



5610 W. Maryland Suite R

Glendale, AZ 85301

866-306-2489

[www.enssolutions.com](http://www.enssolutions.com)

**Concrete Products Manufacturing Facility  
One Year Case Study  
Phoenix Arizona**

*Brad Kachurka, Account Manager*

**Date**

---

## Table of Contents

<a href="#"><u>Introduction</u></a> .....	3
<a href="#"><u>Problem Statement</u></a> .....	3
<a href="#"><u>Previous Options</u></a> .....	3
<a href="#"><u>Enssolutions Solution</u></a> .....	3
<a href="#"><u>Benefit - Environmental Stewardship</u></a> .....	3
<a href="#"><u>Benefit - Environmental Compliance</u></a> .....	3
<a href="#"><u>Benefit - Cost</u></a> .....	3
<a href="#"><u>Implementation</u></a> .....	4
<a href="#"><u>Base Coat</u></a> .....	4
<a href="#"><u>Maintenance Coat</u></a> .....	4
<a href="#"><u>Summary</u></a> .....	4
<a href="#"><u>Appendix – Photos</u></a> .....	5
<a href="#"><u>Surrounding Community</u></a> .....	5
<a href="#"><u>Treated Industrial Site and Applications</u></a> .....	6
<a href="#"><u>Appendix – Cost Benefit Analysis</u></a> .....	7



## **Introduction**

The customer is a manufacturer of specialized cement products weighing up to thirty tons. Their facility is located on fifteen acres with four acres of roadways. There is heavy fork-lift traffic on storage areas located adjacent to roadways. The customer has two main roads which ship between 40-60 semi-truck loads per day.

## **Problem Statement**

Customer's industrial location is located within a one mile radius of revitalized historic shopping, public parks and sporting areas, historic resort, and civic center. Increased environmental regulations, increased focus of neighboring communities, and increased internal standards motivated the customer to improve PM10 standards above current government regulations.

The customer was searching for a dust palliative that was cost effective vs. purchasing a water truck and hiring a part time operator for the water truck.

## **Previous Options**

Customer had tried multiple soil stabilization options including polymers, and lignin sulfates. Previous years budgets for ineffective soil stabilization measures were budgeted at \$45K annually. The customer was not able to effectively control PM emissions with palliatives alone.

## **Enssolutions Solution**

Enssolutions offered a long term solution of treating roadways with a base surface of T.O.P. and maintenance coats on a periodic basis (depending on season and traffic wear). The initial maintenance applications occurred every 4-5 weeks but have now been reduced to every 6-7 weeks.

### *Benefit - Environmental Stewardship*

Customer has proven their standing as a good neighbor to schools, parks, shopping, tourist, and government facilities.

Customer has provided a cleaner and safer work environment for their employees.

### *Benefit - Environmental Compliance*

Enssolutions significantly reduced PM emissions from traffic areas or fugitive dust from traffic areas. Customer has maintained Compliance with Maricopa and ADEQ environmental regulations.

### *Benefit - Cost*

- Enssolutions stabilized soil at 65% of previous soil stabilization costs.
- Enssolutions offset annual supplemental capital and labor costs of \$49,400.



- Enssolutions offset annual water reduction of \$13,000.
- Total annual cost savings = \$27,800 vs. water truck only option.

## **Implementation**

### Base Coat

1. The surface had a heavily compacted base with 1-2" of loose gravel and soil on the surface. Enssolutions moistened the road and swept with a road broom. Total road broom time for initial application was 11 hours.
2. Applied five coats of 5.6% solids over entire area.
3. Let cure for 36 hours prior to truck and fork-lift traffic

### Maintenance Coat

1. Applied one coat of 5.6% solids over entire area.
2. Apply an additional coat to one acre of the project where mobile crane operates.
3. Maintenance applications are monitored until visible scuffing reaches 30-40% of the road surface.

## **Summary**

Enssolutions has provided the most cost effective, environmentally effective solution compared to several previous products which proved more expensive and not suitable for their industrial profile.

Perhaps the greatest benefit is the customer has continued to operate with neighbors which would be highly sensitive to fugitive dust created by their operations with no complaints while maintaining a safe and healthy environment for their workforce.

**Appendix – Photos**

***Surrounding Community***



**Figure 1 Historic Shopping District**



**Figure 2 Historic Civic Center**



**Figure 3 Neighboring Park land.**

### ***Treated Industrial Site and Applications***



**Figure 4**  
Treated roadway intersection. Product is visible during the 4-5 week maintenance phase



**Figure 5**  
Treated Intersection after three weeks. Notice some track on but T.O.P. is still binding surface.



**Figure 6**  
Typically loaded truck - 40 - 60 trucks per day.



**Figure 7** Employee Parking lot treated and striped with no maintenance required for 6 month period.



**Figure 8**  
Staging Area for loaded semi-trucks. Has high turnaround area.



**Figure 9**  
Mobile Crane that carries typical 20-30T loads with infinite turning radius on off-road type tires.



**Appendix – Cost Benefit Analysis**

**Industrial Customer Water  
Truck vs.  
Enssolutions T.O.P.**

Used Water Truck =		\$ 20,000.00
Annual Depreciation on Water Truck	=	\$ 4,000.00
<hr/>		
Hours Per Week Water Truck Operator	=	20
	=	\$35
Weekly Operator Costs	=	\$700
Annual Operator Costs	=	<b>\$36,400</b>
<hr/>		
Cost Water Per Gallon	\$	0.01
Weekly Gallons		25,000
Weekly Water Costs	\$	250.00
<b>Annual Water Costs</b>		<b>\$ 13,000.00</b>
<hr/>		
Water Only Alternative Annual Total		<b>\$49,400.00</b>
<hr/>		
	Or	
Enssolutions Annual Maintenance		<b>\$ 21,600.00</b>
<hr/>		
Annual Cost Savings		<b>\$27,800.00</b>
<hr/>		