

OIL SHALE CORE DESCRIPTION

[illegible]

OIL SHALE CORE DESCRIPTION

PAGE 2

| DEPTH | LITHOLOGY | COLOR | | | | | BEDDING | | EST. RICHNESS | | CALCAR- OUSNESS | | ACCE- SSORY | | MISC. | | REMARKS | | | | | | | | |
|-------|-------------|-------|------|-------|---------|-------|---------|------|---------------|-------|-----------------|------|-------------|------|----------|------------|---------|------|--------|-------------|--------|---------|------|--------|---------|
| | | TAN | GRAY | BROWN | GRY-BRN | BLACK | OTHER | LAM. | CONTORT. | OTHER | POOR | FAIR | MOD. | RICH | SLIGHTLY | MODERATELY | | VERY | PYRITE | SALINE MIN. | CARBON | FOSSILS | VUGS | FRACT. | BRECCIA |
| 123.0 | oil sh | / | X | | | | | X | | | | X | | | | | | | | | | | | | |
| 130.3 | oil sh | | / | | | X | | X | | | | X | | | | | | | | | | | | | |
| 130.7 | oil sh | / | X | | | | | X | | | | X | | | | | | | | | | | | | |
| 134.8 | oil sh | | / | | | X | | X | | | | X | | | | | | | | | | | | | |
| 135.1 | oil sh | / | X | | | | | X | | | | X | | | | | | | | | | | | | |
| 138.1 | oil sh | | X | | | | | X | | | | X | | | | | | | | | | | | | |
| 139.0 | oil sh | | / | | | X | | X | | | | X | | | | | | | | | | | | | |
| 140.0 | oil sh | X | / | | | | | X | | | | X | | | | | | | | | | | | | |
| 142.3 | oil sh | | / | | | X | | X | | | | X | | | | | | | | | | | | | |
| 143.0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 143.0 | oil sh | | / | | | X | | X | | | | X | | | | | | | | | | | | | |
| 144.0 | oil sh | | X | | | | | X | | | | X | | | | | | | | | | | | | |
| 146.4 | oil sh | X | / | | | | | X | | | | X | | | | | | | | | | | | | |
| 147.5 | oil sh | | X | | | / | | X | | | | X | | | | | | | | | | | | | |
| 148.0 | oil sh | / | X | | | | | X | | | | X | | | | | | | | | | | | | |
| 152.0 | oil sh | | / | | | X | | X | | | | X | | | | | | | | | | | | | |
| 153.0 | oil sh | X | / | | | | | X | | | | X | | | | | | | | | | | | | |
| 156.6 | oil sh | | X | | | / | | X | | | | X | | | | | | | | | | | | | |
| 159.0 | oil sh | / | X | | | | | X | | | | X | | | | | | | | | | | | | |
| 160.7 | oil sh | | X | | | / | | X | | | | X | | | | | | | | | | | | | |
| 161.5 | oil sh | X | / | | | | | X | | | | X | | | | | | | | | | | | | |
| 162.9 | Lost | | | | | | | | | | | | | | | | | | | | | | | | |
| 163.0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 163.0 | oil sh | X | / | | | | | X | | | | X | | | | | | | | | | | | | |
| 164.0 | oil sh | | X | | | / | | X | | | | X | | | | | | | | | | | | | |
| 165.7 | oil sh | X | / | | | | | X | | | | X | | | | | | | | | | | | | |
| 170.3 | oil sh | | X | | | / | | X | | | | X | | | | | | | | | | | | | |
| 171.5 | oil sh | X | / | | | | | X | | | | X | | | | | | | | | | | | | |
| 180.5 | oil sh | | X | | | / | | X | | | | X | | | | | | | | | | | | | |
| 181.4 | oil sh | X | / | | | | | X | | | | X | | | | | | | | | | | | | |
| 182.8 | Lost | | | | | | | | | | | | | | | | | | | | | | | | |
| 183.0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 183.0 | oil sh | X | | | | | | X | | | | X | | | | | | | | | | | | | |
| 187.7 | oil sh | | | | | X | | X | | | | X | | | | | | | | | | | | | |
| 188.2 | oil sh | / | X | | | | | X | | | | X | | | | | | | | | | | | | |
| 189.3 | oil sh | | | | | X | | X | | | | X | | | | | | | | | | | | | |
| 190.5 | oil sh | / | X | | | | | X | | | | X | | | | | | | | | | | | | |
| 193.9 | oil sh | | | | | X | | X | | | | X | | | | | | | | | | | | | |
| 194.8 | oil sh | X | / | | | | | X | | | | X | | | | | | | | | | | | | |
| 199.7 | oil sh-Tuff | X | X | | | X | | X | | | | X | | | | | | | | | | | | | |
| 200.2 | Tuff | / | X | | | | | | | | | | | | | | | | | | | | | | |
| 201.4 | oil sh | / | X | | | | | X | | | | X | | | | | | | | | | | | | |
| 202.8 | Lost | | | | | | | | | | | | | | | | | | | | | | | | |
| 203.4 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 203.4 | oil sh | X | | | | | | X | | | | X | | | | | | | | | | | | | |
| 213.7 | oil sh | | | | | X | | X | | | | X | | | | | | | | | | | | | |
| 213.9 | oil sh | X | / | | | | | X | | | | X | | | | | | | | | | | | | |
| 218.7 | oil sh | | | | | X | | X | | | | X | | | | | | | | | | | | | |
| 219.0 | oil sh | X | | | | | | X | | | | X | | | | | | | | | | | | | |
| 220.6 | oil sh | X | | | | | | X | | | | X | | | | | | | | | | | | | |
| 223.6 | | | | | | | | | | | | | | | | | | | | | | | | | |

