

# *SAD AFZAR COMPANY*



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## ***COMPANY PROFILE***

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Sadafzar co. was founded in 1994 with the goal of providing specialized engineering services of Design, Supply, Installation, Data collection, Processing & Interpolation of Geotechnical monitoring Instrumentation and thus became the sole representative of Sisgeo co. of Italy one of the leading manufacturer of Geotechnical monitoring Instrumentation in the world .

In 2002 with the purpose of expansion and diversification in the field of hydraulic structures Sadafzar also became the sole representative of Carpi co. the oldest and largest specialized waterproofing contractor with Geomembrane materials in hydraulic structures.



## ***COMPANY PROFILE***

Sadafzar co. core strategy was to invest in the training of skilled technical personel and development of specialized engineering services in the field of monitoring instrumentation Design, Installation and Analysis which it has achieved so far by providing these services in over 38 project in Iran for which it has received various awards and acclamations, and also recently has finished its first project outside of Iran in Syria, Dreikich Dam.

In the field of waterproofing of hydraulic structures with Geomembrane it has been able to successfully complete the only two major projects in I.R.Iran , Kouhrang HPP Head Pond and Sarcheshmeh Tailing Dam.



## ***FIELDS of ACTIVITIES***

Sadafzar co. is able to provide the following services in both Geotechnical Monitoring Instrumentation and Waterproofing of Hydraulic Structures with Geomembrane materials :

### **A – Geotechnical Monitoring Instrumentation services**

- ✓ Design
- ✓ Supply,
- ✓ Installation
- ✓ Data processing & Analysis
- ✓ Training
- ✓ Maintenance

## ***COMPANY INTRODUCTION***

### **B- Geomembrane services**

Sadafzar co. with the cooperation of Carpi co. & Sembenelli consulting engineers is able to provide the following engineering services with regards to Geomembrane materials:

- Design, Supply and Installation of waterproofing systems with Geomembrane for Hydraulic Tunnels, Dams & Reservoirs.
- Repair & Rehabilitation of Hydraulic Tunnels , Dams and Reservoirs with Geomembrane materials.
- Design and Installation of Geomembrane waterproofing system under water in Concrete or RCC Dams.

