

TELLUS AIRBORNE GEOPHYSICAL SURVEY

DATA RELEASE

WFD BLOCK (Waterford)

27 June 2016

updated

16 July 2020

(EM inversion models added)

1. WFD BLOCK SURVEY DETAILS

Airborne survey operations over the Tellus WFD (Waterford) Block commenced on 8 May 2016 and were completed on 30 May 2016. The locality of the completed WFD block is shown in Figure 1 and, together with all completed data blocks (at time of update, 16 July 2020), in Figure 2.

A total of 6,617 line-km of data were acquired in WFD Block, covering a total area of 1,160 km².

With the completion of WFD Block, a total area of 25,554 km² was covered across the Republic of Ireland. At the time of update (16 July 2020), a total area of 54,532 km² has been completed, up to and including Block A7 (although this area does include regions of overlap between neighbouring blocks, and off-shore areas).

The survey technical specifications are listed in Table 1.

Survey specification highlights are:

- 1) Three geophysical data types collected:
 - Magnetics (single sensor: total magnetic intensity).
 - Gamma-ray spectrometer (total-count and potassium, equivalent uranium and equivalent thorium concentrations).
 - Frequency domain electromagnetics (four-frequencies: 912, 3005, 11962 and 24510 Hz, in-phase and quadrature EM responses and resistivity transforms).

- 2) Flight-line spacing: 200 m.
- 3) Flight altitude (ground clearance): nominal 60 m, increasing to 214 m over sensitive areas (e.g., livestock farms) and 305 m over larger population centres.
- 4) Along-line measurement spacing: nominal 6 m (for magnetics and electromagnetics) and nominal 60 m (for gamma-ray spectrometer).

