

# Colorado River Water Users Annual Conference

## Implementation of Minute 319 and Future Cooperation Opportunities

**Dr. Felipe Arreguín Cortés,  
General Technical Deputy**

Las Vegas, Nv., December 12, 2014

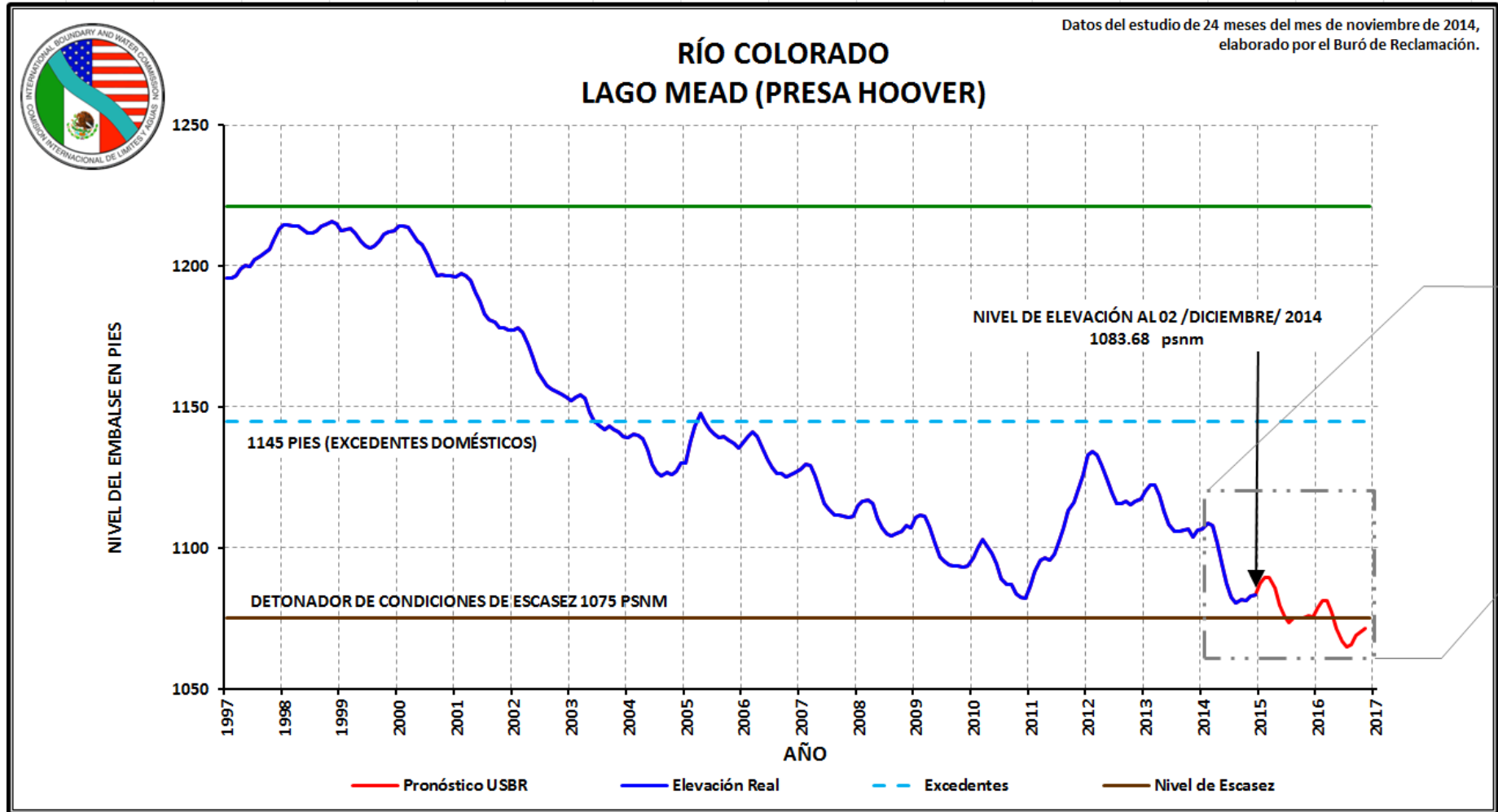
# Forecast and Status Colorado River System

- Monthly and biannually, USA provides information about forecast and status of Colorado River Basin.
- Since 2000, drought in the basin caused low levels at Lake Mead (Hoover dam) (December 1<sup>st</sup>, 1,084 ft and the forecast for January 1<sup>st</sup>, 2015 is 1078.70 ft).
- For 2015, Mexico and lower Colorado River Basin States will receive full allocation.
- Probability of allocation shortage