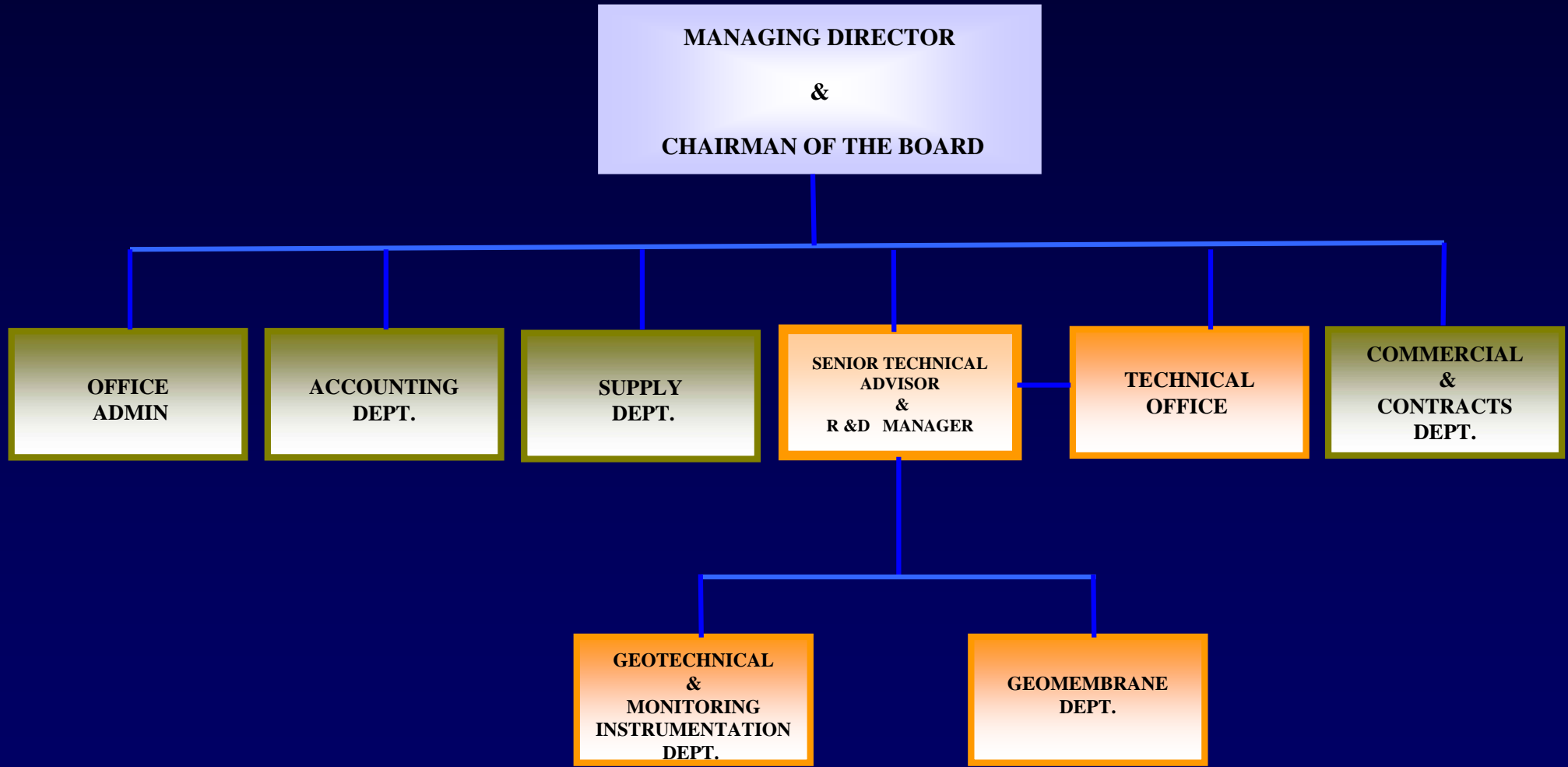
## *COMPANY POLICY*

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Sadafzar co. based on work ethics and professionalism and for the purpose of providing the best possible service to its clients has committed itself to the following :

- ✓ Client Satisfaction
- ✓ Constant improvement in the quality of service
- ✓ Commitment to Professionalism and business ethics
- ✓ Development & improvement of technical knowledge
- ✓ Training & development of skilled technical personnel

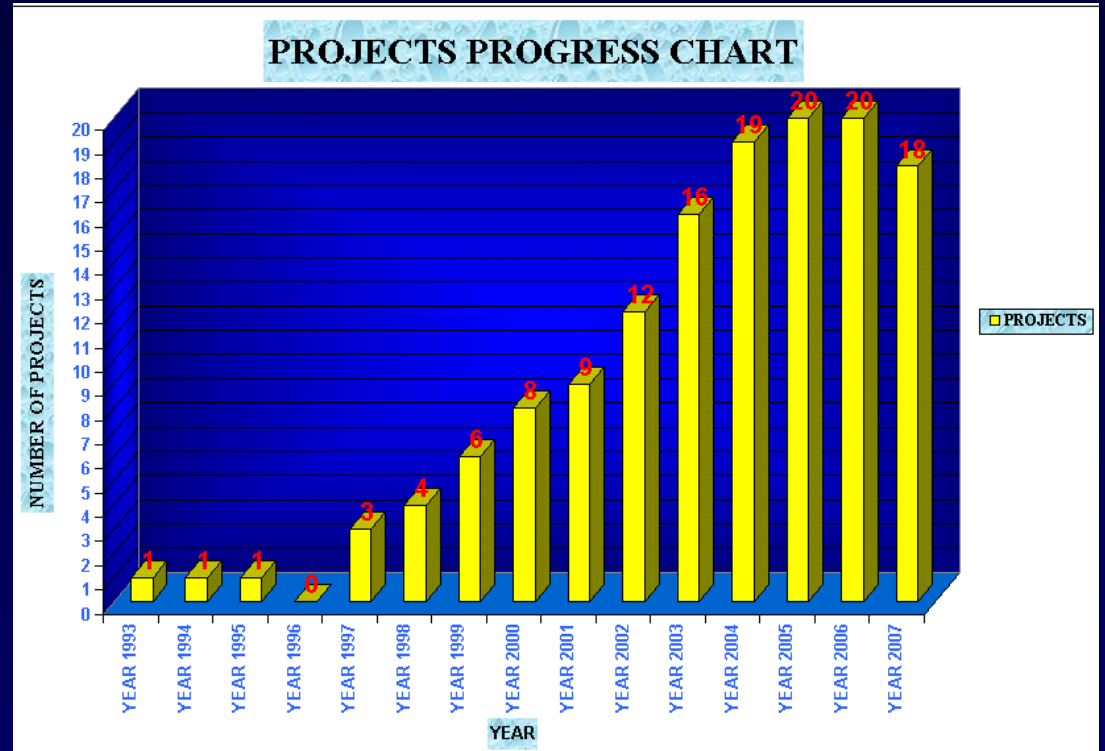
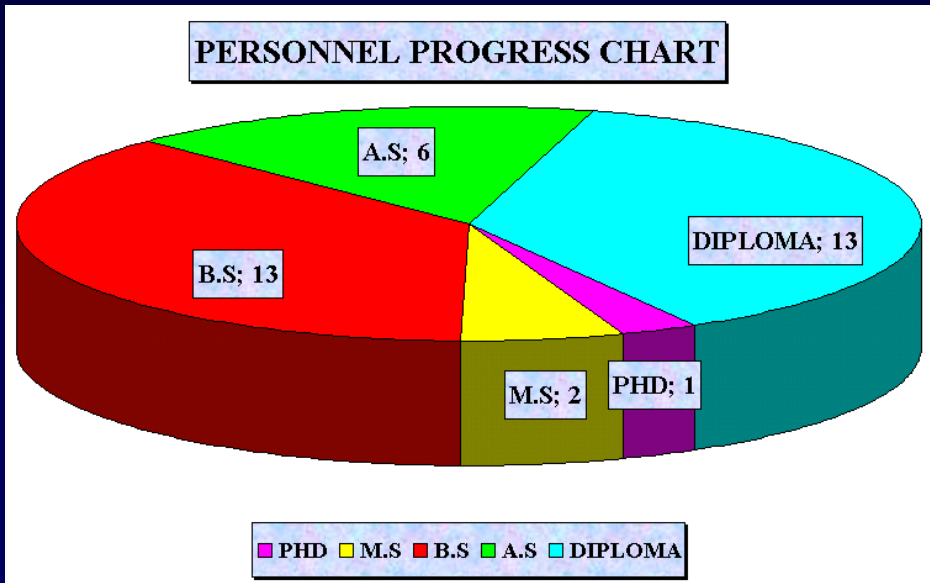
# COMPANY FLOW CHART



