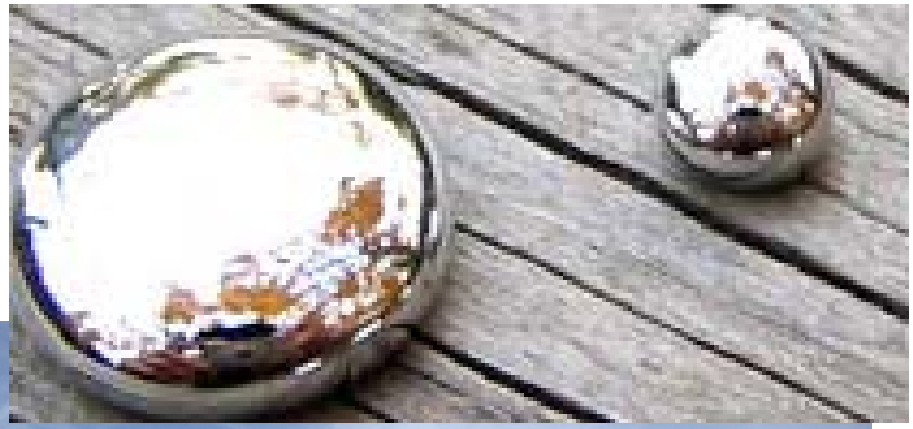

TECHNICAL PRESENTATION OF THE LABORATORIES OF THE CTNDM: CAPABILITIES AND CURRENT ACTIVITIES

WORKSHOP ON MERCURY MANAGEMENT AND DECONTAMINATION IN THE FRAMEWORK OFTHE MEDITARRANEAN REGIONAL PLAN ON MERCURY

ALMADÉN, 12 – 13 DECEMBER 2012

National Technological Center for Mercury Decontamination

GOBIERNO DE ESPAÑA
MINISTERIO DE AGRICULTURA, ALIMENTACIÓN Y MEDIO AMBIENTE

National Technological Center for Mercury Decontamination

GOBIERNO DE ESPAÑA
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TECHNICAL PRESENTATION OF THE LABORATORIES OF THE CTNDM: CAPABILITIES AND CURRENT ACTIVITIES

- **EQUIPMENT LABORATORIES OF THE NATIONAL TECHNOLOGICAL CENTER OF MERCURY DECONTAMINATION. CAPABILITIES**
- **LABORATORIES OF THE TECHNOLOGICAL CENTER OF MERCURY DECONTAMINATION. ACTIVITIES**

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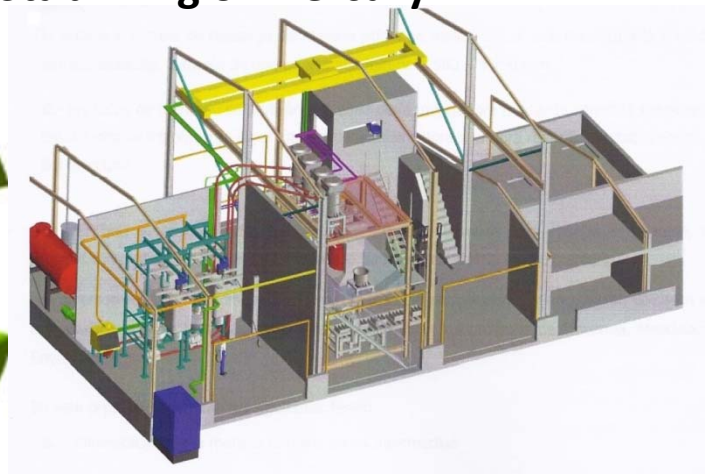
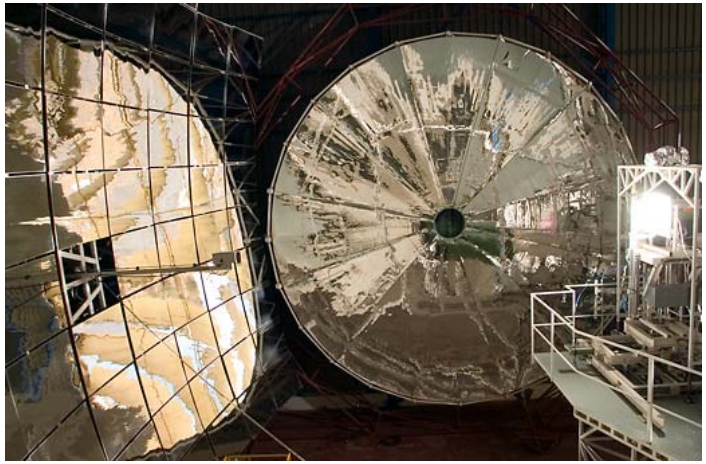
Stabilizing of mercury





