



Delivery Report Spain

EEA-FTSP-Sealing_CountryDeliveryReport-ES

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
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1 INTRODUCTION

1.1 PURPOSE AND SCOPE

This document presents the country delivery report of EEA's Fast Track Service Precursor Sealing Product of Spain.

According to the Tender Specifications, this report corresponds to deliverable 5 (38 Country delivery reports).

1.2 APPLICABLE DOCUMENTS

ITD-0490-PRO-0006	Proposal responding to EEA's Invitation for Tender, Technical Offer including Management Part –Issue 1

1.3 REFERENCE DOCUMENTS

EEA/IDS/07/001	Tender Specifications "GMES Fast Track Service on Land Monitoring", EEA, 2006
ISO9001	ISO 9001: 2000 Standard
ITD-QMS-POL-0001_Infoterra_Quality_Policy	Quality Policy Statement
QMS-ITD-MA-0011_QMSManual_I3.1	Quality Management System (QMS) Manual
ITD-UMS-POL-0001_Infoterra_Environmental_Policy	Declaration of Enterprise Environmental Policy
ITD-QMS-STD-0001-ControlOfDocumentation	Control of Documentation and Data
QMS-ITD-ST-0001_CSM	Customer Satisfaction Measurement
QMS-ITD-PR-0003_PM_ProductDevelopment_I4	Project Management, Product (Prototype) Development and Production

2 DATA SPECIFICATIONS

2.1 TECHNICAL PRODUCT SPECIFICATION

Content
<i>Raster dataset of built-up and non built-up areas including continuous degree of soil sealing ranging from 0 - 100% in full spatial resolution (20 x 20 m) with the associated metadata.</i>
Geographic coverage
<i>Spain (ES) – delivery comprises four files; ES continental area (zone 29, 30 and 31) and ES Canary Islands (zone 28)</i>
<i>Coverage [km²]: 504.782 km² (plus additional buffer of 200 meters outside of country border)</i>
Input data sources
<p><u>Input data provided by ESA:</u></p> <ul style="list-style-type: none"> ▪ <i>Orthorectified satellite data coverage for Europe (Image2006), acquired primarily in the reference year 2006 (+/- 1 year), covering two dates, used sensors SPOT 4 and 5 (HRVIR) and IRS-P6 LISS-III:</i> <ul style="list-style-type: none"> • <i>20 m resampled (with cubic convolution interpolation)</i> • <i>4 spectral bands</i> • <i>Max. 5% cloud coverage</i> • <i>Covering 2 dates, at least 6 weeks apart from the respect. scene selected for the first coverage</i> • <i>Orthorectified towards national projection systems (used DTM unknown)</i> • <i>Delivery on a country by country basis foreseen</i> • <i>Metadata to each scene</i> <p><u>Input data provided by EEA</u></p> <ul style="list-style-type: none"> ▪ <i>Dataset with national country borders (to be used for clipping the data at a national level) as defined and provided by the EEA</i> <p><u>Ancillary input data</u></p> <ul style="list-style-type: none"> ▪ <i>National Corine Land Cover 2000 data in vector format to be used for the stratification of the QA sample plots</i>
Methodology
<i>Supervised classification of built-up areas with following visual improvement of classification result and derivation of degree of soil sealing based on calibrated NDVI</i>
Geometric resolution
<i>Pixel resolution 20 x 20 m</i>

Coordinate Reference System
<i>Projection: UTM 28/ 29/ 30/ 31</i> <i>False Easting: 500000,00</i> <i>False Northing: 0,00</i> <i>Central Meridian: -15°00'00,00" / -9°00'0,00" / -3°00'0,00" / 3°00'0,00"</i> <i>Latitude of Origin: 0°00'00,00"</i> <i>Scale Factor: 0,9996</i> <i>Datum: GRS80</i>
Geometric accuracy (positioning scale)
<i>According to orthorectified satellite image base delivered by ESA</i>
Thematic accuracy (in %)
<i>Classification accuracy per hectare (based on 100 x 100 m grid) of built-up non built-up areas is > 85% (assessed according approach as described in chapter 4.1)</i>
Accuracy assessment approach
<i>Accuracy assessment based on random sample plots</i>
Delivery format
<i>IMAGINE Image (IMG)</i>
Data type
<i>Raster</i>
Raster coding
<i>Thematic pixel values</i> <i>0 – Non-built up areas, water bodies inland</i> <i>1-100 - sealing values for built-up areas</i> <i>254 – Unclassifiable areas (clouds, shadows, etc.)</i> <i>255 – No Data (No thematic information)</i>
Metadata
<i>According to EEA metadata standards (EEA MSGI specification)</i>
Ancillary Data – Mitigation shape file
<i>Metadata set per delivered country in vector format defining all areas which deviate from the ITT's EO data specifications (i.e. clouds, acquisition date). The vector layer is derived from image footprints and cloud cover information of Image2006 within the country border.</i> <i>The attribute table contains information about WU identification and possible deviations from the standard specifications of Image2006:</i> <ul style="list-style-type: none"> <i>[Cntr] Country Code;</i>

- *[SCU]* Number of Sub-Country unit containing the Working Unit;
- *[WU_ID]* Full name of the Working Unit;
- *[No_acqu]* Number of acquisitions within the WU; 0 = gap / no image available;
- *[Out_Veg]* No of acquisition dates outside of country-specific vegetation period;
- *[Below_6w]* Acquisition dates less than 6 weeks apart;
- *[Cloud_cov]* Thematic value indicating the cloud coverage: No clouds = 1; Clouds present in coverage 1 = 2; Clouds present in Coverage 2 = 3; Clouds present in both coverages = 4

2.2 ALGORITHMS USED

The aim of the image processing is to derive in a robust, reliable and reproducible way based on satellite images (Spot 4/5, IRS LISS) a raster dataset of built-up and non built-up areas including continuous degree of soil sealing ranging from 0 - 100% in full spatial resolution (20 x 20 m).

As the main challenge, the derivation of a continuous degree of soil sealing has to be solved. The proposed image processing approach is based on the fact that a reliable derivation of soil sealing degrees is not possible directly from the vegetation index. Low vegetation index values, which are characteristic for densely built-up areas are e.g. also found in bare soil areas of agricultural fields. Even when using multi-temporal satellite images with different acquisition dates in combination with bi-temporal, multi-spectral classification techniques the result may be improved, but the vegetation indices of two acquisitions are still too ambiguous.

Therefore, the proposed image processing approach will start with deriving a binary map of built-up areas and then further subdivide this area into 100 degrees of soil sealing, ranging from totally sealed surfaces (100% degree of soil sealing) up to built-up areas with extensive vegetation cover (1% degree of soil sealing). This allows the final user to aggregate the continuous values as required.

To be viable for this objective the classification methodology has to fulfil the following general criteria:

- Allow for local calibration of parameters used per working sub-area (as defined by satellite images) to overcome diversity of different regions in Europe and image immanent characteristics (such compensating for different settlement structures, ecozones, phonological and weather conditions).
- Deliver the required accuracy
- Maximise consistency and objectivity of the results all over Europe
- Maximise cost-efficiency under given constraints
- Maximise standardisation of production and working motivation of the analysts
- Secure realisation in due time.

Based on these criteria, the proposed methodological approach consists of the following main steps:

- a) Data preparation & management: Provision of spatial database of bi-temporal satellite images and derived working sub-areas ("Working Units" = WU) to be processed in the following steps
- b) Core processing, containing the 3 main processing steps:
 - (1) Hybrid automated classification with supervised and unsupervised elements, leading to binary maps of built-up area
 - (2) Manual correction of the binary built-up map to obtain the required quantitative thematic accuracy (85%) as well as good qualitative results
 - (3) Derivation of degree of soil sealing based on the NDVI (Normalised Difference Vegetation Index)
- c) Generation of sub-country / country data sets
- d) Accuracy assessment
- e) Re-projection & mosaicing, generation of seamless European dataset.

