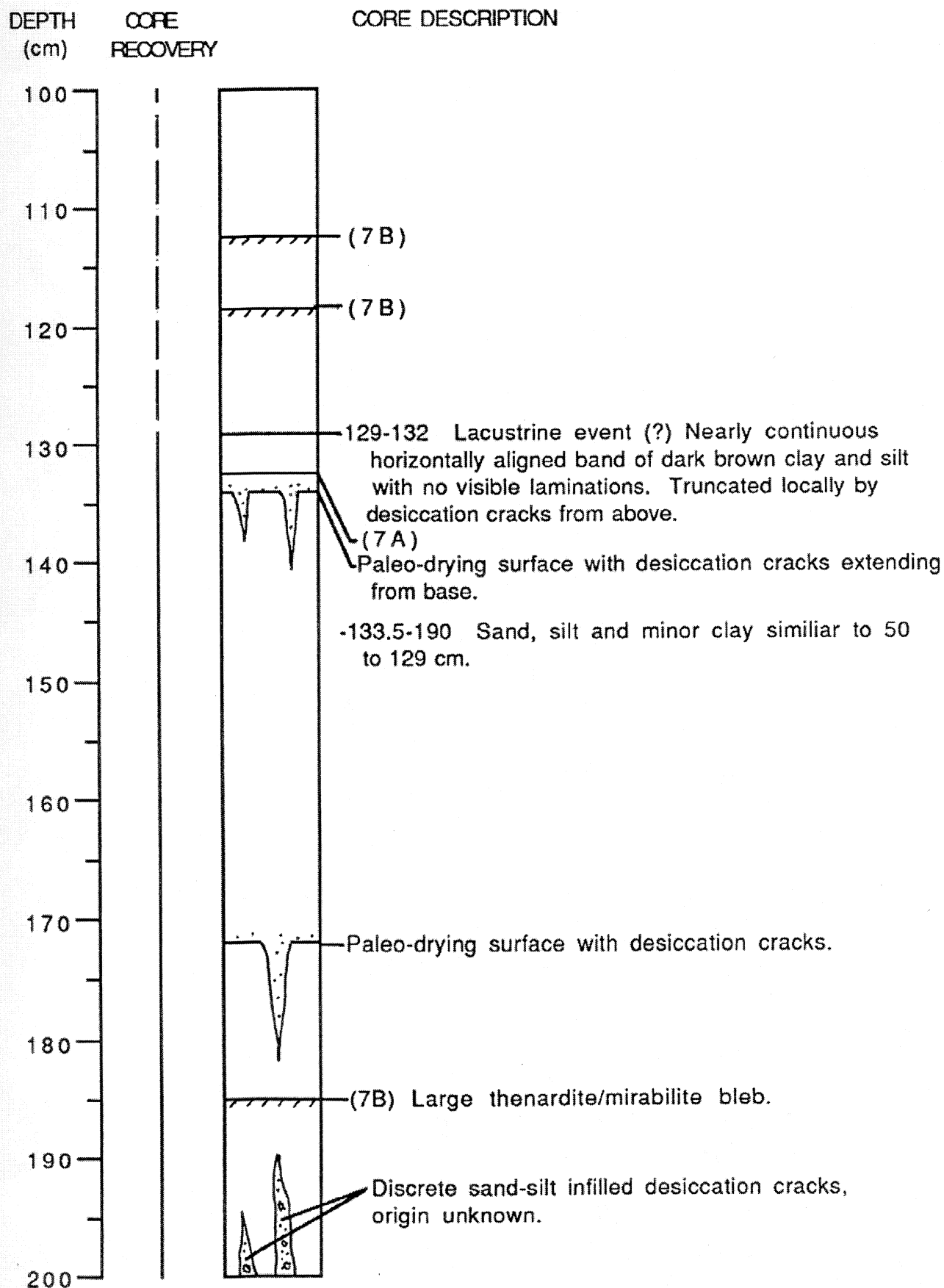
DRIVE	FOOTAGE	DESCRIPTION
1	0 - 3	Brown silty clay.
2	3 - 8	Brown silty clay.
3	8 - 11	Brown silty clay.
4	11 - 16	Brown clays changing to green with depth.
5	16 - 18	Green clays.
6	18 - 23	Green clays, plastic.
7	23 - 28	Green clays changing to blue clays with dark brown horizons at base of drive.
8	28 - 33	Mixed green to blue clays with dark brown/black zones.
9	33 - 38	Green-blue clays with brown to dark brown zones.
10	38 - 39	Hard layer. Coarse sand to 1 inch cobbles. Fan/Beach deposits.

Description by W.J. Brown and R.Y. Anderson - March 1987.