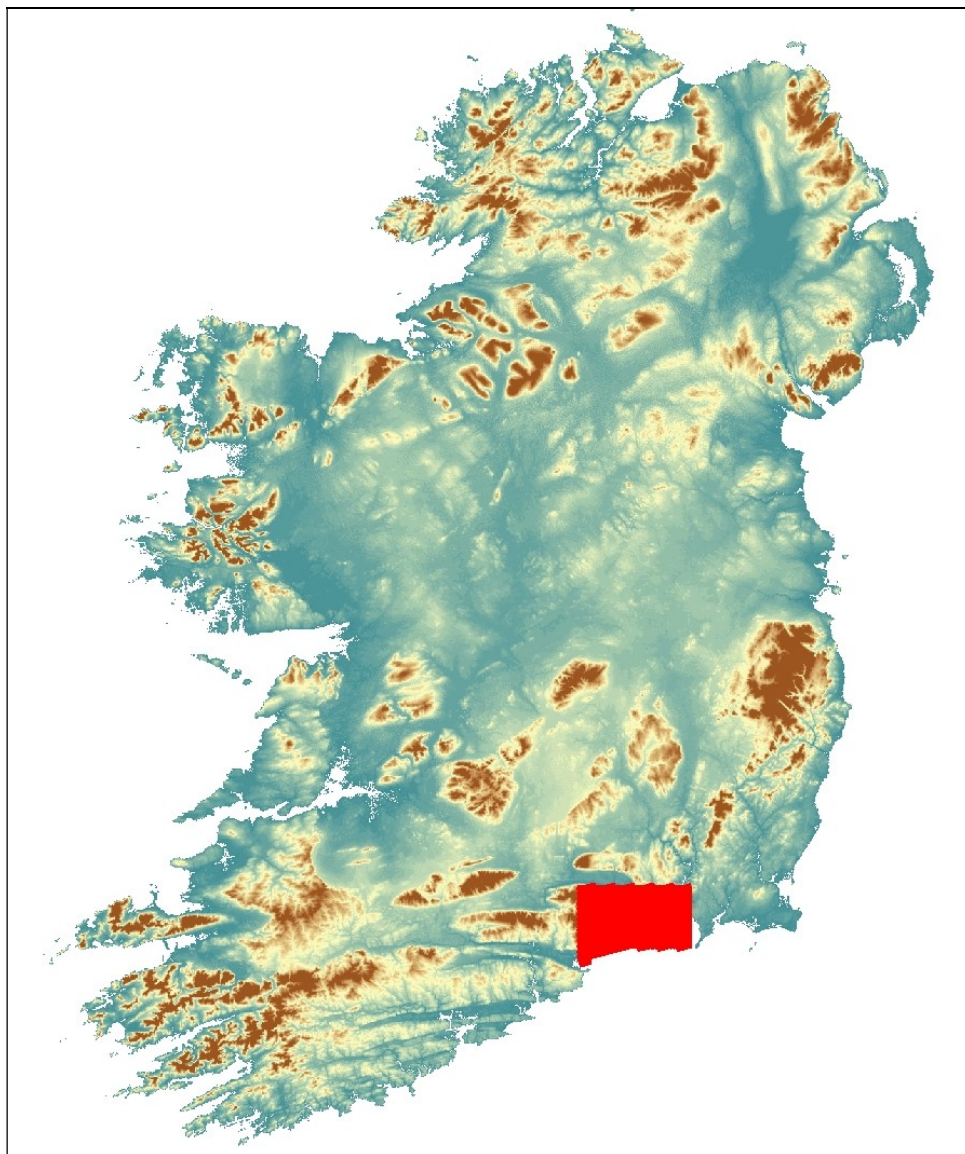


Figure 1. Locality of the Tellus WFD (Waterford) Block. Area of coverage of WFD Block is 1,160 km².

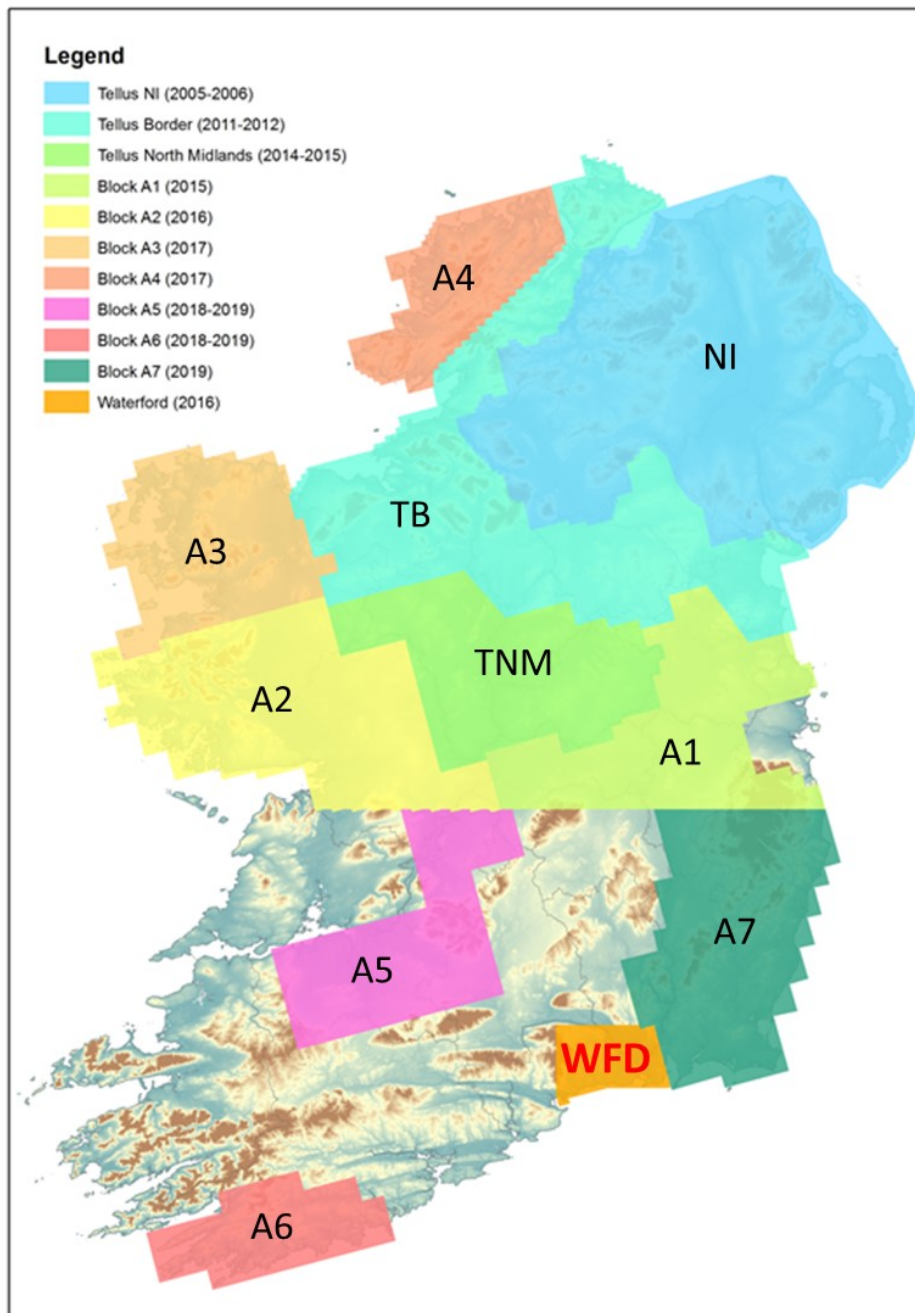


Figure 2. Locality of the Tellus WFD (Waterford) Block, shown with all completed data blocks at time of update (16 July 2020), both in the Ireland and Northern Ireland. The total area of coverage within Ireland (Republic) is 54,532 km² (at time of update, 16 July 2020), including regions of overlap between neighbouring blocks and off-shore areas.