2.3 FORMAT DESCRIPTION

Delivery format
<i>ERDAS IMAGE Image (IMG)</i>
<i>Data Type: unsigned 8-bit</i>
<i>Compression: Run-length encoding (ESRI)</i>
<i>Number of bands: 1</i>
<i>Pixel size: 20 m</i>
Data type
<i>Thematic Raster</i>
Metadata
<i>According to EEA metadata standards (EEA MSGI specification)</i>

2.4 METADATA

See European Environment Agency – Metadata Standard for Geographic Information (EEA-MSGI), Version 1.1a (18 August 2004).

The metadata is provided as XML-file and as PDF-document according to EEA Metadata Standard for Geographic Information (EEA-MSGI).

3 SUMMARY OF PRODUCTION

3.1 TIMETABLE, PRODUCTION MILESTONES

Spain continental area UTM zones 29, 30, 31):

Delivery by ESA	Data Reception	Data Preparation		Received by SP	Production	
		Start	End		Start	End
03.08.2007	07.08.2007	03.09.2007	03.10.2007	04.10.2007	04.10.2007	25.04.2008

Canary Islands (UTM Zone28) with gaps:

Delivery by ESA	Data Reception	Data Preparation		Received by SP	Production	
		Start	End		Start	End
03.08.2007	07.08.2007	03.09.2007	03.10.2007	23.10.2007	23.10.2007	17.04.2008

3.2 TECHNICAL PROBLEMS ENCOUNTERED, MITIGATION MEASURES

The input data for the production process of Spain had the following characteristics:

- Continental zones: cloud free in the majority of images (cloud coverage > 5 % in 1 WU in zone 29, 8 WUs in zone 30 and 1 WU in zone 31);
- Canary Islands: 6 WUs (of 20) affected by clouds;
- Two WUs of the continental area were covered by mono-temporal images only;
- Three WUs of Canary Islands were covered by mono-temporal images only.

As expected, the automated classification process lead to an overestimation of the built-up areas in sparsely vegetated Mediterranean areas due to spectral similarities (bare soil / built-up). This was compensated by intensifying the manual editing effort. Areas especially problematic were semiarid regions or wastelands close to towns or villages with agricultural activity (for example: wastelands in Aragon region, Almeria and Murcia in the southeast of Spain and Canary Islands except La Palma island).

4 ACCURACY ASSESSMENT REPORT

4.1 DESCRIPTION OF APPROACH

The derivation of accuracy measures as agreed with EEA includes the following steps:

1. Definition of 100 x 100 m reference grid in national projection of the respective country assessed
2. Stratification of the area based on Corine Land Cover level I. To emphasize the accuracy assessment in the urban areas, 50 % of the sample plots are placed within CLC class Artificial Surfaces, the other 50 % are placed in the remaining classes.
3. Cluster based random sampling based on 100 x 100 m reference grid, defined per single nation, number of samples adapted to nation size in km²
4. Re-projection of reference samples to allow overlay with Google Earth
5. Estimation, if reference cell will be labelled as “built-up” according to EEA definition or not (80% threshold degree of soil sealing) taking into account the visibility of objects in the satellite images used for the production of the raster product (technically possible also when using Google Earth¹)
6. Estimation of overall accuracy to generate accuracy measure (overall accuracy, user accuracy, (commission error), producer accuracy (omission error), per single nation (for internal use & validation only) and for European dataset for publication by EEA.
7. Adaptation of statistics with regard to the mitigation shape file. All sample plots falling within areas of the raster product, where the underlying IMAGE2006 data has been identified to fail the ITT’s specifications, are not included in the final statistics. This includes areas where
 - Less than two coverages of EO data are available
 - One or more acquisition dates are outside the defined acquisition window
 - The acquisition dates of the two coverages used are less than six weeks apart
 - Cloud cover is present in one or more coverage

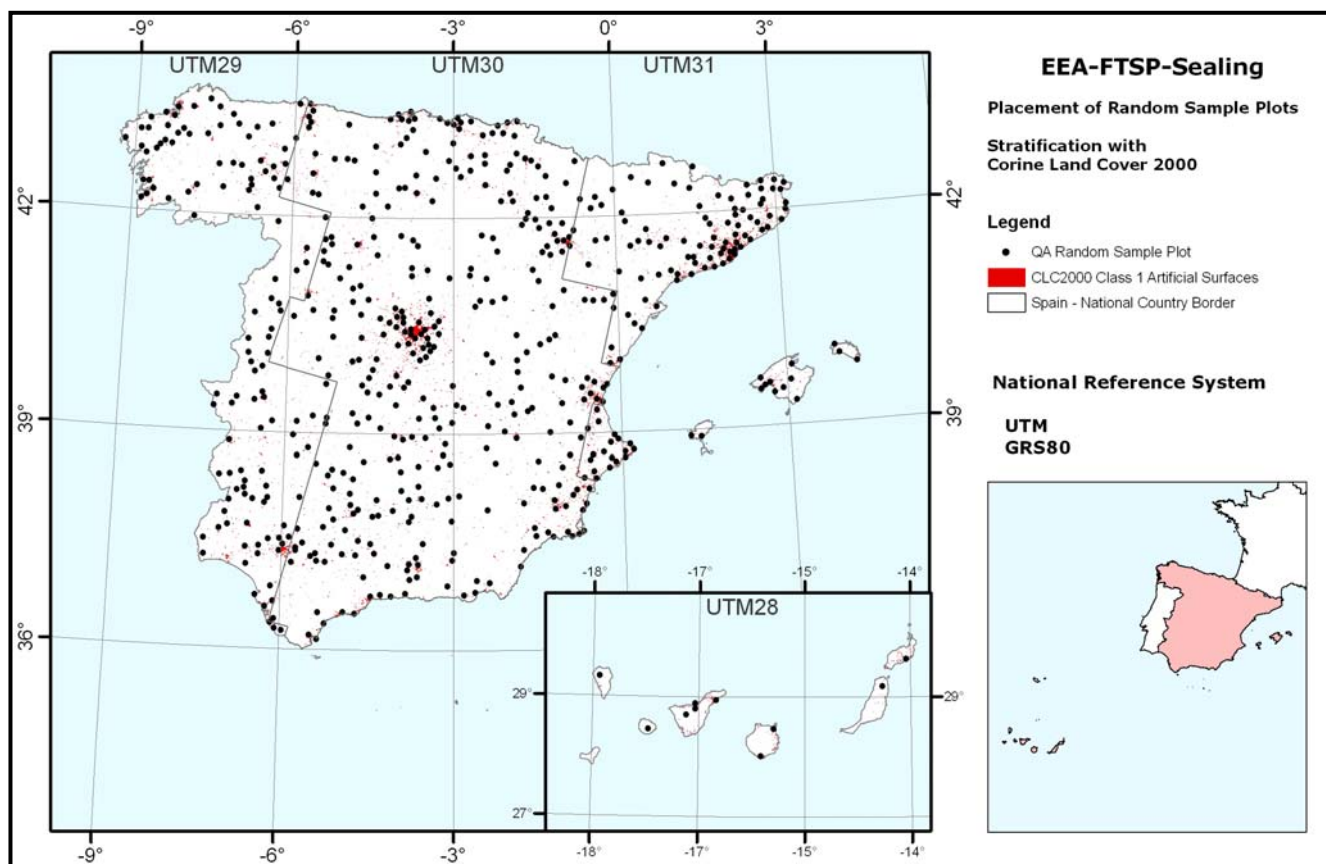
The built-up raster product which is subject to the accuracy assessment is accepted as according to the specifications if the final statistics indicate an overall accuracy of more than 85 %.

Accuracy assessment is performed per country product for internal quality control. For final acceptance by EEA, the overall accuracy of the European product is arbitative.

¹ using web-based information input to a local server

4.2 SAMPLE PLACEMENT (STRATIFICATION, NUMBER & LOCATIONS OF SAMPLE SITES)

Overall number of sample plots: 602 (301 within CLC2000 Artificial Surfaces). The figure below shows the placement of sample plots (black dots) within CLC urban areas (red areas) and outside.



4.3 FINAL RESULT

The final accuracy assessment for the country product surpassed the threshold of an overall accuracy of 85 %.