**2016 = 36%**

**2017 = 58%.**

# Forecast and Status Colorado River System

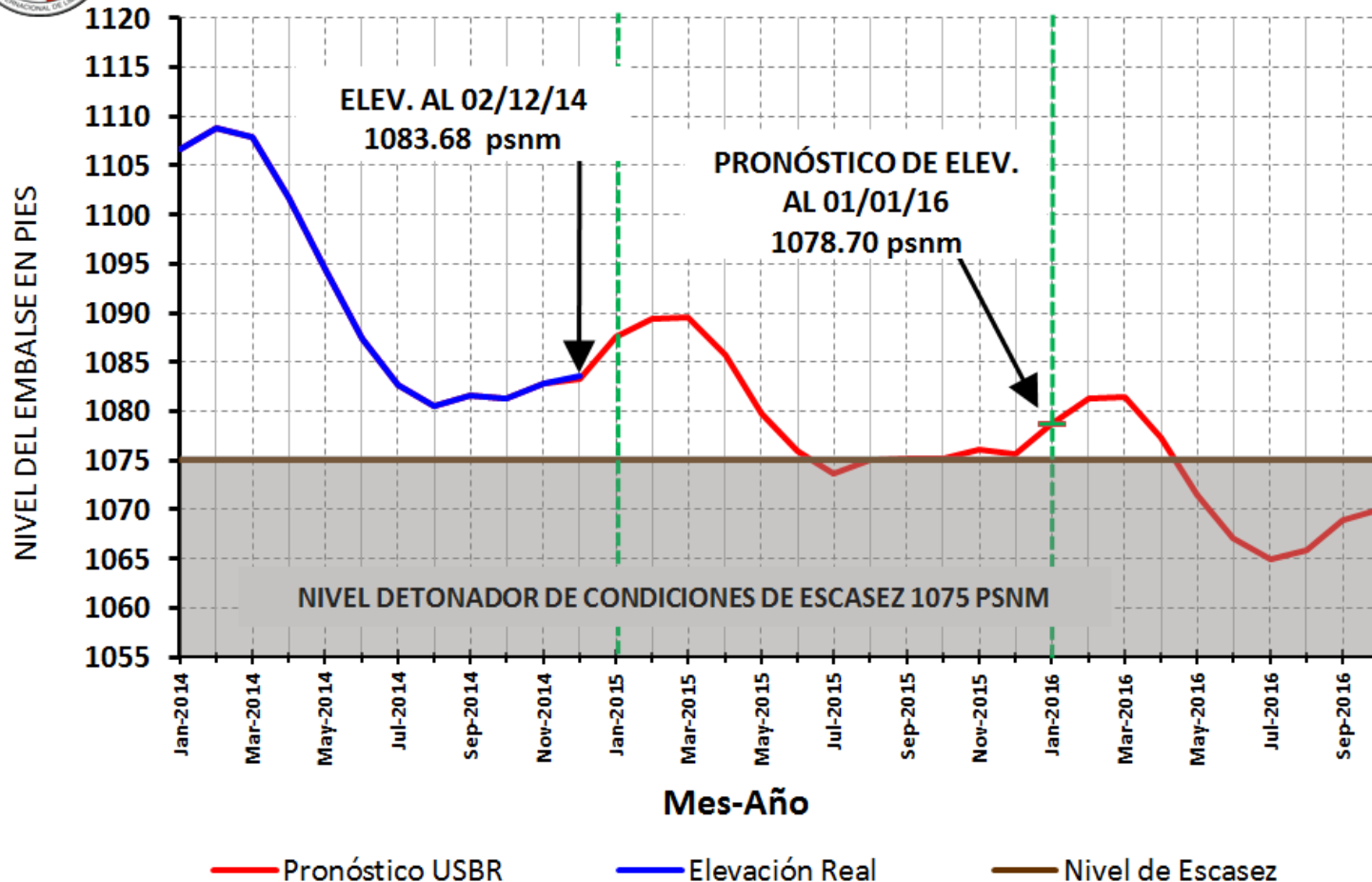


# Forecast and Status Colorado River System

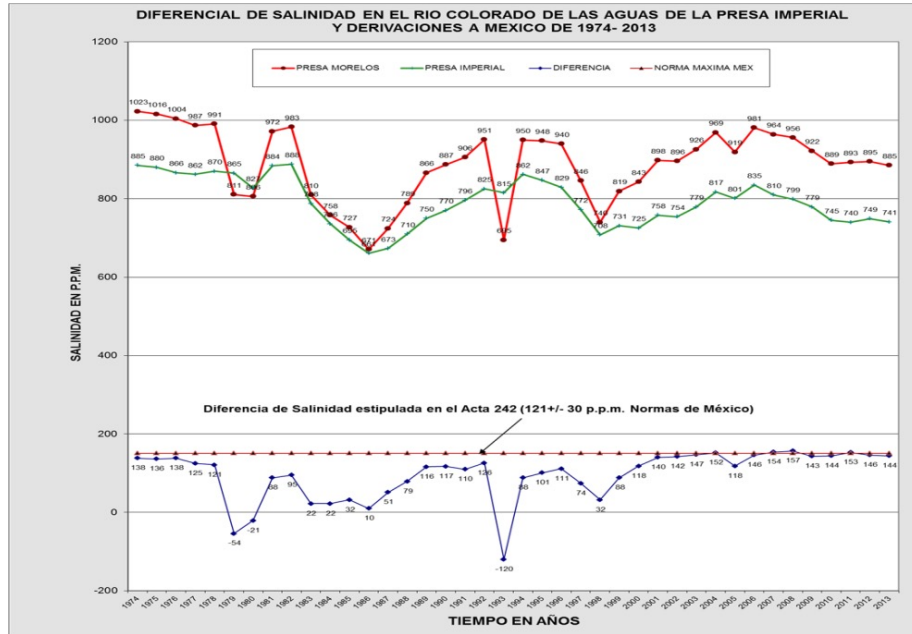


## LAGO MEAD (PRESA HOOVER)

Datos del estudio de 24 meses del mes de noviembre de 2014, elaborado por el Buró de Reclamación.