Table 1. Summary of survey technical specifications: Tellus WFD (Waterford) Block.

Geophysical Contractor	Sander Geophysics Limited (SGL)
Survey Start Date	May 8, 2016
Survey End Date	May 30, 2016
Aircraft Type	De Havilland DHC-6 Twin Otter
Total line kilometres	6,617 km
Traverse Lines	
Number of Lines	251
Line Numbers	L1001 to L1251
Line Direction:	N15°W
Line Spacing	200 m
Control Lines	
Number of Lines	18
Line Numbers	T101 to T118
Line Direction	E15°N
Line Spacing	2000 m
Survey Altitude	
Nominal	60 m
Sensitive Areas	214 m
Large Population Centres	305 m
Number of Flights	17
Flight Numbers	001 to 017
Aircraft Ground Speed Nominal	60 m/s
Instruments Carried	
Magnetics	Single sensor (tail-mounted)
Gamma-Ray Spectrometer	Total-count, potassium, uranium, thorium windows
Frequency Domain Electromagnetics	Four frequency: 912, 3005, 11962 and 24510 Hz
Sample Rates	
Magnetics and Electromagnetics	1 Hz (nominal 6 m)
Gamma-ray Spectrometer	10 Hz (nominal 60 m)
Coordinate System	
Datum	IRENET95
Projection	Irish Transverse Mercator (ITM)

2. URLs FOR DATA DOWNLOAD

Line-based versions of the WFD Block data are now available (see Section 3 for details). Grid-based versions of the EM inversion resistivity models are also available (Section 4). Data and supporting documentation may be downloaded from the GSI website at the following URLs:

Magnetic line data and grids:

[Waterford_2016_SGL_Mag_Data.zip]

https://secure.dccae.gov.ie/GSI_DOWNLOAD/Tellus/Waterford_2016_SGL_Mag_Data.zip

Gamma-ray spectrometer line data and grids:

[Waterford_2016_SGL_Spec_Data.zip]

https://secure.dccae.gov.ie/GSI_DOWNLOAD/Tellus/Waterford_2016_SGL_Spec_Data.zip

Frequency domain electromagnetic line data and grids:

[Waterford_2016_SGL_FEM_Data.zip]

https://secure.dccae.gov.ie/GSI_DOWNLOAD/Tellus/Waterford_2016_SGL_FEM_Data.zip

Frequency domain electromagnetic inversion models line data and grids:

[Waterford_2016_EM_INV_MODELS_OHMM_XYZ.zip]

and

[Waterford_2016_EM_INV_MODELS_OHMM_GRIDS.zip]

https://secure.dccae.gov.ie/GSI_DOWNLOAD/Tellus/Waterford_2016_EM_INV_MODELS_OHMM_XYZ.zip

https://secure.dccae.gov.ie/GSI_DOWNLOAD/Tellus/Waterford_2016_EM_INV_MODELS_OHMM_GRIDS.zip

Survey technical report:

[TR_831_001.pdf]

https://secure.dccae.gov.ie/GSI_DOWNLOAD/Tellus/TR_831_001.pdf

Frequency domain electromagnetic inversion report:

[Waterford_2016_AEMPY_EM_Inversion_Report.pdf]

https://secure.dccae.gov.ie/GSI_DOWNLOAD/Tellus/Waterford_2016_AEMPY_EM_Inversion_Report.zip

For support and further information at GSI: Dr James Hodgson, Tellus Project Manager,
jim.hodgson@gsi.ie, +353 (0)1 6782742.

3. RELEASE INFORMATION FOR LINE DATA

Line based data for all flight lines are provided in ascii-format files, separately for each data type:

- **Magnetic data:**
 [GSI__2016.IRL_SGL_Waterford_MAG.xyz]
- **Gamma-ray spectrometer data:**
 [GSI__2016.IRL_SGL_Waterford_Spec.xyz]
- **Frequency domain electromagnetic data:**
 [GSI__2016.IRL_SGL_Waterford_FEM.xyz]
- **Frequency domain electromagnetic inversion models data:**
 [WFD_EM_INV_MODELS_OHMM.XYZ]

The file format is suitable for direct import into Geosoft Oasis Montaj software or into any other software programme with an ascii, column-based import capacity. The data

channel (column) descriptions for each data file are fully specified in the readme.txt files that accompany the data for each data type. For reference, the readme.txt files are included below in Section 5 (magnetic data), Section 6 (gamma-ray spectrometer data), Section 7 (frequency domain electromagnetic data) and Section 8 (frequency domain electromagnetic inversion model data).