# NATIONAL DISTRIBUTION MAP



# PROJECTS & PERSONNEL PROGRESS CHARTS



# AWARDS & ACCLAMATIONS BOARDS



# EMBANKMENT DAMS



## SIVAND EARTHFILL DAM

### POSITION

**Province:** Fars

**City:** Saadat shahr

**Dam Location:** 14 Kilometers from Saadat shahr

### DAM SPECIFICATION

**Type:** Rockfill Embankment

**Crest Length:** 603m

**Height From Foundation:** 57m

**Reservoir Volume at Normal Level:**  
150 million m<sup>3</sup>

# ***EMBANKMENT DAMS***



## **INSTALLED INSTRUMENTS**

- V.W. Electrical Piezometer
- V.W. Earth Pressure Cell
- Casagrande Piezometer
- Combined Inclinator & Settlement System
- In-place Inclinator System
- Hydraulic Differential Settlement System (DSM)
- Central Data Acquisition System

# ***EMBANKMENT DAMS***



## ***MEYJARAN DAM***

### **POSITION**

**Province:** Mazandaran

**City:** Ramsar

**Dam Location:** 20 Kilometers South East of Ramsar

### **DAM SPECIFICATION**

**Type:** Rockfill Dam With Asphaltic Core

**Crest Length:** 186m

**Height From Foundation:** 58.5m

**Reservoir Volume at Normal Level:**  
8 million m<sup>3</sup>

# ***EMBANKMENT DAMS***



## **INSTALLED INSTRUMENTS**

- V.W Electrical Piezometer
- V.W. Earth Pressure Cell
- Casagrande Piezometer
- Combined Inclinator & Settlement System
- Hydraulic Differential Settlement System (DSM)
- Horizontal Displacement Measurement System
- Reservoir Level Meter
- V-Notch Weir

# ***EMBANKMENT DAMS***



## ***TANGAB EARTHFILL DAM***

### **POSITION**

**Province:** Fars

**City:** Firouz Abad

**Dam Location:** 12 Kilometers  
North West of Firouz Abad

### **DAM SPECIFICATION**

**Type:** Rockfill Dam With Inclined  
Clay Core

**Crest Length:** 270m

**Height From Foundation:** 55m

**Reservoir Volume at Normal Level:**  
130 million m<sup>3</sup>

# ***EMBANKMENT DAMS***



## **INSTALLED INSTRUMENTS**

- V.W. Electrical Piezometer
- V.W. Earth Pressure Cell
- Casagrande Piezometer
- Combined Inclinator & Settlement System
- In-place Inclinator System
- Reservoir Water Level Meter
- V-Notch Weir
- Strong Motion Accelerometer
- Hydraulic Differential Settlement System (DSM)
- Central Data Acquisition System

# ***EMBANKMENT DAMS***

## ***BIDVAZ ESFARAYEN EARTHFILL DAM***



### **POSITION**

**Province:** North Khorasan

**City:** Esfarayen

**Dam Location:** 20 Kilometers North East of Esfarayen

### **DAM SPECIFICATION**

**Type:** Rockfill Dam With Clay Core

**Crest Length:** 104m

**Height From Foundation:** 80m

**Reservoir Volume at Normal Level:**  
52.9 million m<sup>3</sup>

# ***EMBANKMENT DAMS***



## **INSTALLED INSTRUMENTS**

- V.W. Electrical Piezometer
- V.W. Earth Pressure Cell
- Casagrande Piezometer
- Combined Inclinator & Settlement System
- Reservoir Water Level Meter
- Embankment Extensometer System
- Weather Station
- V-Notch Weir
- Central Data Acquisition System

# ***EMBANKMENT DAMS***

## ***KHANABAD EARTHFILL DAM***



### **POSITION**

**Province:** Lorestan

**City:** Aligoudarz

**Dam Location:** 25 Kilometers South East of Aligoudarz

### **DAM SPECIFICATION**

**Type:** Homogenous Earthfill Dam

**Crest Length:** 290m

**Height From Foundation:** 31.5m

**Reservoir Volume at Normal Level:**  
17.9 million m<sup>3</sup>

# ***EMBANKMENT DAMS***



## **INSTALLED INSTRUMENTS**

- V.W. Electrical Piezometer
- Casagrande Piezometer
- Observational well
- Reservoir Water Level Meter
- Strong Motion Accelerometer
- Combined Inclinator & Settlement System
- Weather Station
- V-Notch Weir
- Geodetic Points
- Central Data Acquisition System

# ***EMBANKMENT DAMS***

## ***MOLLASADRA EARTHFILL DAM***



### **POSITION**

**Province:** Fars

**City:** Sedeh

**Dam Location:** 250 kilometers North  
West of Shiraz city

### **DAM SPECIFICATION**

**Type:** Rockfill Dam With Clay Core

**Crest Length:** 630m

**Height From Foundation:** 75m

**Reservoir Volume at Normal Level:**  
440 million m<sup>3</sup>

# ***EMBANKMENT DAMS***



## **INSTALLED INSTRUMENTS**

- V.W. Electrical Piezometer
- V.W. Earth Pressure Cell
- Casagrande Piezometer
- Combined Inclinator & Settlement System
- Strong Motion Accelerometer
- Reservoir Water Level Meter
- Observational well
- V-Notch Weir
- Weather Station
- Geodetic Points
- Central Data Acquisition System