Classification				Producer's Accuracy	Omission Error
Validation		>80%	<80%	Σ	
	>80%	58	24	82	70,7%
	<80%	12	386	398	97,0%
	Σ	70	410	480	3,0%
	User's Accuracy	82,9%	94,1%		
	Commission Error	17,1%	5,9%		
Overall Accuracy		92,5%			

5 DETAILED LIST OF PROVIDED DATA

- Raster dataset of built-up and non built-up areas including degree of soil sealing, 2006, in full spatial resolution (20 m x 20 m). The data set is delivered in four separated files according to different projection zones of the national reference system:
 - UTM Zone 28
 - UTM Zone 29
 - UTM Zone 30
 - UTM Zone 31
- ArcMap Legend File of raster data set for plotting a degree of soil sealing, aggregated to thematic classes
- ArcMap Legend File of raster data set for plotting a degree of soil sealing in a range from 1-100 %
- Mitigation shape file; metadata set per delivered country defining all areas which deviate from the ITT's EO data specifications. The shapes are also divided according to the different projection zones of the national reference system (UTM Zone 28/29/30/31):
- XML-Metadata of raster and vector data after EEA specifications
- EEA Metadata Stylesheet
- Report per Country with description of raster and vector data, country specific production & mitigation issues (the document at hand)
- Product inspection sheet for outgoing deliveries, ensuring product conformity of raster dataset
- National country borders in national projection, each with respective UTM Zone

ANNEX 1: INTERPRETATION GUIDELINE FOR VISUAL CORRECTION

Objective

To produce a pixel-based high-resolution layer of built-up areas including degree of soil sealing for the EEA member states of homogeneous look & feel with an overall thematic accuracy of 85%.

Definition of Built-up Areas

Built-up areas according to the consortium definition are represented by a degree of soil sealing between 1 and 100%.

Built-up area therefore comprises pixels that are fully or partly covered by houses, roads, mines and quarries and any other facilities, including their auxiliary spaces, deliberately installed for the pursuit of human activities. Built-up area does not include any fully vegetated pixels, even if they are closely related to these activities (such as city parks and gardens), or any other unvegetated non-built-up open spaces covered with bare soil, sand, glacier, bare rocks or water.

(modified according to http://glossary.eea.europa.eu/EEAGlossary/B/built_up_land)

The FTSP in Relation to Corine Land Cover

The FTSP high resolution core land cover data is a complementary element of the GMES Fast Track Services. The data set will be a land cover product, reflecting actual ground cover on a pixel by pixel level rather than functional properties.

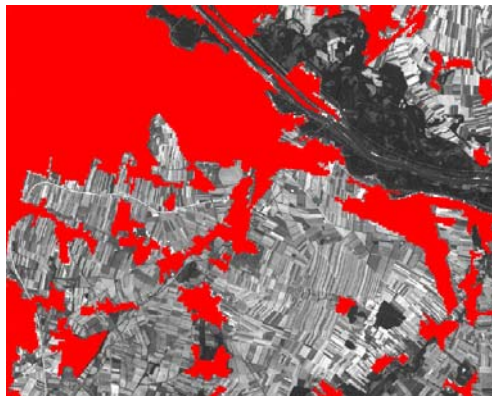
CLC level 1 class 'artificial surfaces' contains artificial surfaces and functionally related vegetated areas, reflecting the land use aspect. Therefore a significant part of this CLC level 1 class contains vegetated areas composed of fully vegetated pixels. However, in the FTSP product only pixels that contain some built-up/sealed area will be included.

In addition, built-up pixels within all other CLC level 1 classes (which are not mapped in CLC according to the 25ha MMU) will be included according to the above definition. Fully vegetated or unvegetated non-built-up pixels will be excluded.

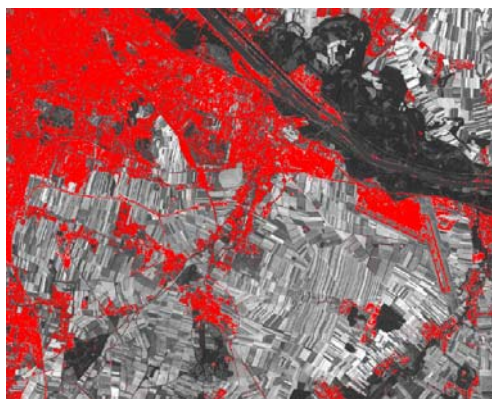
SPOT-4 satellite image over Vienna / Austria
(green band; 20m resolution)



CLC 2000 - level 1 class "artificial surfaces"



FTSP high-resolution layer of built-up areas
(20m resolution)



Special Considerations

- The same definition of built-up areas shall apply for production and quality control.
- To ensure homogeneity across the whole of Europe, partially captured linear features outside of urban agglomerations (e.g. fragments of roads or railway lines) will not be completed by the manual post editing.
- Mines and quarries will be considered built-up areas according to the above definition.
- It is proposed to include a no-data class for unclassifiable areas (e.g., clouds) which is to be marked and identified during the process of manual interpretation.

ANNEX 2: LIST OF WORKING UNITS AND EO DATA USED

The following list provides information about the two coverages of EO data which were used to create the working units. The file name is identical to the WU identification within the mitigation shapefile's attribute table and contains the specifications of sensors, paths/rows and capture dates.

The full file name is explained in the following:

[Sensor Coverage 1]_[TrackFrame Coverage 1]_[Capture Date YY/MM/DD Coverage 1]_[Instrument Coverage 1]_ [Sensor Coverage 2]_[TrackFrame Coverage 2]_[Capture Date YY/MM/DD Coverage 2]_[Instrument Coverage 2]

Table 1: List of Working Units used for the production of Spain

UTM Zone	Working Units
ES_28	spot4_014294_060712_2i0_spot5_014293_070513_2j0
ES_28	spot4_014294_060304_1i0_spot4_014294_060712_2i0
ES_28	spot4_015293_060907_2i0_spot5_015292_070103_1j9
ES_28	spot4_015294_060712_1i0_spot5_015294_070103_1j0
ES_28	spot4_015294_060907_2i0_spot5_015292_070103_1j9
ES_28	spot4_015294_060907_2i0_spot5_015294_070103_1j0
ES_28	spot4_018294_070215_1i0_spot5_017294_060826_1j0
ES_28	spot4_020292_060728_1i0_spot5_020292_051029_1j0
ES_28	spot4_020293_051010_1i0_spot4_020293_060728_1i0
ES_28	spot5_012292_060726_2j6_r
ES_28	spot5_012292_060726_2j6_spot4_012292_070509_2i6
ES_28	spot5_012294_051118_1j5_b4
ES_28	spot5_014293_070513_2j0_spot4_014293_060912_2i0
ES_28	spot5_015292_070103_1j9_spot4_014293_060912_2i0
ES_28	spot5_015294_070103_1j0_spot4_014293_060912_2i0
ES_28	spot5_017293_070103_2j9_spot5_017294_060826_1j0
ES_28	spot5_019294_060811_2j0_r
ES_28	spot5_019294_060811_2j0_spot5_020294_050621_1j0
ES_28	spot5_020291_050621_1j3_spot5_020291_060811_2j3
ES_28	spot5_020294_050621_1j0_spot5_020294_060801_1j0
ES_29	irsp6_010038_060403_I30_irsp6_010039_060708_I3
ES_29	irsp6_010038_060403_I30_irsp6_011038_050811_I3
ES_29	irsp6_010039_060403_I30_irsp6_010039_060708_I3
ES_29	irsp6_011038_050811_I30_irsp6_011038_060502_I3

ES_29	irsp6_011038_050811_I30_irsp6_011039_060806_I3
ES_29	irsp6_011038_060502_I30_irsp6_011039_060806_I3
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ES_29	irsp6_012038_060811_I30_irsp6_012039_060413_I3
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ES_29	irsp6_014042_050428_I30_irsp6_014042_060821_I3
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ES_30	irsp6_017041_050606_I30_irsp6_017041_060812_I30
ES_30	irsp6_018040_060724_I30_irsp6_018040_061028_I30
ES_30	irsp6_018041_060606_I30_irsp6_018041_061028_I30
ES_30	irsp6_019041_051107_I30_irsp6_019041_060822_I30
ES_30	spot5_032268_060808_2j0_irsp6_015041_061013_I30
ES_30	spot5_032269_060822_1j0_irsp6_015041_061013_I30
ES_30	irsp6_013038_060605_I30_irsp6_013038_061027_I30
ES_30	irsp6_013039_060723_I30_irsp6_013039_061027_I30
ES_30	irsp6_015038_060802_I30_irsp6_015038_061013_I30
ES_30	irsp6_015039_060802_I30_irsp6_015039_061013_I30

