APPENDIX A.8

Environmental Baseline Supporting Documentation and Maps

Regional Geological / Geomorphological / Bathymetric Map

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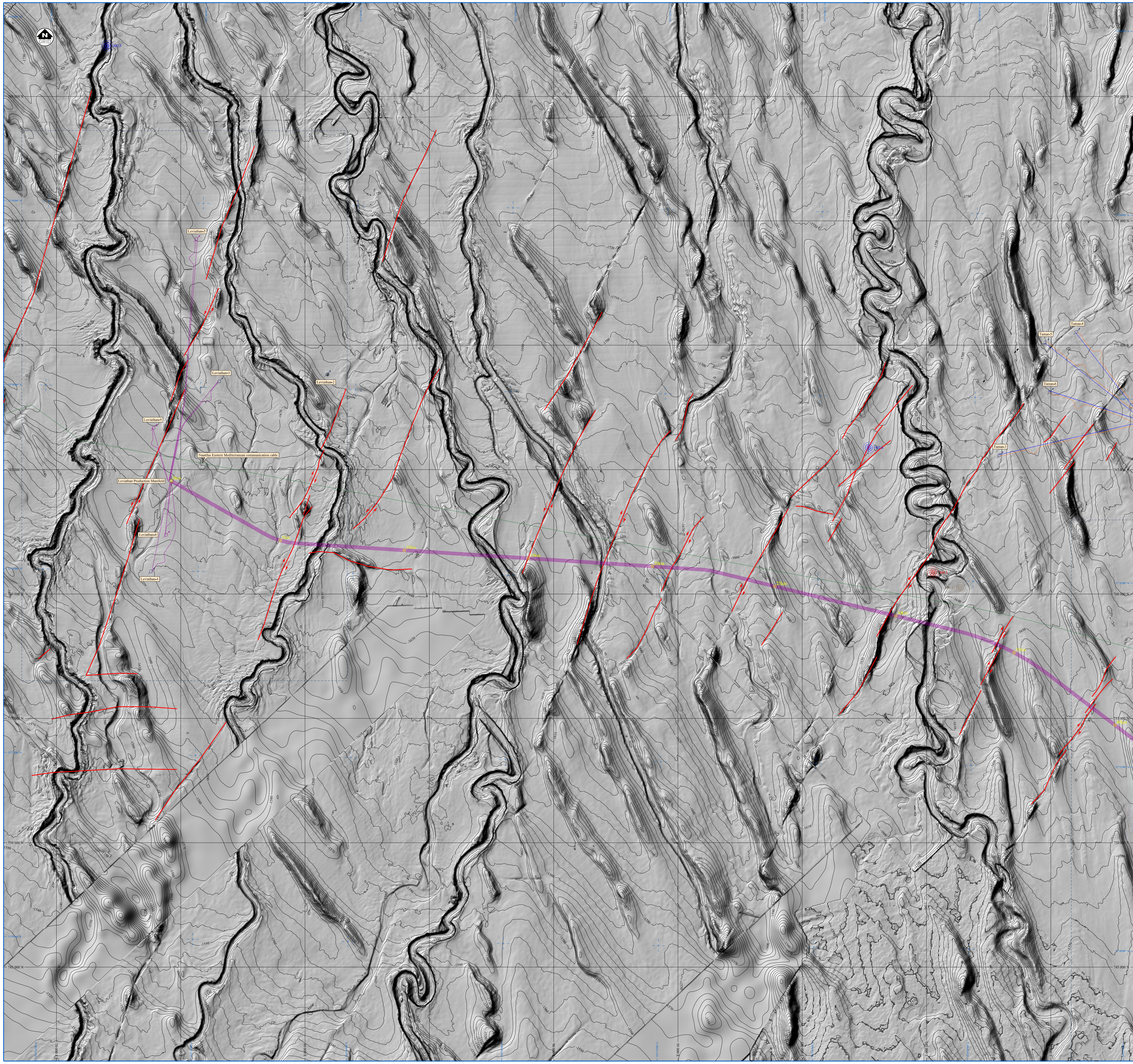