Use of solar energy for the decontaminatio n of sites or matrices contaminated with mercury

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EQUIPMENT FOR THE DETERMINATION OF MERCURY

ATOMIC ABSORPTION SPECTROMETER AMA – 254

METHYL MERCURY ANALYSIS SYSTEM - TEKRAN 2700

- The 2700 can analyze methyl mercury in distilled waters, extracted or distilled tissues and solids, and allows direct analysis of

ples

is

ration of EPA

ated gas

or atomic

r (GC-CVAFS)

rcury Analysis

automate the

methyl mercury

limit of 0.004

•ATOMIC FLUORESCENCE ANALYZER FOR MERCURY DETERMINATION

This equipment uses the technique of cold vapor atomic fluorescence.

The MERCUR range of applications is very wide, such as water analysis or fish, wherein the matrix is capable of measuring MERCUR mercury concentrations less than 0.1 ppt.

Because mercury is a particularly critical element in pollution, environmental regulations worldwide are ever more demanding respect to this metal.

The mercury needs to be determined with great accuracy repeatedly including at very low levels.

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EQUIPMENT FOR THE DETERMINATION OF MERCURY

PORTABLE ZEEMAN MERCURY ANALYZER RA-915 M

The mercury analyzer RA-915M is high sensitivity analytical instrument for the environmental monitoring

especially for the real time detection of mercury vapor in air, the mercury detection limits being as low as 2 ng/m3 in air.

This equipment is a portable multifunctional atomic absorption spectrometer with Zeeman background correction, which eliminates the effect of interfering impurities.

MERCURY ANALYZER RA-915M WITH PYROLYZER PYRO-915+

RA-915M Mercury Analyzer with new pyrolyzer PYRO-915+ is developed for unique direct mercury determination in soils samples (no pretreatment procedures required) in complex organic samples at the level of few mg/kg.

It is based on the atomization of mercury contained in the sample in a thermal decomposition attachment PYRO-915 and subsequent measuring the absorption.

RA-915M mercury analyzer with PYRO-915+ attachment can be used in food and oil-refining industries, medicine, for sanitary and environmental control.

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AREA CTNDM ATOMIC SPECTROMETRY

INDUCTIVELY COUPLED PLASMA EMISSION SPECTROSCOPY - SHIMADZU ICPE-9000

Main specifications

•- Large format CCD detector.

•-Spectrum Acquisition Full broadcast with no wavelength restriction.

•-Automatic selection of the length optimum wavelength.

•- Automatic correction.

•- Low consumption of argon with use of mini torch.

•- Plasma axial arrangement vertical torch that facilitates analyzing samples with matrices complex.

ATOMIC ABSORPTION SPECTROPHOTOMETER. CONTRAA 700 - ANALYTKJENA

• It has a single lamp for all analytes

• It has an exceptional optical resolution, provides great precision in the work, reaching the limits of detection in an ICP optical flame.

• The direct analysis of solids, determines the concentration of the metals of interest without the need for pretreatment of the sample.

• Variety of analytes determined heavy metal contaminants (in low concentrations), or plant nutrients (in high concentrations).

National Technological Center for Mercury Decontamination

PORTABLE OF HEAVY METALS ANALYZER – THERMO SCIENTIFIC NITON XL3t -

The Thermo Scientific Niton portable analyzers ® X-Ray Fluorescence commonly known as XRF analyzers are capable of rapidly and nondestructively elemental composition:

- **Samples of metal and precious metals.**
- **Rocks and soil.**
- **Samples of liquids and mixtures.**
- **Painted surfaces, including wood, plaster, concrete, drywall, and other building materials.**

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SPECTROPHOTOMETER SPECORD 205