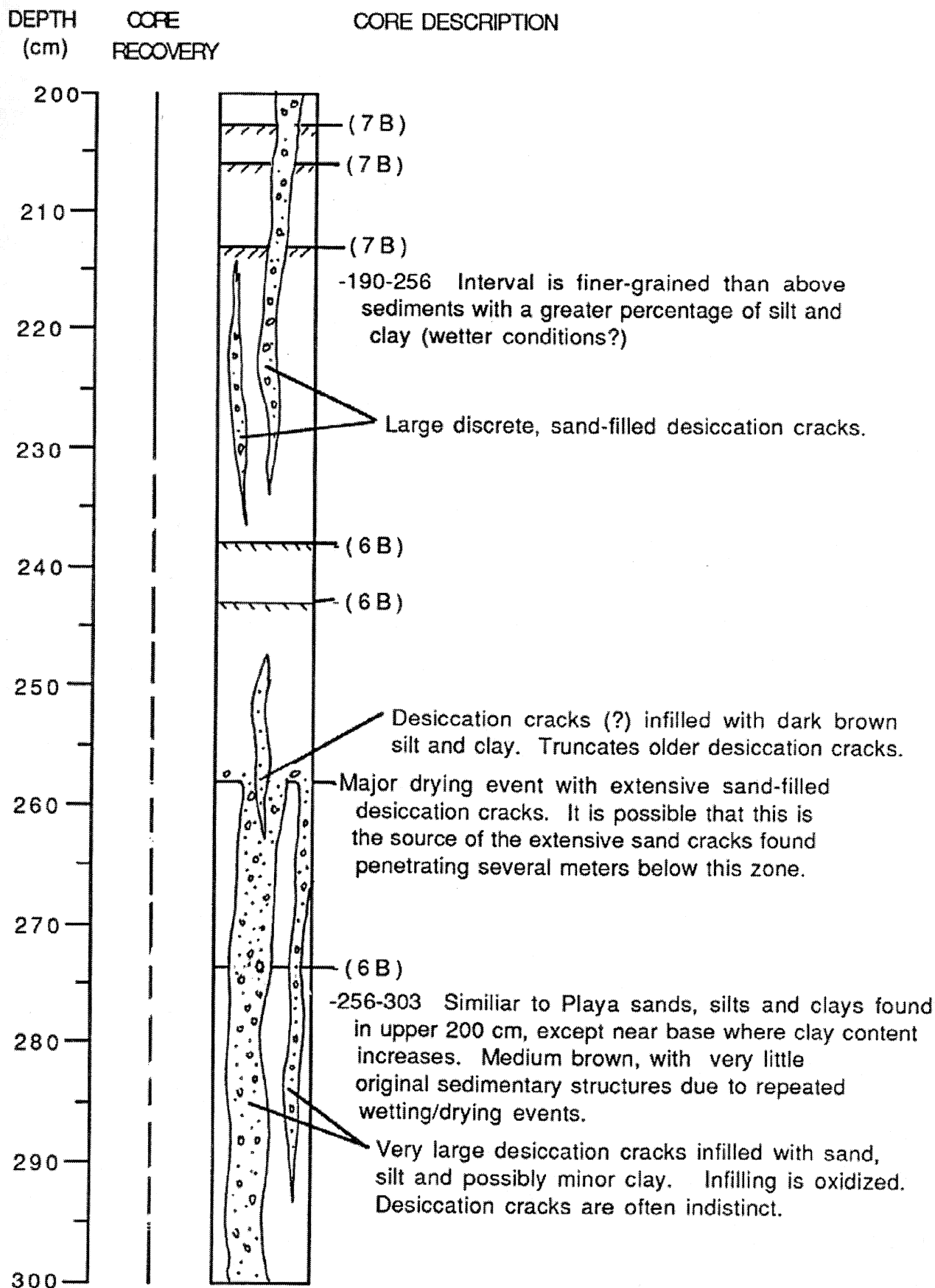
# SILVER LAKE CORE SIL-F



# SILVER LAKE CORE SIL-F

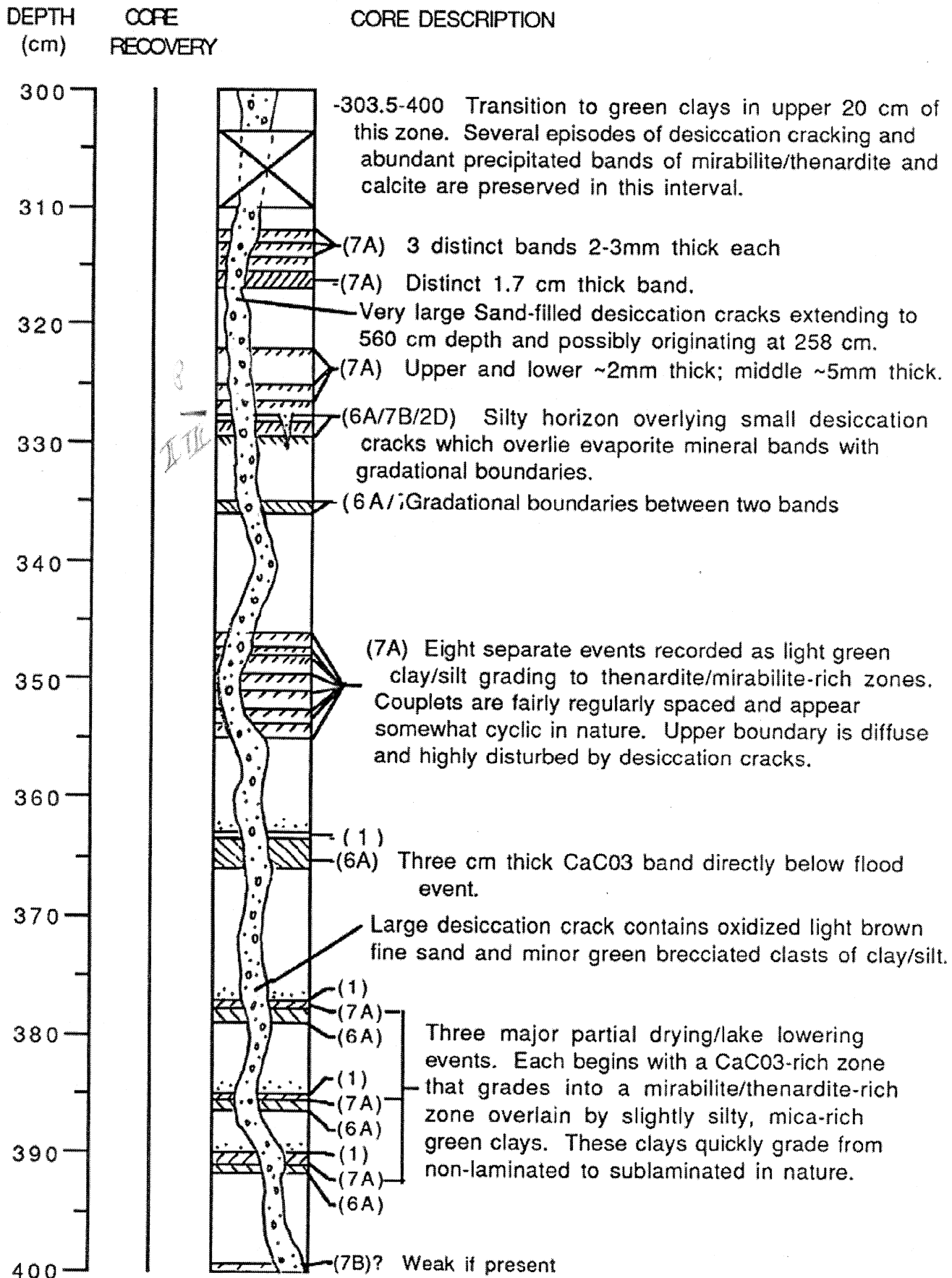


# SILVER LAKE CORE SIL-F

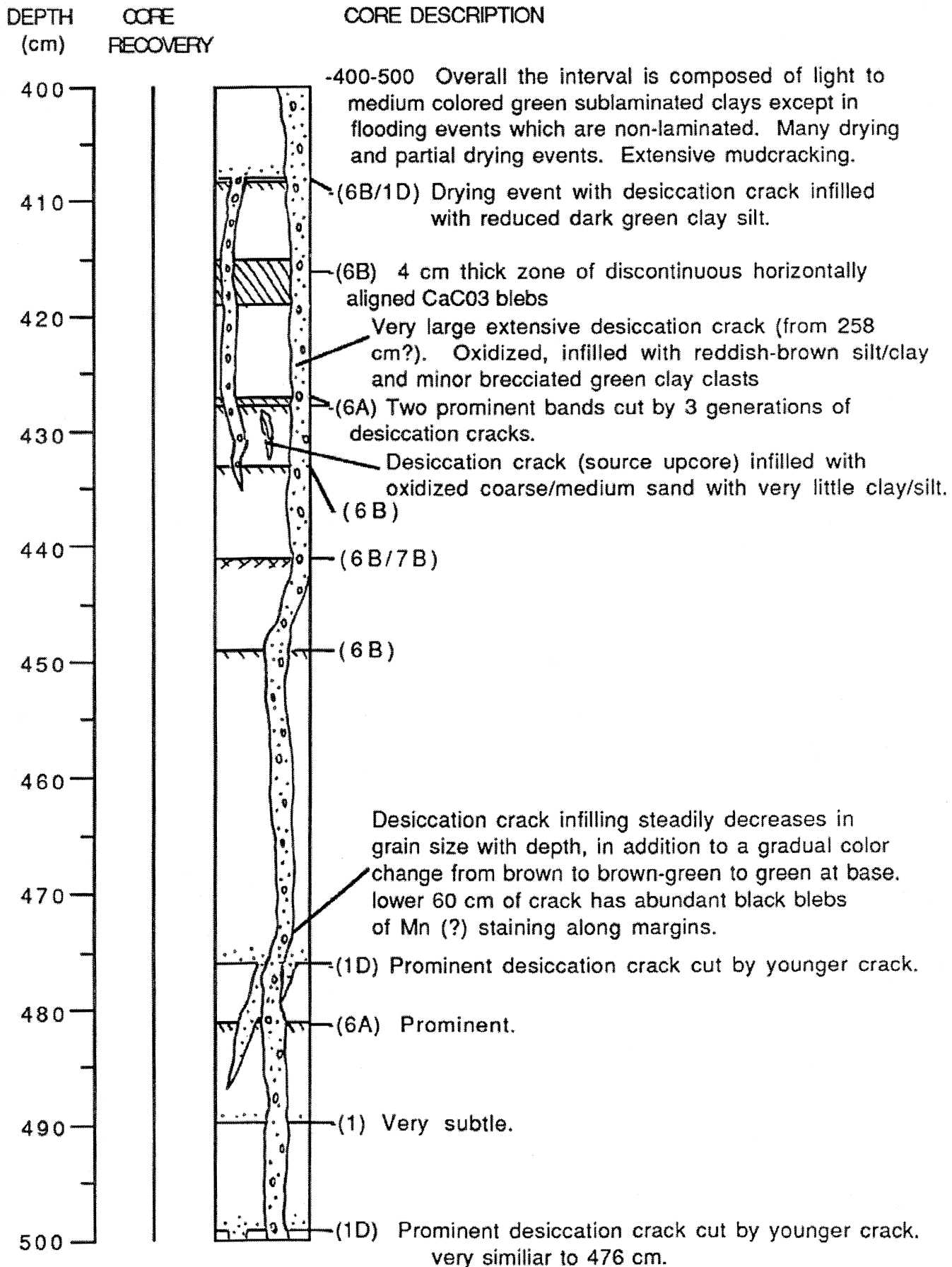




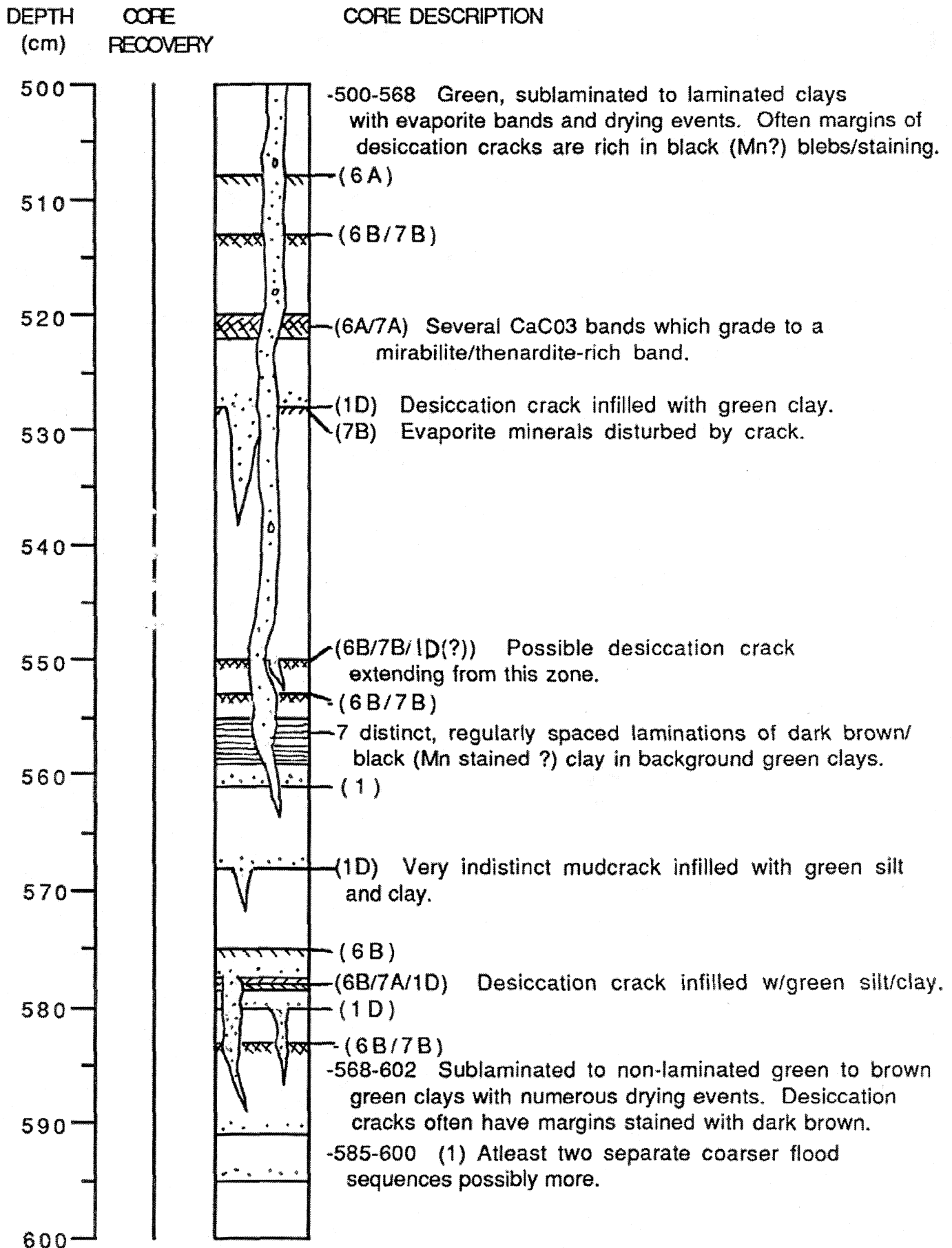
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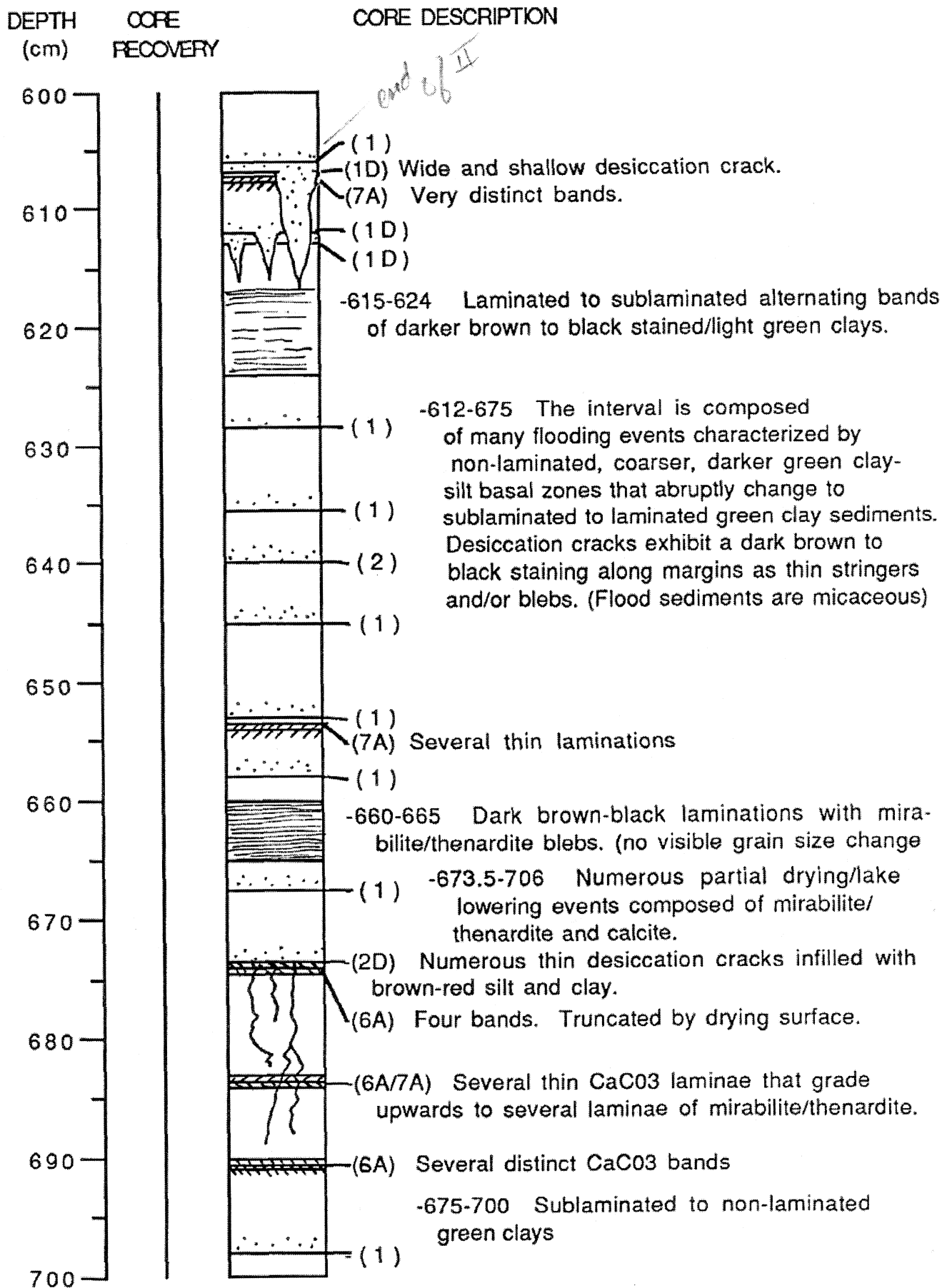
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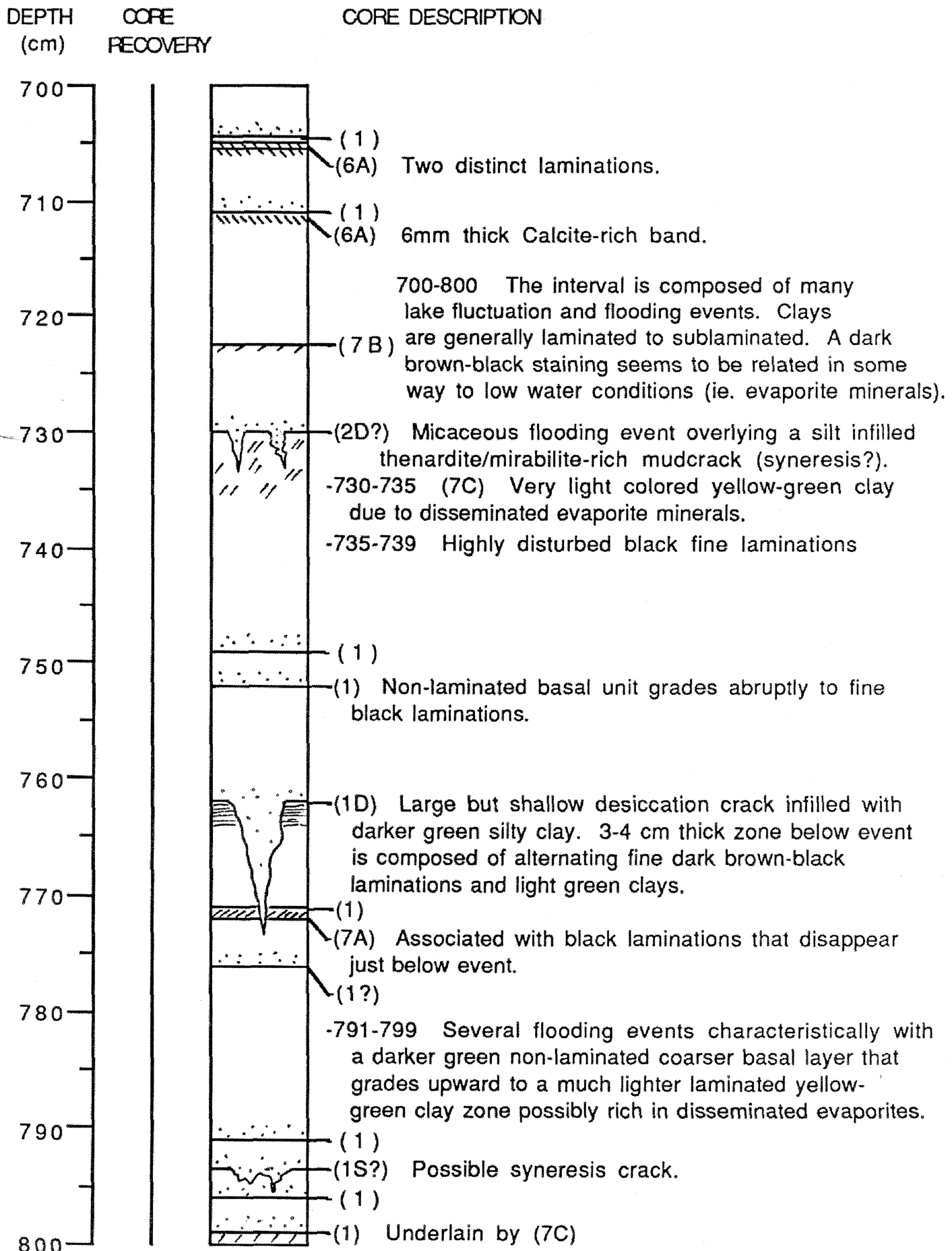
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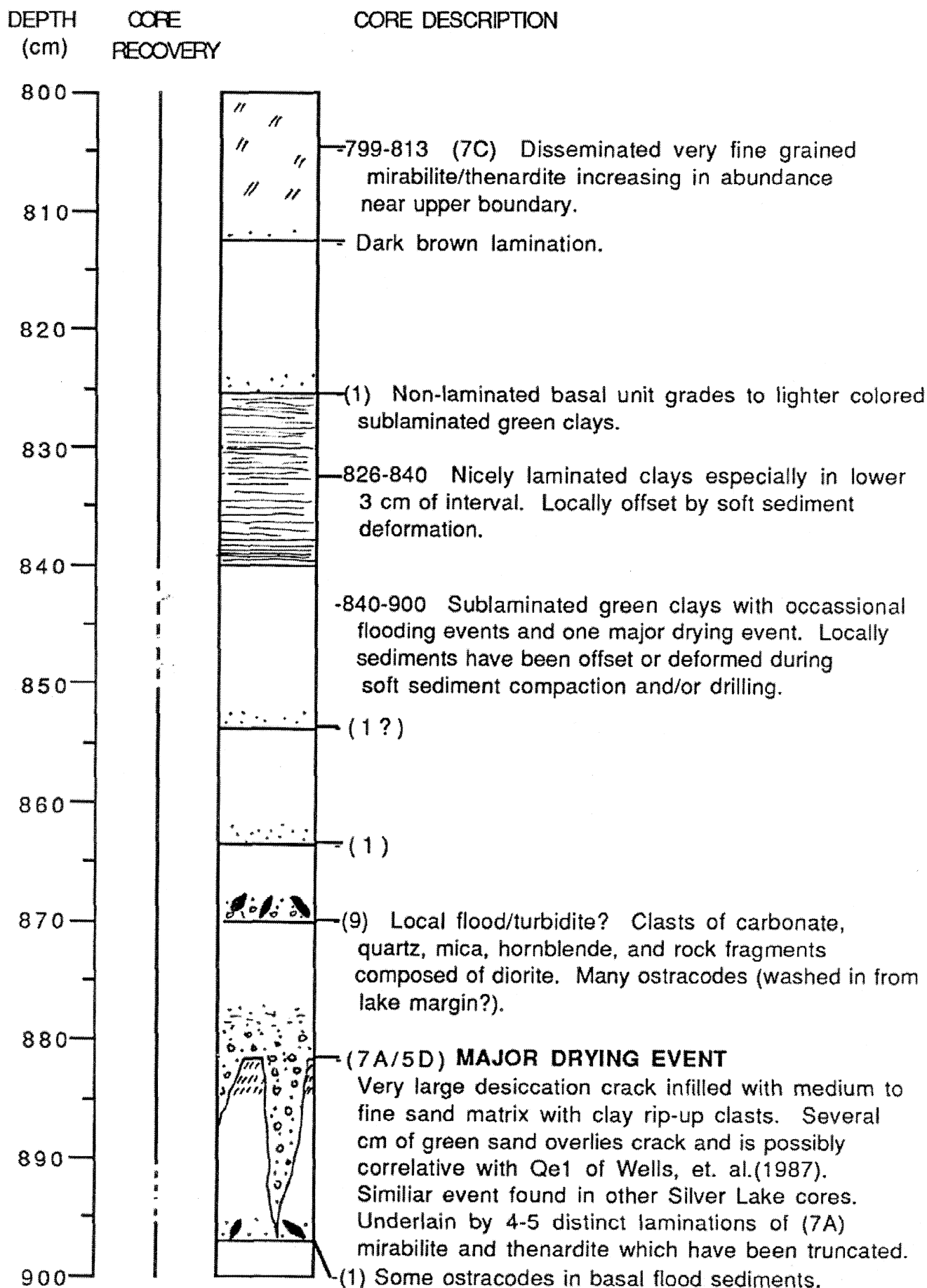
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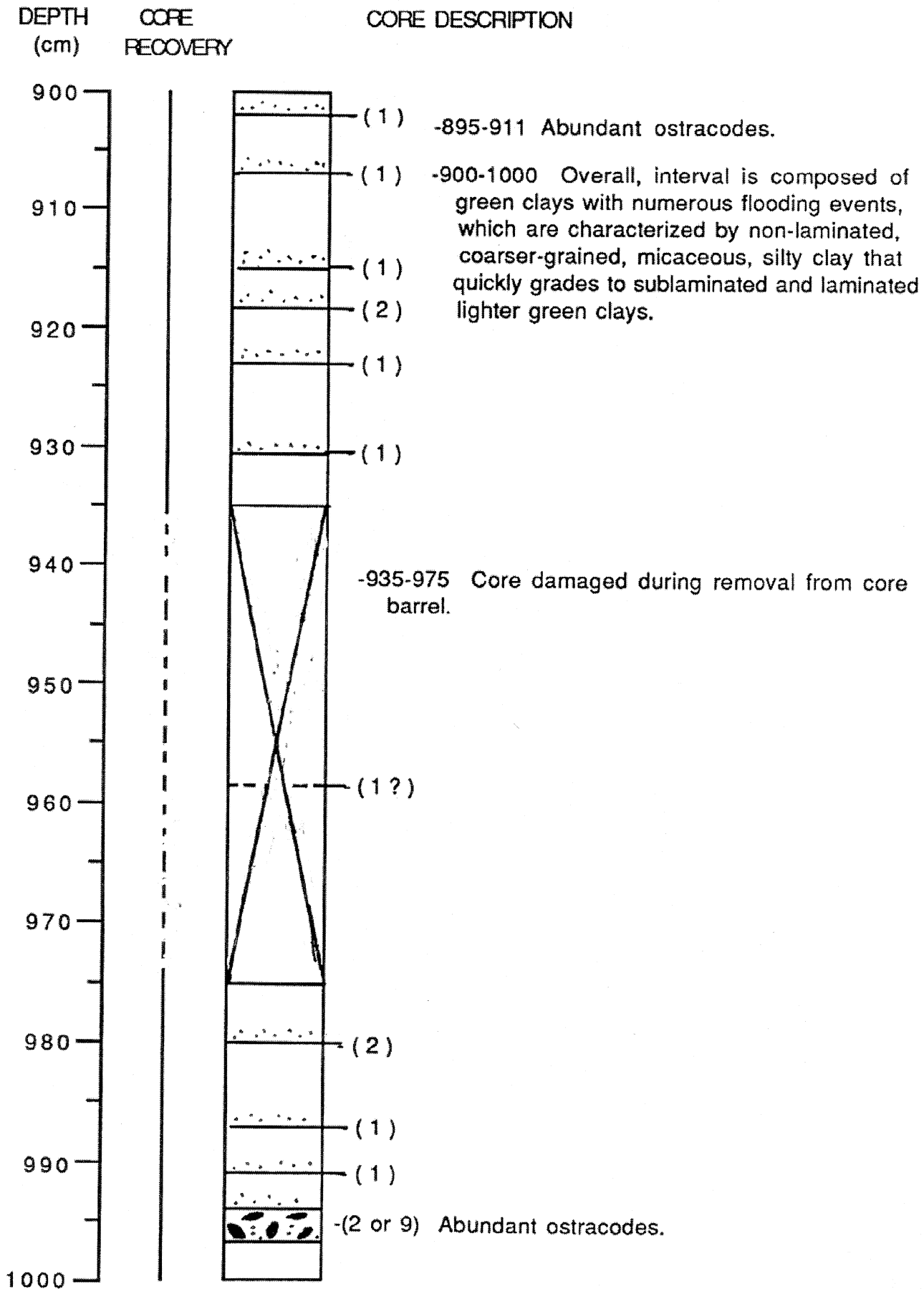
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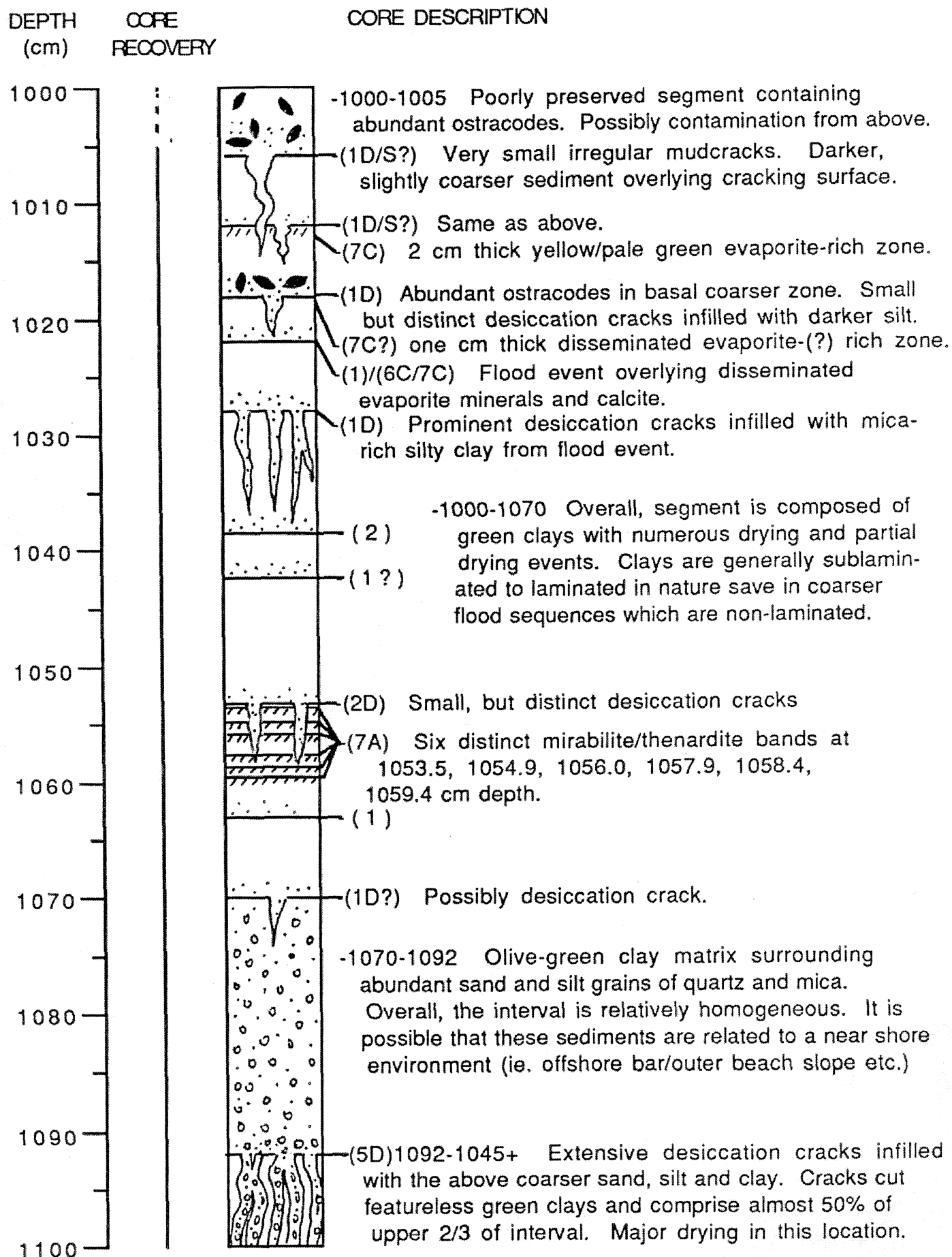
# SILVER LAKE CORE SIL-F



# SILVER LAKE CORE SIL-F

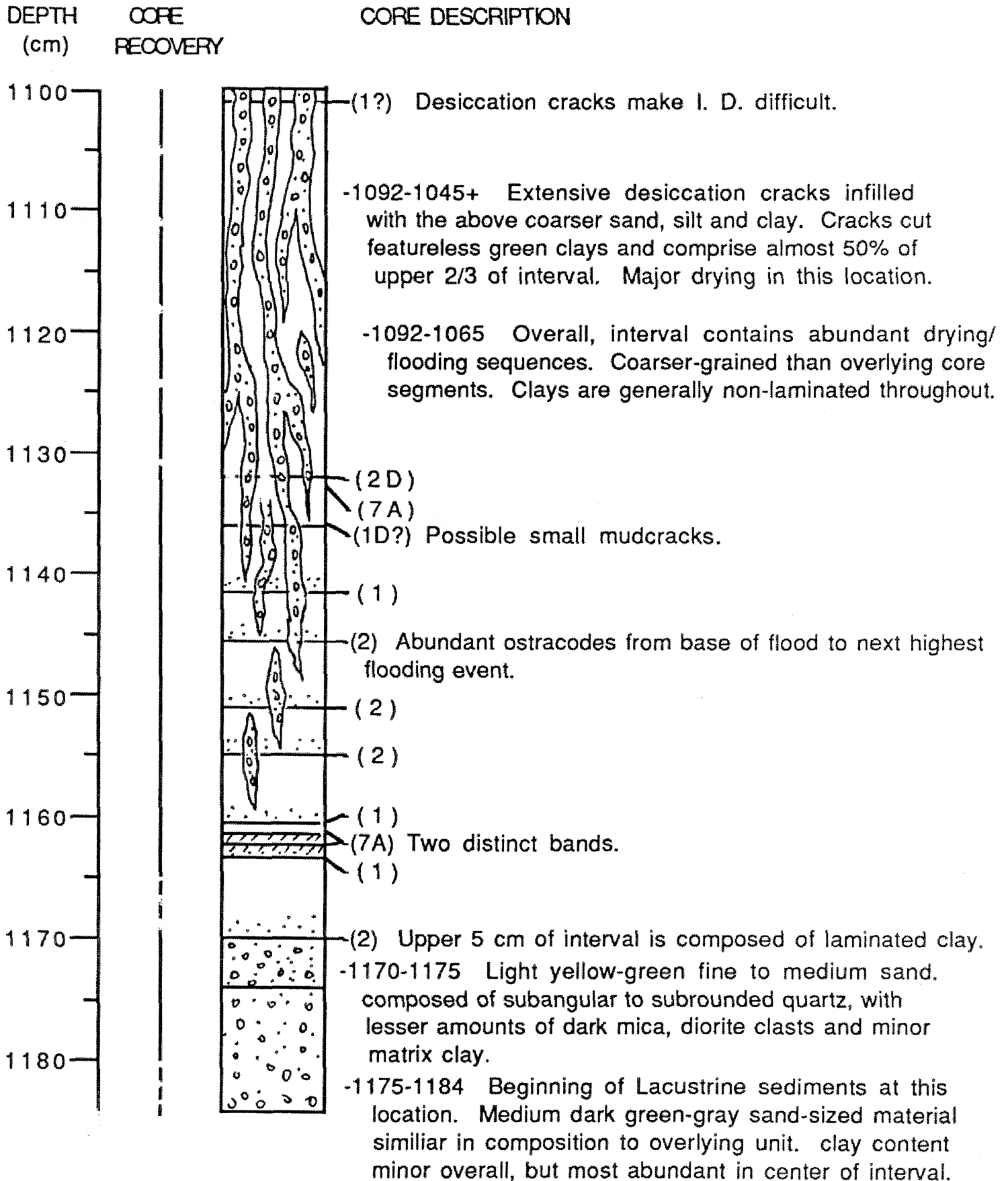


# SILVER LAKE CORE SIL-F





# SILVER LAKE CORE SIL-F



T.D. = 1184 cm.