ES_30	irsp6_016038_060714_I30_irsp6_016038_060831_I30
ES_30	irsp6_016038_060714_I30_irsp6_016039_060831_I30
ES_30	irsp6_016039_060714_I30_irsp6_016039_060831_I30
ES_30	irsp6_017039_060905_I30_irsp6_018039_061028_I30
ES_30	irsp6_018039_060606_I30_irsp6_018039_061028_I30
ES_30	spot4_036262_060729_2i6_spot4_036263_060920_1i0
ES_30	spot5_035264_060718_2j0_irsp6_017039_060905_I30
ES_30	spot5_037264_060718_1j0_irsp6_017039_060905_I30
ES_30	spot5_037265_060718_1j0_irsp6_017039_060905_I30
ES_30	irsp6_017039_060905_I30_1
ES_30	irsp6_017039_060905_I30_2
ES_30	irsp6_014038_060610_I30_irsp6_014038_061008_I30
ES_30	irsp6_014039_060821_I30_irsp6_014039_061008_I30
ES_30	spot4_032277_060829_2i5_irsp6_015044_060802_I30
ES_30	irsp6_015044_060802_I30_irsp6_016044_050508_I30
ES_30	irsp6_018045_050729_I30_irsp6_018045_051102_I30
ES_31	irsp6_019039_051107_I30_irsp6_019039_060822_I30
ES_31	irsp6_019039_051107_I30_irsp6_019040_060822_I30
ES_31	irsp6_019039_060822_I30_irsp6_020039_060710_I30
ES_31	irsp6_019040_060611_I30_irsp6_019040_060822_I30
ES_31	irsp6_020039_060710_I30_irsp6_020039_061014_I30
ES_31	irsp6_020039_060710_I30_irsp6_020040_060429_I30
ES_31	irsp6_020040_060429_I30_irsp6_020040_060827_I30
ES_31	irsp6_020040_060827_I30_irsp6_020041_060429_I30
ES_31	irsp6_020041_060710_I30_irsp6_020040_060827_I30
ES_31	irsp6_020041_060710_I30_irsp6_020041_060429_I30
ES_31	irsp6_020042_060312_I30_irsp6_020042_060710_I30
ES_31	irsp6_021039_050626_I30_irsp6_020039_061014_I30
ES_31	irsp6_021039_050626_I30_irsp6_022039_060602_I30
ES_31	irsp6_021039_050626_I30_spot4_045265_060910_1i0
ES_31	irsp6_021042_050602_I30_spot4_045271_060830_2i8
ES_31	irsp6_022039_060602_I30_irsp6_022040_051216_I30
ES_31	irsp6_022039_060602_I30_spot5_046265_060724_2j0
ES_31	irsp6_022040_051216_I30_spot4_047266_060604_2i0
ES_31	irsp6_022041_050514_I30_irsp6_022041_060720_I30

ES_31	irsp6_023041_050401_l30_irsp6_023041_060701_l30
ES_31	spot4_045265_060910_1i0_spot5_045265_051223_2j0
ES_31	spot4_045266_051108_1i0_spot5_045265_060903_1j6
ES_31	spot4_045266_051108_1i0_spot5_045266_060517_1j0
ES_31	spot4_045266_051108_1i0_spot5_045266_060904_2j0
ES_31	spot5_044265_061030_2j0_spot5_045265_060903_1j6
ES_31	spot5_045265_051223_2j0_spot5_045265_060904_2j0
ES_31	spot5_045265_060903_1j6_spot5_045266_060517_1j0
ES_31	spot5_045266_060517_1j0_spot5_045266_060903_1j6
ES_31	spot5_045266_060903_1j6_spot5_045267_060517_1j0

ANNEX 3: SAMPLE PLOT VALIDATION SHEET

Sample Plot 100 x100 m [ID]	FTSP Degrees of Soil Sealing [Mean Value]	FTSP Built up [TRUE / FALSE]	Reference Built up [TRUE / FALSE]	Compliance	Excluded by Mitigation Shape [TRUE / FALSE]
0	0,0	FALSE	FALSE	TRUE	FALSE
1	0,0	FALSE	FALSE	TRUE	FALSE
2	0,0	FALSE	FALSE	TRUE	FALSE
3	0,0	FALSE	FALSE	TRUE	FALSE
4	0,0	FALSE	FALSE	TRUE	FALSE
5	0,0	FALSE	FALSE	TRUE	FALSE
6	0,0	FALSE	FALSE	TRUE	FALSE
7	0,0	FALSE	FALSE	TRUE	FALSE
8	0,0	FALSE	FALSE	TRUE	FALSE
9	0,0	FALSE	FALSE	TRUE	FALSE
10	0,0	FALSE	FALSE	TRUE	FALSE
11	0,0	FALSE	FALSE	TRUE	FALSE
12	0,0	FALSE	FALSE	TRUE	FALSE
13	0,0	FALSE	FALSE	TRUE	TRUE
14	0,0	FALSE	FALSE	TRUE	TRUE
15	0,0	FALSE	FALSE	TRUE	FALSE
16	0,0	FALSE	FALSE	TRUE	FALSE
17	0,0	FALSE	FALSE	TRUE	FALSE
18	0,0	FALSE	FALSE	TRUE	FALSE
19	0,0	FALSE	FALSE	TRUE	FALSE
20	0,0	FALSE	FALSE	TRUE	TRUE
21	0,0	FALSE	FALSE	TRUE	FALSE
22	0,0	FALSE	FALSE	TRUE	FALSE
23	0,0	FALSE	FALSE	TRUE	FALSE
24	0,0	FALSE	FALSE	TRUE	FALSE
25	66,2	FALSE	FALSE	TRUE	FALSE
26	0,0	FALSE	FALSE	TRUE	FALSE
27	0,0	FALSE	FALSE	TRUE	FALSE
28	28,4	FALSE	FALSE	TRUE	TRUE
29	0,0	FALSE	FALSE	TRUE	FALSE
30	0,0	FALSE	FALSE	TRUE	FALSE
31	0,0	FALSE	FALSE	TRUE	FALSE
32	0,0	FALSE	FALSE	TRUE	FALSE
33	0,0	FALSE	FALSE	TRUE	FALSE
34	0,0	FALSE	FALSE	TRUE	FALSE
35	0,0	FALSE	FALSE	TRUE	FALSE

36	0,0	FALSE	FALSE	TRUE	FALSE
37	0,0	FALSE	FALSE	TRUE	TRUE
38	0,0	FALSE	FALSE	TRUE	FALSE
39	0,0	FALSE	FALSE	TRUE	FALSE
40	0,0	FALSE	FALSE	TRUE	FALSE
41	0,0	FALSE	FALSE	TRUE	FALSE
42	0,0	FALSE	FALSE	TRUE	FALSE
43	0,0	FALSE	FALSE	TRUE	FALSE
44	0,0	FALSE	FALSE	TRUE	FALSE
45	0,0	FALSE	FALSE	TRUE	FALSE
46	0,0	FALSE	FALSE	TRUE	FALSE
47	0,0	FALSE	FALSE	TRUE	TRUE
48	0,0	FALSE	FALSE	TRUE	FALSE
49	0,0	FALSE	FALSE	TRUE	FALSE
50	0,0	FALSE	FALSE	TRUE	FALSE
51	0,0	FALSE	FALSE	TRUE	FALSE
52	0,0	FALSE	FALSE	TRUE	FALSE
53	0,0	FALSE	FALSE	TRUE	FALSE
54	0,0	FALSE	FALSE	TRUE	FALSE
55	0,0	FALSE	FALSE	TRUE	FALSE
56	0,0	FALSE	FALSE	TRUE	FALSE
57	0,0	FALSE	FALSE	TRUE	FALSE
58	0,0	FALSE	FALSE	TRUE	FALSE
59	0,0	FALSE	FALSE	TRUE	FALSE
60	3,9	FALSE	FALSE	TRUE	FALSE
61	0,0	FALSE	FALSE	TRUE	FALSE
62	0,0	FALSE	FALSE	TRUE	FALSE
63	0,0	FALSE	FALSE	TRUE	FALSE
64	0,0	FALSE	FALSE	TRUE	FALSE
65	0,0	FALSE	FALSE	TRUE	TRUE
66	0,0	FALSE	FALSE	TRUE	TRUE
67	0,0	FALSE	FALSE	TRUE	FALSE
68	0,0	FALSE	FALSE	TRUE	TRUE
69	0,0	FALSE	FALSE	TRUE	TRUE
70	0,0	FALSE	FALSE	TRUE	FALSE
71	0,0	FALSE	FALSE	TRUE	TRUE
72	0,0	FALSE	FALSE	TRUE	FALSE
73	0,0	FALSE	FALSE	TRUE	TRUE
74	0,0	FALSE	FALSE	TRUE	FALSE
75	0,0	FALSE	FALSE	TRUE	FALSE
76	0,0	FALSE	FALSE	TRUE	TRUE
77	0,0	FALSE	FALSE	TRUE	TRUE
78	0,0	FALSE	FALSE	TRUE	FALSE