CLEAR AND ULTRA CLEAR TREATMENT WATER

MICROWAVE DIGESTION SPEED WAVE

LIOFILIZADOR TELSTAR LYO QUEST

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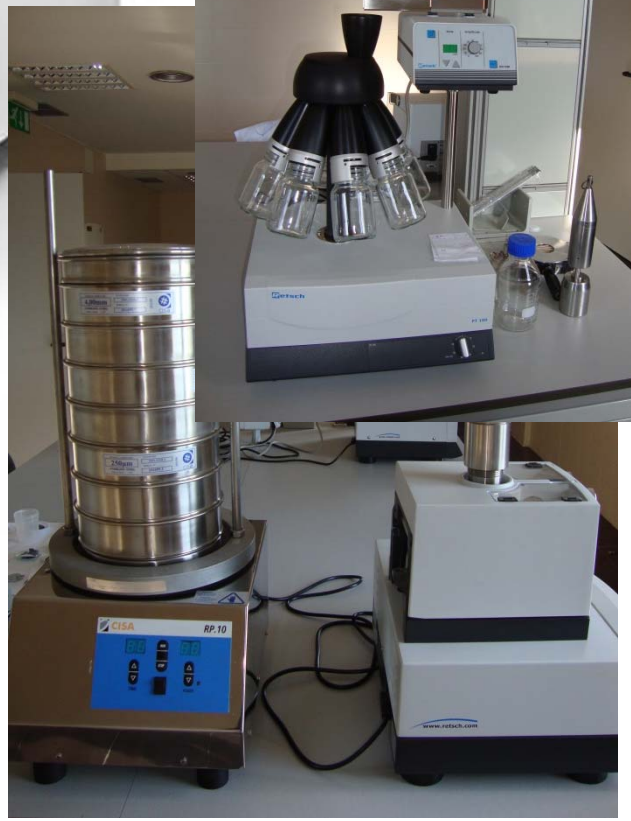
for Mercury
Decontamination



TECHNICAL PRESENTATION OF THE LABORATORIES OF THE CTNDM: CAPABILITIES AN CURRENT ACTIVITIES

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TECHNICAL PRESENTATION OF THE LABORATORIES OF THE CTNDM: CAPABILITIES AND CURRENT ACTIVITIES

➢LABORATORIES OF THE TECHNOLOGICAL CENTER OF MERCURY DECONTAMINATION. ACTIVITIES

National Technological Center for Mercury Decontamination

ENVIROMENTAL MONITORING PLAN FOR AIR QUALITY

Cerco San Teodoro

Chalet Social

Plaza de Toros

E-1. MERCURY CENTER

E-2 Antigua Academia

E-3 Chalet Social

E-4 Antiguo Hospital

TECHNICAL PRESENTATION OF THE LABORATORIES OF THE CTNDM: CAPABILITIES AN CURRENT ACTIVITIES

National Technological Center for Mercury Decontamination

ENVIROMENTAL MONITORING PLAN FOR AIR QUALITY

TECHNICAL PRESENTATION OF THE LABORATORIES OF THE CTNDM: CAPABILITIES AN CURRENT ACTIVITIES

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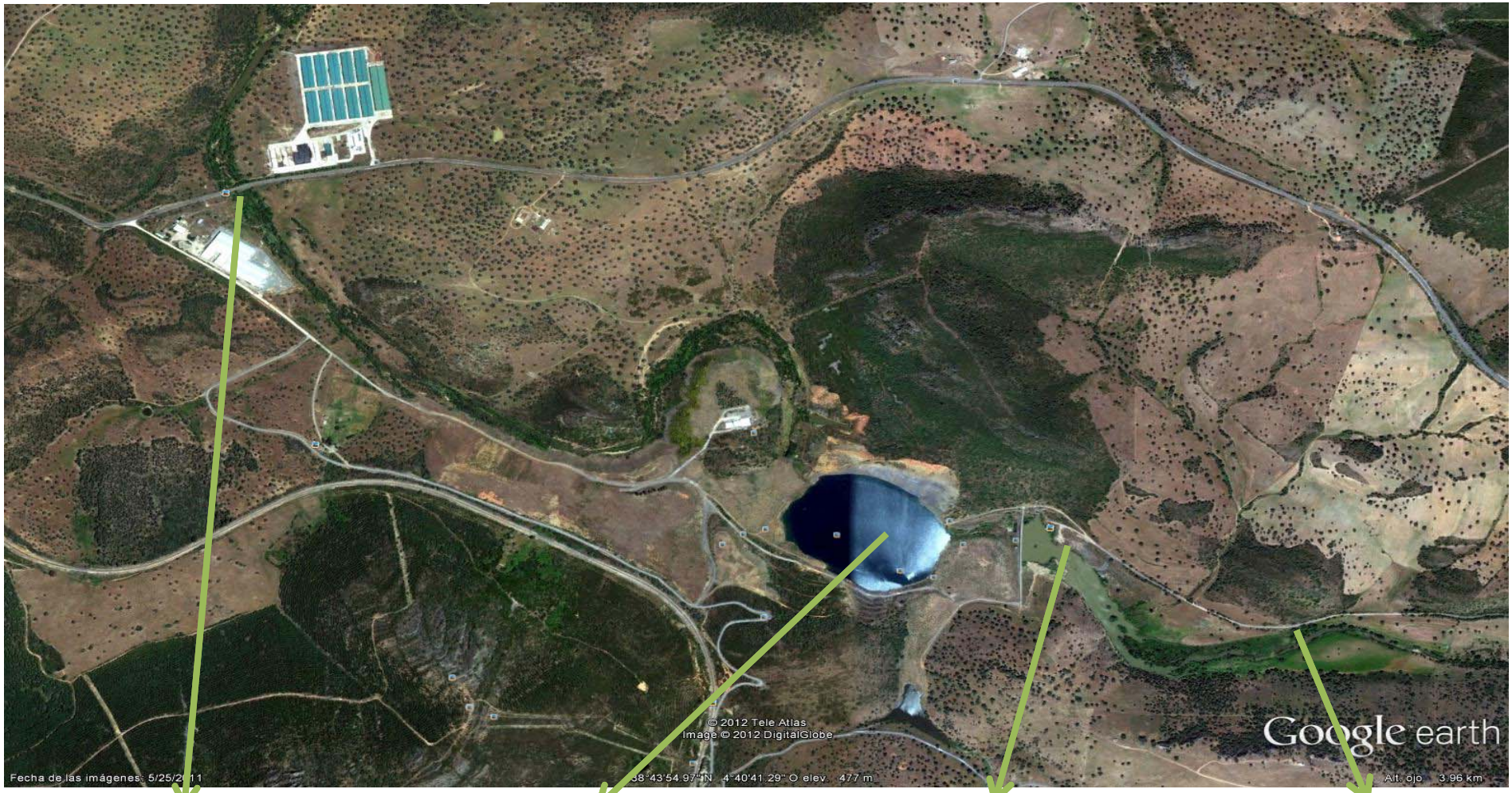
ENVIRONMENTAL MONITORING PLAN FOR OF SURFACE WATER QUALITY