While the line-based data files contain a number of supplementary data channels (providing, e.g., flight altitude, temperature, air pressure, power-line monitor, digital elevation model and geographic coordinate data, as appropriate to each data type), the primary data channels of interest to the data user are likely to be:

- **Magnetics:**
 - “MAG-MIC” data channel – final microlevelled magnetic field anomaly (in nT).
- **Gamma-ray spectrometer:**
 - “C_TOT_ML” channel – final corrected Total Count data (in cps).
 - “C_POTL” channel – final corrected Potassium Concentration (in %).
 - “C_URA_ML” channel – final corrected Equivalent Uranium Concentration (in ppm).
 - “C_THOL” channel – final corrected Equivalent Thorium Concentration (in ppm).
- **Frequency domain electromagnetics:**

Resistivity models (derived using approximate, half-space resistivity transformations for each frequency independently):

 - “Res09_MLEV”, “Res3_MLEV”, “Res12_MLEV” and “Res25_MLEV” channels – final microlevelled resistivity model data for 912, 3005, 11962 and 24510 Hz respectively (in ohm.m).
 - “ResSlice10_ML”, “ResSlice30_ML”, “ResSlice60_ML” and “ResSlice100_ML” channels – resistivity depth slice at 10, 30, 60 and 100 m respectively (in ohm.m).

Electromagnetic response data (for users wishing to model the EM data independently):

 - “P09lev”, “Q09lev”, “P3lev”, “Q3lev”, “P12lev”, “Q12lev”, “P25lev”, “Q25lev” channels – final levelled in-phase and quadrature responses at 912, 3005, 11962 and 24510 Hz respectively (in ppm).
- **Frequency domain electromagnetic inversion models:**

Resistivity models (derived using 1-D inversion of four frequencies simultaneously – using *aempy* software):

 - “ResD1_0_ohmm” to “ResD62_6_ohmm” channels – microlevelled resistivity model data for 20 depth layers from 1.0 to 62.6 m depth (in ohm.m).

4. RELEASE INFORMATION FOR GRID DATA

Grids of the EM inversion resistivity model data are provided for all depth channels (layers) and may be located and downloaded at the URL indicated above. Two file formats are provided: Geosoft Binary (.grd) and georeferenced TIF (.tif). Data are gridded at a 50 m interval, using an Irish Transverse Mercator projection with IREN95 datum.

For reference, the readme.txt files associated with the grid data are included below in Section 9 (frequency domain electromagnetic inversion model grids).

- **Frequency domain electromagnetic inversion models:**
 - “ResD1_0_ohmm_IDW” to “ResD62_6_ohmm_IDW” grids – microlevelled resistivity model grids for 20 depth layers from 1.0 to 62.6 m depth (in ohm.m).

5. MAGNETIC LINE DATA README FILE [WD-readme-mag.txt]

```
=====
Project Code: GSI__16.IRL Waterford Block
Project:   Airborne Magnetic, Radiometric and Frequency Domain Electromagnetic Survey in the Republic of Ireland
Client:    Geological Survey of Ireland (GSI)
Delivery:  DLV1653
Date:      27th June 2016
=====
```

LINE DATA

```
=====
File Name: GSI__2016.IRL_SGL_Waterford_MAG.xyz
File format as follows:
```

Column	Size	Name	Units	Null	Description
01	08	LINE	- -		Line Number - LLLL.SR (L=line, S=segment, R=reflight)
02	06	FLT	- -		Flight Number
03	10	DATE	- -		Date YYYYMMDD
04	05	DAY	- -		Day of year
05	10	TIME	s -		Fiducial Seconds
06	11	ITM-X	m *		X coordinate, IRENET95 ITM
07	11	ITM-Y	m *		Y coordinate, IRENET95 ITM
08	12	UTM-X	m *		X coordinate, WGS-84 UTM29N
09	12	UTM-Y	m *		Y coordinate, WGS-84 UTM29N
10	10	UTM-Z	m *		GPS Elevation above WGS-84 Ellipsoid
11	10	MSLHGT	m *		GPS Elevation above Mean Sea Level
12	13	LAT	degree *		Latitude, WGS-84
13	13	LONG	degree *		Longitude, WGS-84
14	11	CLEAR	m *		GPS Clearance above Terrain
15	11	RADAR	m *		Radar Altimeter Clearance above Terrain