**DRILL HOLE: SIL-G**

**TYPE OF DRILLING: HAMMER CORING**

**GENERAL LOCATION: TIDEWATER BASIN - SILVER LAKE**

**EXACT LOCATION: SEE LOCATION MAP**

**GROUND ELEVATION: 281.15 masl**

**SIZE OF HOLE: 3.8 cm**

**DRILLER: B. ALLEN, R. GREAVES, and J-L MIOSSEC**

**LOGGER: J-L MIOSSEC**

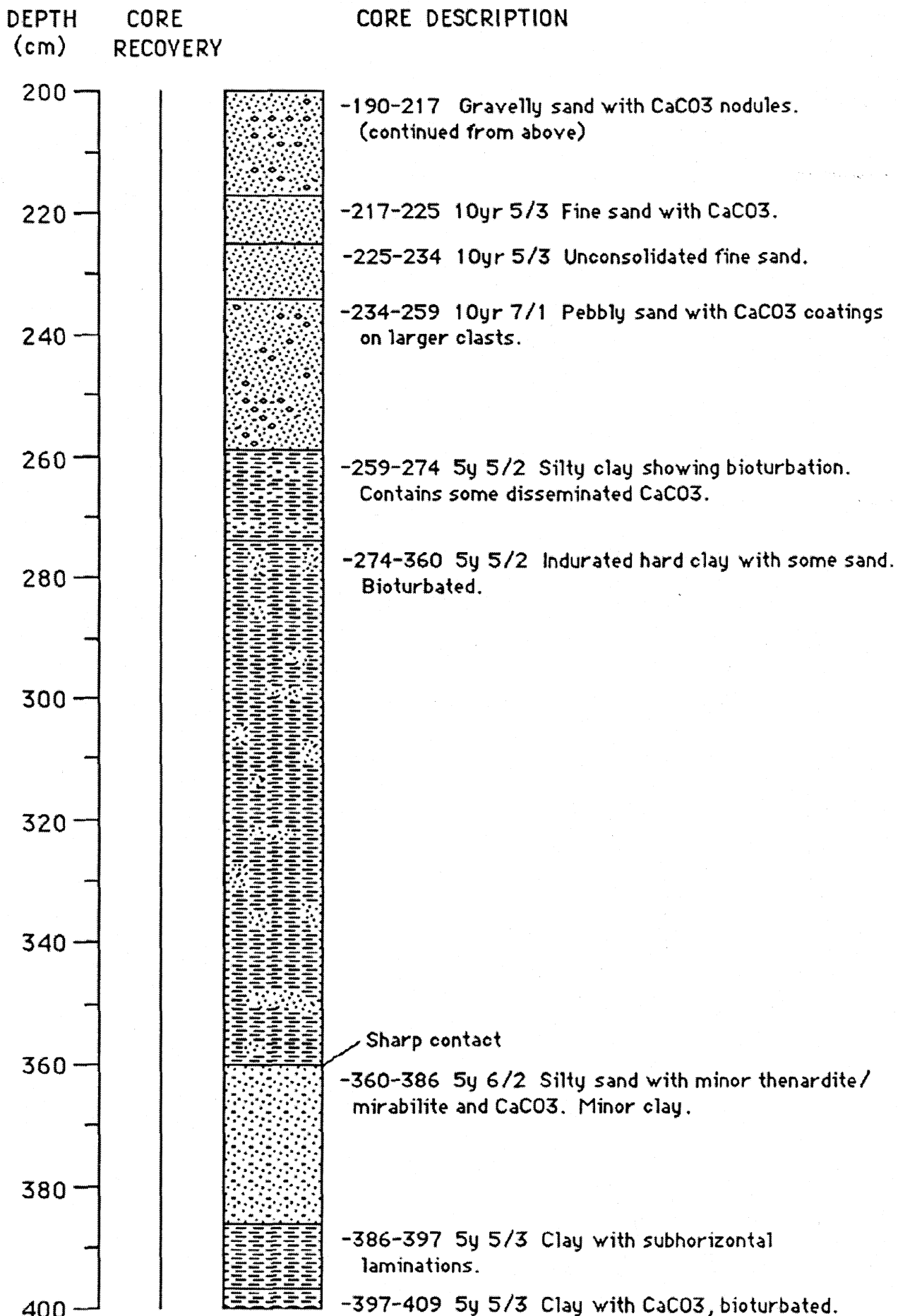
**DEPTH TO WATER TABLE: NOT ENCOUNTERED**

**DRILLED DURING THIS STUDY (MARCH 1987)**

# SILVER LAKE CORE SIL-G

DEPTH (cm)	CORE RECOVERY	CORE DESCRIPTION
00		-0-12 10yr 6/6 Unconsolidated sandy silt.
20		-12-37 10yr 4/4 Consolidated silty sand (hard).
40		-38-44 10yr 4/6 Sublaminated clay with mudcracks. Sharp lower boundary.
60		-44-64 10yr 6/3 Indurated, clayey silt-sand..
80		-64-88 10yr/6/4 Medium to strongly indurated medium to coarse grained sand. -diffuse boundary (coarser sand over finer sand).
100		-88-98 10yr 6/4 Unconsolidated medium to coarse sand.
120		-98-116 10yr 6/4 Clay with mudcracks.
140		-116-122 10yr6/4 Two unconsolidated sand units separated by a thin clay-rich band.
160		-122-142 Unconsolidated fine sand with minor coarse silt (micaceous). (Eolian).
180		-142-158 Sandy clay with mudcracks extending from top of unit filled with sand.
200		-158-176 Fine sand (Eolian) with rootlets, discont- inuous CaCO <sub>3</sub> and some pebbles at base.
		-176-190 10yr 6/3 Gravelly sand to sandy gravel.
		-190-218 Gravelly sand with CaCO <sub>3</sub> nodules.

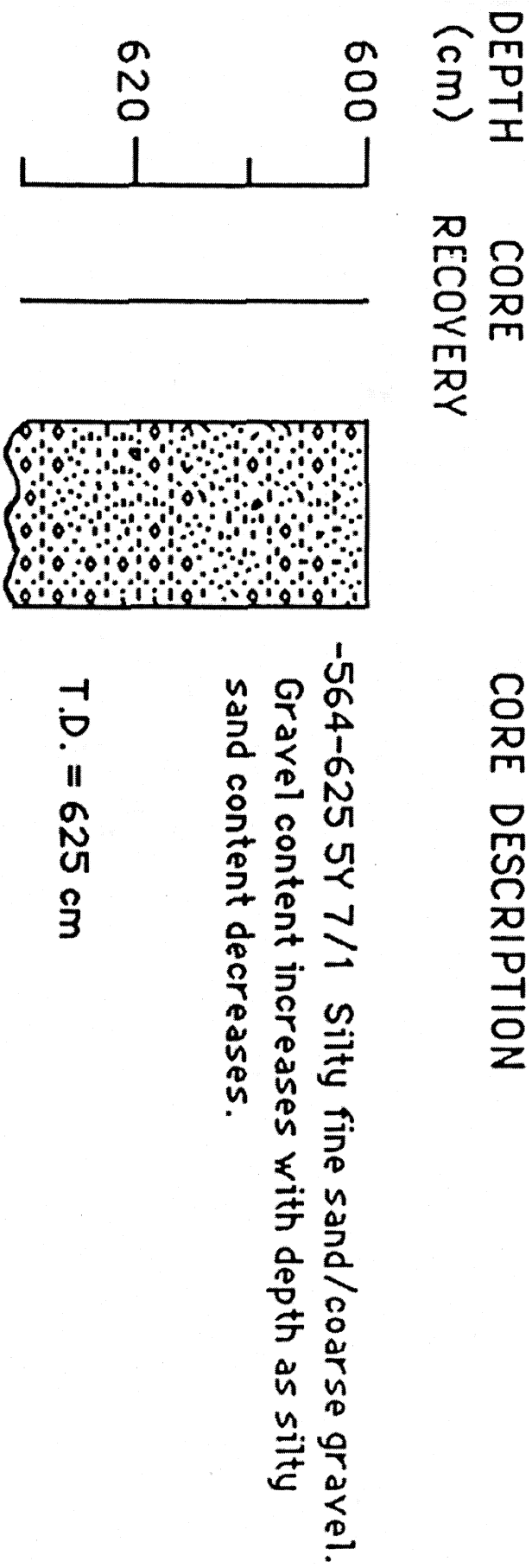
# SILVER LAKE CORE SIL-6



# SILVER LAKE CORE SIL-G

DEPTH (cm)	CORE RECOVERY	CORE DESCRIPTION
400		-397-409 5y 5/3 Clay with CaCO <sub>3</sub> , Bioturbated.
420		-409-508 5y6.5/3 Clay with minor silt and sand.
440		
460		
480		
500		
520		-508-524 5y 6/2 Silty clay, often bioturbated and containing CaCO <sub>3</sub> .
540		-524-540 5y 6/2 Sandy fine silt.
560		-540-546 5y 6/2 Silty sand.
		-546-552 5y 6/2 Silty clay with CaCO <sub>3</sub> .
		-552-564 5y 6/6 Gravelly silty sand.
580		-564-625 5y 7/1 Silty fine sand/minor coarse gravel. Gravel content increases with depth. Some CaCO <sub>3</sub>
600		

# SILVER LAKE CORE SIL-G



**DRILL HOLE: SIL-H**

**TYPE OF DRILLING: AUGER CORING**

**GENERAL LOCATION: NORTH CENTRAL SILVER LAKE**

**EXACT LOCATION: SEE LOCATION MAP**

**GROUND ELEVATION: 277.0 masl**

**SIZE OF HOLE: 6.3 cm**

**DRILLER: KLEINFELDER AND ASSOC.**

**LOGGER: W. BROWN and B. ALLEN**

**DEPTH TO WATER TABLE: Not recorded.**

**DRILLED DURING THIS STUDY (MARCH, 1987)**

# FIELD DRILLING LOG - HOLE SIL-H

DRIVE	FOOTAGE	DESCRIPTION
1	0 - 3	Brown eolian sands and silts.
2	3 - 8	Brown silts and sands.
3	8 - 13	Brown sand and silt with increasing clays with depth.
4	13 - 18	Dry brown clays grading to green at base of drive.
5	18 - 23	Green clays with sand infilling structures.
6	23 - 28	Green, plastic clays with sand near top of drive.
7	28 - 33	Green clays changing to blue with dark brown zones and localized pelecypod shell fragments.
8	33 - 38	Blue-green silty clays; very friable. Sticky.
9	38 - 43	Blue-green clays; very friable with abundant dark brown zones.
10	43 - 48	Blue clays with dark brown zones (organics ?) and ostracodes. Laminated. Strong H <sub>2</sub> S smell.
11	48 - 53	Blue to blue-green clays with abundant dark layers with possible ostracodes. H <sub>2</sub> S smell.
12	53 - 58	Blue clay with sand-silt layers. Black zone with H <sub>2</sub> S smell in lowest few inches of drive.
13	58 - 63	Top 2 feet is composed of black sand, silt and clay with strong H <sub>2</sub> S smell (same as Sil-l). Bottom three feet of drive composed of sand layers with a gray silt-clay matrix
14	63 - 67	Gray to gray-green clays with layers of pebbles and sand-sized material. Hard surface encountered at end of run.
15	67 - 68	Hammer Core Sample. Sand with well-sorted and rounded texture. Ostracodes (?).

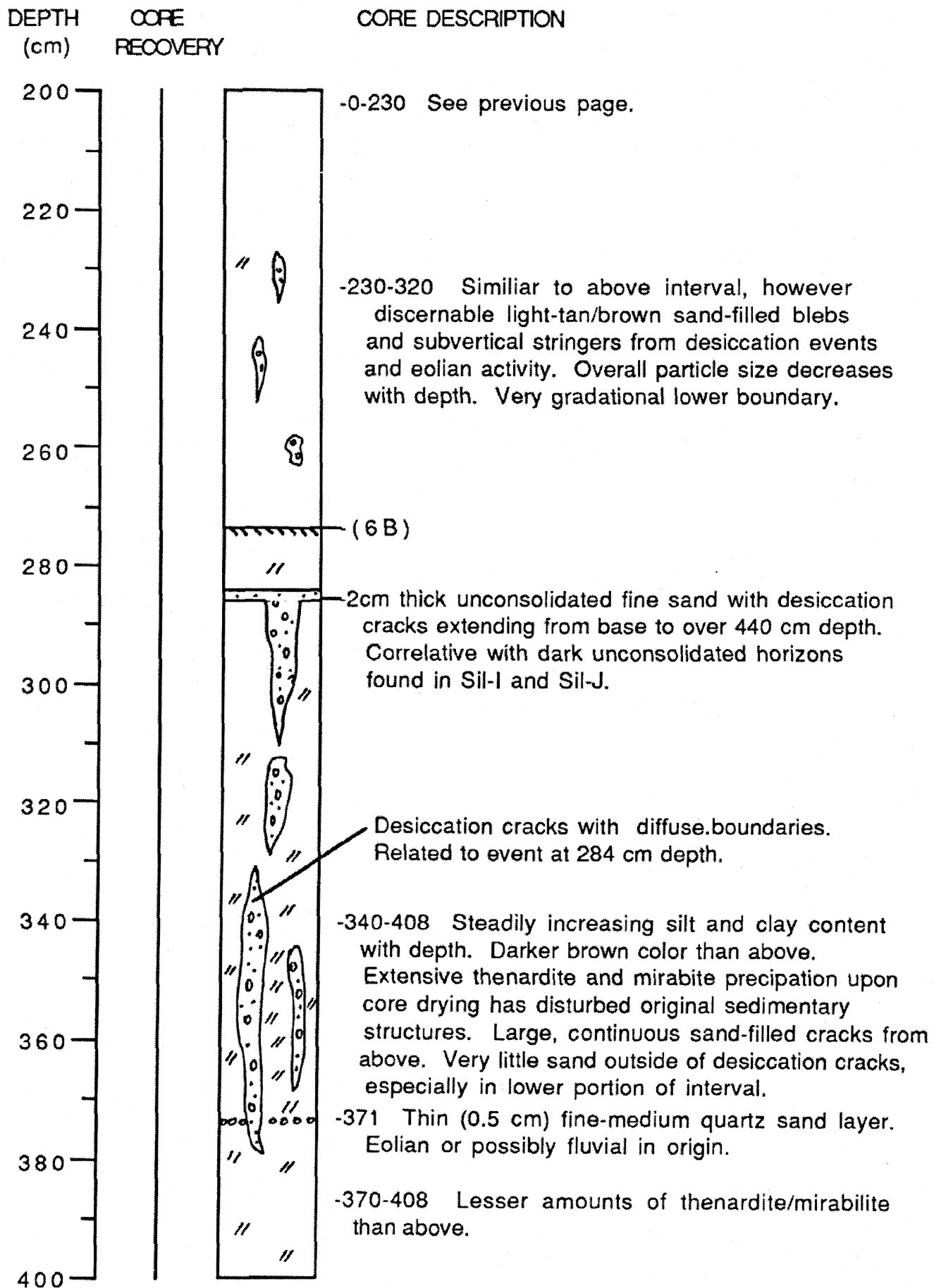
Description by W.J. Brown and R.Y. Anderson - March 1987



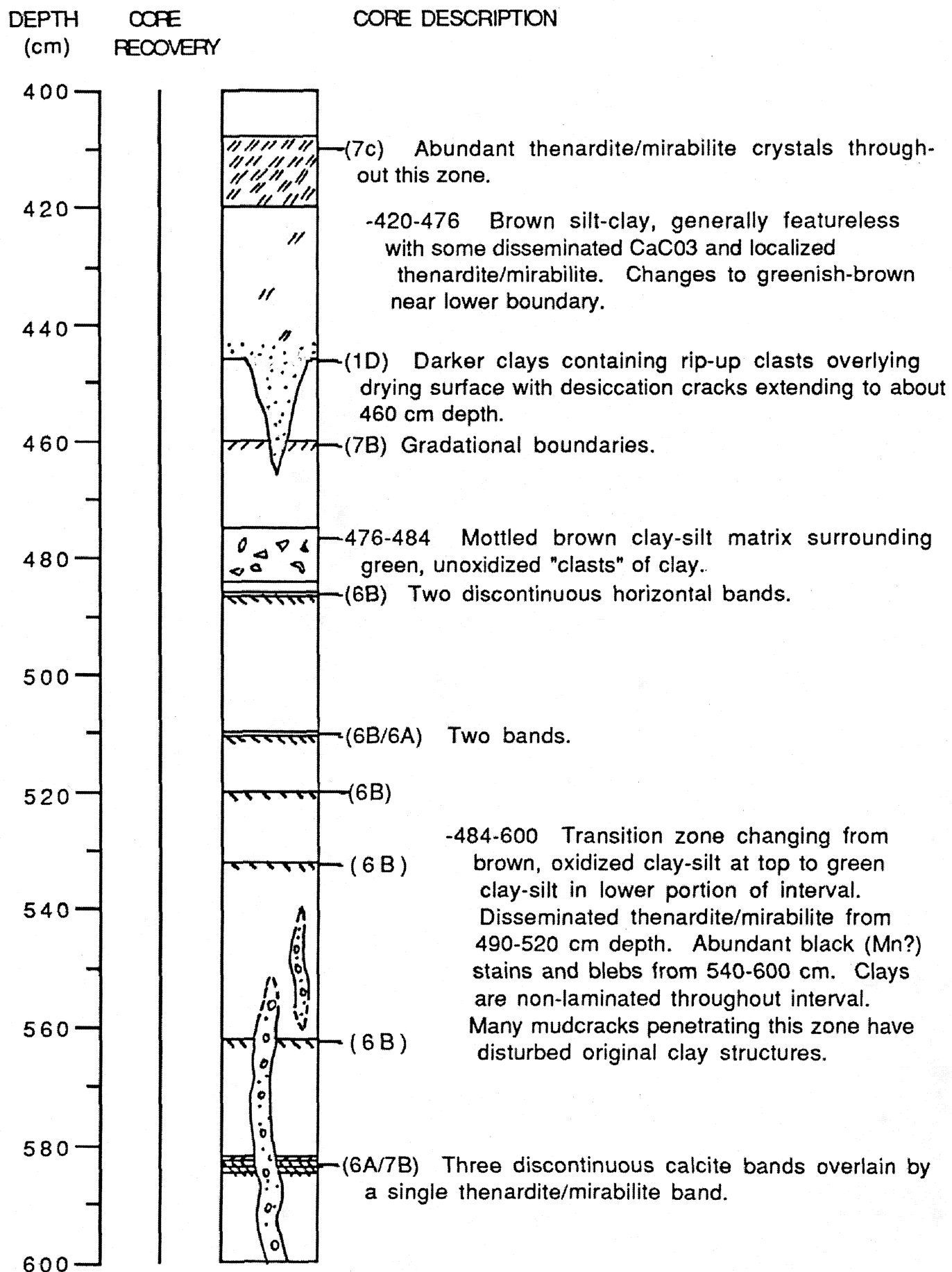
**SILVER LAKE CORE SIL-H**

DEPTH (cm)	CORE RECOVERY	CORE DESCRIPTION
00		<p>-0-230 Brown Sandy silt with minor clay. Numerous wetting-drying cycles have resulted in highly disturbed nonlaminated sediments. Disseminated CaCO<sub>3</sub> found throughout interval increasing in abundance with depth. Thenardite/mirabilite blebs found below 100 cm depth. Sediments are generally poorly indurated, especially in upper 15 cm of interval.</p>
20		
40		
60		
80		
100		
120		
140		
160		
180		
200		