LEGEND

- Leviathan Production Manifold (74,623mE / 764,545m N)
- Existing well
- Proposed well
- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- KP points
- Tamar existing flowlines
- Tamar existing umbilicals
- Subsea communications cable
- Matchlines 1:50,000
- Earthquakes Geophysical Institue of Israel
- Earthquakes International Seismological Centre
- Earthquakes U.S. Geological Survey
- Strike Slip Faults, with direction of movement where apparent
- -1620 Depth below sea surface to seabed, contoured at 5m intervals

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

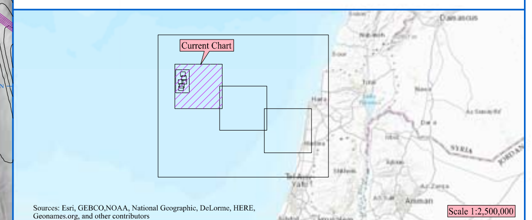
Seabed feature interpretation limited to within at least 2km of proposed route

Estimated rate of movement along strike slip faults is between 4 and 5mm per year

CHART SCALE 1:50,000

0 3,750 7,500 15,000 22,500 Feet

0 1,250 2,500 5,000 7,500 Meters



Sources: Esri, GEBCO,NOAA, National Geographic, DeLorme, HERE, Geonames.org, and other contributors

GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.20451694444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.73439361111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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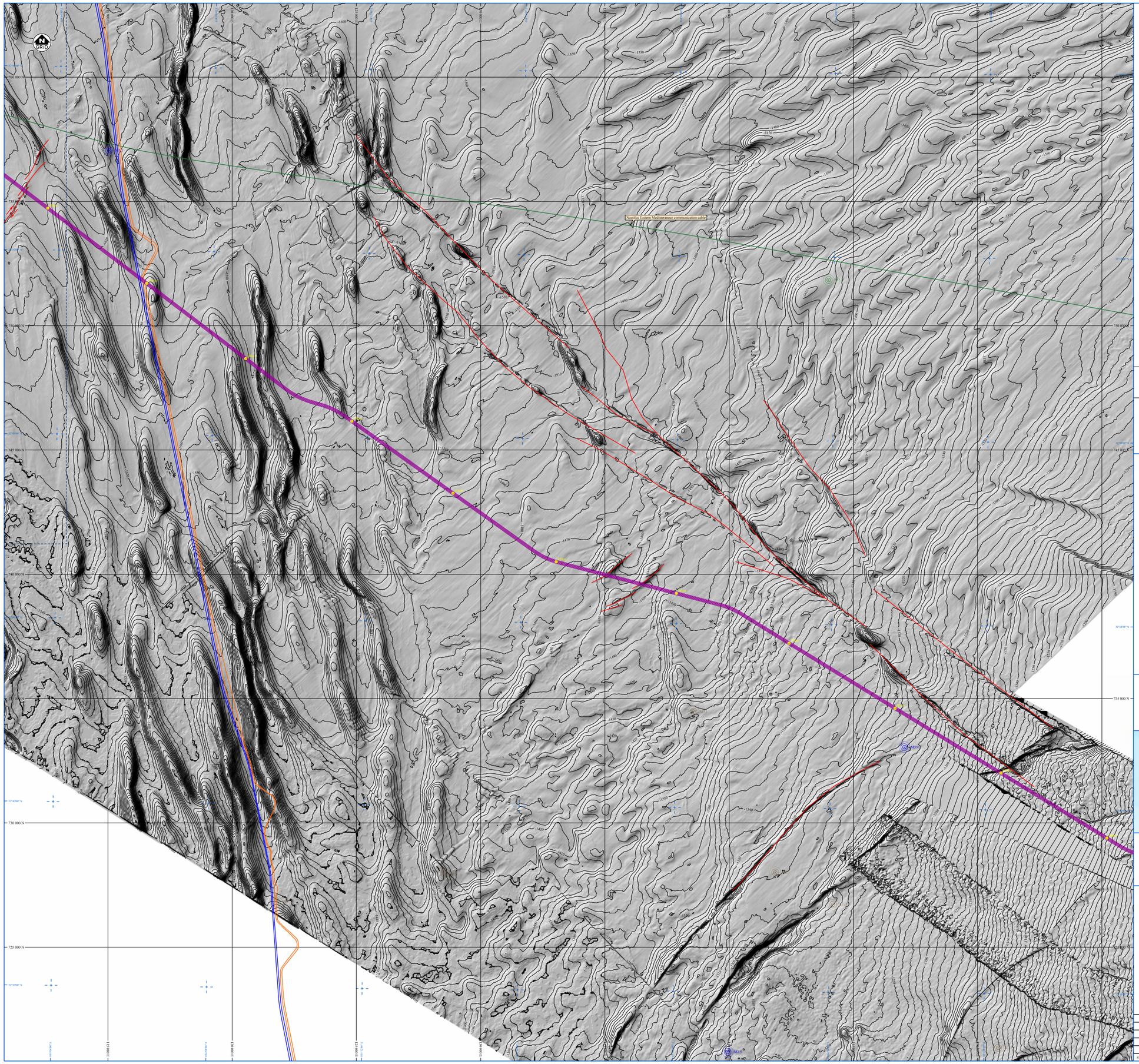
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 4 - CHART 1