# Colorado River Salinity



## Description:

Minute 242 “Permanent and Definitive Solution to the International Problem of the Salinity of the Colorado River, establishes an annual salinity differential of  $121 \pm 30$  ppm between water from Imperial Dam and water delivered to Mexico at NIB

## Current Situation:

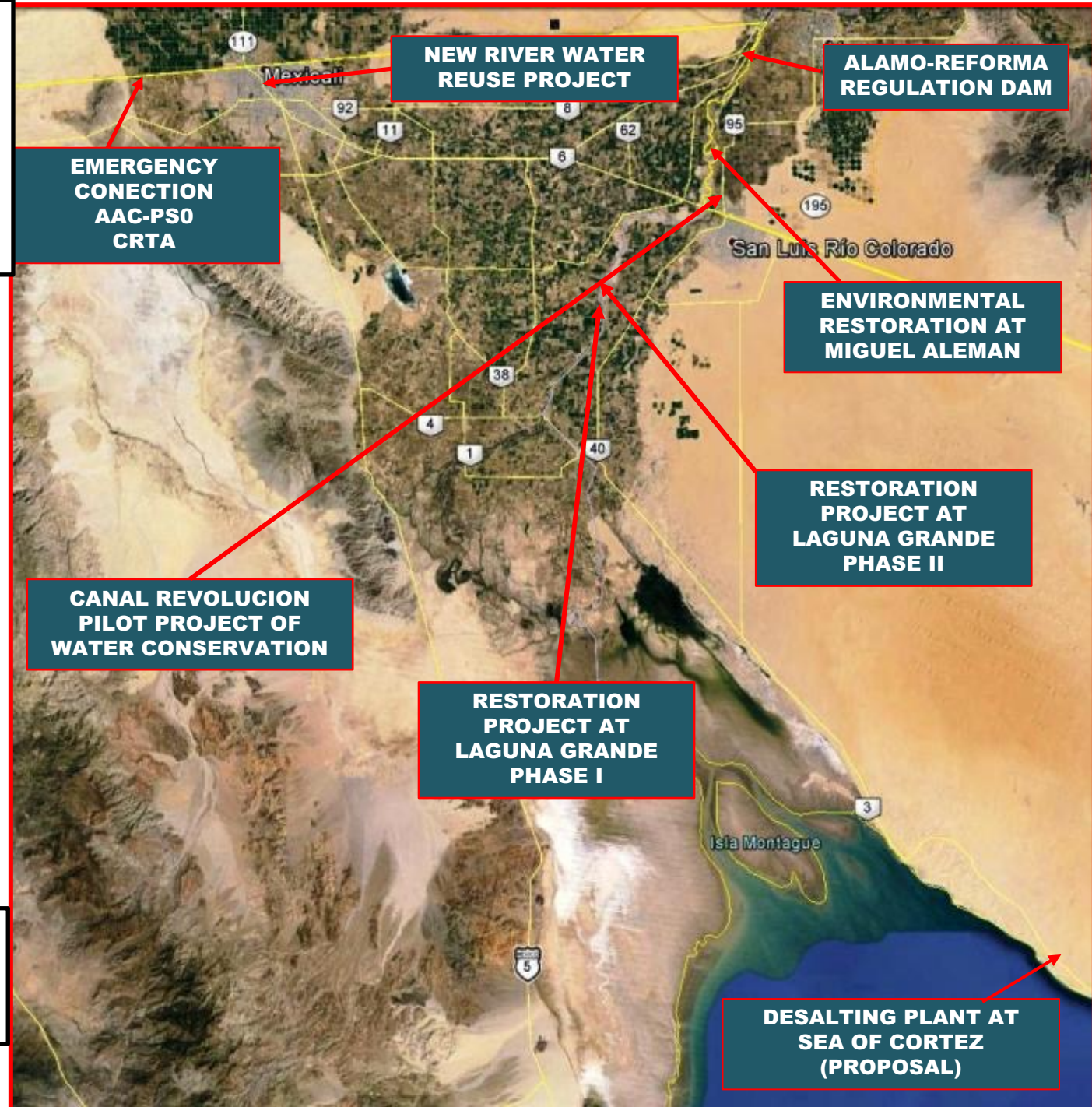
In 2013, a cumulative annual salinity of 144 ppm was registered by Mexico and 129 ppm by USA.