V. Fract. 203.4-206.7

V. Fract. 219-220.6

Curly Tuff
Intubed Tuff & oil sh.

(Sat. May 11th)

148.7-148.85 Banded Tuff

Belly Broken (Rich)

Core #7
128.0'-130.0'
Cut - 130.0'
Rec - 20.0'Core #8
143.0'-146.30'
Cut - 20.0'
Rec - 19.9'Core #9
163.0'-183.0'
Cut - 20.0'
Rec - 17.8'Core #10
183.0'-203.4'
Cut - 20.0'
Rec - 19.8'Core #11
203.4'-223.6'
Cut - 20.2'
Rec - 20.2'

OIL SHALE CORE DESCRIPTION

PAGE 3

| DEPTH | LITHOLOGY | COLOR | | | | | | BEDDING | | EST. RICHNESS | CALCAR- OUSNESS | | | ACCE- SSORY | | MISC. | | | REMARKS | | | | | | |
|-------|-------------|-------|------|-------|---------|-------|-------|---------|----------|---------------|--------------------|------|------|----------------|----------|------------|------|--------|---------|-------------|--------|---------|------|--------|------------------------|
| | | TAN | GRAY | BROWN | GRY-BRN | BLACK | OTHER | LAM. | CONTORT. | OTHER | POOR | FAIR | MOD. | RICH | SLIGHTLY | MODERATELY | VERY | PYRITE | | SALINE MIN. | CARBON | FOSSILS | VUGS | FRACT. | BRECCIA |
| 223.6 | oil sh | X | / | / | | | | X | | | X | | | | | | | | | | | | | | |
| 228.0 | oil sh | X | / | | | | | X | | | X | / | | | | | | | | | | | | | |
| 238.3 | oil sh | X | / | | X | | | X | | | | | X | | | | | | | | | | | | |
| 238.5 | oil sh | | X | | | | | X | | | X | | | | | | | | | | | | | | |
| 239.7 | oil sh | | | | X | | | X | | | | X | | | | | | | | | | | | | |
| 240.2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 240.2 | Oil Sh | | | X | / | | | X | | | | X | | | | | | | | | | | | | |
| 241.1 | Oil Sh | | | X | | | | X | | | | X | | | | | | | | | | | | | |
| 244.0 | tuff-oil sh | X | | | / | | | X | X | X | | | | | | | | | | | | | | | |
| 244.2 | oil sh | X | | | | | | X | | X | | | | | | | | | | | | | | | |
| 245.0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 245.0 | Oil Sh | X | | | | | | X | | X | | | | | | | | | | | | | | | |
| 246.0 | tuff | | | X | | | | | | | | | | | | | | | | | | | | | |
| 246.2 | Oil Sh | X | | | | | | X | | X | | | | | | | | | | | | | | | |
| 246.6 | tuff | | | X | | | | X | | X | | | | | | | | | | | | | | | |
| 246.7 | Oil Sh | X | / | / | | | | X | | X | | | | | | | | | | | | | | | |
| 248.9 | tuff | | | X | | | | X | | X | | | | | | | | | | | | | | | |