Prepared by: Gardline Surveys, Inc. 1500 Bingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 11, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.12



LEGEND

- Existing well
- KP points
- Tamar existing flowlines
- Tamar existing umbilicals
- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- Subsea communications cable
- Matchlines 1:50,000
- Earthquakes Geophysical Institue of Israel
- Earthquakes International Seismological Centre
- Earthquakes Jordanian Seismological Observatory
- Strike/slip faults
- Slump faults, ticks denotes downthrown side
- -1420 Depth below sea surface to seabed, contoured at 5m intervals

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder

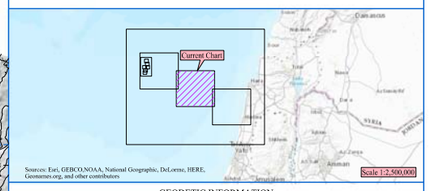
Illuminated from northwest at 45° above horizontal

Seabed feature interpretation limited to within at least 2km of proposed route

CHART SCALE 1:50,000

0 3,750 7,500 15,000 22,500 Feet

0 1,250 2,500 5,000 7,500 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.2045169444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.7343936111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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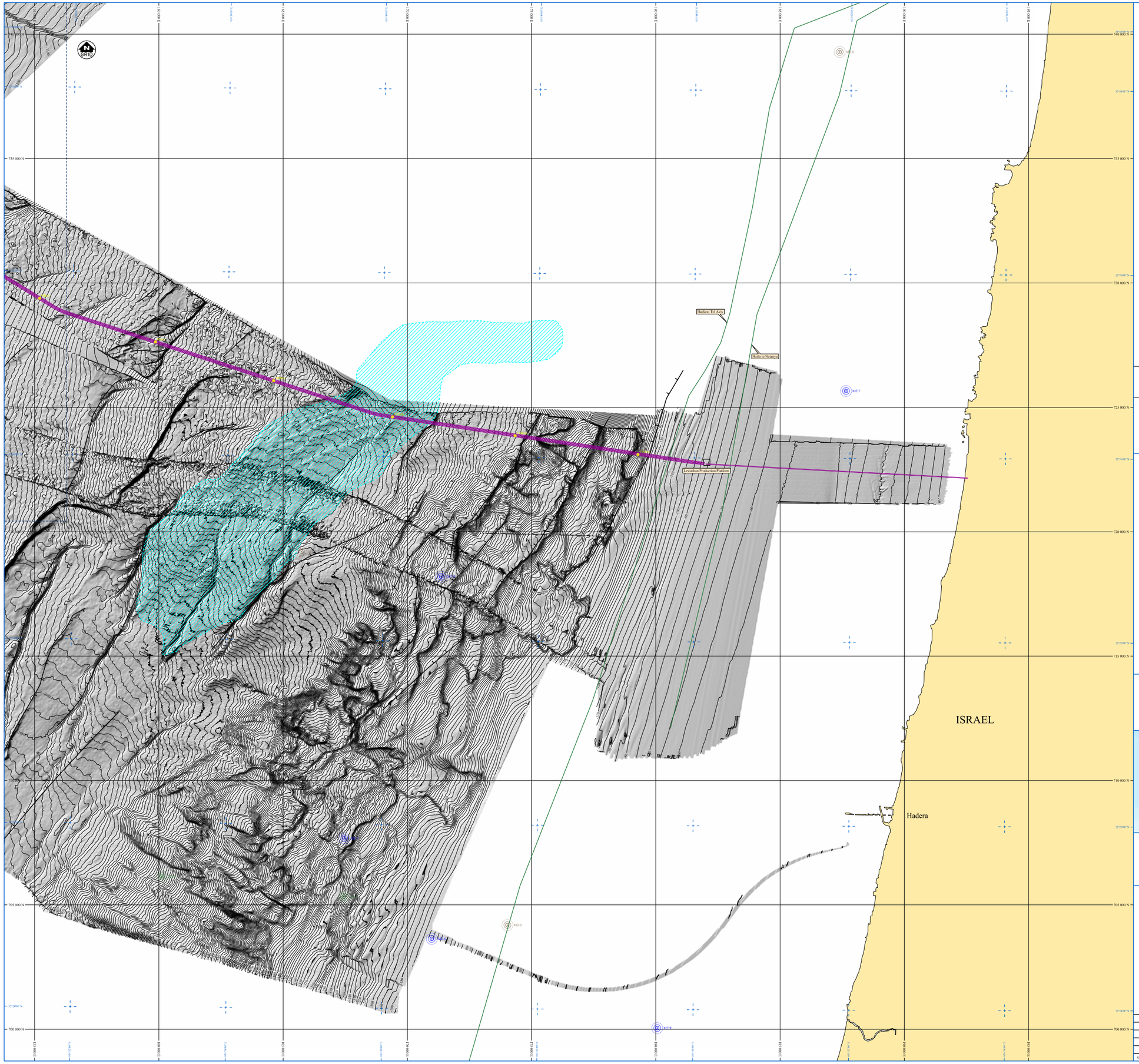
GEOLOGICAL CONDITIONS OFFSHORE ISRAEL LEVIATHAN AREA LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM GEOLOGICAL SETTING