## ***EMBANKMENT DAMS***



### ***SALMAS (DEREK) EARTHFILL DAM***

#### **POSITION**

**Province:** West Azarbayjan

**City:** Salmas

**Dam Location:** 90 Kilometers North  
West of Orumieh City

#### **DAM SPECIFICATION**

**Type:** Earthfill Dam With Clay Core

**Crest Length :** 454m

**Height From Foundation:** 40m

**Reservoir Volume at Normal Level:**  
22.2 million m<sup>3</sup>

# EMBANKMENT DAMS



## INSTALLED INSTRUMENTS

- V.W. Electrical Piezometer
- V.W. Earth Pressure Cell
- Casagrande Piezometer
- Combined Inclinator & Settlement System
- In-place Inclinator System
- Strong Motion Accelerometer
- Reservoir Water Level Meter
- Hydraulic Settlement System
- DEX 3-D Displacement System
- Measurement Tell-Tale Settlement Measuring System
- Observational well
- V-Notch Weir
- Weather Station
- Central Data Acquisition System

# EMBANKMENT DAMS



## KAMAL SALEH EARTHFILL DAM

### POSITION

**Province:** Markazi

**City:** Shazand

**Dam Location:** 46 Kilometers South of Shazand

### DAM SPECIFICATION

**Type:** Rockfill Dam With Clay Core

**Crest Length:** 762m

**Height From Foundation:** 80m

**Reservoir Volume at Normal Level:** 110 million m<sup>3</sup>

# EMBANKMENT DAMS



## INSTALLED INSTRUMENTS

- V.W. Electrical Piezometer
- V.W. Earth Pressure Cell
- Casagrande Piezometer
- Combined Inclinometer & Settlement System
- Strong Motion Accelerometer
- Reservoir Water Level Meter
- Observational well
- V-Notch Weir
- Weather Station
- Central Data Acquisition System

# ***EMBANKMENT DAMS***



## ***AZADI EARTHFILL DAM***

### **POSITION**

**Province:** Kermanshah

**City:** Kouzaran

**Dam Location:** 110 Kilometers  
North of Kermanshah

### **DAM SPECIFICATION**

**Type:** Rockfill Dam With Clay Core

**Crest Length:** 737m

**Height From Foundation:** 64m

**Reservoir Volume at Normal Level:**  
70.47 million m<sup>3</sup>

# ***EMBANKMENT DAMS***



## **INSTALLED INSTRUMENTS**

- V.W. Electrical Piezometer
- V.W. Earth Pressure Cell
- Casagrande Piezometer
- Combined Inclinometer & Settlement System
- In-place Inclinometer System
- Strong Motion Accelerometer
- Reservoir Water Level Meter
- V-Notch Weir
- Weather Station
- Geodetic Points
- Central Data Acquisition System

# EMBANKMENT DAMS

## TALEGHAN EARTHFILL DAM



### POSITION

**Province:** Tehran

**City:** Taleghan

**Dam Location:** Sangban

### DAM SPECIFICATION

**Type:** Rockfill Dam With Clay Core

**Crest Length:** 1111m

**Height From Foundation:** 109m

**Reservoir Volume at Normal Level:**

**420 million m<sup>3</sup>**

# ***EMBANKMENT DAMS***



## **INSTALLED INSTRUMENTS**

- DEX 3-D Displacement Measuring System

# EMBANKMENT DAMS



## CHESHMEZANE EARTHFILL DAM

### POSITION

**Province:** Chahar Mahal & Bakhtiari

**City:** Shahre Kord

**Dam Location:** 100 Kilometers West Of Esfahan City

### DAM SPECIFICATION

**Type:** Earthfill Dam with Clay Core

**Crest Length:** 417m

**Height From Foundation:** 38m

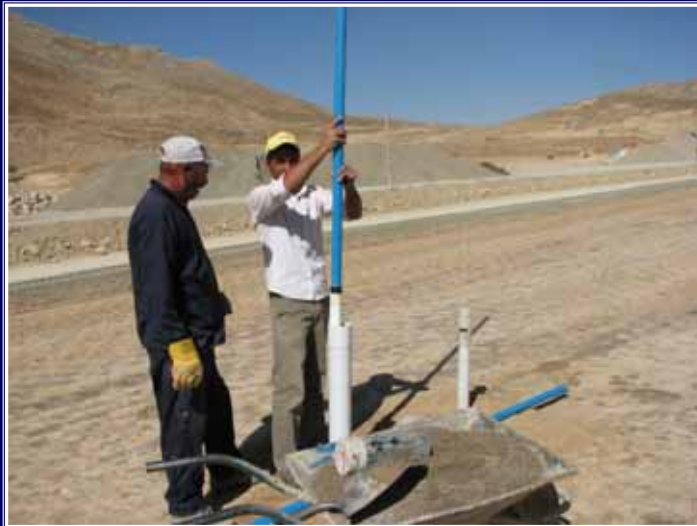
**Reservoir Volume at Normal Level:**  
1.03 million m<sup>3</sup>

