

## Enviro Clean Product Application Example

### Key Project Elements

- Enviro Clean Product Application
- Waste Characterization
- Sampling
- Waste Disposal

### Client

Oilfield Service Company

### Duration

2017

### Description

Enviro Clean performed industrial cleaning services for an oilfield service company based in Oklahoma City. The project was completed with the application of one of Enviro Clean's own proprietary blended products.

Upon arrival at the site, the Enviro Clean remediation team assessed the situation and began work immediately. First steps involved analyzing all solid and liquid materials, followed by gathering samples for laboratory testing. Second steps involved the complete removal of solid and liquid wastes from the sump. Once all waste materials had been gathered, Enviro Clean handled the disposal of the waste materials for the customer. Following the removal of the materials, Enviro Clean applied a specialized product, manufactured by our own blending facility, for this specific clean-up. The concentrated remediation product was diluted and power-washed over the entire facility completely removing any residues and returning all surfaces to a debris free condition.

Enviro Clean is proud to offer customers a strong selection of propriety blended products for use in all environmental, remediation projects.

For more information, please contact:

[info@eccgrp.com](mailto:info@eccgrp.com)





## Project Summary



### Vapor Suppression Aledo Terminal Aledo, Texas

#### Key Project Elements

- Tank Assessment
- Tank Cleaning
- Vapor Suppression
- Tank Removal

#### Client

Confidential

#### Duration

2007

#### Description

Enviro Clean provided services at a terminal in Aledo, Texas in 2007. At the beginning of every day, a safety meeting was held at the job site. Enviro Clean then inspected the site and decided that the vessel would need to have all fluids removed prior to clay media removal. Enviro Clean drained all of the JP8 (jet fuel) and prepared it for disposal. After the liquid was removed, the vessel was power washed with soap and water. After the initial power wash, the clay media removal process commenced. During this process, gravel was discovered in the bottom 2 to 3 feet of the vessel.

After a second power washing, the vessel's LEL levels were measured at 750-900%. In order to reduce these levels, a vacuum truck was used to fill the vessel with fresh water and a 5% mixture of EnviroClean® product. After the vacuum truck removed all fluids, the LEL levels measured at 10%. This process was repeated until LEL levels measured at 0%. Following confined space safety protocol, the vessel was entered and the gravel removal process began. Once the vessel was cleaned, it was removed. Because the vessel was cemented to its pad, it could not be lifted without causing damage. Since the LEL levels had been reduced to 0%, a welder was able to successfully use a torch to cut the base of the vessel. A crane was then used to lift and move the vessel. Following confined space safety protocol, any remaining gravel was removed and the vessel was power washed with a 3% mixture of EnviroClean® product. The vessel was then loaded on a truck and removed from the site. For more information, please contact: [info@eccgrp.com](mailto:info@eccgrp.com)

### EnviroClean® Product Example – Emergency Response

#### Oklahoma City, Oklahoma



#### Key Project Elements

- EnviroClean® Product
- Emergency Response
- Spill Remediation
- Site Assessment

#### Client

Undisclosed

#### Duration

Completed 2016

#### Description

The Emergency Response team were called to a business following an accident involving a tipped crane. Upon arrival, the team assessed the situation of the crane and discovered that the crane had been holding approximately 150 gallons of diesel and had begun leaking diesel, transmission fluid and hydraulic fluid onto the pavement. Upon further inspection, they discovered that some of the chemicals had made their way into a nearby storm drain. After notifying the Oklahoma Storm Water Quality Department of the spill, Enviro Clean's Emergency Response team

proceeded to provide all spill remediation needs associated with the accident. EnviroClean®, our #1 best selling product, was the primary product used in the remediation of this spill. EnviroClean® is a non-flammable, non-toxic, water-based, proprietary blend of surfactants that has been specifically engineered as a cleanup and mitigation agent for a wide range of hydrocarbon products. EnviroClean® has been shown to be effective for quickly and effectively suppressing or completely eliminating VOCs, LEL's, benzene and low levels of H2S and mercaptans in open or confined spaces. EnviroClean® is also used to cleanup hydrocarbon spills. EnviroClean® is a concentrated product, which must be diluted with water, that readily biodegrades. EnviroClean® is commercially available in 5-gallon buckets, 55-gallon drums, 275 and 330-gallon totes, and bulk from Oklahoma City, Oklahoma.

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### EnviroClean® Product Example – Spill Response Hennessey, Oklahoma



Initial Site Conditions after Release



Site Conditions after Suctioning  
Residual Release Fluids



Application of EnviroClean® Solution over  
Impacted Area

#### Key Project Elements

- EnviroClean® Product
- Emergency Response
- Spill Remediation
- Sampling

#### Client

Undisclosed

#### Duration

Completed 2018

#### Description

On December 4, 2018, ECS was contacted by our client requesting ECS to respond to a release at their site location. Fluids released had already been suctioned out of the impacted area.