79	0,0	FALSE	FALSE	TRUE	FALSE
80	0,0	FALSE	FALSE	TRUE	FALSE
81	0,0	FALSE	FALSE	TRUE	FALSE
82	0,0	FALSE	FALSE	TRUE	FALSE
83	0,0	FALSE	FALSE	TRUE	FALSE
84	0,0	FALSE	FALSE	TRUE	FALSE
85	9,3	FALSE	FALSE	TRUE	FALSE
86	0,0	FALSE	FALSE	TRUE	FALSE
87	0,0	FALSE	FALSE	TRUE	FALSE
88	0,0	FALSE	FALSE	TRUE	FALSE
89	0,0	FALSE	FALSE	TRUE	TRUE
90	0,0	FALSE	FALSE	TRUE	FALSE
91	0,0	FALSE	FALSE	TRUE	FALSE
92	0,0	FALSE	FALSE	TRUE	FALSE
93	0,0	FALSE	FALSE	TRUE	TRUE
94	26,0	FALSE	FALSE	TRUE	FALSE
95	67,8	FALSE	FALSE	TRUE	FALSE
96	30,1	FALSE	FALSE	TRUE	TRUE
97	0,0	FALSE	FALSE	TRUE	FALSE
98	11,1	FALSE	FALSE	TRUE	FALSE
99	76,8	FALSE	TRUE	FALSE	FALSE
100	89,9	TRUE	FALSE	FALSE	FALSE
101	7,1	FALSE	FALSE	TRUE	TRUE
102	92,3	TRUE	TRUE	TRUE	FALSE
103	1,8	FALSE	FALSE	TRUE	TRUE
104	21,4	FALSE	FALSE	TRUE	FALSE
105	23,5	FALSE	TRUE	FALSE	TRUE
106	99,4	TRUE	TRUE	TRUE	FALSE
107	62,1	FALSE	FALSE	TRUE	FALSE
108	100,0	TRUE	TRUE	TRUE	FALSE
109	0,0	FALSE	FALSE	TRUE	FALSE
110	65,2	FALSE	FALSE	TRUE	TRUE
111	5,8	FALSE	FALSE	TRUE	TRUE
112	9,0	FALSE	FALSE	TRUE	FALSE
113	88,5	TRUE	TRUE	TRUE	FALSE
114	0,0	FALSE	FALSE	TRUE	TRUE
115	69,6	FALSE	FALSE	TRUE	FALSE
116	16,9	FALSE	FALSE	TRUE	FALSE
117	100,0	TRUE	TRUE	TRUE	FALSE
118	4,2	FALSE	FALSE	TRUE	TRUE
119	59,0	FALSE	FALSE	TRUE	FALSE
120	100,0	TRUE	TRUE	TRUE	FALSE
121	71,9	FALSE	FALSE	TRUE	TRUE

122	5,1	FALSE	FALSE	TRUE	FALSE
123	254,0	NO DATA	FALSE	FALSE	TRUE
124	78,6	FALSE	FALSE	TRUE	FALSE
125	4,8	FALSE	FALSE	TRUE	FALSE
126	90,9	TRUE	TRUE	TRUE	FALSE
127	0,0	FALSE	FALSE	TRUE	FALSE
128	100,0	TRUE	TRUE	TRUE	FALSE
129	98,1	TRUE	TRUE	TRUE	TRUE
130	29,6	FALSE	FALSE	TRUE	TRUE
131	0,0	FALSE	FALSE	TRUE	TRUE
132	58,9	FALSE	FALSE	TRUE	FALSE
133	47,6	FALSE	TRUE	FALSE	FALSE
134	18,6	FALSE	FALSE	TRUE	FALSE
135	51,1	FALSE	TRUE	FALSE	FALSE
136	12,2	FALSE	FALSE	TRUE	FALSE
137	8,8	FALSE	FALSE	TRUE	FALSE
138	13,0	FALSE	FALSE	TRUE	TRUE
139	76,0	FALSE	TRUE	FALSE	FALSE
140	89,7	TRUE	TRUE	TRUE	TRUE
141	30,2	FALSE	FALSE	TRUE	FALSE
142	73,7	FALSE	FALSE	TRUE	TRUE
143	100,0	TRUE	TRUE	TRUE	FALSE
144	24,8	FALSE	FALSE	TRUE	FALSE
145	0,0	FALSE	FALSE	TRUE	FALSE
146	0,0	FALSE	FALSE	TRUE	TRUE
147	61,5	FALSE	FALSE	TRUE	FALSE
148	2,7	FALSE	FALSE	TRUE	FALSE
149	0,0	FALSE	FALSE	TRUE	FALSE
150	6,1	FALSE	FALSE	TRUE	FALSE
151	87,3	TRUE	TRUE	TRUE	TRUE
152	40,5	FALSE	FALSE	TRUE	TRUE
153	43,3	FALSE	FALSE	TRUE	FALSE
154	62,4	FALSE	TRUE	FALSE	FALSE
155	43,0	FALSE	FALSE	TRUE	FALSE
156	13,8	FALSE	FALSE	TRUE	FALSE
157	0,0	FALSE	FALSE	TRUE	FALSE
158	33,4	FALSE	FALSE	TRUE	TRUE
159	8,5	FALSE	FALSE	TRUE	FALSE
160	42,4	FALSE	FALSE	TRUE	TRUE
161	13,6	FALSE	FALSE	TRUE	TRUE
162	30,7	FALSE	FALSE	TRUE	TRUE
163	78,9	FALSE	FALSE	TRUE	FALSE
164	28,1	FALSE	FALSE	TRUE	FALSE