SET 4 - CHART 2

Prepared by: Gardline Surveys, Inc. 1500 Jingle Road, Houston, Texas, 77055. Telephone: 713.461.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2ND DRAFT	JE	KB	ARH
2	July 11, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE:	N/A	REPORT REF	10773	REF NO	10773.13



LEGEND

- Leviathan Production Platform (182,052m E / 722,792m N)
- KP points
- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- Subsea communications cable
- Matchlines 1:50,000
- Shoreline
- Earthquakes Geophysical Institue of Israel
- Earthquakes International Seismological Centre
- Earthquakes Jordanian Seismological Observatory
- Strike/slip faults
- Normal faults, ticks denotes downthrown side
- Regional landslide pathway, debris deposits and several smaller scale normal faults
- -1020- Depth below sea surface to seabed, contoured at 5m intervals

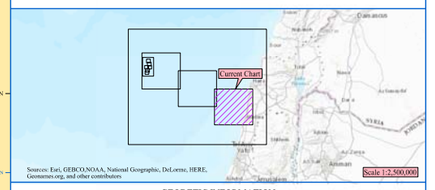
NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

Seabed feature interpretation limited to within at least 2km of proposed route

CHART SCALE 1:50,000

0 3,750 7,500 15,000 22,500 Feet
0 1,250 2,500 5,000 7,500 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code: 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.2045169444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.7343936111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 4 - CHART 3

Prepared by: Gardline Surveys, Inc. 1500 Hingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2ND DRAFT	JE	KB	ARH
2	July 11, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE:	N/A	REPORT REF	10773	REF NO	10773.14

LEGEND

- Leviathan Production Manifold (74,623mE / 764,545m N)
- Existing well
- Proposed well
- KP points
- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- Subsea communications cable
- Chart outlines 1:5,000
- Strike/slip faults
- Slump scars
- Reverse faults
- -1620 Depth below sea surface to seabed, contoured at 5m intervals

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

Seabed feature interpretation limited to within at least 2km of proposed route

CHART SCALE 1:20,000

0 1,500 3,000 6,000 9,000 Feet

0 500 1,000 2,000 3,000 Meters

Current Chart

Sources: Esri, GEBCO,NOAA, National Geographic, DeLorme, HERE, Geonames.org, and other contributors

Scale 1:2,500,000

GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.2045169444444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.7343936111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925T99433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 4 - CHART 4

Prepared by: Gardline Surveys, Inc. 1500 Bingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 11, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.15