# ***EMBANKMENT DAMS***



## **INSTALLED INSTRUMENTS**

- V.W. Electrical Piezometer
- V.W. Earth Pressure Cell
- Casagrande Piezometer
- Combined Inclinator & Settlement System
- Bench Mark Points
- Target Points



# ***EMBANKMENT DAMS***

## ***FARROKHI GHAEN EARTHFILL DAM***



### **POSITION**

**Province:** South Khorasan

**City:** Ghaen

**Dam Location:** 41 Kilometers from  
Ghaen, Farrokhi Village

### **DAM SPECIFICATION**

**Type:** Earthfill Dam with Clay Core

**Crest Length:** 900m

**Height From Foundation:** 20m

**Reservoir Volume at Normal Level:**

7.5 million m<sup>3</sup>

# ***EMBANKMENT DAMS***



## **INSTALLED INSTRUMENTS**

- V.W. Electrical Piezometer
- Casagrande Piezometer
- Reservoir Water Level Meter
- V-Notch Weir
- Geodetic Points

## ***EMBANKMENT DAMS***

### ***EYVASHAN EARTHFILL DAM***



#### **POSITION**

**Province:** Lorestan

**City:** Khoram Abad

**Dam Location:** Eyvashan Town

#### **DAM SPECIFICATION**

**Type:** Rockfill Dam With Clay Core

**Crest Length:** 676m

**Height From Foundation:** 71m

**Reservoir Volume at Normal Level:**

**51.75 million m<sup>3</sup>**

# EMBANKMENT DAMS



## INSTALLED INSTRUMENTS

- V.W. Electrical Piezometer
- V.W. Earth Pressure Cell
- Casagrande Piezometer
- Combined Inclinator & Settlement System
- In-place Inclinator System
- Reservoir Water Level Meter
- V-Notch weir
- Geodetic Points
- Central Data Acquisition System

# ***EMBANKMENT DAMS***

## ***NAMROUD EARTHFILL DAM***



### **POSITION**

**Province:** Tehran

**City:** Firouzkouh

**Dam Location:** 120 Kilometers  
East of Tehran City

### **DAM SPECIFICATION**

**Type:** Rockfill Dam With Clay Core

**Crest Length:** 652m

**Height From Foundation:** 82m

**Reservoir Volume at Normal Level:**  
120 million m<sup>3</sup>

# ***EMBANKMENT DAMS***



## **INSTALLED INSTRUMENTS**

- V.W. Electrical Piezometer
- V.W. Earth Pressure Cell
- Casagrande Piezometer
- Combined Inclinator & Settlement System
- In-place Inclinator
- Strong Motion Accelerometer
- Reservoir Water Level
- V-Notch Weir
- Geodetic Points
- Weather Station
- Central Data Acquisition System

## ***EMBANKMENT DAMS***

### ***TAHAM EARTHFILL DAM***

#### **POSITION**

**Province:** Zanzan

**City:** Zanzan

**Dam Location:** 15 Kilometers North  
West of Zanzan City

#### **DAM SPECIFICATION**

**Type:** Earthfill Dam With Clay Core

**Crest Length:** 451m

**Height From Foundation:** 123.7m

**Reservoir Volume at Normal Level:**  
87.78 million m<sup>3</sup>



# ***EMBANKMENT DAMS***



## **INSTALLED INSTRUMENTS**

- V.W. Earth Pressure Cell
- Casagrande Piezometer
- Combined Inclinator & Settlement System
- Strong Motion Accelerometer



# ***EMBANKMENT DAMS***



## ***IZADKHAST EARTHFILL DAM***

### **POSITION**

**Province:** Fars

**City:** Abadeh

**Dam Location:** at a distance of 5 kilometers from Izadkhast Village

### **DAM SPECIFICATION**

**Type:** Earthfill Dam With Clay Core

**Crest Length:** 294m

**Height From Foundation:** 39.5m

**Reservoir Volume at Normal Level:**  
12 million m<sup>3</sup>

# ***EMBANKMENT DAMS***



## **INSTALLED INSTRUMENTS**

- V.W. Electrical Piezometer
- V.W. Earth Pressure Cell
- Casagrande Piezometer
- Combined Inclinometer & Settlement System
- Reservoir Water Level
- V-Notch Weir
- Central Data Acquisition System

## ***EMBANKMENT DAMS***



### ***TANGEH HALEH EARTHFILL DAM***

#### **POSITION**

**Province:** Lorestan

**City:** Kouhdasht

**Dam Location:** Haft Cheshmeh Village

#### **DAM SPECIFICATION**

**Type:** Homogenous Earthfill Dam

**Crest Length:** 195m

**Height From Foundation:** 42.55m

**Reservoir Volume at Normal Level:**

**3.5 million m<sup>3</sup>**

# ***EMBANKMENT DAMS***



## **INSTALLED INSTRUMENTS**

- Casagrande Piezometer
- Combined Inclinator & Settlement System
- Reservoir Water Level Meter
- V-Notch Weir



# ***EMBANKMENT DAMS***

## ***SEYMAREH COFFER DAM***



### **POSITION**

**Province:** Ilam

**City:** Ilam

**Dam Location:** 40 Kilometer North  
West of Dareh Shahr

### **COFFER DAM SPECIFICATION**

**Type:** Earthfill

**Crest Length:** 202m

**Reservoir Volume at Normal Level:**  
3200 million m<sup>3</sup>

# ***EMBANKMENT DAMS***



## **INSTALLED INSTRUMENTS**

- V.W Electrical Piezometer
- Pneumatical Piezometer
- Combined Inclinator & Settlement System
- Observational Well