ENTREDICHO MINE



DV. Rio Valdeazogue,a la altura de Derivados del Mercurio

ENT. Rio Valdeazogue en la Corta del Entredicho

3. Rio Valdeazogue. Presa del entredicho

1. RIO Valdeazogue un Km arriba presa entredicho

TECHNICAL PRESENTATION OF THE LABORATORIES OF THE CTNDM: CAPABILITIES AN CURRENT ACTIVITIES

National Technological Center for Mercury Decontamination

ENVIRONMENTAL MONITORING PLAN FOR OF SURFACE WATER QUALITY

CUEVAS MINE

CV-1. Presa las Cuevas

CV-3. Puerta Minas las Cuevas

TECHNICAL PRESENTATION OF THE LABORATORIES OF THE CTNDM: CAPABILITIES AN CURRENT ACTIVITIES

National Technological Center for Mercury Decontamination

ENVIRONMENTAL MONITORING PLAN FOR OF SURFACE WATER QUALITY

LAND CASTILSERAS

14-H. Arroyo Azogado ctra 1,5 Km

ALMADEN

DHP. Presa Castilseras

10. Rio Valdeazogues altura Estación de Chillon

15. Arroyo Azogado 20 m antes confluencia rio valdeazogue

9. Rio Valdeazogue antes confluencia con arroyo azogado

TECHNICAL PRESENTATION OF THE LABORATORIES OF THE CTNDM: CAPABILITIES AN CURRENT ACTIVITIES

National Technological Center for Mercury Decontamination

ENVIRONMENTAL MONITORING PLAN FOR OF SURFACE WATER QUALITY

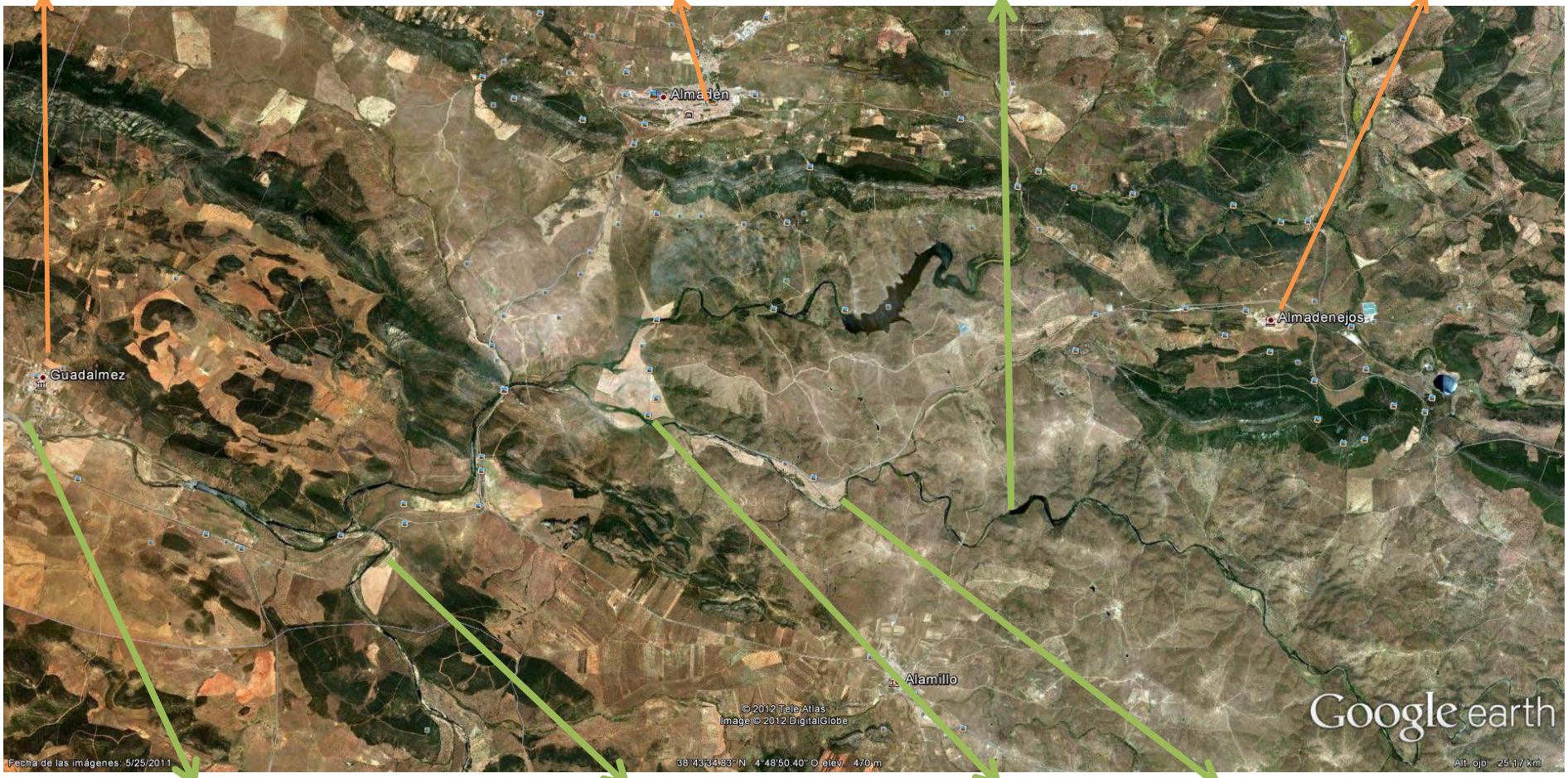
LAND CASTILSERAS

GUADALMEZ