| 249.0 | Oil Sh | X | | | | | | X | | X | | | | | | | | | | | | | | | |
| 252.5 | tuff | | | / | | X | | X | | | | | | | | | | | | | | | | | tuff contains Oil |
| 252.7 | Oil Sh | X | | | | | | X | | X | | | | | | | | | | | | | | | |
| 256.0 | tuff | / | X | | | | | | | | | | | | | | | | | | | | | | |
| 258.1 | Oil Sh | X | | | | | | X | | X | | | | | | | | | | | | | | | |
| 260.0 | Oil Sh | X | | / | | | | X | | X | | | X | | | | | | | | | | | | |
| 261.4 | tuff-oil sh | / | X | | | | | | | X | X | | | | | | | | | | | | | | |
| 261.6 | Oil Sh | / | X | | | | | X | | X | | | | | | | | | | | | | | | |
| 261.8 | tuff | | X | | | | | | | X | | | | | | | | | | | | | | | |
| 261.9 | Oil Sh | X | | / | | | | X | | X | | | | | | | | | | | | | | | |
| 269.8 | tuff | | X | | | | | | | | | | | | | | | | | | | | | | |
| 269.9 | Oil Sh | X | | | | | | X | | X | | | | | | | | | | | | | | | |
| 270.7 | tuff | | | | X | | | X | | | X | | | | | | | | | | | | | | tuff contains Oil |
| 271.2 | Oil Sh | X | | | | | | X | | | | | | | | | | | | | | | | | |
| 278.1 | tuff | X | | | | | | X | | | | | | | | | | | | | | | | | tuff contains SOME Oil |
| 276.2 | Oil Sh | X | | | | | | X | | X | | | X | | | | | | | | | | | | |
| 280.3 | Oil Sh | | | X | | | | X | | X | | | X | | | | | | | | | | | | |
| 280.7 | Oil Sh | X | | | | | | X | | X | | | X | | | | | | | | | | | | |
| 281.7 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 281.7 | Oil Sh | X | | | | | | X | | X | | | X | | | | | | | | | | | | |
| 283.7 | Oil Sh | | | X | | | | X | | X | | | X | | | | | | | | | | | | |
| 283.8 | Oil Sh | X | | | | | | X | | X | | | X | | | | | | | | | | | | |
| 284.6 | Oil Sh | | | X | | | | X | | X | | | X | | | | | | | | | | | | |
| 284.7 | Oil Sh | X | | | | | | X | | X | | | X | | | | | | | | | | | | |
| 284.9 | Oil Sh | | | X | | | | X | | X | | | X | | | | | | | | | | | | |
| 285.1 | Oil Sh | X | | | | | | X | | X | | | X | | | | | | | | | | | | |
| 285.6 | Oil Sh | | | X | | | | X | | X | | | X | | | | | | | | | | | | |
| 286.2 | tuff-oil sh | / | X | | | | | X | | X | | | X | | | | | | | | | | | | |
| 286.9 | Oil Sh | | | X | | | | X | | X | | | X | | | | | | | | | | | | |
| 288.1 | Oil Sh | | | X | | | | X | | X | | | X | | | | | | | | | | | | |
| 288.8 | | | | | | | | | | | | | | | | | | | | | | | | | |