# ***EMBANKMENT DAMS***

## ***CHANGOOREH EARTHFILL DAM***

### **POSITION**

**Province:** Quazvin

**City:** Boueen Zahra

**Dam Location:** Boueen Zahra

### **DAM SPECIFICATION**

**Type:** Earthfill Dam

**Crest Length:** 450m

**Height From Foundation:** 41m

**Reservoir Volume at Normal Level:**

2.8 million m<sup>3</sup>

### **INSTALLED INSTRUMENTS**

- V.W. Electrical Piezometer
- Casagrande Piezometer
- Combined Inclinator & Settlement System

# ***EMBANKMENT DAMS***

## ***GOLESTAN 2 EARTHFILL DAM***

### **POSITION**

**Province:** Gholestan

**City:** Gonbad

**Dam Location:** 45 kilometer North  
East of Gonbad

### **DAM SPECIFICATION**

**Type:** Earthfill Dam

**Crest Length:** 665m

**Height From Foundation:** 35m

**Reservoir Volume at Normal Level:**  
54 million m<sup>3</sup>

### **INSTALLED INSTRUMENTS**

- V.W. Electrical Piezometer
- V.W. Earth Pressure Cell
- Casagrande Piezometer
- Combined Inclinometer & Settlement System
- Hydraulic Differential Settlement System (DSM)
- Reservoir Water Level Meter
- V-Notch Weir
- Observational Well
- Central Data Acquisition System



# ***EMBANKMENT DAMS***

## ***TOZANLOO EARTHFILL DAM***

### **POSITION**

**Province:** Khorasan Razavi

**City:** Dargaz

**Dam Location:** Dargaz

### **DAM SPECIFICATION**

**Type:** Earthfill Dam

**Crest Length:** 490m

**Height From Foundation:** 31.2m

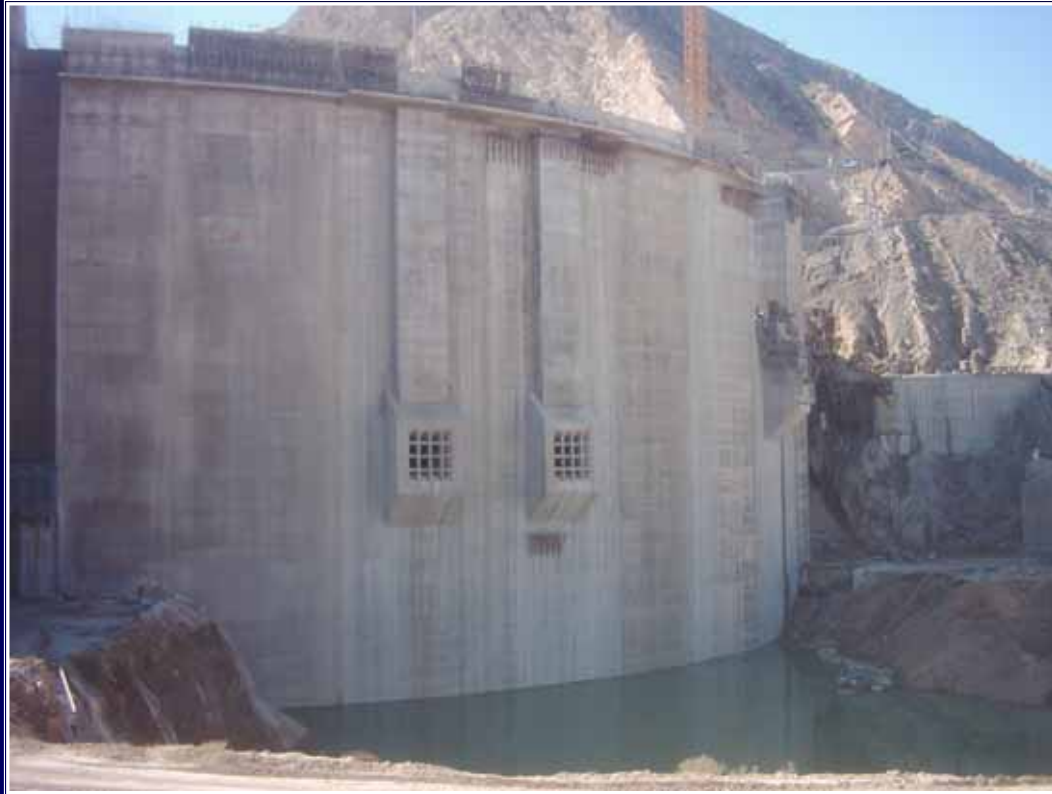
**Reservoir Volume at Normal Level:**

**2.5 million m<sup>3</sup>**

### **INSTALLED INSTRUMENTS**

- Casagrande Piezometer
- Combined Inclinator & Settlement System

## CONCRETE DAMS



### **SALMAN FARSI CONCRETE DAM**

#### **POSITION**

**Province:** Fars

**City:** Ghir

**Dam Location:** 30 Kilometers from  
North East of Ghir

#### **DAM SPECIFICATION**

**Type:** Arch Gravity

**Crest Length:** 345m

**Height From Foundation:** 125m

**Reservoir Volume at Normal Level:**  
1400 million m<sup>3</sup>

# CONCRETE DAMS



## INSTALLED INSTRUMENTS

- Inverted Pendulum
- Clinometer
- Air/Concrete/Water Thermometers
- Rock Meter (Mechanical)
- Crack Meter (Mechanical)
- Up Lift Measurement System
- Strong Motion Accelerometer
- Reservoir Level Meter
- V-Notch Weir
- Central Data Acquisition System

