Web GIS and Mobile Data Collection in Remote Areas

Brett Shaver

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The business of sustainability

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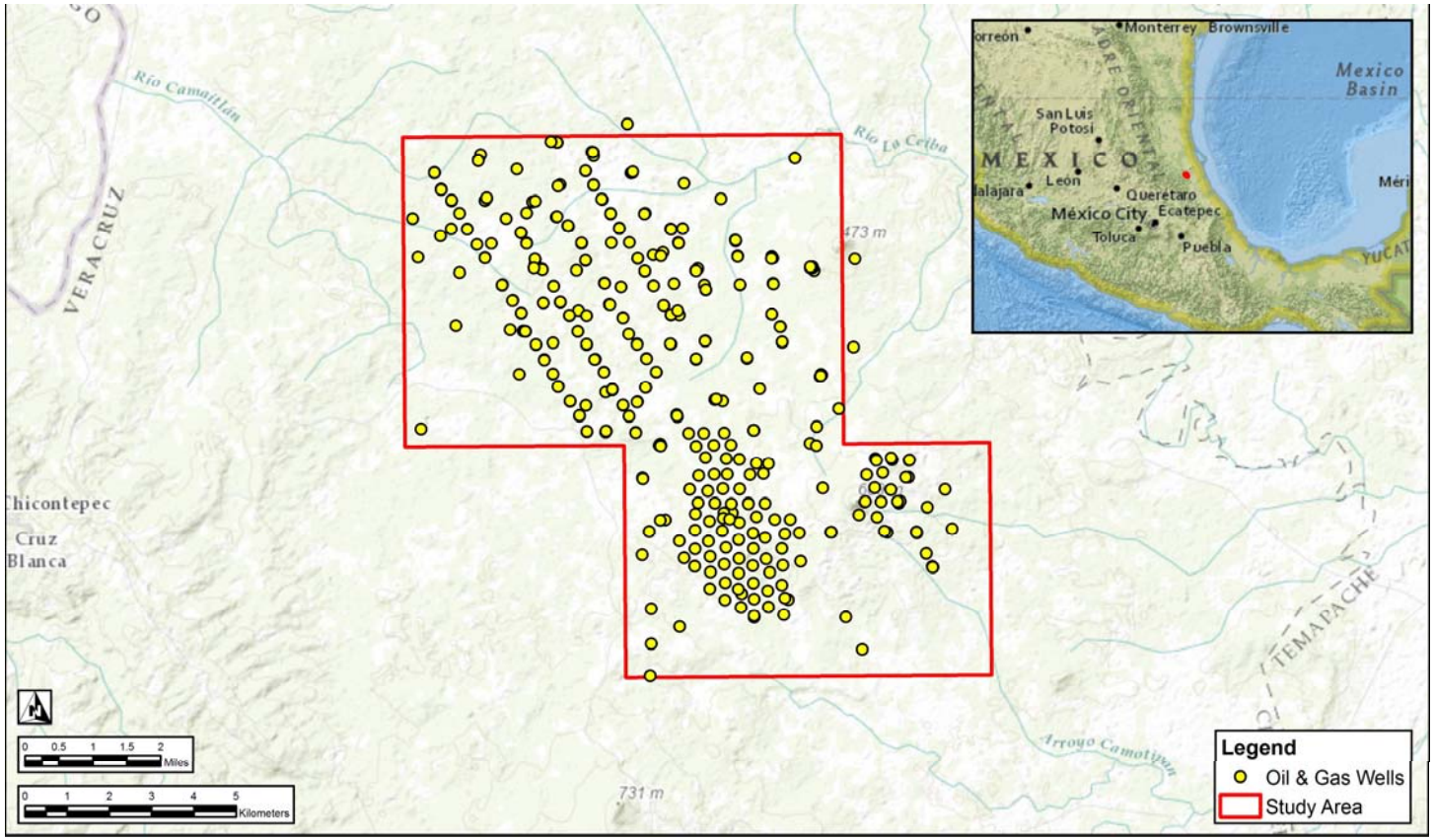
Agenda

- Project Overview
- Remote Sensing / Desktop Review
- Field Planning
- Field Survey Data Collection
- Semi-automated reporting

Project Overview

- Phase I ESA investigation for hundreds of Oil & Gas Wells in remote part of Mexico
- Quantify environmental risk for potential divestiture
- GIS critical throughout project lifecycle from planning through reporting