165	47,4	FALSE	FALSE	TRUE	FALSE
166	54,7	FALSE	FALSE	TRUE	FALSE
167	15,1	FALSE	FALSE	TRUE	FALSE
168	72,0	FALSE	TRUE	FALSE	FALSE
169	85,2	TRUE	TRUE	TRUE	FALSE
170	2,7	FALSE	FALSE	TRUE	FALSE
171	2,0	FALSE	FALSE	TRUE	TRUE
172	0,0	FALSE	FALSE	TRUE	FALSE
173	22,3	FALSE	FALSE	TRUE	FALSE
174	63,7	FALSE	FALSE	TRUE	FALSE
175	1,3	FALSE	FALSE	TRUE	TRUE
176	0,0	FALSE	FALSE	TRUE	TRUE
177	0,0	FALSE	FALSE	TRUE	FALSE
178	66,5	FALSE	FALSE	TRUE	FALSE
179	100,0	TRUE	TRUE	TRUE	FALSE
180	78,9	FALSE	FALSE	TRUE	FALSE
181	0,0	FALSE	FALSE	TRUE	FALSE
182	0,0	FALSE	FALSE	TRUE	FALSE
183	65,1	FALSE	FALSE	TRUE	FALSE
184	85,9	TRUE	TRUE	TRUE	FALSE
185	254,0	NO DATA	FALSE	FALSE	TRUE
186	0,0	FALSE	FALSE	TRUE	FALSE
187	100,0	TRUE	TRUE	TRUE	FALSE
188	0,0	FALSE	FALSE	TRUE	FALSE
189	0,0	FALSE	FALSE	TRUE	FALSE
190	0,0	FALSE	FALSE	TRUE	FALSE
191	0,0	FALSE	FALSE	TRUE	TRUE
192	0,0	FALSE	FALSE	TRUE	FALSE
193	0,0	FALSE	FALSE	TRUE	FALSE
194	0,0	FALSE	FALSE	TRUE	FALSE
195	0,0	FALSE	FALSE	TRUE	FALSE
196	0,0	FALSE	FALSE	TRUE	FALSE
197	0,0	FALSE	FALSE	TRUE	FALSE
198	0,0	FALSE	FALSE	TRUE	FALSE
199	0,0	FALSE	FALSE	TRUE	FALSE
200	0,0	FALSE	FALSE	TRUE	FALSE
201	0,0	FALSE	FALSE	TRUE	TRUE
202	0,0	FALSE	FALSE	TRUE	FALSE
203	0,0	FALSE	FALSE	TRUE	FALSE
204	0,0	FALSE	FALSE	TRUE	FALSE
205	0,0	FALSE	FALSE	TRUE	FALSE
206	0,0	FALSE	FALSE	TRUE	FALSE
207	0,0	FALSE	FALSE	TRUE	FALSE
208	0,0	FALSE	FALSE	TRUE	FALSE

209	0,0	FALSE	FALSE	TRUE	FALSE
210	0,0	FALSE	FALSE	TRUE	FALSE
211	0,0	FALSE	FALSE	TRUE	FALSE
212	0,0	FALSE	FALSE	TRUE	FALSE
213	0,0	FALSE	FALSE	TRUE	FALSE
214	0,0	FALSE	FALSE	TRUE	FALSE
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247	0,0	FALSE	FALSE	TRUE	FALSE
248	0,0	FALSE	FALSE	TRUE	FALSE
249	0,0	FALSE	FALSE	TRUE	FALSE
250	0,0	FALSE	FALSE	TRUE	FALSE
251	0,0	FALSE	FALSE	TRUE	FALSE
252	0,0	FALSE	FALSE	TRUE	FALSE

253	0,0	FALSE	FALSE	TRUE	FALSE
254	0,0	FALSE	FALSE	TRUE	FALSE
255	0,0	FALSE	FALSE	TRUE	FALSE
256	0,0	FALSE	FALSE	TRUE	FALSE
257	0,0	FALSE	FALSE	TRUE	FALSE
258	0,0	FALSE	FALSE	TRUE	FALSE
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260	0,0	FALSE	FALSE	TRUE	TRUE
261	0,0	FALSE	FALSE	TRUE	FALSE
262	0,0	FALSE	FALSE	TRUE	FALSE
263	0,0	FALSE	FALSE	TRUE	FALSE
264	0,0	FALSE	FALSE	TRUE	TRUE
265	20,2	FALSE	FALSE	TRUE	FALSE
266	0,0	FALSE	FALSE	TRUE	FALSE
267	0,0	FALSE	FALSE	TRUE	FALSE
268	0,0	FALSE	FALSE	TRUE	FALSE
269	0,0	FALSE	FALSE	TRUE	FALSE
270	0,0	FALSE	FALSE	TRUE	FALSE
271	0,0	FALSE	FALSE	TRUE	FALSE
272	0,0	FALSE	FALSE	TRUE	FALSE
273	0,0	FALSE	FALSE	TRUE	FALSE
274	0,0	FALSE	FALSE	TRUE	FALSE
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280	0,0	FALSE	FALSE	TRUE	FALSE
281	76,7	FALSE	FALSE	TRUE	FALSE
282	0,0	FALSE	FALSE	TRUE	FALSE
283	0,0	FALSE	TRUE	FALSE	FALSE
284	67,8	FALSE	TRUE	FALSE	FALSE
285	96,3	TRUE	TRUE	TRUE	FALSE
286	67,1	FALSE	FALSE	TRUE	FALSE
287	0,0	FALSE	FALSE	TRUE	TRUE
288	0,0	FALSE	FALSE	TRUE	TRUE
289	89,2	TRUE	TRUE	TRUE	FALSE
290	37,7	FALSE	FALSE	TRUE	FALSE
291	53,8	FALSE	FALSE	TRUE	FALSE
292	11,1	FALSE	FALSE	TRUE	FALSE
293	0,0	FALSE	FALSE	TRUE	FALSE
294	90,3	TRUE	TRUE	TRUE	FALSE
295	75,4	FALSE	TRUE	FALSE	TRUE
296	0,0	FALSE	FALSE	TRUE	FALSE

297	0,2	FALSE	FALSE	TRUE	FALSE
298	22,6	FALSE	FALSE	TRUE	FALSE
299	11,4	FALSE	FALSE	TRUE	TRUE
300	89,1	TRUE	TRUE	TRUE	FALSE
301	84,7	TRUE	FALSE	FALSE	FALSE
302	10,2	FALSE	FALSE	TRUE	TRUE
303	0,0	FALSE	FALSE	TRUE	FALSE
304	0,0	FALSE	FALSE	TRUE	FALSE
305	98,8	TRUE	TRUE	TRUE	FALSE
306	91,7	TRUE	TRUE	TRUE	FALSE
307	45,5	FALSE	FALSE	TRUE	FALSE
308	51,1	FALSE	FALSE	TRUE	FALSE
309	47,4	FALSE	FALSE	TRUE	FALSE
310	0,0	FALSE	FALSE	TRUE	TRUE
311	92,9	TRUE	FALSE	FALSE	FALSE
312	37,7	FALSE	FALSE	TRUE	FALSE
313	0,0	FALSE	FALSE	TRUE	FALSE
314	31,0	FALSE	FALSE	TRUE	FALSE
315	44,5	FALSE	FALSE	TRUE	FALSE
316	83,5	TRUE	TRUE	TRUE	FALSE
317	0,0	FALSE	FALSE	TRUE	FALSE
318	24,5	FALSE	TRUE	FALSE	FALSE
319	73,8	FALSE	TRUE	FALSE	FALSE
320	96,4	TRUE	FALSE	FALSE	FALSE
321	0,0	FALSE	TRUE	FALSE	FALSE
322	99,0	TRUE	TRUE	TRUE	TRUE
323	40,1	FALSE	FALSE	TRUE	FALSE
324	20,7	FALSE	FALSE	TRUE	FALSE
325	97,8	TRUE	TRUE	TRUE	FALSE
326	69,8	FALSE	FALSE	TRUE	FALSE
327	3,4	FALSE	FALSE	TRUE	FALSE
328	42,1	FALSE	FALSE	TRUE	FALSE
329	37,2	FALSE	FALSE	TRUE	FALSE
330	77,7	FALSE	TRUE	FALSE	FALSE
331	69,6	FALSE	FALSE	TRUE	FALSE
332	2,8	FALSE	FALSE	TRUE	FALSE
333	95,1	TRUE	TRUE	TRUE	FALSE
334	0,0	FALSE	FALSE	TRUE	FALSE
335	97,4	TRUE	TRUE	TRUE	FALSE
336	61,1	FALSE	FALSE	TRUE	FALSE
337	42,9	FALSE	TRUE	FALSE	FALSE
338	99,9	TRUE	TRUE	TRUE	FALSE
339	0,0	FALSE	FALSE	TRUE	FALSE