16	11	LASER	m	*	Laser Altimeter Clearance above Terrain
17	11	DEM	m	*	Digital Elevation Model from SRTM (above WGS-84 Ellipsoid)
18	11	DEMRA	m	*	Digital Elevation Model from Radar (above WGS-84 Ellipsoid)
19	11	DEMLAS	m	*	Digital Elevation Model from Laser (above WGS-84 Ellipsoid)
20	11	DICOR	nT	*	Diurnal Magnetic Field from reference station
21	11	IGRF	nT	*	IGRF Correction
22	11	MAG-uncomp	nT	*	Uncompensated Airborne Magnetic Field
23	11	MAG-comp	nT	*	Compensated Airborne Magnetic Field
24	11	MAG-DC	nT	*	Diurnally Corrected Airborne Magnetic Field
25	11	MAG-IGRF	nT	*	IGRF Corrected Airborne Magnetic Field
26	11	MAG-HC	nT	*	Height Corrected Airborne Magnetic Field
27	11	MAG-LEV	nT	*	Levelled Airborne Magnetic Field
28	11	MAG-MIC	nT	*	Microlevelled Airborne Magnetic Field

=====

6. GAMMA-RAY SPECTROMETER LINE DATA README FILE [WD-Readme-Spec.txt]

```
=====
Project Code: GSI__16.IRL Waterford Block
Project:   Airborne Magnetic, Radiometric and Frequency Domain Electromagnetic Survey in the Republic of Ireland
Client:    Geological Survey of Ireland (GSI)
Delivery:  DLV1654
Date:      27th June 2016
=====
```

LINE DATA

```
=====
File Name: GSI__2016.IRL_SGL_Waterford_Spec.xyz
File format as follows:
```

Column	Size	Name	Units	Null	Description
01	08	LINE	-	-	Line Number - LLLL.SR (L=line, S=segment, R=reflight)
02	06	FLT	-	-	Flight Number
03	10	DATE	-	-	Date YYYYMMDD
04	05	DAY	-	-	Day of year
05	10	TIME	s	-	Fiducial Seconds
06	11	ITM-X	m	*	X coordinate, IREN95 ITM
07	11	ITM-Y	m	*	Y coordinate, IREN95 ITM
08	12	UTM-X	m	*	X coordinate, WGS-84 UTM29N
09	12	UTM-Y	m	*	Y coordinate, WGS-84 UTM29N
10	10	UTM-Z	m	*	GPS Elevation above WGS-84 Ellipsoid
11	10	MSLHGT	m	*	GPS Elevation above Mean Sea Level
12	13	LAT	degree	*	Latitude, WGS-84
13	13	LONG	degree	*	Longitude, WGS-84
14	11	RADAR	m	*	Radar Altimeter Clearance above Terrain
15	11	CLEAR	m	*	Clearance

16	11	BARO	m	*	Barometric Pressure Altitude
17	11	TEMP	msec	*	Temperature
18	11	E_HGT	m	*	Effective Height at Standard Temperature and Pressure
19	08	R_LIVE	counts/s	*	Gamma-ray spectrometer live time
20	10	R_COS	counts/s	*	Recorded Cosmic Count
21	10	R_UPU	counts/s	*	Recorded Up-Looking Uranium Count
22	10	R_TOT	counts/s	*	Recorded Total Count,de-lagged
23	10	R_POT	counts/s	*	Recorded Potassium Count,de-lagged
24	10	R_URA	counts/s	*	Recorded Uranium Count,de-lagged
25	10	R_THO	counts/s	*	Recorded Thorium Count,de-lagged
26	10	C_TOT_M	counts/s	*	Corrected Total Count, de-lagged, micro-levelled
27	10	C_POT	%	*	Corrected Potassium Concentration,de-lagged
28	10	C_URA_M	ppm	*	Corrected Uranium Concentration,de-lagged, micro-levelled
29	10	C_THO	ppm	*	Corrected Thorium Concentration,de-lagged
30	10	C_TOT_ML	counts/s	*	Corrected Total Count, de-lagged, micro-levelled and minimum limited to 0
31	10	C_POTL	%	*	Corrected Potassium Concentration,de-lagged and minimum limited to 0
32	10	C_URA_ML	ppm	*	Corrected Uranium Concentration,de-lagged, micro-levelled and minimum limited to 0
33	10	C_THOL	ppm	*	Corrected Thorium Concentration,de-lagged and minimum limited to 0
34	10	E_DOSE	nGy/hr	*	Air absorbed dose rate
35	10	RUT	-	*	Uranium / Thorium Ratio
36	10	RUK	-	*	Uranium / Potassium Ratio
37	10	RTK	%/ppm	*	Thorium / Potassium Ratio

=====

7. FREQUENCY DOMAIN ELECTROMAGNETIC LINE DATA README FILE [EM_A6_2018_2019_ReadMe.txt]

```
=====
Project Code: GSI_16.IRL Waterford Block
Project:   Airborne Magnetic, Radiometric and Frequency Domain Electromagnetic Survey in the Republic of Ireland
Client:    Geological Survey of Ireland (GSI)
Delivery:  DLV1655
Date:      27 June 2016
=====
```