## Next Steps:

Monitoring and review of compliance of the rules established in Minute 242

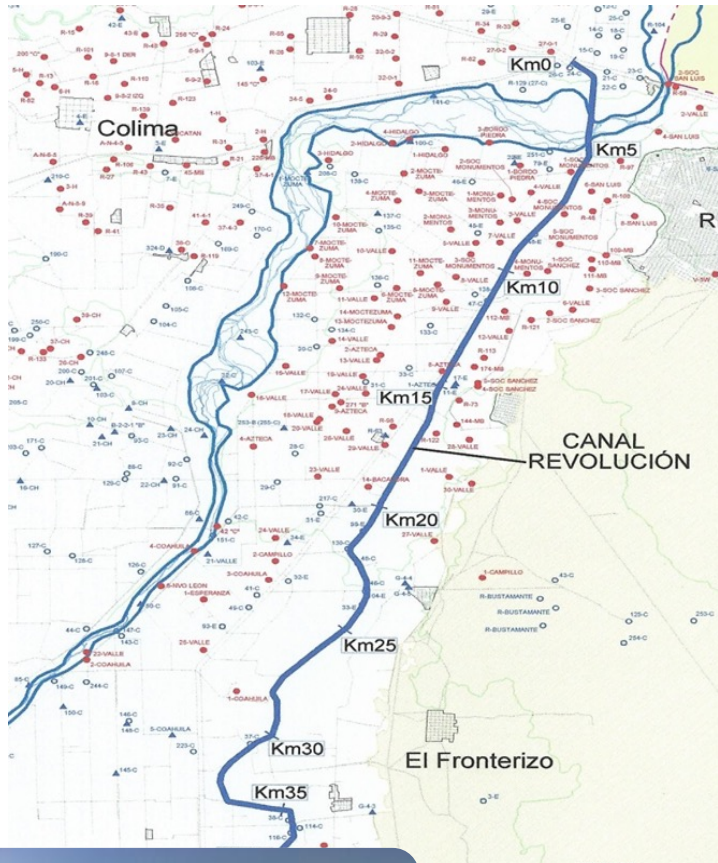


# Implementation of Minute 319 progress



## International Projects Map

# Revolucion Canal Lining Project



## Objectives

- 16.2 km Concrete lining of Revolucion Canal (from 4+100 to 20+340 km).
- Resize the existing land canal to convey with a smaller lined canal for a flow of 27 to 30 m<sup>3</sup>/s (less than today).
- Reduces costs and simplifies operation.
- Conveys water efficiently and reduces losses.