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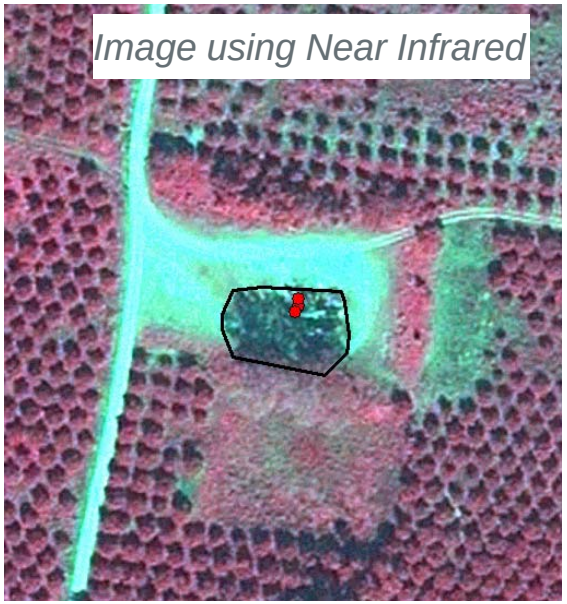
Remote Sensing / Desktop Studies

Goal: to assess preliminary environmental risk in order to prioritize field investigations

- Task satellite to acquire new imagery for AOI
- Identify potential areas of concern from visible staining
- Classify locations based on environmental risk



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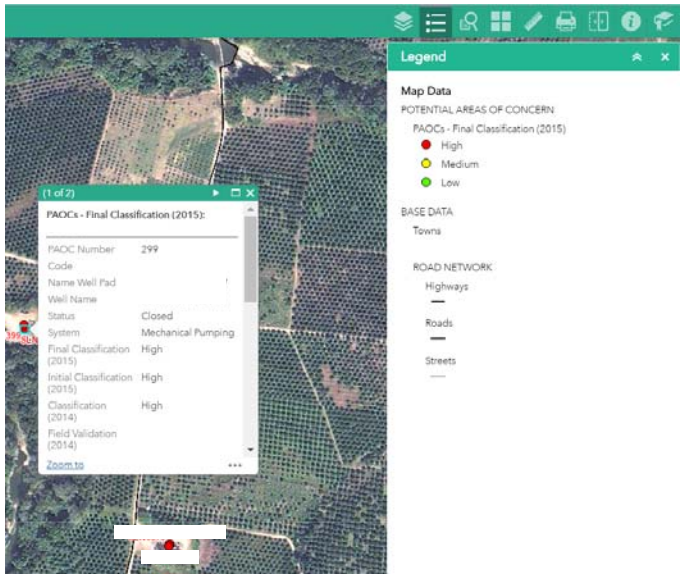
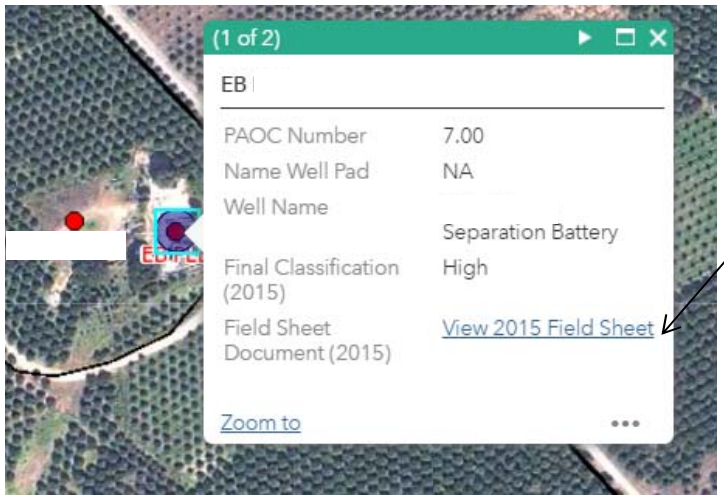
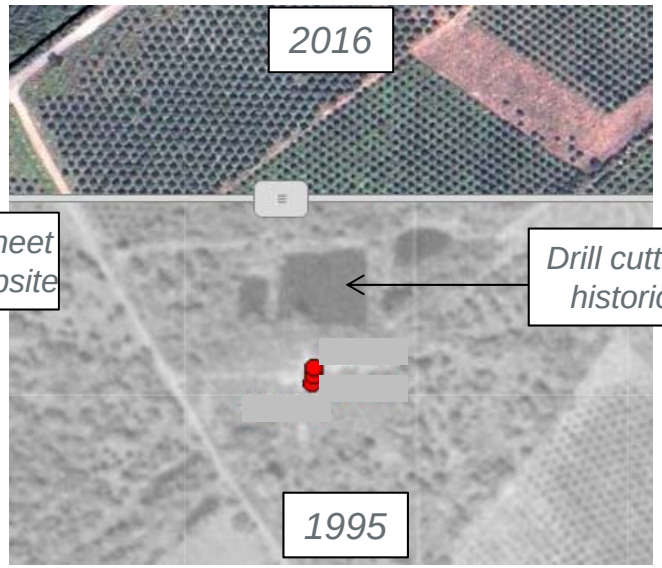
Web GIS Application