FREQUENCY DOMAIN EM LINE DATA

```
=====
File Names: GSI_2016.IRL_SGL_Waterford_FEM.xyz
File format as follows:
```

Name	Size	Units	Null	Description
LINE	08	-	-	Line number - LLLL.SR (L=line, S=segment, R=reflight)
FLIGHT	06	-	-	Flight number
DATE	10	-	-	Date YYYYMMDD
DAY	05	-	-	Day of year
TIME	11	s	-	UTC seconds
ITM-X	13	m	*	X coordinate, IREN95 ITM
ITM-Y	13	m	*	Y coordinate, IREN95 ITM
UTM-X	13	m	*	X coordinate, WGS-84 UTM 29N
UTM-Y	13	m	*	Y coordinate, WGS-84 UTM 29N
WGSHT	13	m	*	GPS Elevation (above WGS-84 Ellipsoid)
RADAR	11	m	*	Radar Altimeter Clearance above Terrain
P09ppm	08	ppm	*	In-phase 912 Hz
Q09ppm	08	ppm	*	Quadrature 912 Hz
P3ppm	08	ppm	*	In-phase 3005 Hz
Q3ppm	08	ppm	*	Quadrature 3005 Hz



P12ppm	08	ppm	*	In-phase 11962 Hz
Q12ppm	08	ppm	*	Quadrature 11962 Hz
P25ppm	08	ppm	*	In-phase 24510 Hz
Q25ppm	08	ppm	*	Quadrature 24510 Hz
P09filt	08	ppm	*	Filtered in-phase 912 Hz
Q09filt	08	ppm	*	Filtered quadrature 912 Hz
P3filt	08	ppm	*	Filtered in-phase 3005 Hz
Q3filt	08	ppm	*	Filtered quadrature 3005 Hz
P12filt	08	ppm	*	Filtered in-phase 11962 Hz
Q12filt	08	ppm	*	Filtered quadrature 11962 Hz
P25filt	08	ppm	*	Filtered in-phase 24510 Hz
Q25filt	08	ppm	*	Filtered quadrature 24510 Hz
P09lev	08	ppm	*	Levelled and filtered in-phase 912 Hz
Q09lev	08	ppm	*	Levelled and filtered quadrature 912 Hz
P3lev	08	ppm	*	Levelled and filtered in-phase 3005 Hz
Q3lev	08	ppm	*	Levelled and filtered quadrature 3005 Hz
P12lev	08	ppm	*	Levelled and filtered in-phase 11962 Hz
Q12lev	08	ppm	*	Levelled and filtered quadrature 11962 Hz
P25lev	08	ppm	*	Levelled and filtered in-phase 24510 Hz
Q25lev	08	ppm	*	Levelled and filtered quadrature 24510 Hz
Radio_Flag	09	-	*	Radio call flag
PLM_mV	10	mV	*	Power line monitor
Res09	10	ohm-m	*	Apparent resistivity, half-space model, 912 Hz
Res3	10	ohm-m	*	Apparent resistivity, half-space model, 3005 Hz
Res12	10	ohm-m	*	Apparent resistivity, half-space model, 11962 Hz
Res25	10	ohm-m	*	Apparent resistivity, half-space model, 24510 Hz
Res09_MLEV	10	ohm-m	*	Microlevelled apparent resistivity, half-space model, 912 Hz
Res3_MLEV	10	ohm-m	*	Microlevelled apparent resistivity, half-space model, 3005 Hz
Res12_MLEV	10	ohm-m	*	Microlevelled apparent resistivity, half-space model, 11962 Hz
Res25_MLEV	10	ohm-m	*	Microlevelled apparent resistivity, half-space model, 24510 Hz
Depth09	10	m	*	Centroid depth 912Hz
Depth3	10	m	*	Centroid depth 3005Hz
Depth12	10	m	*	Centroid depth 11962Hz
Depth25	10	m	*	Centroid depth 24510Hz
ResSlice10	11	ohm-m	*	Resistivity depth slice at 10m

ResSlice30	11	ohm-m	*	Resistivity depth slice at 30m
ResSlice60	11	ohm-m	*	Resistivity depth slice at 60m
ResSlice100	11	ohm-m	*	Resistivity depth slice at 100m
ResSlice10_ML	11	ohm-m	*	Microlevelled resistivity depth slice at 10m
ResSlice30_ML	14	ohm-m	*	Microlevelled resistivity depth slice at 30m
ResSlice60_ML	14	ohm-m	*	Microlevelled resistivity depth slice at 60m
ResSlice100_ML	14	ohm-m	*	Microlevelled resistivity depth slice at 100m

=====

8. FREQUENCY DOMAIN ELECTROMAGNETIC INVERSION MODEL LINE DATA README FILE [A6_EM_INV_MODELS_OHMM_ReadMe.txt]

=====

This readme file relates to data from file: WFD_EM_INV_MODELS_OHMM.XYZ (for lines L311001 - L311251)

1-D inversion model data derived from airborne electromagnetic (EM) geophysical data collected during May 2016 by Geological Survey Ireland, Tellus Project.