Conserves volumes lost by seepage  
about 0.9 m<sup>3</sup>/s



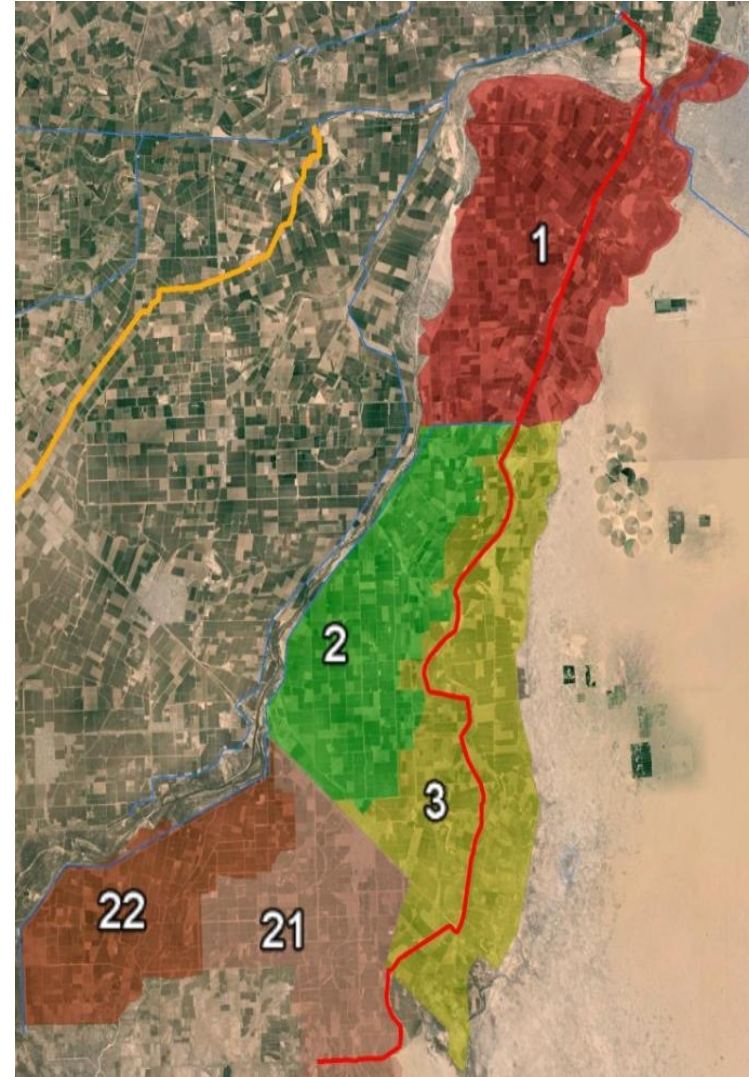


# Revolucion Canal Lining Project

- Starts at 26+600 km of the Reforma Canal
- Irrigates modules 1, 2, 3, 21 and 22.
- Length of 57.34 km, from which 16.2 km are not lined.
- Starts with a flow of 33.20 m<sup>3</sup>/s
- Most fertile lands of the Irrigation District 014.

## Next Steps:

- Finish final Design.
- Present the project to USA to request US\$18 Mio.
- Begin construction in 2015, with an expected period of 18 months.





# Alamo-Reforma Regulation Dam

## Description:

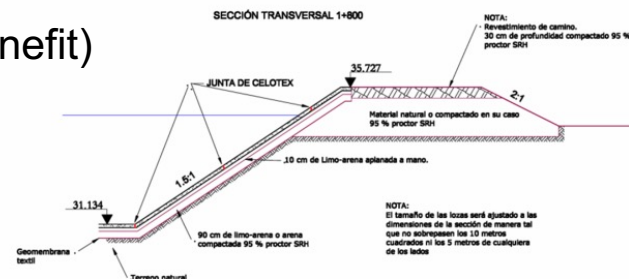
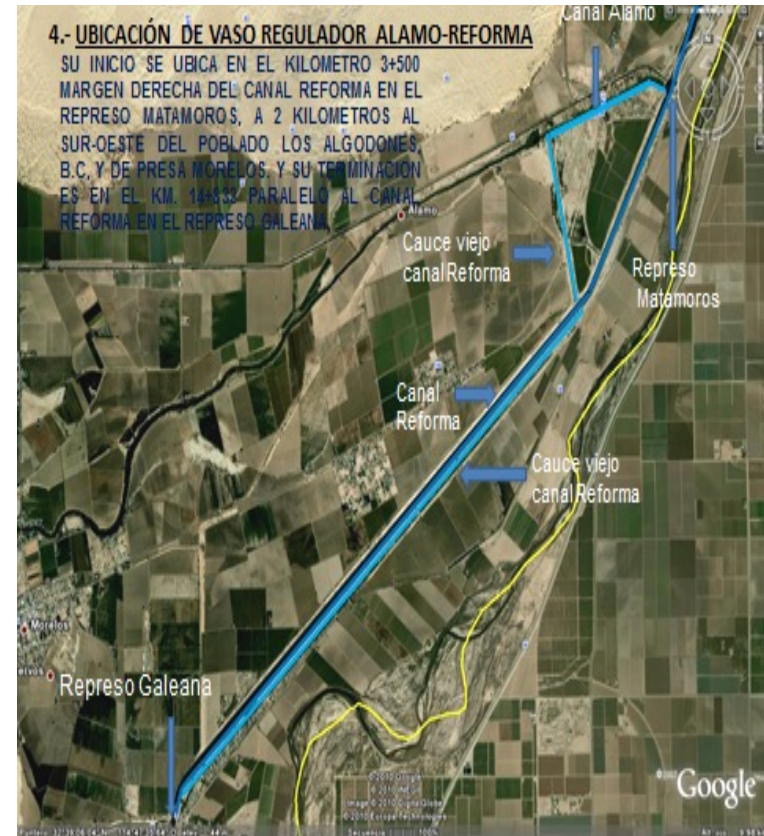
- Objective: conserve volumes from Colorado River that cannot be stored and to regulate volumes from the delivery program of the Irrigation District 014.
- Participate with resources from both countries. (50/50)
- Length 11 km. Cap.= 700,000 m<sup>3</sup>.
- Location: Alamo Reforma Canal old channel