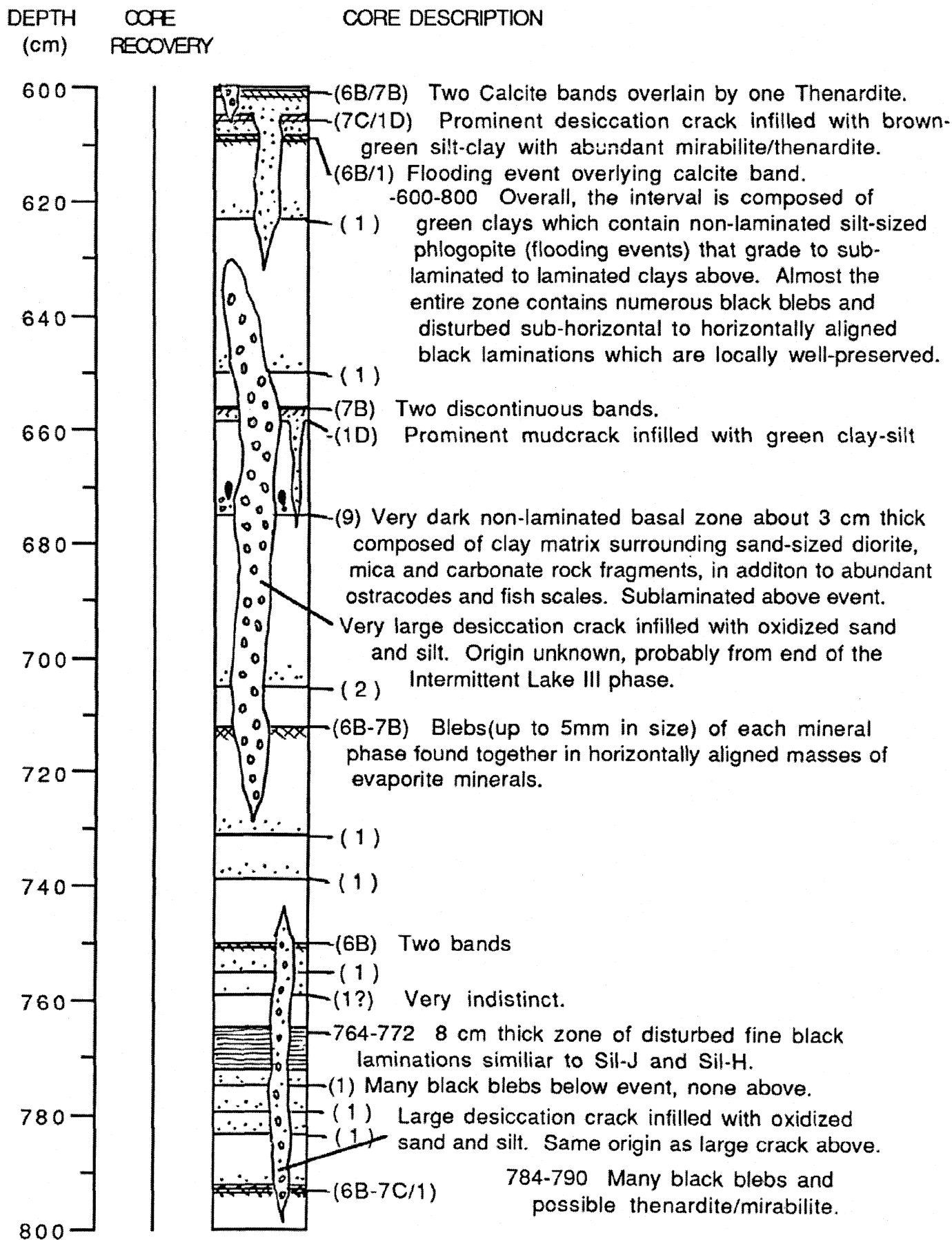
# SILVER LAKE CORE SIL-H



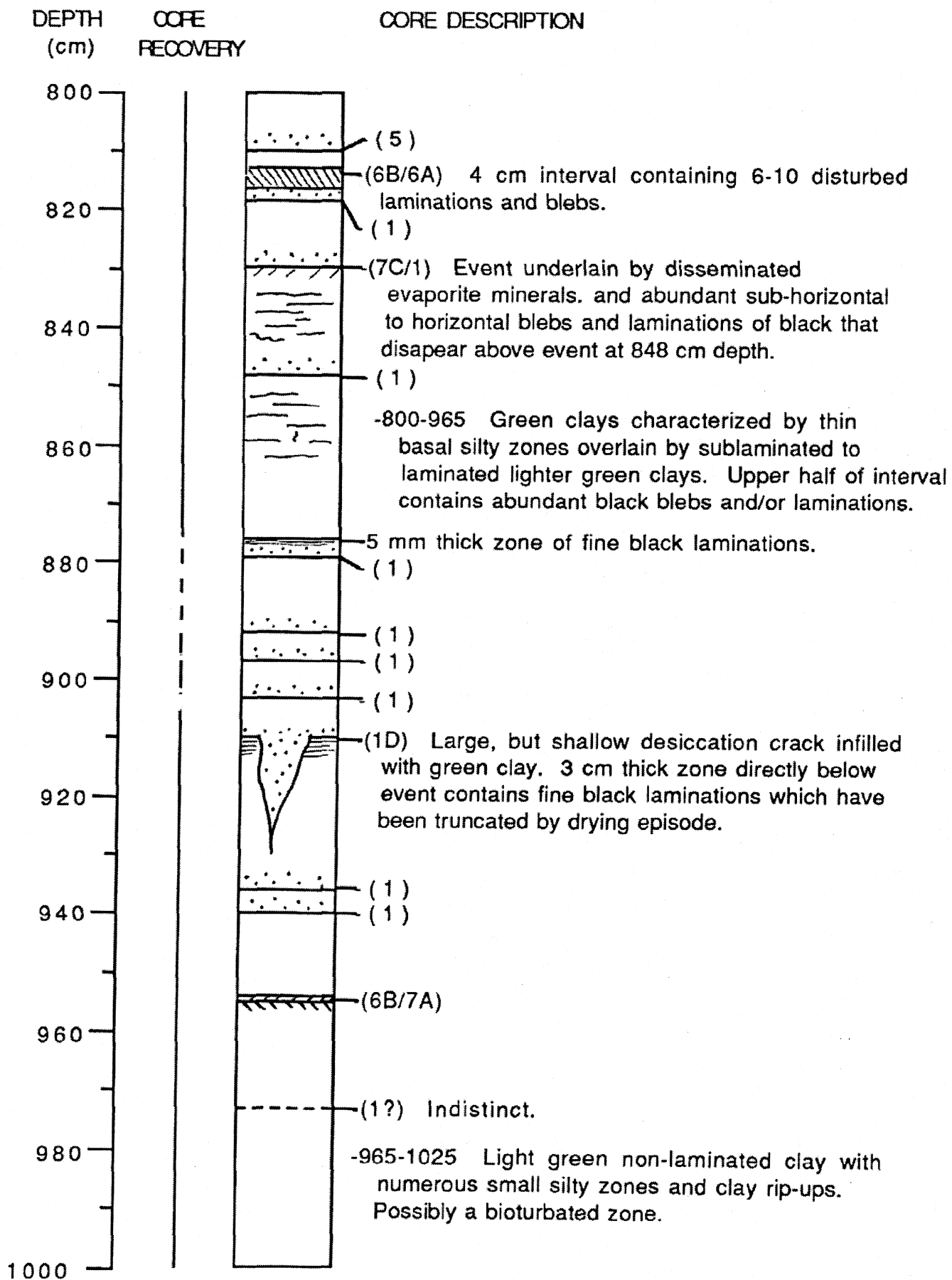
# SILVER LAKE CORE SIL-H



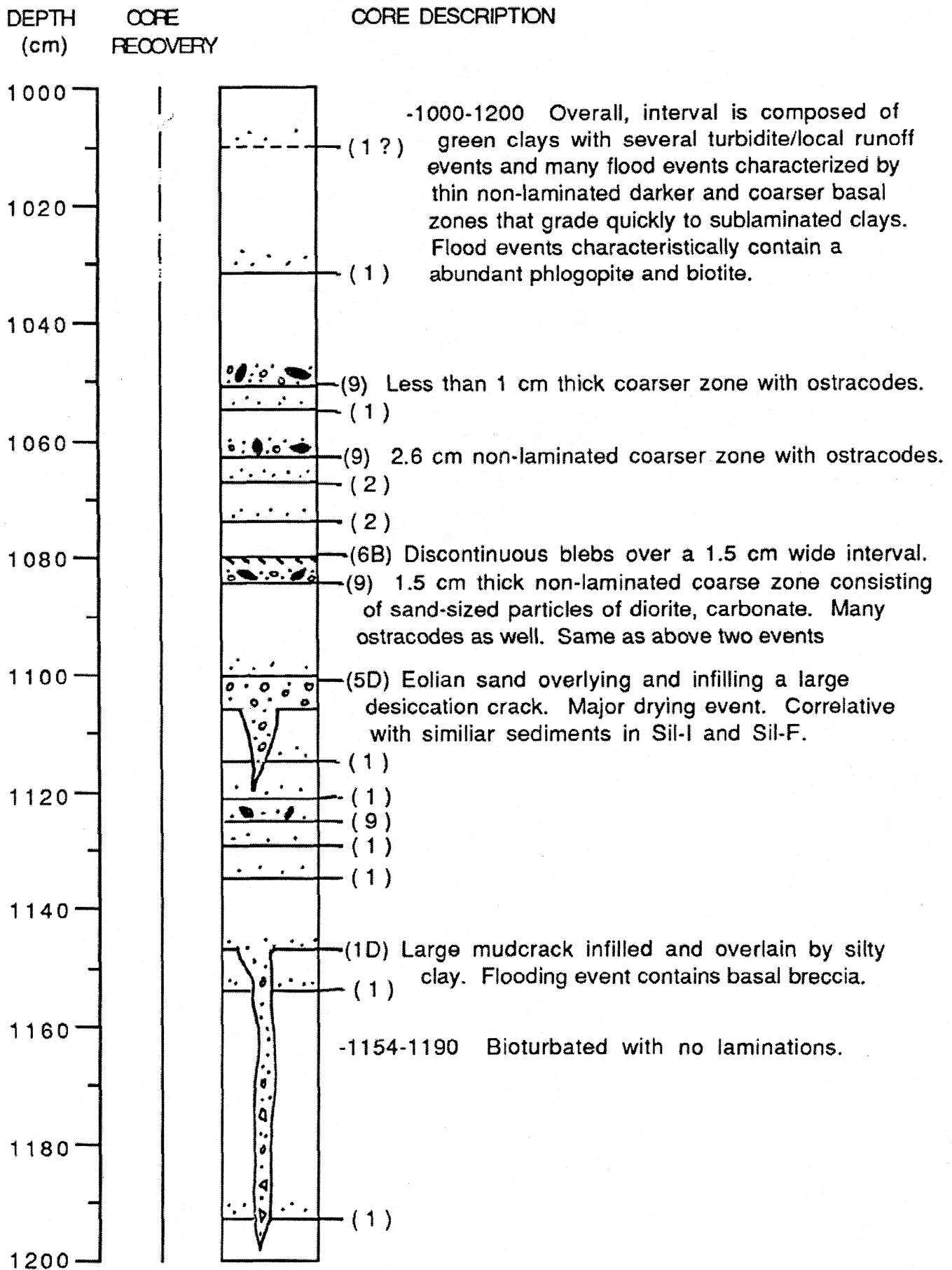
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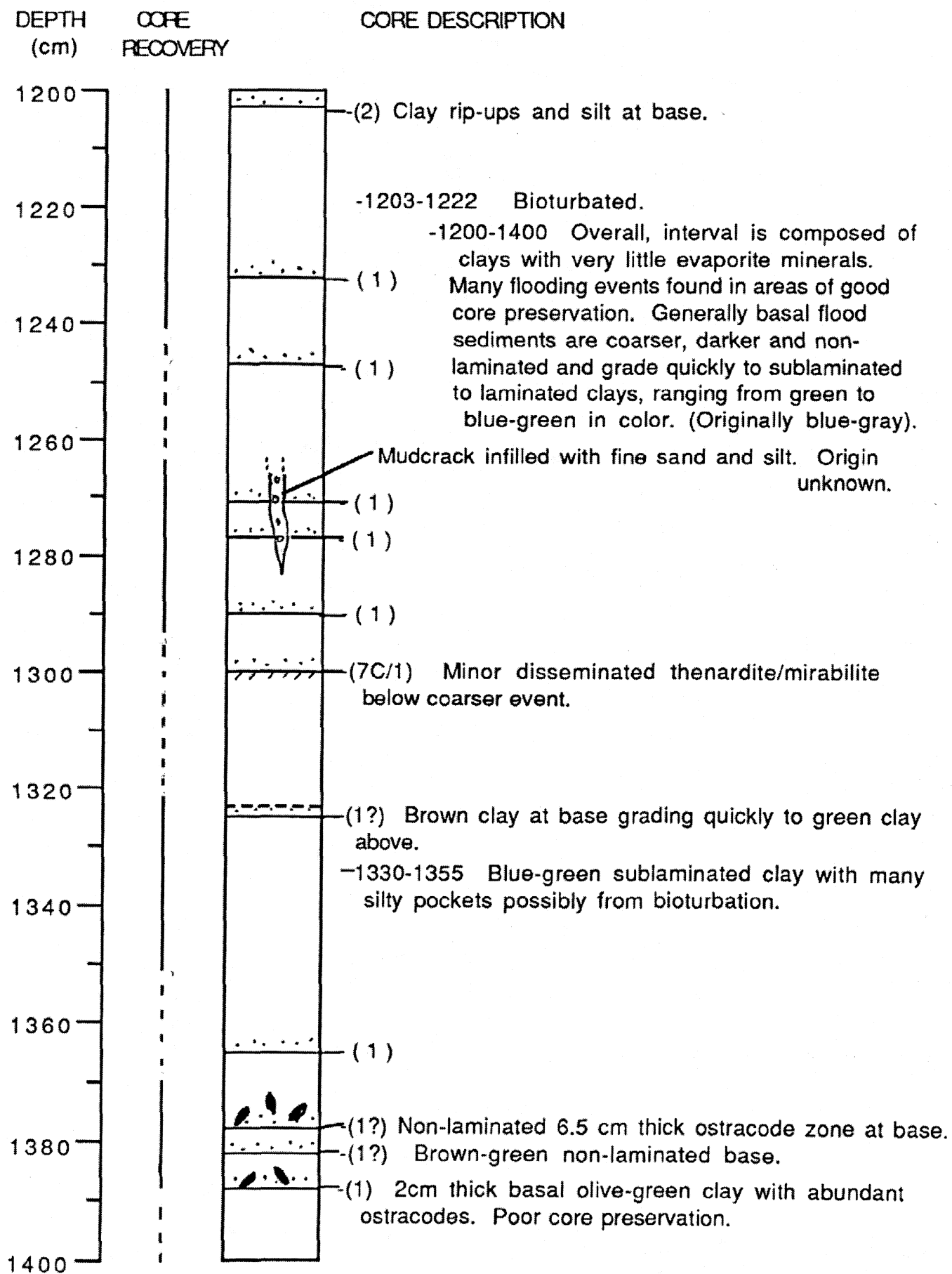
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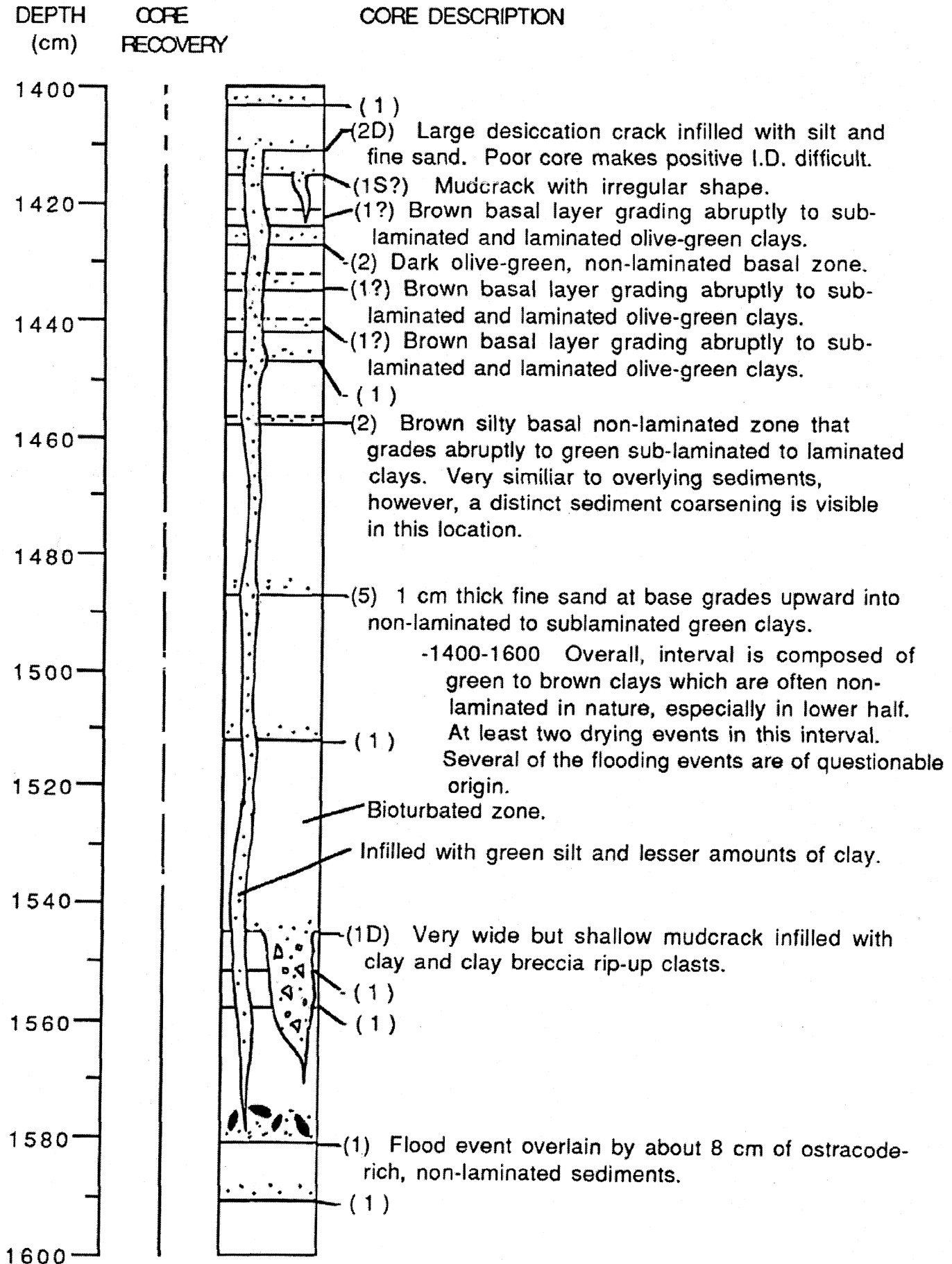
# SILVER LAKE CORE SIL-H