340	0,0	FALSE	FALSE	TRUE	FALSE
341	17,4	FALSE	FALSE	TRUE	TRUE
342	98,2	TRUE	FALSE	FALSE	FALSE
343	90,1	TRUE	TRUE	TRUE	FALSE
344	80,4	TRUE	TRUE	TRUE	FALSE
345	59,8	FALSE	FALSE	TRUE	FALSE
346	46,3	FALSE	FALSE	TRUE	FALSE
347	97,5	TRUE	TRUE	TRUE	FALSE
348	33,3	FALSE	FALSE	TRUE	FALSE
349	0,0	FALSE	FALSE	TRUE	TRUE
350	99,4	TRUE	TRUE	TRUE	FALSE
351	79,9	FALSE	TRUE	FALSE	FALSE
352	44,3	FALSE	FALSE	TRUE	FALSE
353	14,5	FALSE	FALSE	TRUE	FALSE
354	26,7	FALSE	FALSE	TRUE	FALSE
355	46,6	FALSE	FALSE	TRUE	FALSE
356	0,1	FALSE	FALSE	TRUE	FALSE
357	2,8	FALSE	FALSE	TRUE	FALSE
358	0,0	FALSE	FALSE	TRUE	FALSE
359	4,9	FALSE	FALSE	TRUE	TRUE
360	25,0	FALSE	FALSE	TRUE	FALSE
361	52,9	FALSE	FALSE	TRUE	FALSE
362	65,1	FALSE	FALSE	TRUE	FALSE
363	6,5	FALSE	FALSE	TRUE	FALSE
364	57,0	FALSE	FALSE	TRUE	FALSE
365	65,6	FALSE	TRUE	FALSE	FALSE
366	0,0	FALSE	FALSE	TRUE	FALSE
367	13,8	FALSE	FALSE	TRUE	FALSE
368	0,0	FALSE	FALSE	TRUE	FALSE
369	75,8	FALSE	TRUE	FALSE	FALSE
370	10,7	FALSE	FALSE	TRUE	FALSE
371	37,8	FALSE	FALSE	TRUE	FALSE
372	45,4	FALSE	TRUE	FALSE	FALSE
373	0,0	FALSE	FALSE	TRUE	FALSE
374	0,0	FALSE	FALSE	TRUE	FALSE
375	0,0	FALSE	FALSE	TRUE	FALSE
376	0,0	FALSE	FALSE	TRUE	FALSE
377	0,0	FALSE	FALSE	TRUE	FALSE
378	0,0	FALSE	FALSE	TRUE	TRUE
379	0,0	FALSE	FALSE	TRUE	FALSE
380	0,0	FALSE	FALSE	TRUE	TRUE
381	0,0	FALSE	FALSE	TRUE	FALSE
382	0,0	FALSE	FALSE	TRUE	FALSE
383	0,0	FALSE	FALSE	TRUE	FALSE

384	0,0	FALSE	FALSE	TRUE	FALSE
385	0,0	FALSE	FALSE	TRUE	FALSE
386	0,0	FALSE	FALSE	TRUE	TRUE
387	0,0	FALSE	FALSE	TRUE	FALSE
388	0,0	FALSE	FALSE	TRUE	FALSE
389	0,0	FALSE	FALSE	TRUE	FALSE
390	0,0	FALSE	FALSE	TRUE	TRUE
391	0,0	FALSE	FALSE	TRUE	TRUE
392	0,0	FALSE	FALSE	TRUE	FALSE
393	0,0	FALSE	FALSE	TRUE	FALSE
394	0,0	FALSE	FALSE	TRUE	FALSE
395	0,0	FALSE	FALSE	TRUE	FALSE
396	0,0	FALSE	FALSE	TRUE	FALSE
397	0,0	FALSE	FALSE	TRUE	FALSE
398	0,0	FALSE	FALSE	TRUE	FALSE
399	0,0	FALSE	FALSE	TRUE	FALSE
400	0,0	FALSE	FALSE	TRUE	FALSE
401	27,5	FALSE	TRUE	FALSE	FALSE
402	0,0	FALSE	FALSE	TRUE	TRUE
403	0,0	FALSE	FALSE	TRUE	TRUE
404	0,0	FALSE	FALSE	TRUE	FALSE
405	0,0	FALSE	FALSE	TRUE	TRUE
406	0,0	FALSE	FALSE	TRUE	FALSE
407	0,0	FALSE	FALSE	TRUE	FALSE
408	0,0	FALSE	FALSE	TRUE	FALSE
409	0,0	FALSE	FALSE	TRUE	FALSE
410	0,0	FALSE	FALSE	TRUE	FALSE
411	0,0	FALSE	FALSE	TRUE	FALSE
412	0,0	FALSE	FALSE	TRUE	FALSE
413	0,0	FALSE	FALSE	TRUE	FALSE
414	0,0	FALSE	FALSE	TRUE	TRUE
415	0,0	FALSE	FALSE	TRUE	FALSE
416	0,0	FALSE	FALSE	TRUE	FALSE
417	0,0	FALSE	FALSE	TRUE	FALSE
418	0,0	FALSE	FALSE	TRUE	FALSE
419	0,0	FALSE	FALSE	TRUE	FALSE
420	0,0	FALSE	FALSE	TRUE	FALSE
421	0,0	FALSE	FALSE	TRUE	FALSE
422	0,0	FALSE	FALSE	TRUE	FALSE
423	0,0	FALSE	FALSE	TRUE	FALSE
424	0,0	FALSE	FALSE	TRUE	FALSE
425	0,0	FALSE	FALSE	TRUE	FALSE
426	0,0	FALSE	FALSE	TRUE	TRUE
427	0,0	FALSE	FALSE	TRUE	FALSE
428	0,0	FALSE	FALSE	TRUE	FALSE

429	0,0	FALSE	FALSE	TRUE	FALSE
430	0,0	FALSE	FALSE	TRUE	FALSE
431	0,0	FALSE	FALSE	TRUE	FALSE
432	0,0	FALSE	FALSE	TRUE	FALSE
433	0,0	FALSE	FALSE	TRUE	FALSE
434	0,0	FALSE	FALSE	TRUE	FALSE
435	166,9	NO DATA	FALSE	FALSE	TRUE
436	0,0	FALSE	FALSE	TRUE	FALSE
437	0,0	FALSE	FALSE	TRUE	FALSE
438	0,0	FALSE	FALSE	TRUE	TRUE
439	0,0	FALSE	FALSE	TRUE	FALSE
440	0,0	FALSE	FALSE	TRUE	FALSE
441	0,0	FALSE	FALSE	TRUE	FALSE
442	0,0	FALSE	FALSE	TRUE	FALSE
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444	0,0	FALSE	FALSE	TRUE	FALSE
445	0,0	FALSE	FALSE	TRUE	FALSE
446	0,0	FALSE	FALSE	TRUE	FALSE
447	0,0	FALSE	FALSE	TRUE	FALSE
448	0,0	FALSE	FALSE	TRUE	FALSE
449	0,0	FALSE	FALSE	TRUE	FALSE
450	0,0	FALSE	FALSE	TRUE	FALSE
451	0,0	FALSE	FALSE	TRUE	FALSE
452	0,0	FALSE	FALSE	TRUE	TRUE
453	0,0	FALSE	FALSE	TRUE	FALSE
454	0,0	FALSE	FALSE	TRUE	FALSE
455	0,0	FALSE	FALSE	TRUE	FALSE
456	0,0	FALSE	FALSE	TRUE	FALSE
457	0,0	FALSE	FALSE	TRUE	TRUE
458	0,0	FALSE	FALSE	TRUE	FALSE
459	81,8	TRUE	FALSE	FALSE	FALSE
460	46,6	FALSE	TRUE	FALSE	FALSE
461	98,8	TRUE	TRUE	TRUE	FALSE
462	98,5	TRUE	TRUE	TRUE	FALSE
463	96,0	TRUE	TRUE	TRUE	FALSE
464	34,5	FALSE	FALSE	TRUE	TRUE
465	88,1	TRUE	TRUE	TRUE	FALSE
466	2,7	FALSE	FALSE	TRUE	FALSE
467	88,9	TRUE	TRUE	TRUE	FALSE
468	52,4	FALSE	FALSE	TRUE	FALSE
469	4,6	FALSE	FALSE	TRUE	FALSE
470	51,3	FALSE	FALSE	TRUE	FALSE
471	22,4	FALSE	FALSE	TRUE	TRUE
472	0,0	FALSE	FALSE	TRUE	FALSE
473	66,8	FALSE	FALSE	TRUE	FALSE