## Current Situation:

- Final design began in August 2013.
- The study divided the regulation dam in three, the total cost is 477 MP and the volume to recover would be 87 Mm<sup>3</sup>

## Next Steps:

- Explore the feasibility of the project (cost-benefit)
- Explore binational project



# Binational Rosarito Beach Desalting Plant

## Description:

- Binational Desalting Plant at Rosarito Beach, B.C. for 2.19 m<sup>3</sup>/s.

## Current Situation:

### Developed Studies:

- Feasibility Study
- Conveyance Alignments Definition
- Environmental Impact Statement (environmentally feasible).

## Next Steps:

- Definition of implementation scenario
- US Participation in the project
- Analyze advantages and disadvantages for a Binational Plant with private funds



# AAC – PS0

## Connection Project

- Mexico's Water conduction by ACC during emergency conditions.
- Connection by pipes in both directions.

### Current Situation

- Information or proposal of USA to provisionally divert in AAC to construct the connection.
- CEA finished the preliminary design.
- It is required 50% of the final design to start US environmental statement.

### Next Steps

- Working group meeting in mid January to continue with the project





# Colorado River Water Deliveries

## Deferred Water Account, Minute 319

Annually, Mexico receives 1,850.234 Mm<sup>3</sup> from the Colorado River.

Minute 319, extends cooperative measures of Minute 318 and allows Mexico to defer water volumes from the Colorado River deliveries and store in the US dam system for future use.

## Current Situation:

Year	Gross Volume (Mm <sup>3</sup> )	Used Volume (Mm <sup>3</sup> )	Accumulated Volume (Mm <sup>3</sup> )	3% evaporation	Net Volume to Dec. 31, 14 minus 3% of evaporation (Mm <sup>3</sup> )
2011	62.089	0	62.089	1.863	60.226
2012	164.026	0	224.252	6.728	217.525
2013	156.422	0	373.947	11.218	362.728
2014	69.090	130.0*	<b>301.820</b>		

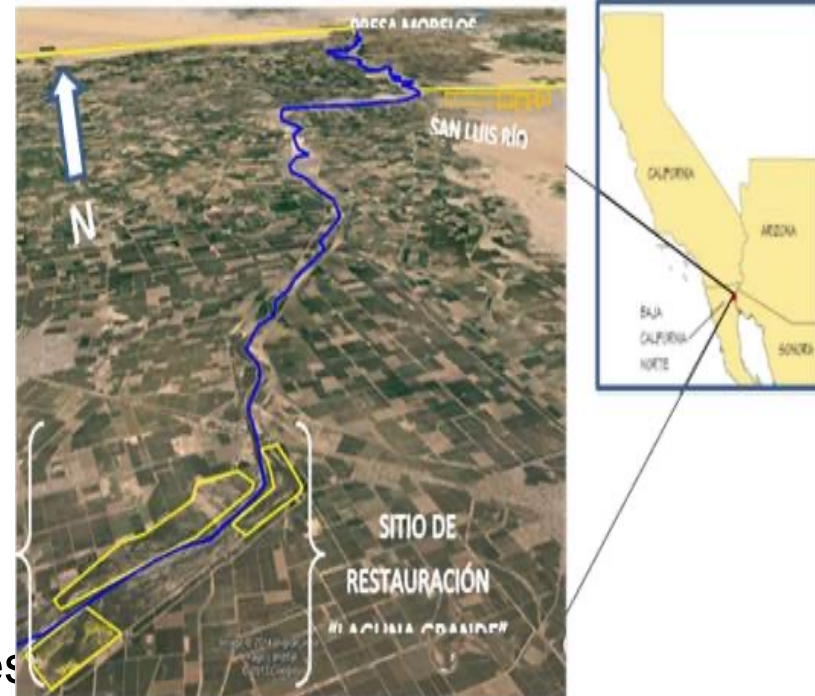
\* Pulse Flow to the Colorado River Delta from March to May



# Environmental Projects

## Description:

- Minute 319 establishes a contribution of US\$ 3 mio for environmental projects
- Currently three projects are being implemented:
  - Laguna Grande Phase I US\$226,717
  - Laguna Grande Phase II US\$418,754
  - Miguel Aleman (habitat restoration) US\$ 350,00
- PRONATURA Northwestern and US allies execute.