ALMADEN

16. Rio Alcudias, Presa ALAMILLO

ALMADENEJOS



20. Rio Guadalmez a la altura de la población

19. Rio Guadalmez antes confluencia con rio Valdeazogue

18. Rio Alcudia antes confluencia rio Valdeazogue

17. Rio Alcudia tras confluir con arroyo Cañandricia

TECHNICAL PRESENTATION OF THE LABORATORIES OF THE CTNDM: CAPABILITIES AN CURRENT ACTIVITIES

National Technological Center for Mercury Decontamination

ENVIRONMENTAL MONITORING OF THE DUMP ALMADEN SAN TEODORO

SURFACE WATER

BALSA NORTE

A-10. ARROYO FUENTE VIEJA

A-11. ARROYO FUENTE VIEJA

BALSA SUR

ARQUETA 2

ARQUETA 1

TECHNICAL PRESENTATION OF THE LABORATORIES OF THE CTNDM: CAPABILITIES AN CURRENT ACTIVITIES

National Technological Center for Mercury Decontamination

ENVIRONMENTAL MONITORING OF THE DUMP ALMADEN SAN TEODORO

ANDERGROUND WATER

TECHNICAL PRESENTATION OF THE LABORATORIES OF THE CTNDM: CAPABILITIES AN CURRENT ACTIVITIES

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PROJECT MERSADE DETERMINATIONS

National Technological Center for Mercury Decontamination

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MINISTERIO DE AGRICULTURA, ALIMENTACIÓN Y MEDIO AMBIENTE

THANK YOU FOR YOUR ATTENTION

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