GULF MINERAL RESOURCES CO
WELL ANANZA #22
LOCATION _____

REMARKS

Mon. 12th May
240.7 tuff nodules, m. bn.

tuff contains Oil

tuff contains Oil

tuff contains SOME Oil

Core #12
223.6-240.2
Cut - 16.6
Rec. - 16.6Core #13
240.2-245.0
Cut 4.8
Rec. 4.8Core #14
245.0-261.8
Cut 16.8
Rec. 16.8Core #15
261.8-281.7
Cut 20.0
Rec. 19.9Core #16
281.8-301.7
Cut - 19.9
Rec. - 19.6

OIL SHALE CORE DESCRIPTION

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| DEPTH | LITHOLOGY | COLOR | | | | | BEDDING | | EST. RICHNESS | CALCAR- DUSNESS | | ACCE- SSORY | MISC. | | REMARKS | | | | | | | | | | |
|-------|-------------|-------|------|-------|---------|-------|---------|------|---------------|--------------------|-------|----------------|-------|------|---------|------|------|----------|------------|------|--------|-------------|--------|---------|------------------------------------|
| | | TAN | GRAY | BROWN | DRY-BRN | BLACK | OTHER | LAM. | | CONTOUR | OTHER | | POOR | FAIR | | MOD. | RICH | SLIGHTLY | MODERATELY | VERY | PYRITE | SALINE MIN. | CARBON | FOSSILS | VUGS |
| 288.8 | Oil Sh | | | X | | | | X | | | | | | | | | | | | | | | | | |
| 291.5 | tuff-Oil Sh | | | X | | | | X | | | | | | | | | | | | | | | | | |
| 291.7 | Oil Sh | | | | X | | | | | | | | | | | | | | | | | | | | |
| 296.4 | Oil Sh | | | X | | | | X | | | | | | | | | | | | | | | | | |
| 296.5 | Oil Sh | | | X | | | | X | | | | | | | | | | | | | | | | | |
| 297.2 | tuff | | | | X | | | | | X | | | | | | | | | | | | | | | |
| 297.3 | Oil Sh | | | X | | | | X | | | | | | | | | | | | | | | | | |
| 297.7 | Oil Sh | | | | | X | | X | | | | | | | | | | | | | | | | | |
| 298.2 | Oil Sh | | | X | | X | | X | | | | | | | | | | | | | | | | | interbedded m. bn x bk oil shale |
| 298.6 | Oil Sh | | | X | | X | | X | | | | | | | | | | | | | | | | | |
| 300.8 | Oil Sh | | | X | | X | | X | | | | | | | | | | | | | | | | | |
| 301.4 | Oil Sh | | | X | | | | X | | | | | | | | | | | | | | | | | |
| 301.6 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 301.7 | oil sh. | | | X | | | | X | | | | | | | | | | | | | | | | | |
| 305.1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 311.1 | Oil Sh-tuff | | | X | | | | X | | | | | | | | | | | | | | | | | |
| 311.2 | Oil Sh | | | X | | | | X | | | | | | | | | | | | | | | | | |
| 316.0 | Oil Sh-tuff | | | X | | | | X | | | | | | | | | | | | | | | | | |
| 318.0 | Oil Sh | | | X | | | | X | | | | | | | | | | | | | | | | | interbedded lenses of tuff & shale |
| 320.3 | Oil Sh | X | | | | | | X | | | | | | | | | | | | | | | | | |
| 320.8 | Oil Sh | | | X | | | | X | | | | | | | | | | | | | | | | | |
| 321.1 | tuff-Oil Sh | | | X | | | | X | | | | | | | | | | | | | | | | | |
| 321.3 | Oil Sh | | | X | | | | X | | | | | | | | | | | | | | | | | |
| 323.3 | Oil Sh-tuff | | | X | | | | X | | | | | | | | | | | | | | | | | |
| 323.5 | tuff | | | X | | | | X | | | | | | | | | | X | | | | | | | tuff contains Oil |
| 323.6 | Oil Sh-tuff | | | X | | | | X | | | | | | | | | | X | | | | | | | tuff contains Oil |
| 323.7 | tuff | | | X | | | | X | | | | | | | | | | X | | | | | | | contains Oil |
| 323.8 | Oil Sh | | | X | | | | X | | | | | | | | | | | | | | | | | |
| 324.4 | tuff | | | X | | | | X | | | | | | | | | | | | | | | | | |
| 324.5 | Lost | | | | | | | | | | | | | | | | | | | | | | | | |
| 326.1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 326.1 | Oil Sh | X | | | | | | X | | | | | | | | | | | | | | | | | |
| 329.3 | tuff-Oil Sh | | | X | | | | X | | | | | | | | | | | | | | | | | mostly tuff. tuff contains Oil |
| 329.5 | Oil Sh | | | X | | | | X | | | | | | | | | | | | | | | | | |
| 329.7 | Oil Sh | | | X | | | | X | | | | | | | | | | X | | | | | | | very rich shale |
| 330.0 | Oil Sh | | | X | | | | X | | | | | | | | | | X | | | | | | | |
| 333.0 | Oil Sh | X | | | | | | X | | | | | | | | | | | | | | | | | Breccia at 336.7 & 1 foot. |
| 345.6 | Lost | | | | | | | | | | | | | | | | | | | | | | | | |
| 347.1 | Oil Sh | | | X | | | | X | | | | | | | | | | | | | | | | | |
| 347.6 | Oil Sh | X | | | | | | X | | | | | | | | | | | | | | | | | |
| 350.9 | Oil Sh-tuff | X | | | | | | X | | | | | | | | | | | | | | | | | |
| 351.0 | Oil Sh | X | | | | | | X | | | | | | | | | | | | | | | | | |
| 360.1 | | | | | | | | | | | | | | | | | | | | | | | | | last Box 11/7 |