Notepad text editor is recommended to read the data file correctly.

Data type: The data are 1-D EM inversion models for the WFD survey block.

Data modelling: Inversion models computed using aempy software, Tikhonov-type 1-D layered model inversion.

Model solutions nulled where failing QC criteria. Microlevelled.

Date of collection: EM data collected between 08/05/2016 and 30/05/2016.

Geographical extent: The WFD Survey block covers the majority of County Waterford, Ireland.

Contractor: Sander Geophysics Ltd

Client: Geological Survey Ireland (GSI)

Date of data release: 16 July 2020

For data queries please contact: tellus@gsi.ie

The data file contains the channels (columns) described below.

File header lines at start of file specified with "/" or "/" characters (without inverted commas)

The dataset is flight-line ordered, with a line separator "LINE line_number" at the start of each flight-line in the file (without inverted commas and where line_number is numeric, e.g., 311001).

=====

File Name: WFD_EM_INV_MODELS_OHMM.XYZ

Name	Units	Description
LINE	-	Line Number
ITM_X	m	X coordinate, IREN95 ITM
ITM_Y	m	Y coordinate, IREN95 ITM
DEM	m	Digital Elevation Model with respect to Mean Sea Level, from Laser Altimeter and GPS Z data
ALT	m	Flight clearance above Terrain, from Laser Altimeter
ResD1_0_ohmm	ohm.m	Model resistivity at 1.0 m depth, data nulled where failing QC criteria
ResD3_1_ohmm	ohm.m	Model resistivity at 3.1 m depth, data nulled where failing QC criteria
ResD5_2_ohmm	ohm.m	Model resistivity at 5.2 m depth, data nulled where failing QC criteria
ResD7_5_ohmm	ohm.m	Model resistivity at 7.5 m depth, data nulled where failing QC criteria
ResD9_8_ohmm	ohm.m	Model resistivity at 9.8 m depth, data nulled where failing QC criteria
ResD12_3_ohmm	ohm.m	Model resistivity at 12.3 m depth, data nulled where failing QC criteria
ResD14_9_ohmm	ohm.m	Model resistivity at 14.9 m depth, data nulled where failing QC criteria
ResD17_6_ohmm	ohm.m	Model resistivity at 17.6 m depth, data nulled where failing QC criteria
ResD20_5_ohmm	ohm.m	Model resistivity at 20.5 m depth, data nulled where failing QC criteria
ResD23_5_ohmm	ohm.m	Model resistivity at 23.5 m depth, data nulled where failing QC criteria
ResD26_6_ohmm	ohm.m	Model resistivity at 26.6 m depth, data nulled where failing QC criteria
ResD29_9_ohmm	ohm.m	Model resistivity at 29.9 m depth, data nulled where failing QC criteria
ResD33_3_ohmm	ohm.m	Model resistivity at 33.3 m depth, data nulled where failing QC criteria
ResD36_9_ohmm	ohm.m	Model resistivity at 36.9 m depth, data nulled where failing QC criteria
ResD40_7_ohmm	ohm.m	Model resistivity at 40.7 m depth, data nulled where failing QC criteria
ResD44_7_ohmm	ohm.m	Model resistivity at 44.7 m depth, data nulled where failing QC criteria
ResD48_9_ohmm	ohm.m	Model resistivity at 48.9 m depth, data nulled where failing QC criteria
ResD53_2_ohmm	ohm.m	Model resistivity at 53.2 m depth, data nulled where failing QC criteria

ResD57_8_ohmm	ohm.m	Model resistivity at 57.8 m depth, data nulled where failing QC criteria
ResD62_6_ohmm	ohm.m	Model resistivity at 62.6 m depth, data nulled where failing QC criteria

=====

9. FREQUENCY DOMAIN ELECTROMAGNETIC INVERSION MODEL GRID DATA README FILE [WFD_EM_INV_MODELS_OHMM_GRIDS_ReadMe.txt]

=====

This readme file relates to raster grids provided in the file: [WFD_EM_INV_MODELS_OHMM_GRIDS.zip]

Raster grids of 1-D inversion model data derived from airborne electromagnetic (EM) geophysical data collected during May 2016 by Geological Survey Ireland, Tellus Project.