# CONCRETE DAMS



## RAEESALI DELVARI CONCRETE DAM

### POSITION

**Province:** Boushehr

**City:** Borazjan

**Dam Location:** 60 Kilometer North West of Borazjan

### DAM SPECIFICATION

**Type:** Double Arch

**Crest Length:** 240m

**Height From Foundation:** 115m

**Reservoir Volume at Normal Level:**  
685 million m<sup>3</sup>

# CONCRETE DAMS



## INSTALLED INSTRUMENTS

- Direct & Inverted Pendulum
- Clinometer
- Air/Concrete/Water Thermometer
- Electrical Strain Gauge
- Rock Meter (Mechanical)
- Crack Meter (Mechanical)
- Up Lift Measurement System
- Strong Motion Accelerometer
- Reservoir Level Meter
- V-Notch Weir
- Central Data Acquisition System

# CONCRETE DAMS

## KOMAYESTAN CONCRETE DAM



### POSITION

**Province:** Khorasan Razavi

**City:** Sabzevar

**Dam Location:** 98 Kilometers North West of Sabzevar

### DAM SPECIFICATION

**Type:** Gravity Concrete

**Crest Length:** 83.5m

**Height From Foundation:** 34.5m

**Reservoir Volume at Normal Level:**  
1.47 million m<sup>3</sup>

# CONCRETE DAMS



## INSTALLED INSTRUMENTS

- V.W. Electrical Piezometer
- Directed Pendulum
- Up Lift Measurement System
- Crack Meter (Mechanical)
- Air/Concrete/Water Thermometer
- Reservoir Level Meter
- Rock Meter (Mechanical)
- V-Notch Weir

# TUNNEL MONITORING

## ESFAHAN- SHIRAZ RAILWAY TUNNEL



### POSITION

**Province:** Fars

**City:** Safashahr

### TUNNEL SPECIFICATION

**Tunnel Length:** 4151.5m (Summation of 5 Tunnels)

**Tunnel Width:** 7m

# TUNNEL MONITORING



## INSTALLED INSTRUMENTS

- Borehole Extensometer
- Convergence Meter
- V.W. Strain Gauge

# ***TUNNEL MONITORING***

## ***QUAZVIN- RASHT RAILWAY TUNNEL***



### **POSITION**

**Province:** Quazvin

**City:** Kouhin

### **TUNNEL SPECIFICATION**

**Tunnel Length:** 1635m

# ***TUNNEL MONITORING***



## **INSTALLED INSTRUMENTS**

- Borehole Extensometer
- Convergence Meter
- V.W. Strain Gauge

# ***TUNNEL MONITORING***

## ***KAROON 3 DAM DIVERSION TUNNEL***

### **POSITION**

**Province:** Khuzestan

**City:** Eazeh

### **INSTALLED INSTRUMENTS**

- Borehole Extensometer
- Convergence Meter
- Load Cell

# ***TUNNEL MONITORING***

## ***KOOHRANG TUNNEL 3***

### **POSITION**

**Province:** Chahar Mahal & Bakhtiari

**City:** Kouhrang

### **INSTALLED INSTRUMENTS**

- Borehole Extensometer
- Convergence Meter
- Load Cell
- NATM Shotcrete Pressure Cell

# ***TUNNEL MONITORING***

## ***ZAGROSS TRANSITION TUNNEL***

### **POSITION**

**Province:** Lorestan

**City:** Sar Pol Zahab

### **INSTALLED INSTRUMENTS**

- Borehole Extensometer
- Convergence Meter
- NATM Pressure Cell for Concrete & Rock

# ***TUNNEL MONITORING***

## ***ABIVARD WATER CONVEYANCE TUNNEL***

### **POSITION**

**Province:** Khorasan Razavi

**City:** Abivard

### **INSTALLED INSTRUMENTS**

- V.W. Electrical Piezometer
- NATM Shotcrete Pressure Cell
- Load Cell
- V.W. Strain Gauge
- Borehole Extensometer
- Central Data Acquisition System

# POWER PLANTS

## KOUHRANG 2 HPP BASIN



### POSITION

**Province:** Chahar Mahal & Bakhtiari

**City:** Shahre Kord

**Power Plant Location:** 2 Kilometer  
South East of Chelgerd Town

### POWER PLANT SPECIFICATION

**Type:** Earth Surface & Flowing

**Yearly Energy:** 128 GWh

**Basin Dimensions:** 200 × 330 m

**Crest Length:** 470m

**Average Height of Head Pond:** 15 m

# POWER PLANTS



## INSTALLED INSTRUMENTS at LOCATION of POWER PLANT'S PIT

- V.W. Electrical Piezometer
- Combined Inclinator & Settlement System
- Observational well



## INSTALLED INSTRUMENTS at LOCATION of POWER PLANT'S BASIN

- Combined Inclinator & Settlement System
- Hydraulic Differential Settlement System
- V.W. Electrical Piezometer
- Casagrande Piezometer