Localización del sitio del proyecto de restauración Laguna Grande (polígonos en amarillo)

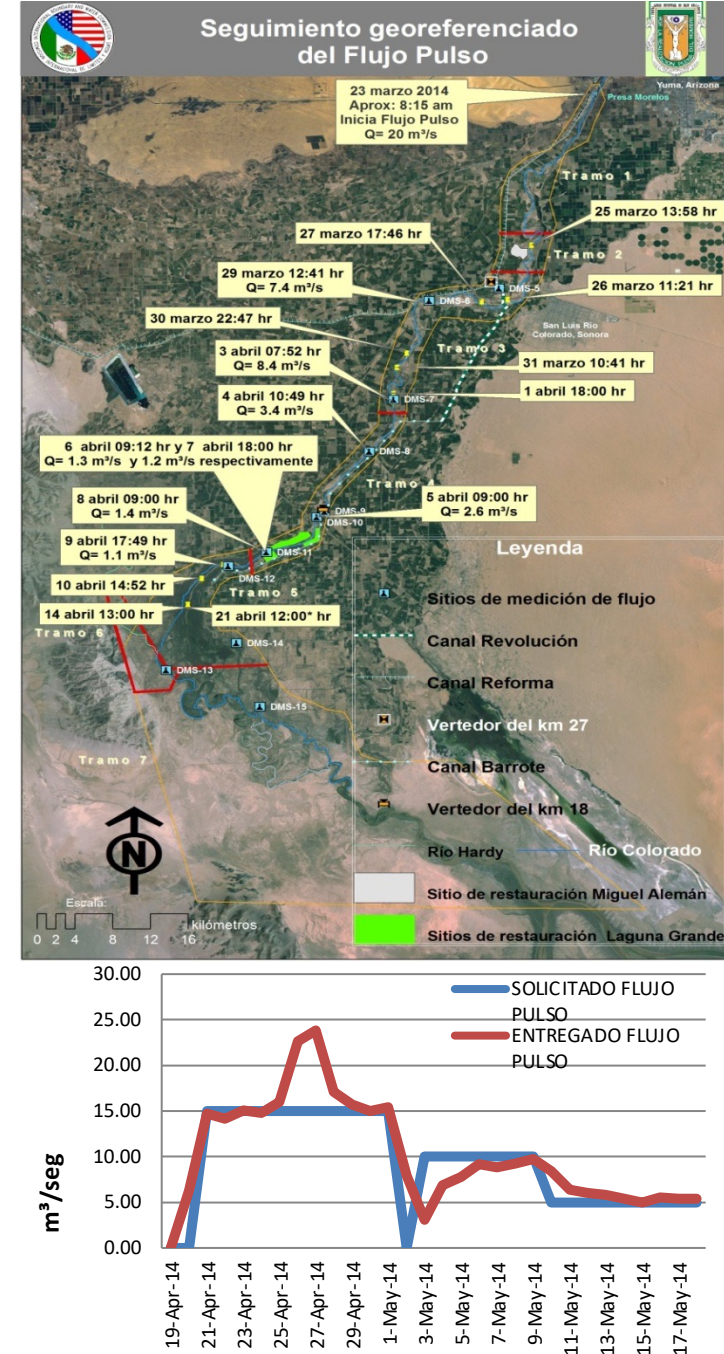
## Next Steps:

- Define other environmental projects for investment of US funds established in Minute 319