1st Box 117

Core #16 Cont.
281.8-301.7
cut 19.9
Rec. 19.6

Core #17 Cont.
301.7-305.1
cut 3.4
Rec. 3.4

Core #18 Cont.
305.1-326.1
cut 21.0
Rec. 19.4

Core #19 Cont.
326.1-347.1
cut 21.0
Rec. 19.5

Core #20
347.1-360.1
cut 13.0
Rec. 13.0

Core to 495
 & drill 30' more

Core barrel & sub 23'

OIL SHALE CORE DESCRIPTION

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| | | GULF. MINERAL RESOURCES CO. | | | | | | | | | | | WELL <u>BONANZA 22</u> | | | | | | | | | | |
|--|--|---|--|--|--|--|--|--|--|--|--|--|-------------------------------|--|--|--|--|--|--|--|--|--|--|
| | | LOCATION | | | | | | | | | | | REMARKS | | | | | | | | | | |
| | | 1st Box is #120 | | | | | | | | | | | Wed. May 14th | | | | | | | | | | |
| | | OIL oozes from the tuff | | | | | | | | | | | interbedded mod. & lean shale | | | | | | | | | | |
| | | 368.4-368.9 Vert. fracture | | | | | | | | | | | interbedded gy & bn | | | | | | | | | | |
| | | Vert. frac. from 374.6-378.8 | | | | | | | | | | | and from 379.0-380.5 | | | | | | | | | | |
| | | Vert. frac 381.1-381.9, & tuff at 382.4 | | | | | | | | | | | | | | | | | | | | | |
| | | tuff contains OIL 2.1' | | | | | | | | | | | & tuff at 398.6 | | | | | | | | | | |
| | | May 15 | | | | | | | | | | | | | | | | | | | | | |
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May 15

the tuff is gy.
 & tuff at 426.9
 high angle fractures at 427.1-427.8,
 428.6-429.8, 430.1-430.5 and
 431.3-432.6 fault at 429.2
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may be some v.f. ss