# ***POWER PLANTS***

## ***POWER PLANT CHAMBER of KAROON 3 DAM***

### **POSITION**

**Province:** Khuzestan

**City:** Eazeh

### **INSTALLED INSTRUMENTS**

- Borehole Extensometer

## ***SPECIAL PROJECTS***



### ***EMAM REZA HOLY SHRINE***

#### **POSITION**

**Province:** Khorasan Razavi

**City:** Mashhad

## ***SPECIAL PROJECTS***



### **INSTALLED INSTRUMENTS**

- Bi-Axial Electrical Joint Meter
- V.W. Earth Pressure Cell
- Casagrande Piezometer
- Strong Motion Accelerometer
- Electrical Deformometer
- Beam Clinometer
- DEX 3-D Displacement Measuring System
- Tell- Tale Settlement System

## ***SPECIAL PROJECTS***



### ***KAHRIZAK LANDFILL***

#### **POSITION**

**Province:** Tehran

**City:** Tehran

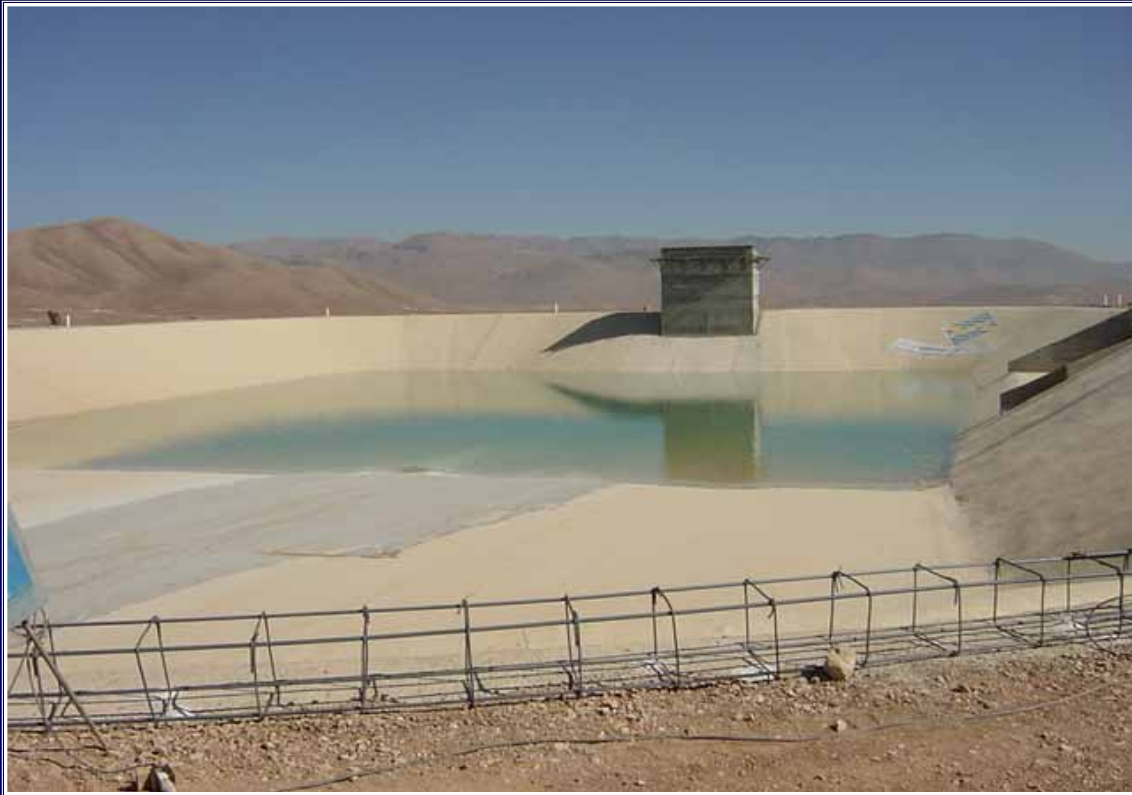
**Project Location:** Kahrizak

### ***INSTALLED INSTRUMENTS***

- Tell-Tale Settlement System
- Profiler System
- Thermometer
- Weather Station

# GEOMEMBRANE PROJECTS

## KOUHRANG 2 HPP BASIN



### POSITION

**Province:** Chahar Mahal & Bakhtiari

**City:** Shahre Kord

**Power Plant Location:** 2 Kilometer  
South East of Chelgerd Town

### POWER PLANT SPECIFICATION

**Type:** Earth Surface & Flowing

**Yearly Energy:** 128 GWh

**Basin Dimensions:** 200 × 330 m

**Crest Length:** 470m

**Average Height of Head Pond:** 15 m

# ***GEOMEMBRANE PROJECTS***



***WATERPROOFING of POWER PLANT BASIN  
with PVC GEOMEMBRANE***

# GEOMEMBRANE PROJECTS

## SARCHESHMEH TAILING DAM



### POSITION

**Province:** Kerman

**City:** Kerman

**Dam Location:** 150 Kilometer

South West of the city of Kerman

# GEOMEMBRANE PROJECTS



## DAM SPECIFICATION

**Type:** Rockfill Dam With Clay Core  
(Raised Rockfill Dam with Carpi  
Geomembrane System)

**Crest Length:** 1000m

**Height From Foundation:** 71m

**Reservoir Volume at Normal Level:**  
51.75 million m<sup>3</sup>