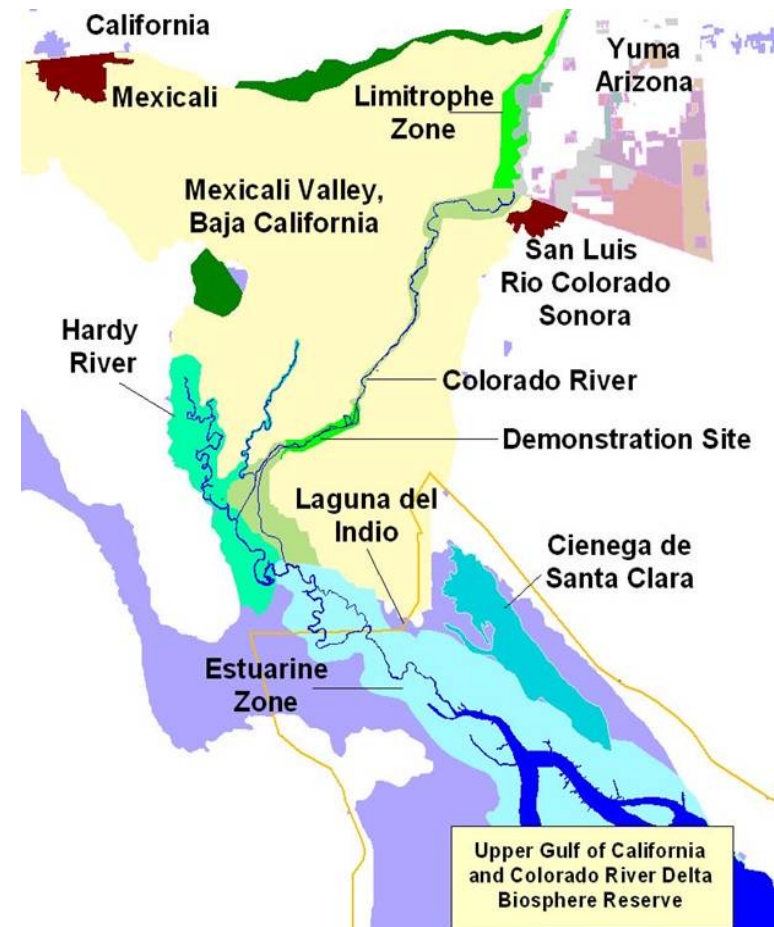
# Pulse Flow

- From March 23 to May 18, 130 Mm<sup>3</sup> were sent to the Colorado River Delta.
- Pulse Flow was designed to achieve the most benefits without causing floods or damages to surrounding towns and farmland.
- Pulse Flow did not affect the delivery program of the Colorado River Users.
- Its implementation was a internationally recognized major achievement in environmental issues, as well as the recognition by USA of the environmental needs in Mexico.



# Base Flow

- CONAGUA and Pronatura signed an agreement to send a base flow up to 9.4 Mm<sup>3</sup> for the 2013 – 2014 irrigation cycle.
- The flow was sent from June 1<sup>st</sup> to September 16, 2014.
- It was part of the 65 Mm<sup>3</sup> that would be destined until 2017 to maintain the restored sites with the 130 Mm<sup>3</sup> of the Pulse Flow.
- Base flows will depend on volumes transmitted by ID014 users, without affecting water volumes of the areas that are currently irrigated.





# The implementation of Minute 319 has allowed:

- USA involvement in environmental commitments within the whole Basin.
- Identification of innovative opportunities of water conservation and environmental protection.
- Active participation of environmental groups of both countries on its implementation.
- Extension of Minute 318, to defer water delivery and ensure its future use.
- Adopt surplus criteria for when there is excess water in the basin and Mexico has access to them.
- Set bilateral criteria to voluntary and temporary reduction in allocation when shortage conditions.
- Mexico can use the intentionally stored water.

**All without affecting water deliveries established in  
1944 Treaty nor the Mexican water users rights**

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# Future measures

- Improve measurement and operation of the hydraulic system of the Colorado River Basin (upfront longer and severe droughts/climate change).
  - Development of projects to create new water, for environmental restoration and for water conservation, such as:
    - Desalting Plants at Rosarito, Río Nuevo (Mexicali), B.C. and Sea of Cortez (without brine discharge).
    - Irrigation modernization and technification.
    - Intensive reuse of treated wastewater.
    - Creation and restoration of wetlands.
  - NGOs should also provide resources for identified environmental projects as of water needs map.
  - Monitoring of the groundwater quality in both sides of the border.
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# Future Actions

**Национальное и международное водное право: современные тенденции развития**

- Take advantage of the international recognition of Minute 319 in countries from Asia and the European Economic United Nations Commission, where Minute 319 is a model to follow in transboundary cooperation in water issues and as an example of climate change adaptation.
- Continue with these cooperation schemes in the long term, in principle until 2026, as established in the Minute.



# Final Message

- Mexico and USA Water Treaty has been a model of joint transboundary work cooperation.
- The process since Minute 316 privileges the integrated water management concept and binational cooperation as a strategy to assure water sustainability and economic development of the region respecting the compliance of international obligations in a climate change scenario.
- Promote and strengthen new cooperation and collaboration options to face a changing hydrological regime by the impacts of climate change.





**¡THANKS!**

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**Dr. Felipe Arreguín Cortés**  
General Technical Deputy  
[felipe.arreguin@conagua.gob.mx](mailto:felipe.arreguin@conagua.gob.mx)

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