- Organize all project data into a single, interactive web portal, accessible to the project team
- Enables efficient desktop review and survey planning
- Serves as a platform for navigation and data collection during field investigations
- Ultimately delivered to client





View PDF field sheet summaries in website



Drill cutting pond in historic imagery

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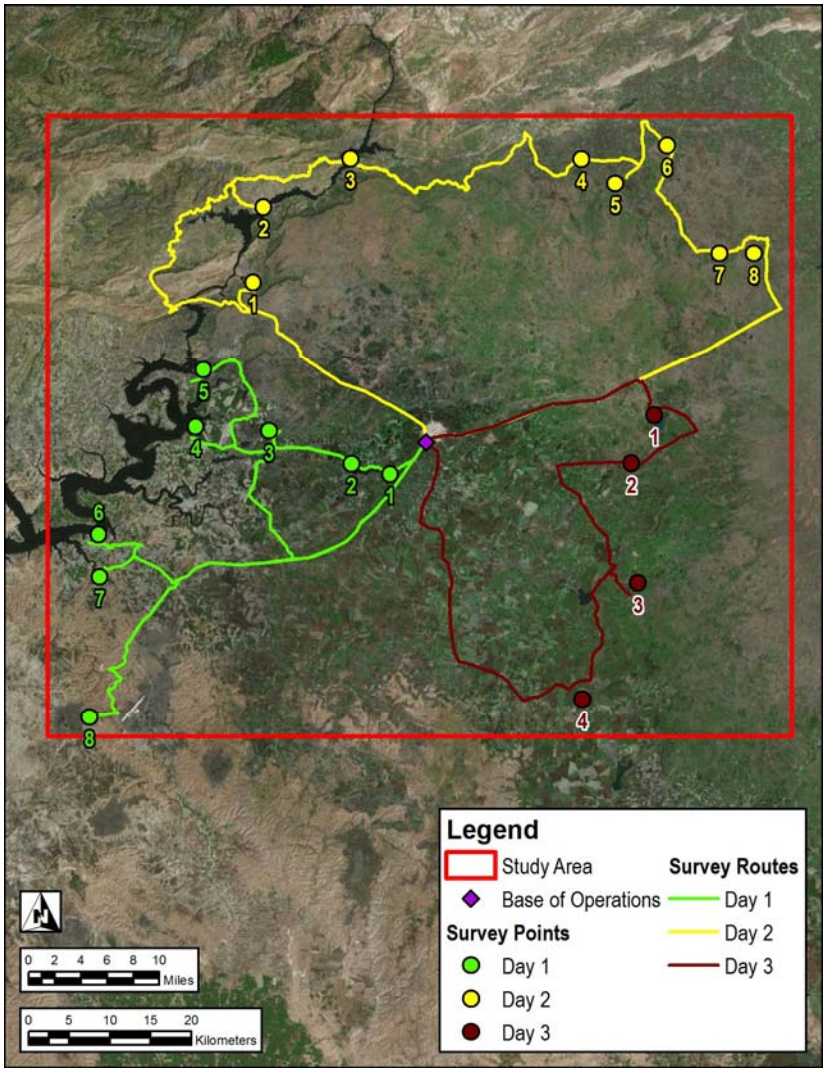
Field Survey Planning

Health & Safety Requirements

- Fixed start / stop times
- Driving time limits

Route Optimization

- Using road networks and desired survey points, GIS optimized route for most efficient use of survey time
- GIS database ready for route map and itinerary production