# SILVER LAKE CORE SIL-H

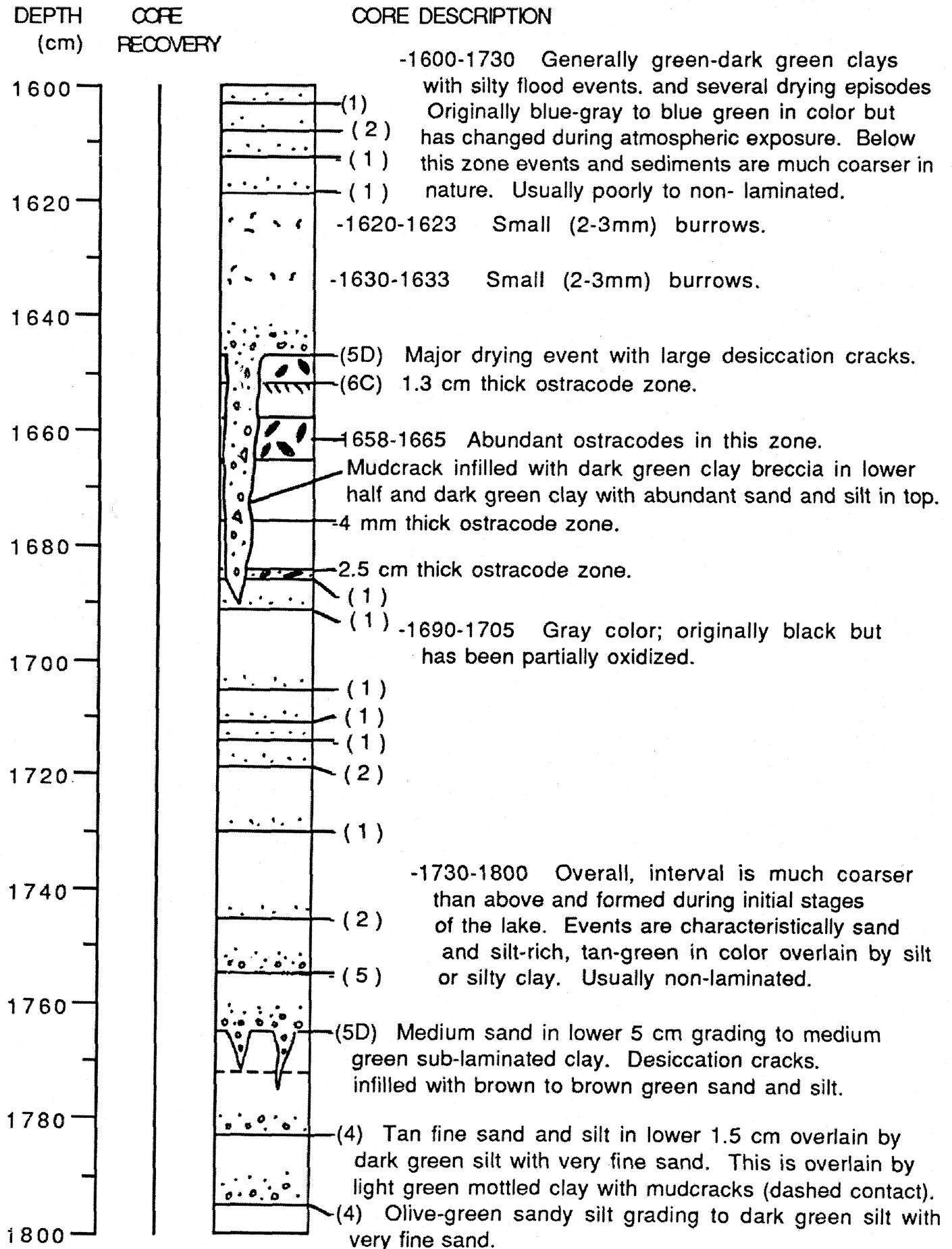


# SILVER LAKE CORE SIL-H

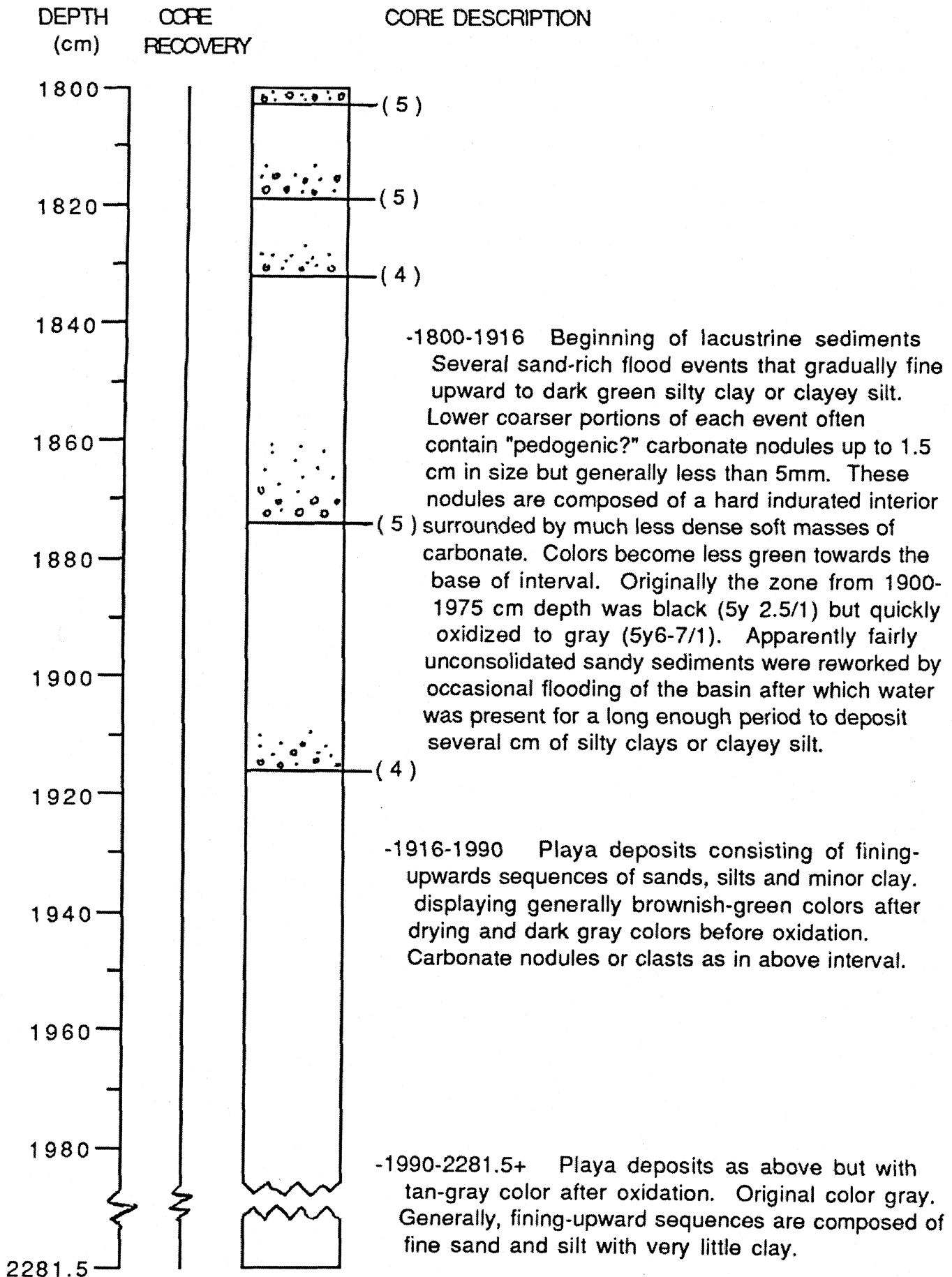




# SILVER LAKE CORE SIL-H



# SILVER LAKE CORE SIL-H



# FIELD DRILLING LOG - HOLE SIL-I

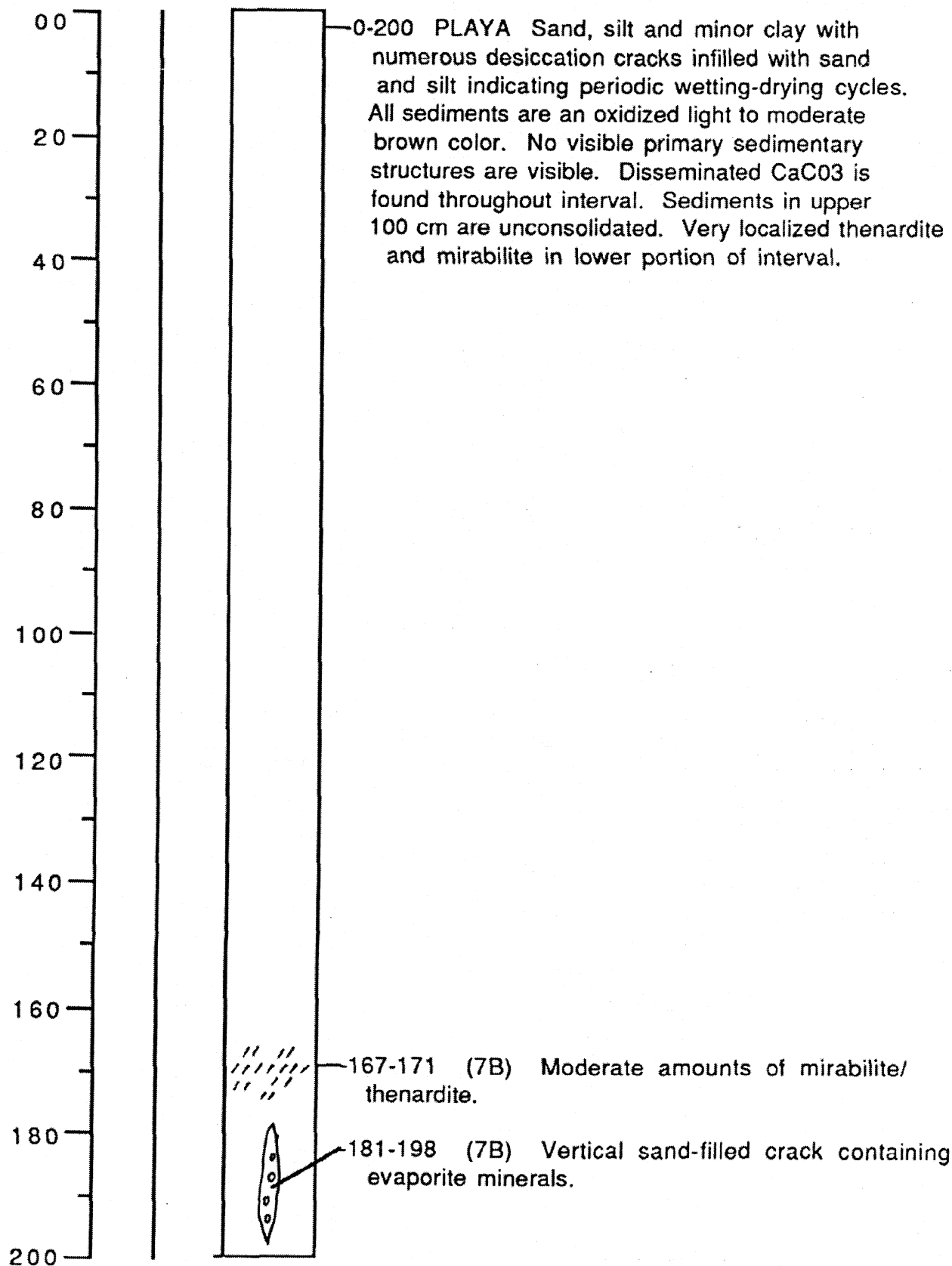
DRIVE	FOOTAGE	DESCRIPTION
1	0 - 3	Brown sand and silt (eolian).
2	3 - 8	Brown sand and silt with some clay matrix, very soft.
3	8 - 13	Brown clays with some sand and silt.
4	13 - 18	Brown/green clays with minor sand and silt events.
5	18 - 23	Green clays with minor brown silt and sand. Dry and very friable.
6	23 - 28	Green clay; fairly moist and plastic.
7	28 - 33	Blue to green-blue clays with localized organic(?) layers
8	33 - 38	Blue clays with localized silt.
9	38 - 43	Blue clays, friable. Locally silty and organic (?) zones.
10	43 - 48	Blue clays with localized abundant black to brown zones. Possible ostracodes.
11	48 - 53	Blue-green to blue clays with laminae and localized brown-dark brown organic (?) zones.
12	53 - 58	Blue to green-blue clays with organic (?) black zone in lowest one foot of drive composed of sand and gray-white $\text{CaCO}_3$ . Strong $\text{H}_2\text{S}$ smell.
13	58 - 63	Black layer in upper one foot of drive (same as above). Underlying sediments consist of gray sand and pebbles with lighter gray $\text{CaCO}_3$ .
14	63 - 68	Gray sand silt and clays with well-sorted, rounded pebble zone near base (beach bar?).
15	68 - 72	Gray silt and sand matrix surrounding cobbles and pebbles. Prominent pedogenic carbonate zones and mafic rock fragments (alluvial fan?).
16	72 - 77	Gravels; pebbles to cobbles, angular. Moderately sorted and stratified. Transition downhole to finer grained clastics (sands and silts). Well-preserved prominent imbrication. possible soil at base.
17	77 - 78	Continued gravels with imbrication. Drilling stopped.

Descriptions by: W.J. Brown and R.Y. Anderson - March 1987.

