



# Case History

AMINE TREATER  
REGENERATOR VENT  
SCRUBBER

**ENVIRO SCRUB®**

## Background

The following application concerns the removal of H<sub>2</sub>S from a water saturated CO<sub>2</sub> gas stream that was produced from an alkanolamine sweetener.

A natural gas plant located in the northwestern New Mexico, removes acid gas with alkanolamine absorption and regeneration. The resulting acid gas rejected in the regenerator vent contains over 99 percent CO<sub>2</sub> and as much as 150 ppm H<sub>2</sub>S. Reducing the H<sub>2</sub>S concentration to 10 ppm or less permits the gas to be discharged to the atmosphere.

## System Data

|                            |                                                                                                                    |
|----------------------------|--------------------------------------------------------------------------------------------------------------------|
| Gas Flow Rate :            | 5 MMScfd                                                                                                           |
| Gas Composition:           | 99 + % CO <sub>2</sub>                                                                                             |
| Pressure:                  | 17 – 21 psig                                                                                                       |
| Incoming H <sub>2</sub> S: | 150 ppm                                                                                                            |
| Outgoing H <sub>2</sub> S: | 0-7 ppm                                                                                                            |
| <b>ENVIRO-SCRUB®</b>       |                                                                                                                    |
| Consumption:               | 0.035 to 0.040 gallons<br>per ppm H <sub>2</sub> S per million<br>Scf. 2.11 to 2.41 lbs. per<br>gallon of product. |

## Solution

**ENVIRO-SCRUB®** is injected via an atomizer into a horizontal line just ahead of a static mixer in the rich amine feed to the regenerator. Before the CO<sub>2</sub> reaches the contact tower, the H<sub>2</sub>S concentration drops from 150 ppm to 40 ppm. The remaining H<sub>2</sub>S is removed in the regenerator.

## Results

The contact tower is on liquid level control. The 10 ppm permit H<sub>2</sub>S level is easily achieved and the air is discharged into the atmosphere. The spent **ENVIRO-SCRUB®** is disposed of in permitted disposal wells. This continuous system has produced substantial economic benefits for the customer.