474	98,6	TRUE	FALSE	FALSE	FALSE
475	84,1	TRUE	TRUE	TRUE	FALSE
476	19,2	FALSE	FALSE	TRUE	TRUE
477	56,0	FALSE	FALSE	TRUE	FALSE
478	100,0	TRUE	TRUE	TRUE	FALSE
479	2,8	FALSE	FALSE	TRUE	FALSE
480	0,0	FALSE	FALSE	TRUE	FALSE
481	89,8	TRUE	TRUE	TRUE	FALSE
482	6,7	FALSE	FALSE	TRUE	TRUE
483	88,4	TRUE	FALSE	FALSE	FALSE
484	50,8	FALSE	FALSE	TRUE	TRUE
485	3,7	FALSE	FALSE	TRUE	FALSE
486	25,9	FALSE	FALSE	TRUE	FALSE
487	232,8	NO DATA	FALSE	FALSE	TRUE
488	70,5	FALSE	TRUE	FALSE	FALSE
489	24,5	FALSE	FALSE	TRUE	TRUE
490	99,2	TRUE	TRUE	TRUE	TRUE
491	84,5	TRUE	TRUE	TRUE	FALSE
492	25,9	FALSE	FALSE	TRUE	FALSE
493	64,1	FALSE	TRUE	FALSE	FALSE
494	85,0	TRUE	FALSE	FALSE	TRUE
495	4,6	FALSE	FALSE	TRUE	TRUE
496	0,0	FALSE	FALSE	TRUE	TRUE
497	91,7	TRUE	TRUE	TRUE	TRUE
498	95,6	TRUE	TRUE	TRUE	FALSE
499	0,0	FALSE	FALSE	TRUE	FALSE
500	100,0	TRUE	TRUE	TRUE	FALSE
501	89,0	TRUE	TRUE	TRUE	FALSE
502	93,7	TRUE	TRUE	TRUE	TRUE
503	94,0	TRUE	TRUE	TRUE	FALSE
504	97,0	TRUE	TRUE	TRUE	TRUE
505	0,0	FALSE	FALSE	TRUE	FALSE
506	0,0	FALSE	FALSE	TRUE	TRUE
507	94,6	TRUE	TRUE	TRUE	FALSE
508	59,2	FALSE	FALSE	TRUE	FALSE
509	68,8	FALSE	FALSE	TRUE	FALSE
510	100,0	TRUE	TRUE	TRUE	FALSE
511	93,4	TRUE	TRUE	TRUE	FALSE
512	26,9	FALSE	FALSE	TRUE	FALSE
513	2,2	FALSE	FALSE	TRUE	TRUE
514	85,2	TRUE	TRUE	TRUE	FALSE
515	54,2	FALSE	FALSE	TRUE	TRUE
516	94,8	TRUE	TRUE	TRUE	FALSE
517	89,0	TRUE	TRUE	TRUE	FALSE
518	87,8	TRUE	TRUE	TRUE	FALSE

519	91,7	TRUE	TRUE	TRUE	FALSE
520	76,8	FALSE	FALSE	TRUE	FALSE
521	21,1	FALSE	FALSE	TRUE	FALSE
522	11,3	FALSE	FALSE	TRUE	TRUE
523	91,3	TRUE	TRUE	TRUE	FALSE
524	83,2	TRUE	TRUE	TRUE	TRUE
525	93,1	TRUE	FALSE	FALSE	FALSE
526	68,1	FALSE	TRUE	FALSE	TRUE
527	3,8	FALSE	FALSE	TRUE	TRUE
528	57,3	FALSE	FALSE	TRUE	FALSE
529	1,1	FALSE	FALSE	TRUE	TRUE
530	79,6	FALSE	FALSE	TRUE	FALSE
531	87,4	TRUE	TRUE	TRUE	TRUE
532	0,4	FALSE	FALSE	TRUE	FALSE
533	85,2	TRUE	TRUE	TRUE	FALSE
534	72,1	FALSE	FALSE	TRUE	TRUE
535	37,5	FALSE	FALSE	TRUE	TRUE
536	0,0	FALSE	FALSE	TRUE	FALSE
537	94,4	TRUE	TRUE	TRUE	FALSE
538	97,6	TRUE	TRUE	TRUE	FALSE
539	82,6	TRUE	FALSE	FALSE	FALSE
540	65,6	FALSE	TRUE	FALSE	FALSE
541	6,4	FALSE	FALSE	TRUE	TRUE
542	0,0	FALSE	FALSE	TRUE	FALSE
543	54,4	FALSE	FALSE	TRUE	TRUE
544	0,0	FALSE	FALSE	TRUE	FALSE
545	0,0	FALSE	FALSE	TRUE	TRUE
546	0,0	FALSE	FALSE	TRUE	FALSE
547	0,0	FALSE	FALSE	TRUE	FALSE
548	0,0	FALSE	FALSE	TRUE	FALSE
549	0,0	FALSE	FALSE	TRUE	FALSE
550	5,6	FALSE	FALSE	TRUE	FALSE
551	0,0	FALSE	FALSE	TRUE	TRUE
552	0,0	FALSE	FALSE	TRUE	FALSE
553	0,0	FALSE	FALSE	TRUE	TRUE
554	0,0	FALSE	FALSE	TRUE	TRUE
555	75,7	FALSE	FALSE	TRUE	FALSE
556	0,0	FALSE	FALSE	TRUE	FALSE
557	0,0	FALSE	FALSE	TRUE	TRUE
558	0,0	FALSE	FALSE	TRUE	FALSE
559	0,0	FALSE	FALSE	TRUE	FALSE
560	0,0	FALSE	FALSE	TRUE	FALSE
561	0,0	FALSE	FALSE	TRUE	TRUE
562	0,0	FALSE	FALSE	TRUE	FALSE
563	0,0	FALSE	FALSE	TRUE	FALSE

564	0,0	FALSE	FALSE	TRUE	TRUE
565	0,0	FALSE	FALSE	TRUE	FALSE
566	0,0	FALSE	FALSE	TRUE	FALSE
567	0,0	FALSE	FALSE	TRUE	FALSE
568	90,6	TRUE	TRUE	TRUE	FALSE
569	92,8	TRUE	TRUE	TRUE	TRUE
570	75,8	FALSE	FALSE	TRUE	TRUE
571	0,0	FALSE	FALSE	TRUE	FALSE
572	4,4	FALSE	FALSE	TRUE	TRUE
573	0,0	FALSE	FALSE	TRUE	FALSE
574	0,0	FALSE	FALSE	TRUE	TRUE
575	255,0	NO DATA	TRUE	TRUE	FALSE
576	100,0	TRUE	TRUE	TRUE	FALSE
577	88,4	TRUE	FALSE	FALSE	TRUE
578	15,9	FALSE	FALSE	TRUE	FALSE
579	100,0	TRUE	TRUE	TRUE	TRUE
580	96,1	TRUE	TRUE	TRUE	FALSE
581	93,6	TRUE	FALSE	FALSE	FALSE
582	32,3	FALSE	FALSE	TRUE	FALSE
583	30,7	FALSE	FALSE	TRUE	FALSE
584	6,9	FALSE	FALSE	TRUE	TRUE
585	99,9	TRUE	TRUE	TRUE	TRUE
586	91,7	TRUE	TRUE	TRUE	FALSE
587	78,8	FALSE	TRUE	FALSE	FALSE
588	94,9	TRUE	TRUE	TRUE	TRUE
589	0,0	FALSE	TRUE	FALSE	FALSE
590	21,0	FALSE	FALSE	TRUE	FALSE
591	63,4	FALSE	FALSE	TRUE	FALSE
592	0,0	FALSE	FALSE	TRUE	TRUE
593	0,0	FALSE	FALSE	TRUE	TRUE
594	0,0	FALSE	FALSE	TRUE	TRUE
595	74,9	FALSE	FALSE	TRUE	TRUE
596	0,0	FALSE	FALSE	TRUE	FALSE
597	64,1	FALSE	FALSE	TRUE	TRUE
598	78,8	FALSE	TRUE	FALSE	TRUE
599	99,9	TRUE	TRUE	TRUE	TRUE
600	17,4	FALSE	FALSE	TRUE	FALSE
601	86,5	TRUE	FALSE	FALSE	FALSE