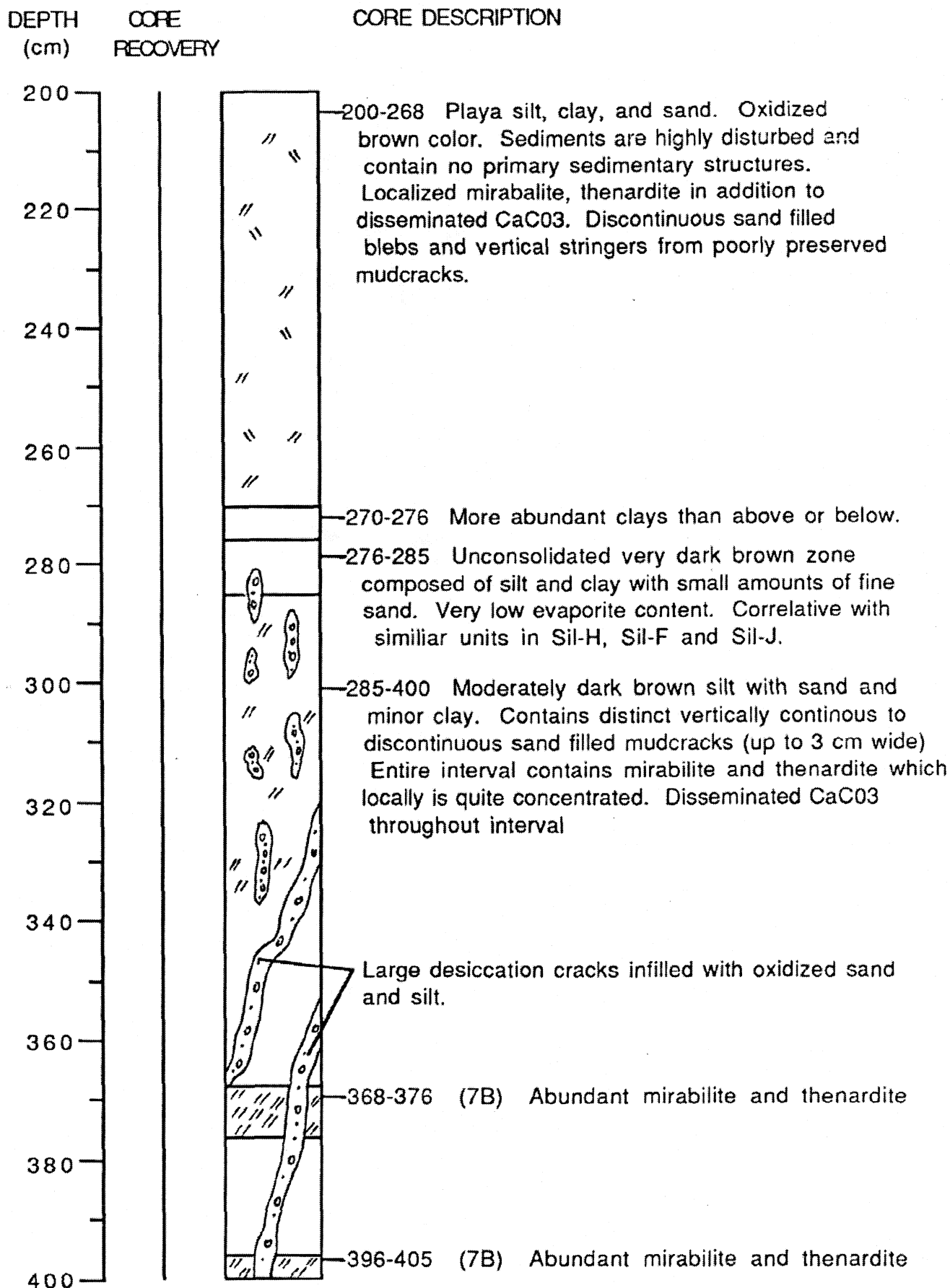
# SILVER LAKE CORE SIL-1

DEPTH  
(cm) CORE  
RECOVERY

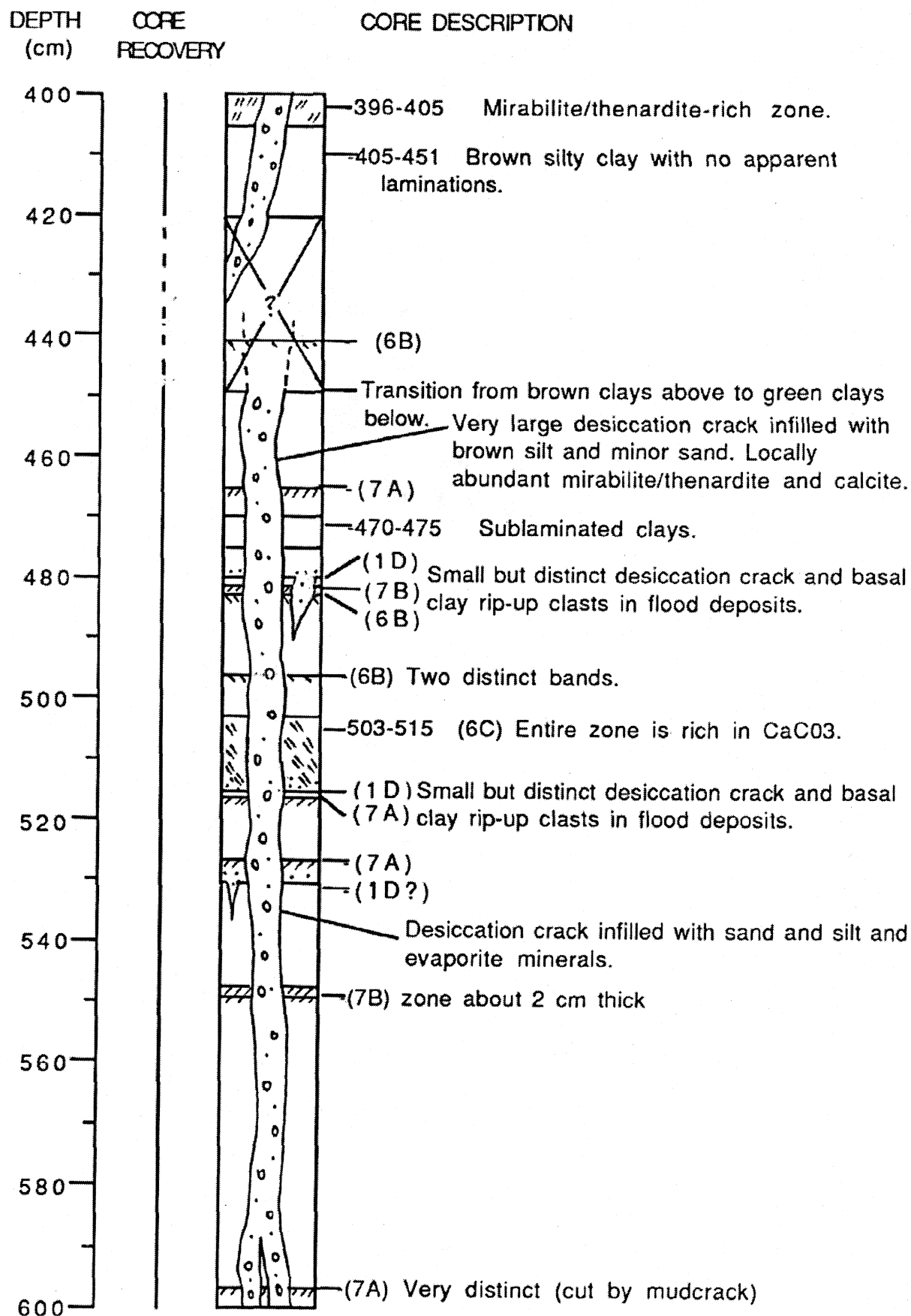
CORE DESCRIPTION SIL-1



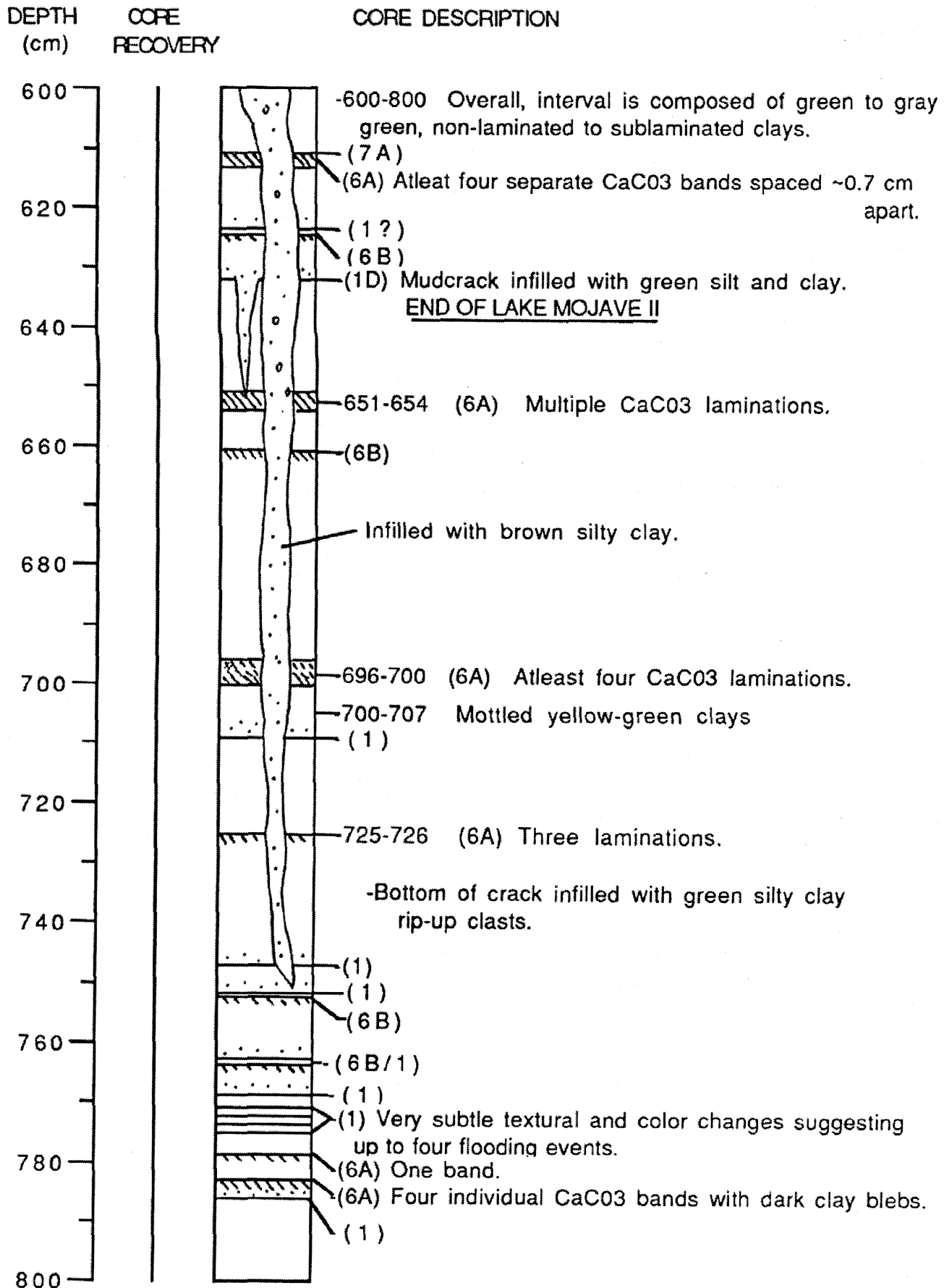
# SILVER LAKE CORE SIL-I



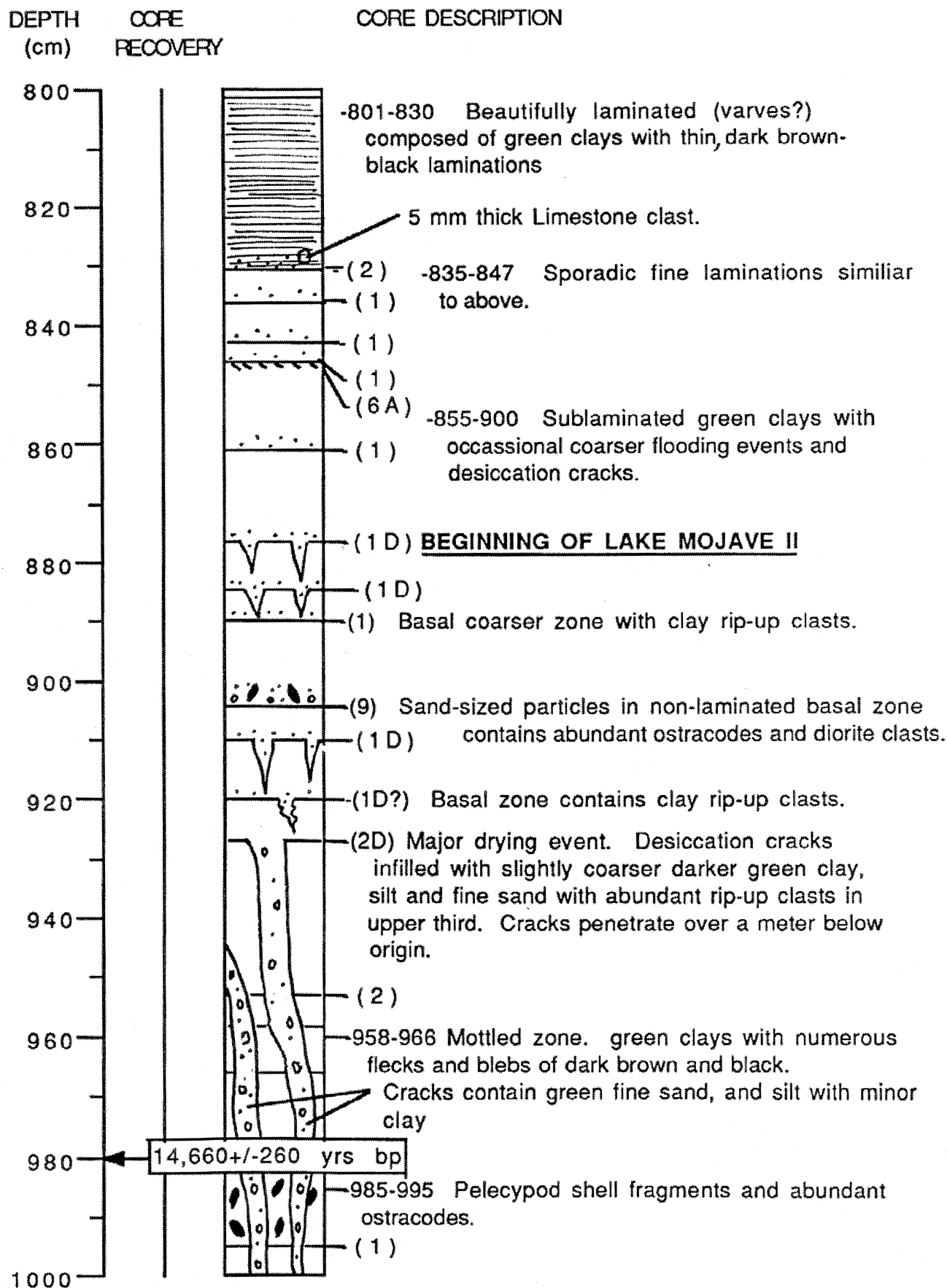
# SILVER LAKE CORE SIL-1



# SILVER LAKE CORE SIL-I

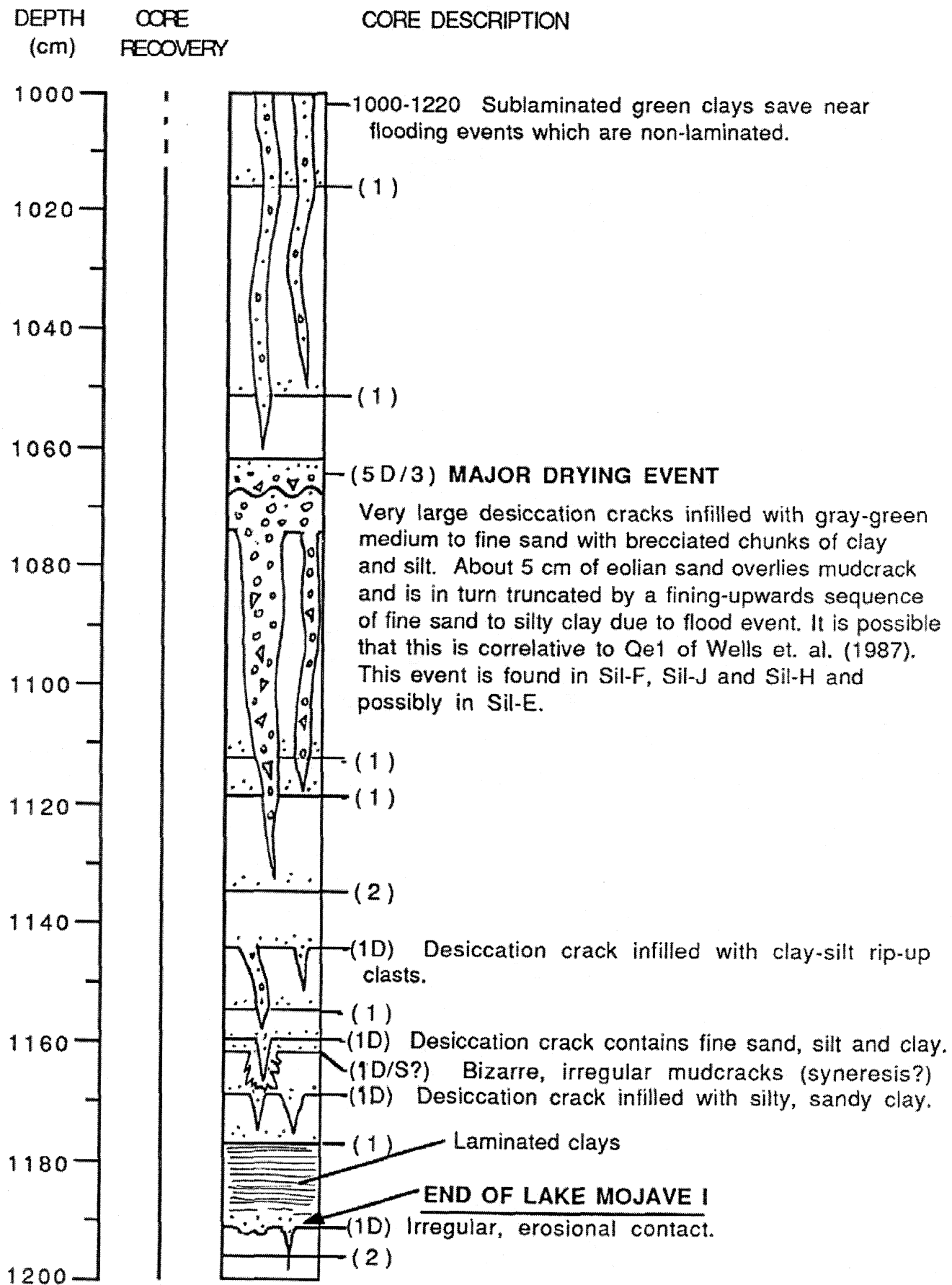


# SILVER LAKE CORE SIL-I

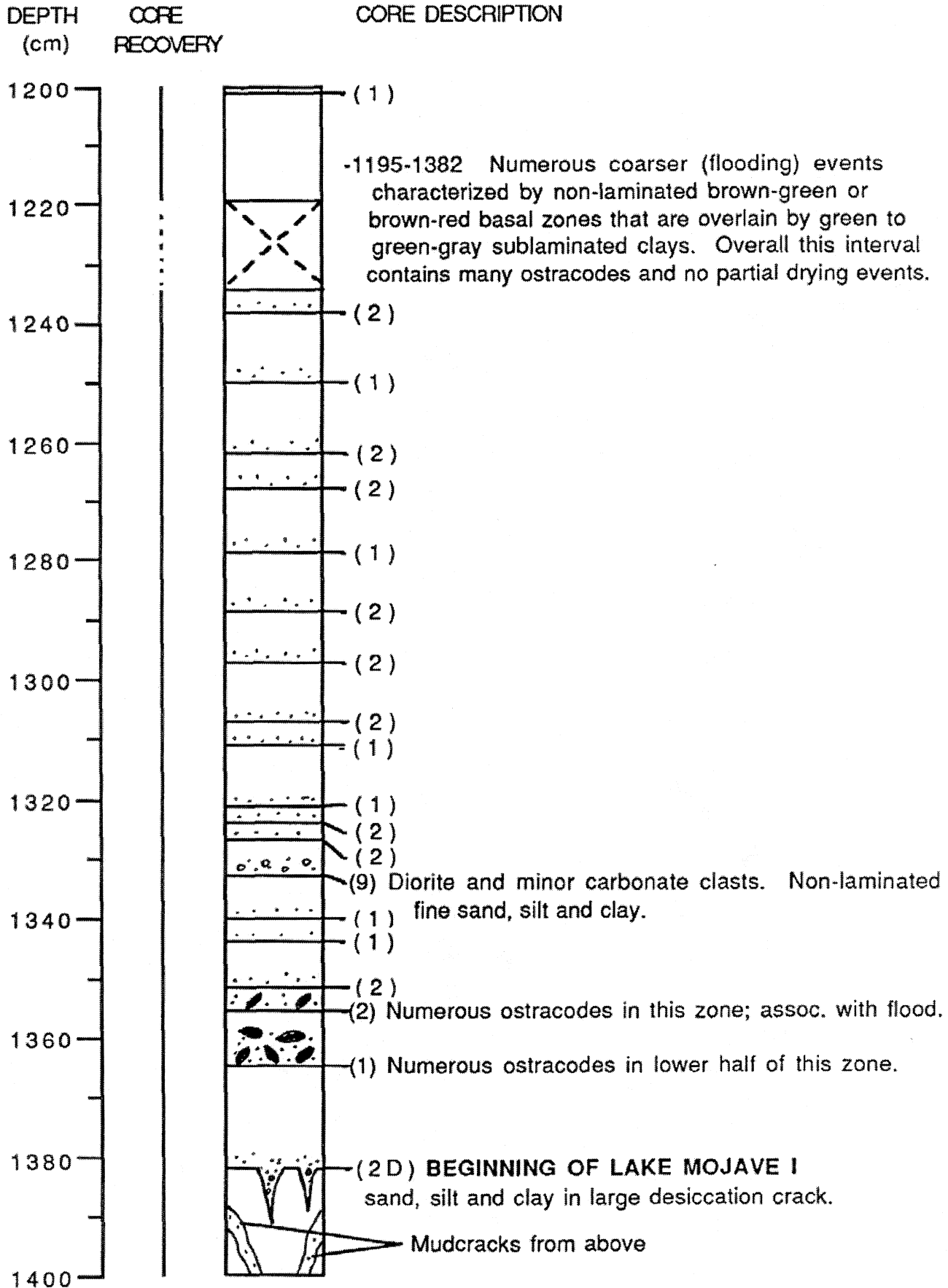




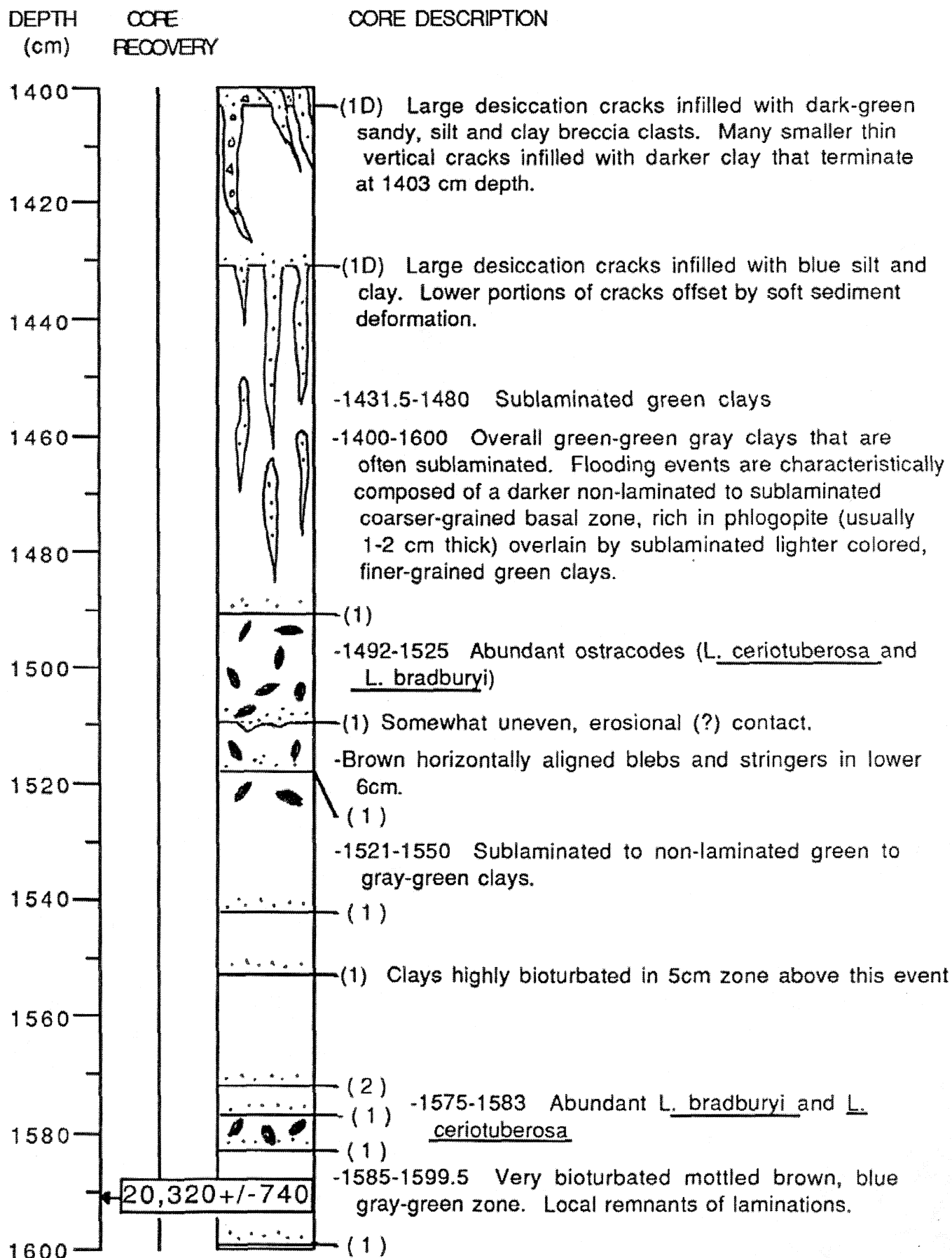
# SILVER LAKE CORE SIL-1



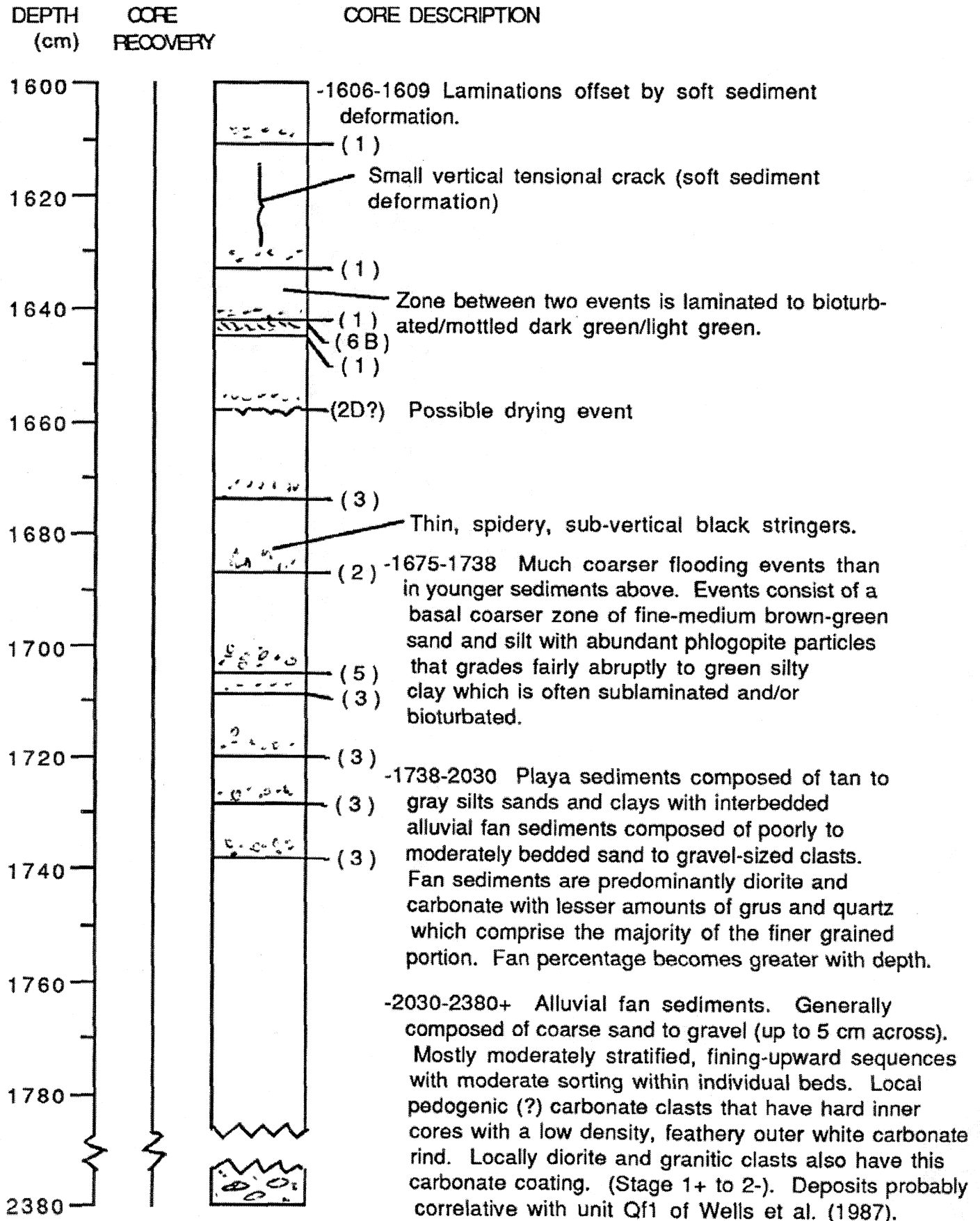
# SILVER LAKE CORE SIL-I



# SILVER LAKE CORE SIL-1



# SILVER LAKE CORE SIL-I



**DRILL HOLE: SIL-J**

**TYPE OF DRILLING: AUGER CORING**

**GENERAL LOCATION: NORTHWEST SILVER LAKE**

**EXACT LOCATION: SEE LOCATION MAP**

**GROUND ELEVATION: ~277 masl**

**SIZE OF HOLE: 6.3 cm**

**DRILLER: KLEINFELDER AND ASSOC.**

**LOGGER: W. BROWN**

**DEPTH TO WATER TABLE: Not recorded.**

**DRILLED DURING THIS STUDY (MARCH, 1987)**

## DRILLING LOG - HOLE SIL-J

DRIVE	FOOTAGE	DESCRIPTION
1	0 - 3	Brown (eolian?) fine sands with clays. Moderately indurated.
2	3 - 8	Same as above.
3	8 - 13	Brown clay and silt changing to green at base.
4	13 - 18	Brown-green clays with sand infilled structures.
5	18 - 23	Green clays with minor brown organic (?) zones.
6	23 - 28	Green, plastic clays, locally brown.
7	28 - 33	Green clay with sharp transition to blue clay at 31 feet depth. Dry and easily friable.
8	33 - 38	Alternating green-blue clays with dark brown organic (?) zones and possible ostracodes.
9	38 - 43	Blue clays with lower 1.5 feet containing abundant gravel with prominent pedogenic $\text{CaCO}_3$ .
10	43 - 48	Blue-gray gravels (clasts are composed of diorite) with $\text{CaCO}_3$ . Angular clasts with no apparent imbrication. Poorly sorted. Fan deposits.
11	48 - 53	Same as above.
12	53 - 58	Same as above with distinct, horizontally aligned, pedogenic carbonate lenses at base.