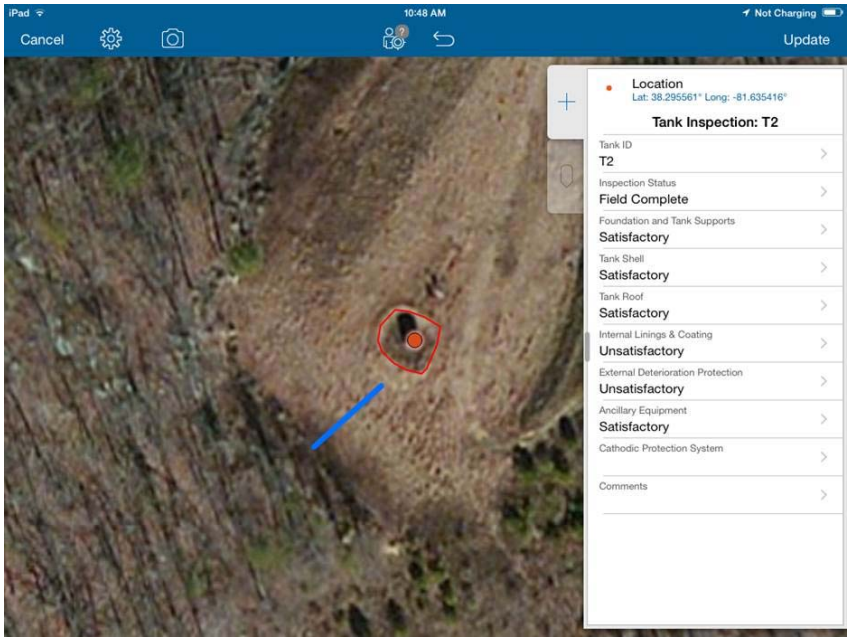
Field Data Collection

iPad with Web GIS Data

- Data and imagery loaded to iPad for offline use (no cell service)
- Able to use iPad to navigate to locations