As requested, on December 6, 2018, ECS mobilized to the site to conduct a site assessment. Before the site walk-through, ECS met with a client representative and completed the appropriate safety awareness video.

After the site assessment, the ECS team met to complete the appropriate job safety analysis (JSA) and conduct a safety meeting. Once a remediation plan was determined, ECS commenced remediation treatment of the impacted area.

The team treated the impacted area by spraying an Enviro Clean® solution over the impacted soils.

EnviroClean® is a concentrated solution of surfactants and microbial colonies specifically designed and mixed to degrade various petroleum hydrocarbons.

Approximately 25-gallons of EnviroClean® product was used to treat the area.

**For more information, please visit our website at [www.ECCGRP.com](http://www.ECCGRP.com)**





## Project Summary

### EnviroClean® Product Example - LEL Suppression STACK Play in Oklahoma

#### Key Project Elements

- EnviroClean® Product
- Tank Assessment
- LEL Suppression

#### Client

Oil and Gas Exploration & Production Company

#### Duration

Sept 2018

#### Description

Enviro Clean was contacted to provide our proprietary EnviroClean chemical product for suppression services at a production site near Kingfisher, OK.

The customer had two newer vessels, roughly 10 feet x 60 feet, which had external leaks on the flange. Before the vessels could be entered to repair the leaks, the company first needed to neutralize the LEL's in each vessel. The team began by draining all the contents within each vessel. Due to the newness of these vessels, there were no solids to be removed, only liquids. Once the vessels were empty, the team inserted a power-washer wand through a 4-inch port that was able to spray in all directions and thoroughly agitate the interior parts of the vessel with a 6% solution of EnviroClean®.

EnviroClean® is a non-flammable, non-toxic, water-based proprietary blend of surfactants specifically engineered as a cleanup and mitigation agent. It has been shown to be effective for quickly and effectively suppressing or completely eliminating VOCs, LEL's, benzene and low levels of H<sub>2</sub>S and mercaptans in open or confined spaces.

The customers tank held 500-gallons of fresh water and 30-gallons of EnviroClean® concentrate. The team repeated the suppression process by spraying at several different ports down the length of the vessel. The process took 45-minutes to an hour to get the LEL's below 10%, at which the customer felt it was safe enough to move forward and enter the vessel to repair the leaks.

EnviroClean® is commercially available in 5-gallon buckets, 55-gallon drums, 330-gallon totes, and bulk from Oklahoma City, Oklahoma.

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### EnviroClean® Product Example – Spill Response

#### Caddo County, Oklahoma



Till-and-Treat of Impacted Area



Application of EnviroClean®  
Treatment over Impacted Area

#### Key Project Elements

- EnviroClean® Product
- Spill Remediation
- Sampling

#### Client

Undisclosed

#### Duration

Completed 2018

#### Description

On November 30, 2018, ECS was contacted by our client requesting ECS to collect confirmation soil samples after a release had occurred at their site. The client had provided the initial cleanup and remediation of the impacted area.

On December 3, 2018, ECS mobilized to the site to conduct a walk-through of the impacted area. Following the walk-through, ECS advanced six hand-augured borings. During advancement, soil samples were collected at approximately one-foot intervals from the soil surface to a total depth of approximately two-feet below ground surface (bgs), with samples collected from the surface (approximately zero to six inches bgs), approximately 6-12 inches bgs, and approximately 12-24 inches bgs.

In addition to these borings, a background soil sample, labeled BG, was collected up-gradient and away from the release area.

The soil samples collected were submitted under Chain-of-Custody control and analyzed for TSS (Total Soluble Salts) and TPH (Total Petroleum Hydrocarbon) levels. Sampling equipment was decontaminated between each sample location. Following the completion of sampling activities, each boring was plugged per applicable Oklahoma Water Resource Board (OWRB) rules and regulations.

As per the OCC Guardian Guidance (July 2014), minimum action levels for TPH from oil condensate is 5,000 mg/Kg. Based on a review of the analytical soil results for TPH, results exceeded OCC Cleanup Criteria. However, TSS results were below the OCC minimum action levels for brine contaminated soils measuring greater than 2,640 ppm.

Remediation recommendations, which included: excavation, the replacement of impacted soils, and/or the use of amendments (such as organic materials) to aid in leaching, accelerating or enhancing water movement through the soil profile were made to our client.



Tilled-and-Treated Impacted Area



Tilled-and-Treated Impacted Area

On January 11, 2019, ECS returned to the site to begin tilling-and-treating the impacted areas. A job safety analysis (JSA) and safety meeting was completed before ECS began till-and-treat activities. ECS personnel mechanically tilled the impacted area, approximately 30 feet by 130-feet, to an approximate depth of six-inches bgs.

Once all tilling was complete, the tilled area was treated with EnviroClean® solution. Approximately 20-gallons of EnviroClean® solution was used to treat the impacted area.

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