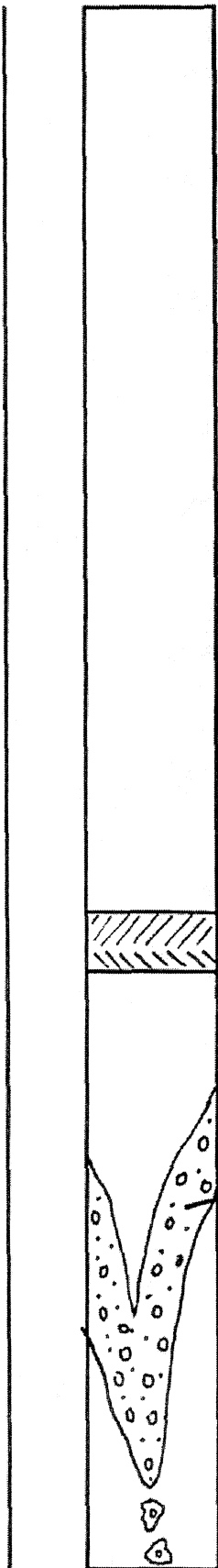
Descriptions by W.J. Brown and R.Y. Anderson - March 1987.

# SILVER LAKE CORE SIL-J

DEPTH  
(cm) CORE  
RECOVERY

CORE DESCRIPTION

00  
20  
40  
60  
80  
100  
120  
140  
160  
180  
200

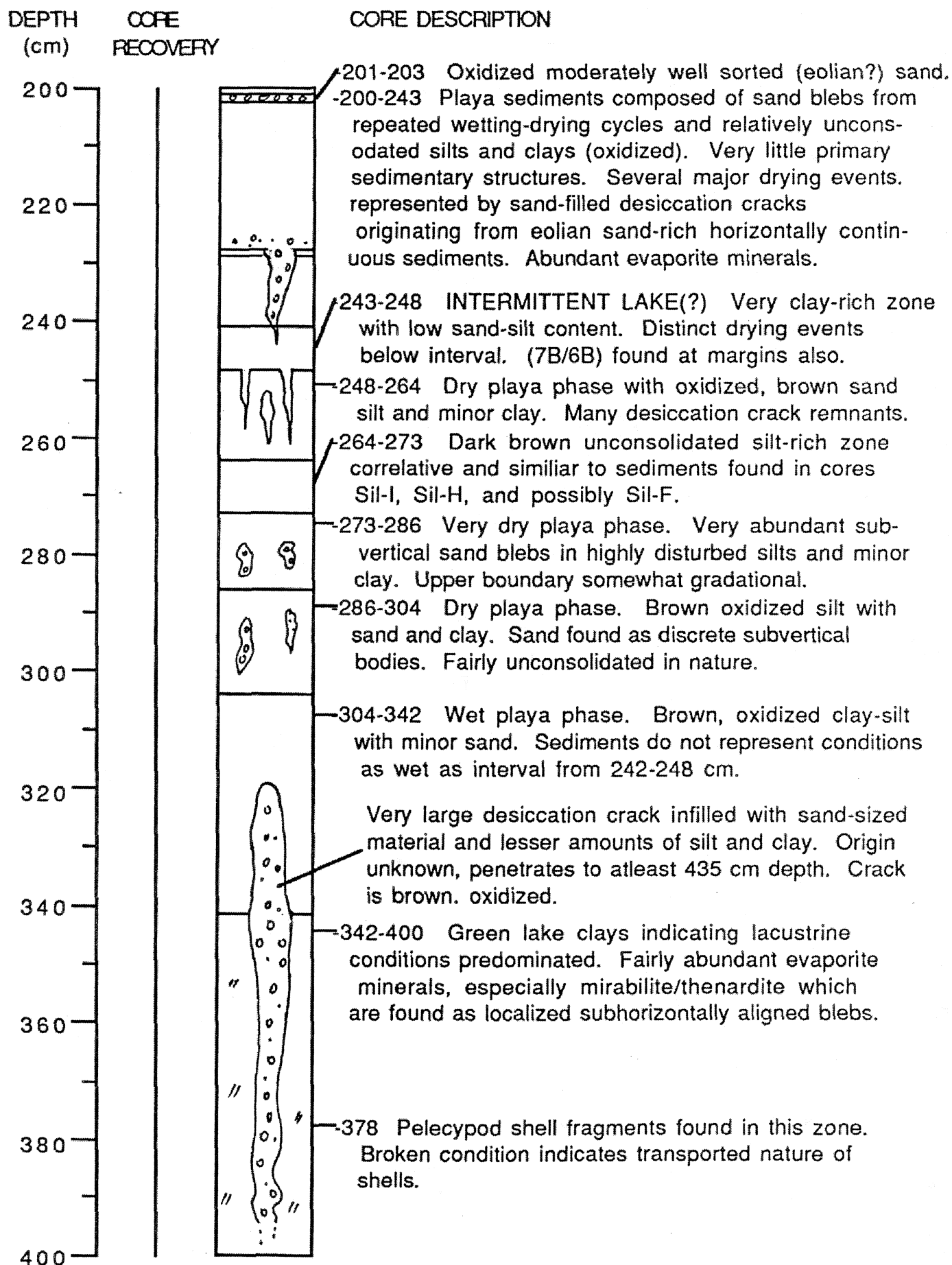


-0-200 Oxidized, brown, playa silts, clays and sand lacking primary sedimentary structure. Several zones of abundant evaporite minerals in addition to locally preserved desiccation cracks infilled with sand and silt. Disseminated Calcite concentrated in cracks and found in lesser amounts throughout core. Disseminated halite is also present in detectable (taste) amounts .

-(6B/7B) Zone is rich in evaporites.

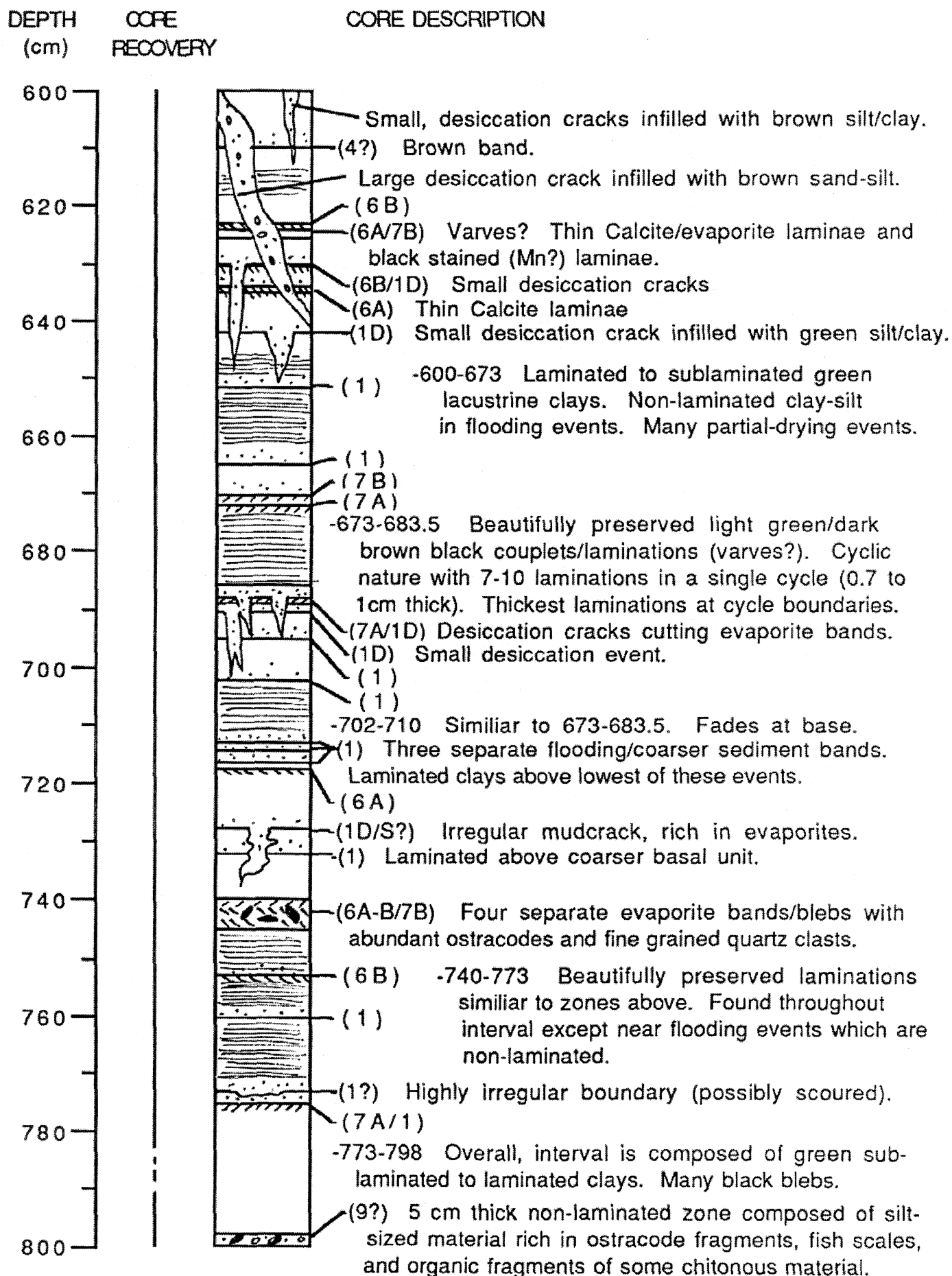
Very large sand-filled dessication crack Originating from higher in section and extending to below 198 cm depth.