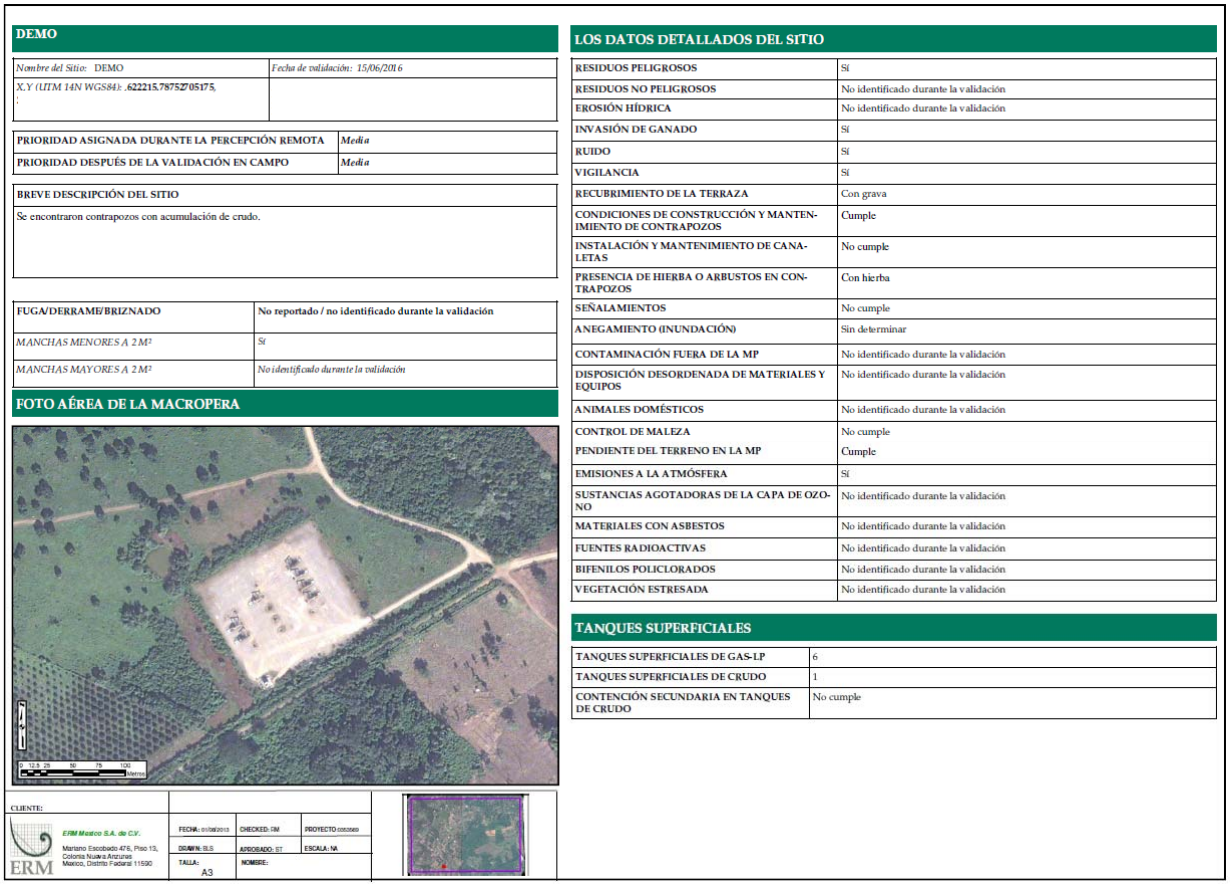
Survey Data Collection

- Use iPad with prefilled questionnaire to answer questions, take notes and pictures
- Upload data to the website when back on WiFi
- Project Managers able to track survey status in the office



Semi-Automated Reporting

- Survey data table imports directly from website into MS Publisher
- Ability to populate site summary sheet automatically from fields
- Links to photos taken during survey
- Export all pages into individual site summary PDFs



DEMO

Nombre del Sitio: DEMO	*Fecha de validación:* 15/06/2016
X,Y (UTM 14N WGS84): 622215,7875270.5175,	

PRIORIDAD ASIGNADA DURANTE LA PERCEPCIÓN REMOTA	*Media*
PRIORIDAD DESPUÉS DE LA VALIDACIÓN EN CAMPO	*Media*

BREVE DESCRIPCIÓN DEL SITIO
Se encontraron contrapozos con acumulación de crudo.

FUGA/DERRAME/BRIZNADO	No reportado / no identificado durante la validación
MANCHAS MENORES A 2 M²	*Si*
MANCHAS MAYORES A 2 M²	*No identificado durante la validación*

FOTO AÉREA DE LA MACROPERA

LOS DATOS DETALLADOS DEL SITIO

RESIDUOS PELIGROSOS	Sí
RESIDUOS NO PELIGROSOS	No identificado durante la validación
EROSIÓN HÍDRICA	No identificado durante la validación
INVASIÓN DE GANADO	Sí
RUIDO	Sí
VIGILANCIA	Sí
RECUBRIMIENTO DE LA TERRAZA	Con grava
CONDICIONES DE CONSTRUCCIÓN Y MANTENIMIENTO DE CONTRAPOZOS	Cumple
INSTALACIÓN Y MANTENIMIENTO DE CANALETAS	No cumple
PRESENCIA DE HIERBA O ARBUSTOS EN CONTRAPOZOS	Con hierba
SEÑALAMIENTOS	No cumple
ANEGAMIENTO (INUNDACIÓN)	Sin determinar
CONTAMINACIÓN FUERA DE LA MP	No identificado durante la validación
DISPOSICIÓN DESORDENADA DE MATERIALES Y EQUIPOS	No identificado durante la validación
ANIMALES DOMÉSTICOS	No identificado durante la validación
CONTROL DE MALEZA	No cumple
PENDIENTE DEL TERRENO EN LA MP	Cumple
EMISIONES A LA ATMÓSFERA	Sí
SUSTANCIAS AGOTADORAS DE LA CAPA DE OZONO	No identificado durante la validación
MATERIALES CON ASBESTOS	No identificado durante la validación
FUENTES RADIOACTIVAS	No identificado durante la validación
BIFENILOS POLICLORADOS	No identificado durante la validación
VEGETACIÓN ESTRESADA	No identificado durante la validación

TANQUES SUPERFICIALES

TANQUES SUPERFICIALES DE GAS-LP	6
TANQUES SUPERFICIALES DE CRUDO	1
CONTENCIÓN SECUNDARIA EN TANQUES DE CRUDO	No cumple

CLIENTE:

ERM Mexico S.A. de C.V.
Mariano Escobedo 476, Piso 13,
Colonia Nueva Anzures
Mexico, Distrito Federal 11590

FECHA: 01/02/2013 | CHECKED: RM | PROYECTO 0002669
DRAWN: SLS | APROBADO: ST | ESCALA: NA
TALLA: A3 | NOMBRE:

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Questions

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