Data type: Data are raster grids of 1-D EM inversion models for the WFD survey block.

Data modelling: Inversion models computed using aempy software, Tikhonov-type 1-D layered model inversion. Model solutions nulled where failing QC criteria. Microlevelled. Gridded at 50 m x 50 m mesh using Inverse Distance Weighted algorithm.

Date of collection: EM data collected between 08/05/2016 and 30/05/2016.

Geographical extent: The WFD Survey block covers the majority of County Waterford, Ireland.

Contractor: Sander Geophysics Ltd

Client: Geological Survey Ireland (GSI)

Date of data release: 16 July 2020

Two different georeferenced grid formats are provided for the Tellus geophysical data grids:

.grd files are Geosoft grid files and can be opened in: GIS software including Geosoft, ArcGIS (only with Geosoft ArcGIS plugin) and MAPINFO.

.tif files are georeferenced coloured raster files (GeoTiff files). Resolution 100 dpi (equivalent to 39.6 m ground units).

Colour scale for .tif images: log-linear, blue to red, from 31.62 to 3162 ohm.m - as illustrated in image file "Resistivity_colour_scale.tif"

Instructions on how to display the grids with the correct colour ramp in ArcGIS and QGIS are in the [ArcGIS_Colour_Ramp_gxf_InstructionsReadMe.pdf] and [QGIS_Colour_Ramp_gxf_InstructionsReadMe.pdf] files included in this .zip.

Images are intended to be viewed with in the Geosoft Clra 32 colour ramp. Included in this .zip file are an ArcGIS style file [Geosoft.Style] and an QGIS XML Colour ramp [Geosoft_Clra_32_qgis.XML] that contain Geosoft Clra 32 colour ramps.

For data queries please contact: tellus@gsi.ie

The delivered grids are described below:

Name	Unit	DESCRIPTION
WFD_ResD1_0_ohmm_IDW	ohm.m	Model resistivity grid at 1.0 m depth, data nulled where failing QC criteria
WFD_ResD3_1_ohmm_IDW	ohm.m	Model resistivity grid at 3.1 m depth, data nulled where failing QC criteria
WFD_ResD5_2_ohmm_IDW	ohm.m	Model resistivity grid at 5.2 m depth, data nulled where failing QC criteria
WFD_ResD7_5_ohmm_IDW	ohm.m	Model resistivity grid at 7.5 m depth, data nulled where failing QC criteria
WFD_ResD9_8_ohmm_IDW	ohm.m	Model resistivity grid at 9.8 m depth, data nulled where failing QC criteria
WFD_ResD12_3_ohmm_IDW	ohm.m	Model resistivity grid at 12.3 m depth, data nulled where failing QC criteria
WFD_ResD14_9_ohmm_IDW	ohm.m	Model resistivity grid at 14.9 m depth, data nulled where failing QC criteria
WFD_ResD17_6_ohmm_IDW	ohm.m	Model resistivity grid at 17.6 m depth, data nulled where failing QC criteria
WFD_ResD20_5_ohmm_IDW	ohm.m	Model resistivity grid at 20.5 m depth, data nulled where failing QC criteria
WFD_ResD23_5_ohmm_IDW	ohm.m	Model resistivity grid at 23.5 m depth, data nulled where failing QC criteria
WFD_ResD26_6_ohmm_IDW	ohm.m	Model resistivity grid at 26.6 m depth, data nulled where failing QC criteria
WFD_ResD29_9_ohmm_IDW	ohm.m	Model resistivity grid at 29.9 m depth, data nulled where failing QC criteria
WFD_ResD33_3_ohmm_IDW	ohm.m	Model resistivity grid at 33.3 m depth, data nulled where failing QC criteria
WFD_ResD36_9_ohmm_IDW	ohm.m	Model resistivity grid at 36.9 m depth, data nulled where failing QC criteria
WFD_ResD40_7_ohmm_IDW	ohm.m	Model resistivity grid at 40.7 m depth, data nulled where failing QC criteria
WFD_ResD44_7_ohmm_IDW	ohm.m	Model resistivity grid at 44.7 m depth, data nulled where failing QC criteria
WFD_ResD48_9_ohmm_IDW	ohm.m	Model resistivity grid at 48.9 m depth, data nulled where failing QC criteria
WFD_ResD53_2_ohmm_IDW	ohm.m	Model resistivity grid at 53.2 m depth, data nulled where failing QC criteria
WFD_ResD57_8_ohmm_IDW	ohm.m	Model resistivity grid at 57.8 m depth, data nulled where failing QC criteria
WFD_ResD62_6_ohmm_IDW	ohm.m	Model resistivity grid at 62.6 m depth, data nulled where failing QC criteria