# SILVER LAKE CORE SIL-J

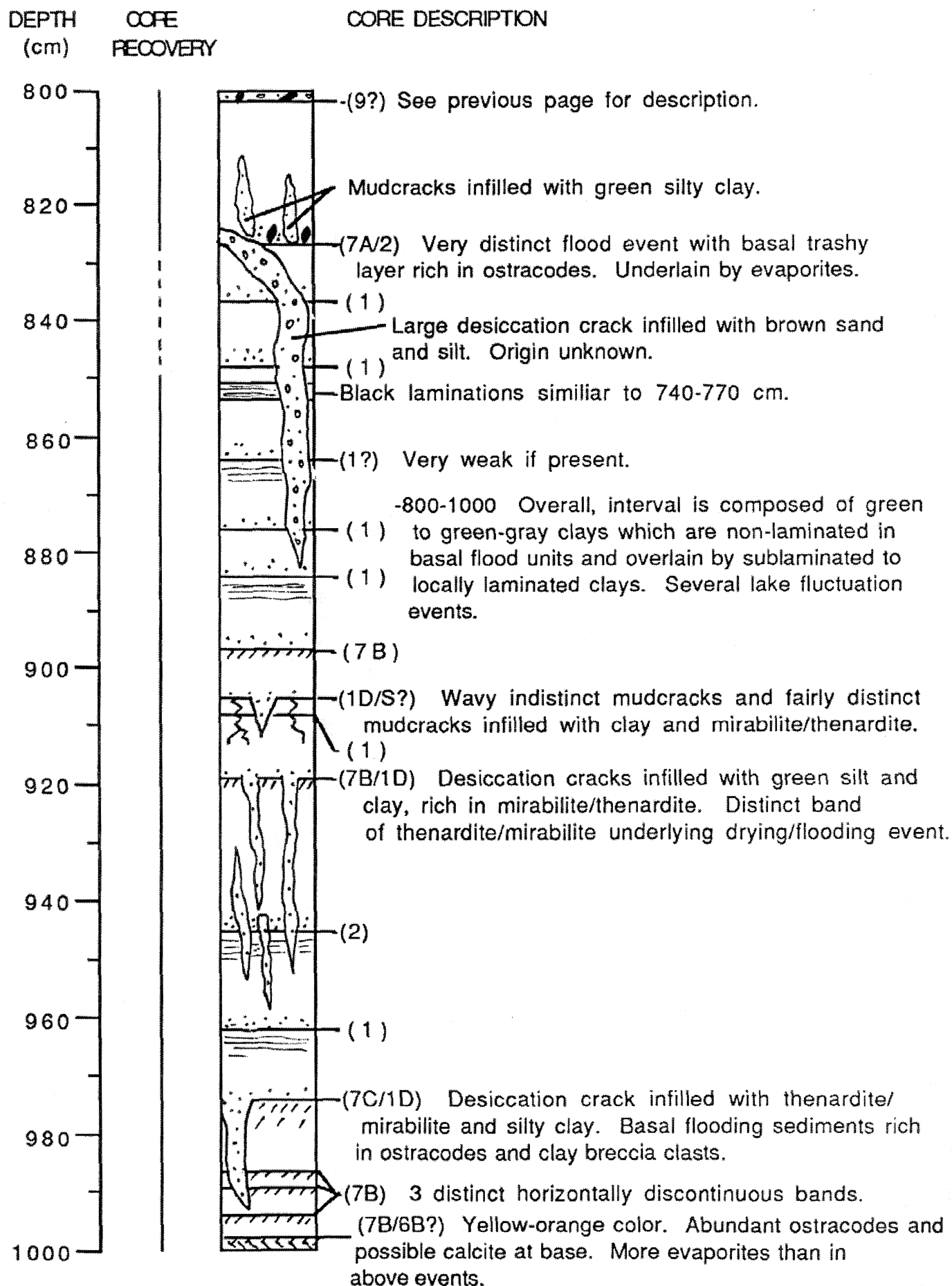




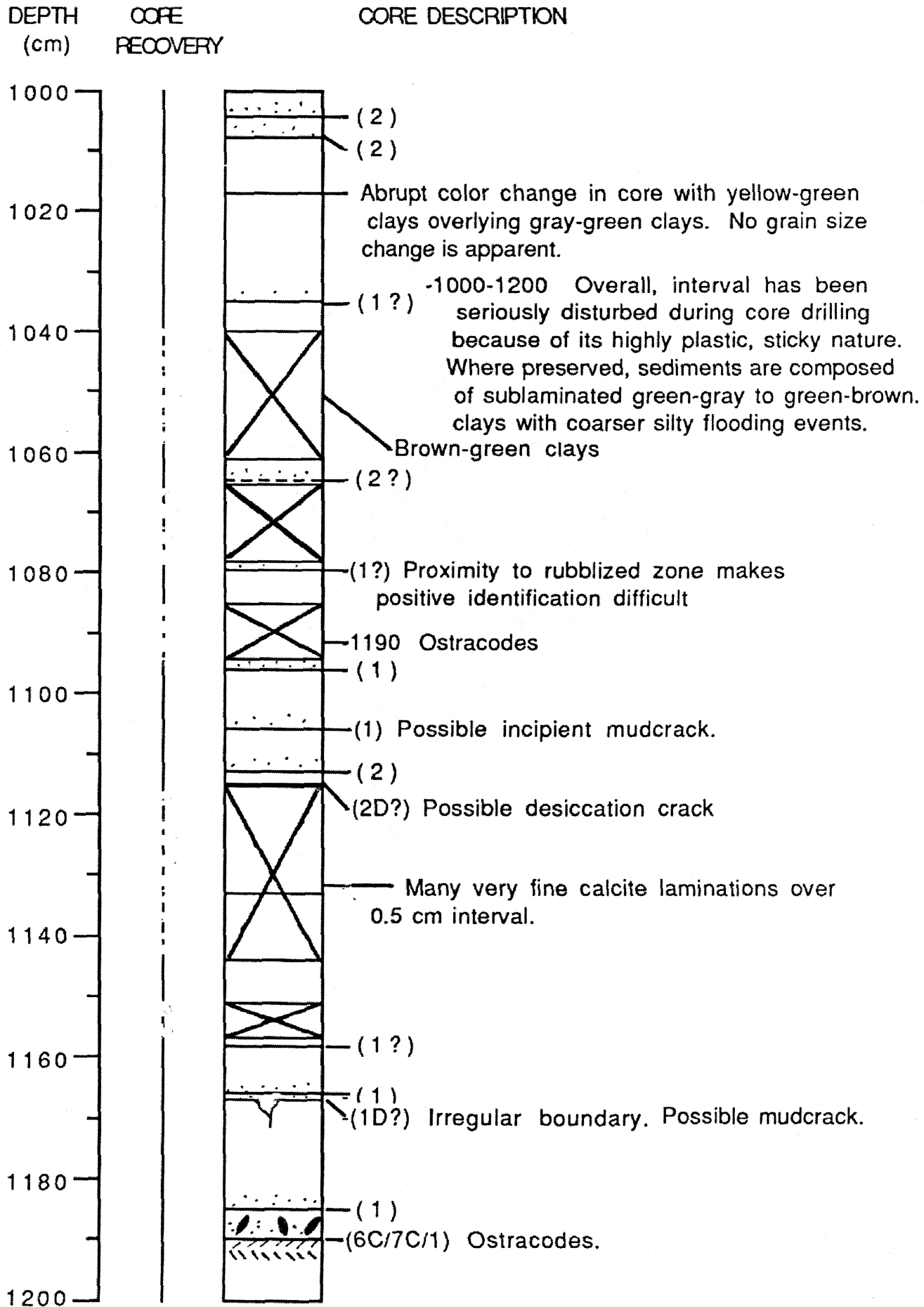
# SILVER LAKE CORE SIL-J



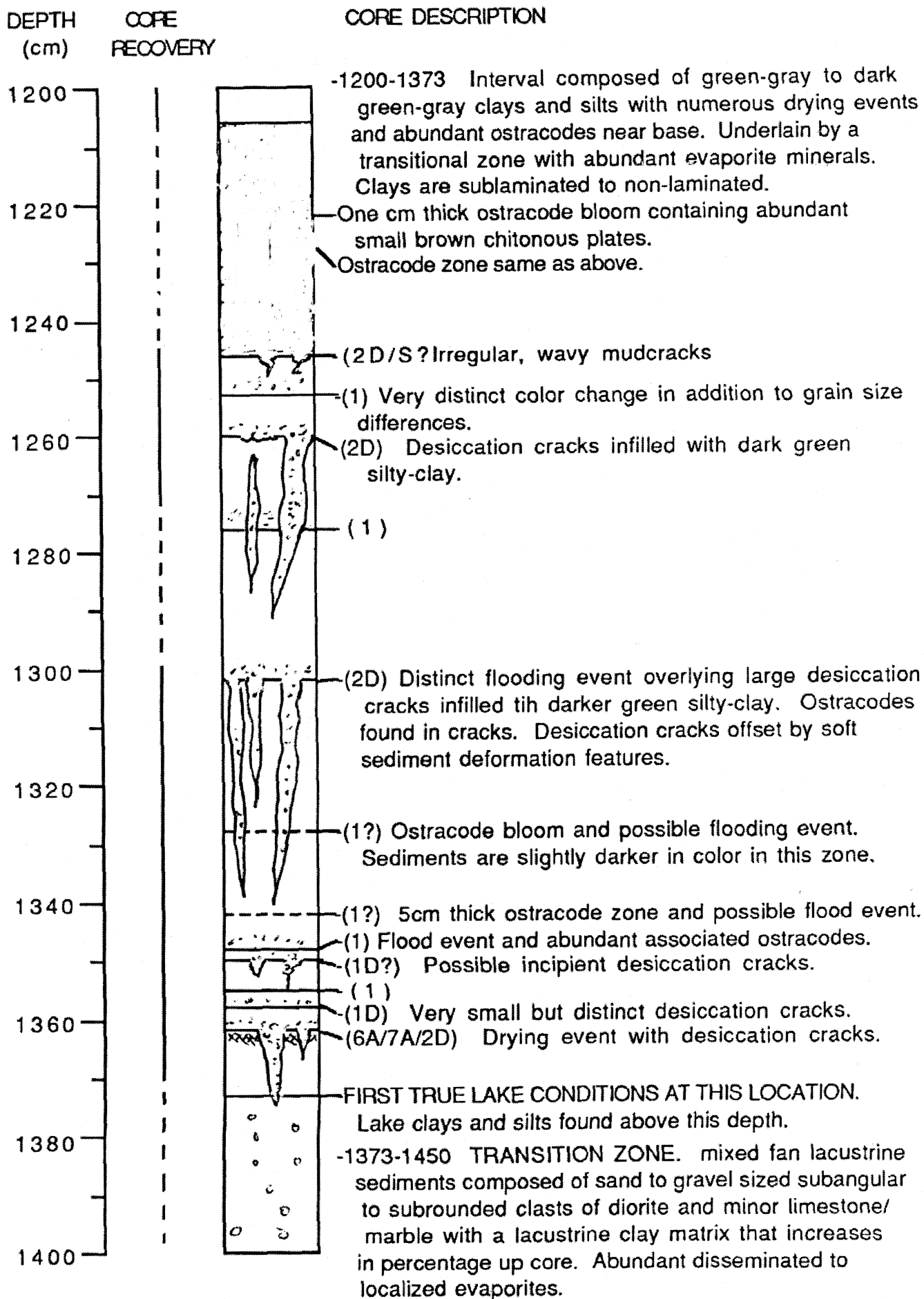
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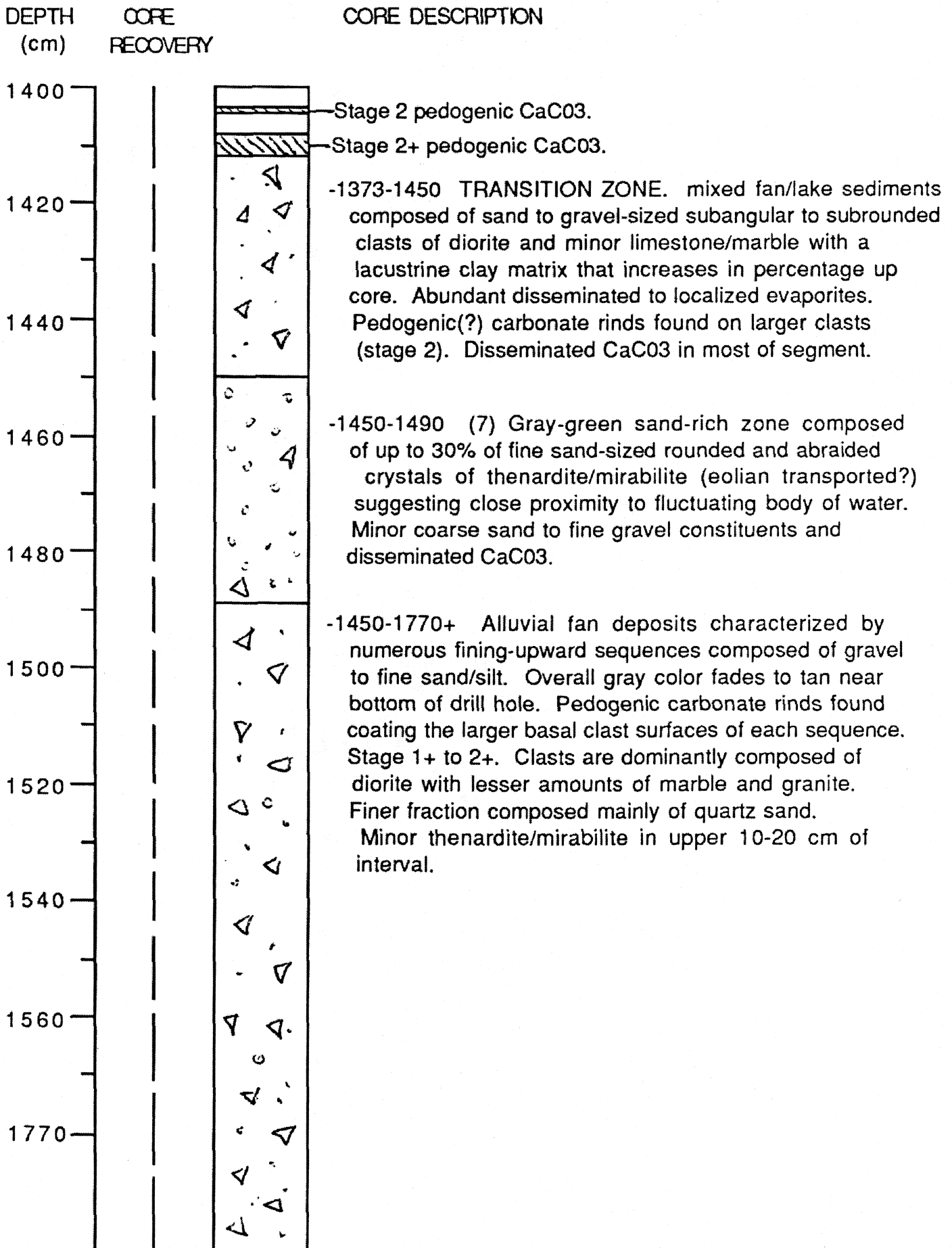
# SILVER LAKE CORE SIL-J



# SILVER LAKE CORE SIL-J



# SILVER LAKE CORE SIL-J



**DRILL HOLE: SIL-L**

**TYPE OF DRILLING: HAMMER CORING**

**GENERAL LOCATION: TIDEWATER BASIN-SILVER LAKE**

**EXACT LOCATION: SEE LOCATION MAP**

**GROUND ELEVATION: 285.24 masl**

**SIZE OF HOLE: 3.8 cm**

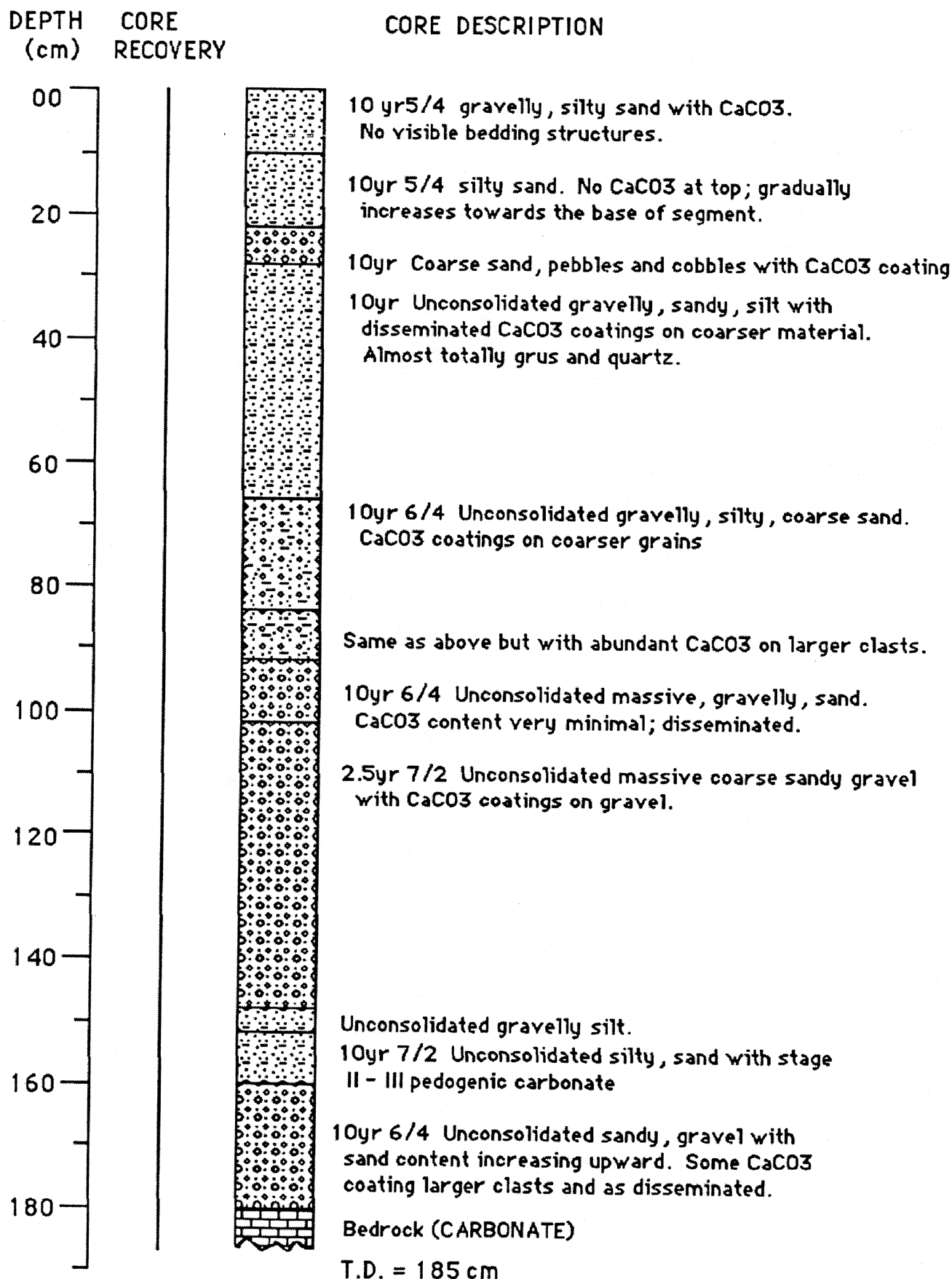
**DRILLER: B. ALLEN, R. GREAVES, and J-L MIOSSEC**

**LOGGER: J-L MIOSSEC**

**DEPTH TO WATER TABLE: NOT ENCOUNTERED**

**DRILLED DURING THIS STUDY (MARCH 1987)**

# SILVER LAKE PLAYA - CORE SIL-L



**DRILL HOLE: SIL-M/PIT M and SIL-N**

**TYPE OF DRILLING: CORE and EXCAVATED PIT**

**GENERAL LOCATION: SILVER LAKE DELTA**

**EXACT LOCATION: SEE LOCATION MAP**

**GROUND ELEVATION: ~278.5 m**

**SIZE OF HOLE: 5 cm**

**DRILLER: B. Allen, Y. Enzel, W. Brown**

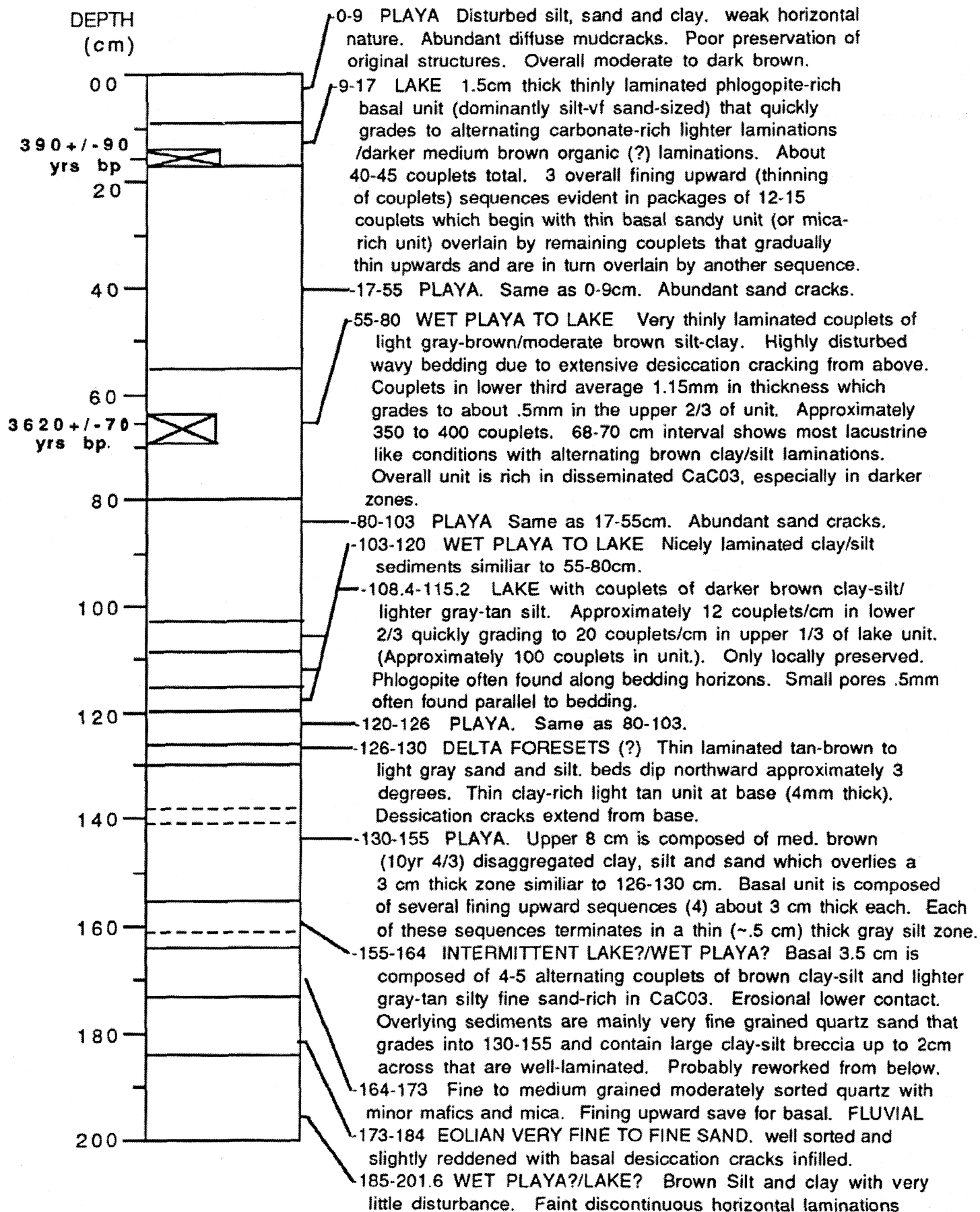
**LOGGER: W. J. Brown**

**DEPTH TO WATER TABLE: Not encountered**

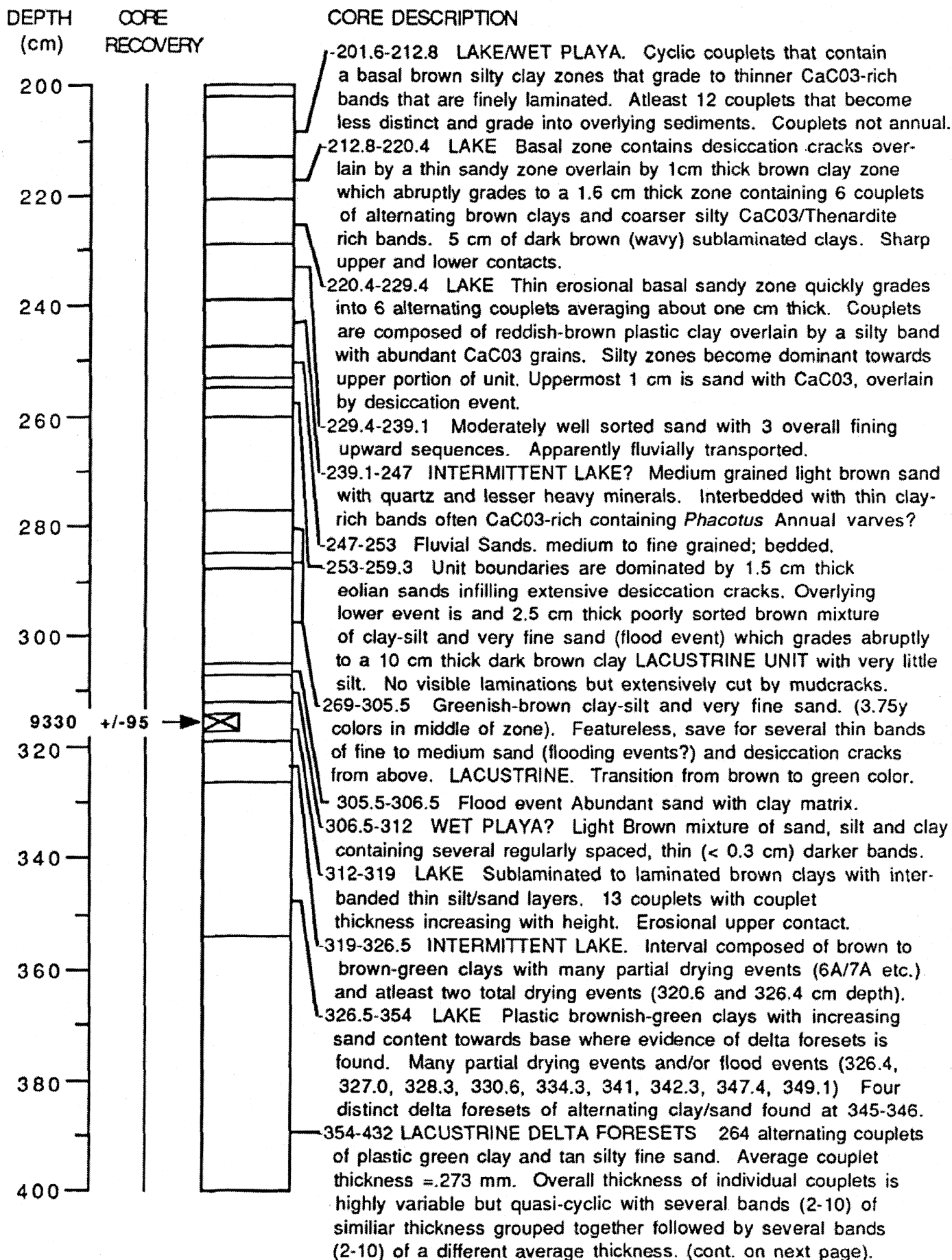
**DRILLED DURING THIS STUDY (JAN. 1988)**



# SYNTHESIZED DESCRIPTION OF CORES SIL-M/N AND PIT M



# SYNTHESIZED DESCRIPTION OF CORES SIL-M AND SIL-N



# SYNTHESIZED DESCRIPTION OF CORES SIL-M AND SIL-N

DEPTH (cm)	CORE RECOVERY	CORE DESCRIPTION
400		354-432 (CONTINUED from previous page). Clay/Sand ratio varies in a pattern similar to couplet thickness. Thickest couplets usually are dominated by sand portion. Occasional very thick (< 1.0 cm) sand layer is found among these couplets and may represent large-scale flooding events. Fairly sharp lower boundary with lake clays and very gradational boundary with overlying unit. Overall, the couplets thin upward, until the clay/sand portions are no longer separate units (the lower portion of 326.5-354 cm depth). Maximum clay thickness is 2 mm; minimum clay thickness is < 0.3 mm. Maximum sand thickness in couplets is 8.8 mm and the minimum thickness is < 0.3 mm. Base of interval and the first sand layer is directly overlying and infilling a prominent desiccation crack. Another desiccation event occurred somewhere in the lower portion of the interval but origin of mudcracks is unknown.
420		
440		
460		
		(7B-7C)
		(7A) Three distinct bands.
		(7B) -432-640+ cm Plastic sublaminate to laminated green-gray clays. Similar to Lake Mojave II and Intermittent Lake III phases in other cores, but with more frequent recorded events.
480		(1D)
		(7A) Three distinct bands with associated black staining.
500		(6A/7A) 0.65 cm thick zone of very thin CaCO <sub>3</sub> laminations overlain by a single thenardite/mirabilite layer. Microscopic investigation indicates CaCO <sub>3</sub> is microcrystalline, non-organic.
520		(1)
		(7A)
540		(1?) Irregular boundary.
		(7A)
560		(1)
580		(7A)
		(1D) Prominent mudcrack infilled with darker, coarser basal flood deposits.
600		

SYNTHESIZED DESCRIPTION OF CORES SIL-M AND SIL-N

