





## Chemicals Business Division

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**FERRARI OIL LLC**  
**CHEMICALS**  
**ENVIRONMENTAL**  
**SOLUTIONS**

# INTRODUCTION

Ferrari Oil LLC is pleased to bring to the market the **Ferrari Oil LLC** line of Environmental Clean-up Products.

After twenty (20) years in the Industrial and Oil Field Market we feel we know what problems are being faced and have addressed them with the **Ferrari Oil LLC** product line. **Ferrari Oil LLC** will continue “**Developing Products for Today's Problems**”.

Specifically, **Ferrari Oil LLC** addresses the remediation of Hydrocarbon hazardous wastes, using all biodegradable products scientifically tailored to utilize nature's microorganisms.



# INTRODUCTION (continued...)

*Ferrari Oil LLC, manufactures its' own special enzyme loaded nutrient enhancer that has proven time and again to be the best and most cost effective in Hydrocarbon Bioremediation. **Bioremediation** is the natural process of breaking down organic matter by bacterial digestion. As naturally occurring bacteria consume the organic, the end products are ultimately carbon dioxide and water.*

*Ferrari Oil LLC CP-7010 is an ideal natural culture media for bacterial growth and will support bacteria life while they adjust to the organic to be consumed.*

*In addition to reclaiming land contaminated by hydrocarbons, **Ferrari Oil LLC** has developed a unique product which neutralizes brine spills and blocks the effect of the sodium ion on plant life.*



# RECLAMATION OF SOILS STERILIZED WITH BRINE

*Brine spills or excessive levels of sodium salts cause immediate sterilization of soil. All grasses and other plant life die within twenty four hours. The prime reason for the sterilization is the sodium and chloride ions. If it were possible to wash the excess away immediately, the soil could recover by itself; however, brine soaks into the soil and is especially retained in low places.*

*If the excess sodium is left in place, it begins to displace the calcium ions off of the soil clay particles making the soil alkaline and removing calcium as calcium chloride. As the sodium saturated soil is leached, sodium hydroxide is released raising the ph. As this reacts with carbon dioxide in the air of the soil, sodium carbonate is formed. These alkali soils are sticky, impervious to water and unfavorable for agriculture.*

*Alkali soils can be reclaimed by adding a soluble calcium salt such as (calcium sulfate). The process is slow but with good ion exchange the calcium will displace the sodium ion off of the clay particle and the resulting sodium sulfate is removed in drainage water. Good drainage is necessary to remove end products so the reactions can proceed.*

# RECLAMATION OF SOILS STERILIZED WITH BRINE

*If nothing is done to recover the alkali soils, the degradation of the soil will continue. Without calcium in the clay portion of the soil the organic portion steadily degrades and ultimately the land becomes a desert. At this point the recovery costs increase dramatically since the soil must be completely restructured.*

*Treatment of brine spills and alkali soils with an excessive amount of calcium salts has been the only means of recovery of salt land until the development of CP-7008 by **Ferrari Oil LLC**. CP-7008 can restore sterilized land immediately. Where the old treatments required several months to several years, CP-7008 can be applied and the land planted the same day.*

*CP-7008 reacts with di and trivalent metals in the soil to form a very high molecular weight, natural polymer. This polymer performs two functions:*

- 1. The polymer blocks sodium from affecting the plants.*
- 2. The polymer creates an ion exchange medium that causes calcium to remain on clay particles and drive off any sodium that has attached itself to the clay particles.*

*With CP-7008 in the soil, the brine will drain off the land without damaging the soil.*

# PROCEDURE

1. *Test the soil for available metal ions. This test is given in the procedure on page 6.*
2. *If ions are available go to step 4.*
3. *If ions are not available pre-treat the soil by lightly dusting the area with powdered gypsum or by spraying a solution of CP-7013 over the area. Dilute CP-7013 one (1) part to ten (10) parts water and apply at a rate of approximately 100 gallons per acre.*
4. *Treat the area with CP-7008 diluted one (1) to 10 OR one (1) to 20 depending on the quantity of liquid needed to adequately cover the area. Soils which have been heavily contaminated will need a treatment of 50 to 60 gallons per acre. Soils which are growing some grass or low yielding crops can be treated at 20 to 30 gallons per acre. For soils with sodium chloride levels above 50,000 ppm 80 gallons per acre may be needed.*
5. *CP-7008 will not soak into the soil. It must be incorporated by disking or tilling. To insure a good distribution to a depth of eight (8) to ten (10) inches, apply 1/3 of the CP-7008 then till the soil, apply another 1/3, till and then apply the last 1/3 and till the soil.*
6. *This is all the treatment needed and the area can be seeded with grass or crops. For soil that has been sterile for several years it is advisable to have it tested for the micronutrient needed for each specific crop to be planted.*
7. *One application should be good for five (5) to ten (10) years unless crops are planted that deplete the soil organic. The sodium contaminant should be gone in this time so regular good crop practice should take care of any problems.*

# A SOIL TEST PROCEDURE FOR AVAILABLE DI AND TRIVALENT METALS

*This method is a simple test to indicate whether or not there are enough di and trivalent metals available in salted soil to cause the necessary polymerization of Ferrari Oil LLC CP-7008.*

- 1. Add 20 ml of the soil to be tested to a 100 ml graduated cylinder.*
- 2. Fill the cylinder to the 100 ml mark with Tap water. Stopper the cylinder and shake well to disperse the soil into the water. Soil which contains excess sodium ions will almost totally disperse in the water and leave the water cloudy.*
- 3. Add 2 ml Ferrari Oil LLC CP-7008, re-stopper the graduate and shake again.*
- 4. After shaking, allow the graduate to stand and observe the water clarity. If enough di and trivalent metals are present the soil will immediately settle out leaving the water completely clear.*
- 5. If di and trivalent metals are absent or too low, the water will stay cloudy.*

# RECLAMATION OF SOILS STERILIZED WITH BRINE

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# SALT PROJECT 1



# SALT PROJECT 1



# SALT PROJECT 1

Oil pipe line break



6 weeks after treatment and planting



Small test with winter Rye grass



Visible salt on the ground with grass growing



# SALT PROJECT 2

Salt water from well head spill



6 weeks after treatment and planting



# SALT PROJECT 3

Salt water spilled in hay meadow



New well spill on set up



Application



# SALT PROJECT 3

Spray, till, spray and till again, then seed



6 weeks after application



# ELEMENTS WHICH INFLUENCE A SUCCESSFUL BIOREMEDIATION

*There are many factors that will affect the proper process of Bioremediation on a given site. The following factors must be evaluated:*

- 1. Temperature - The optimum temperature for Bioremediation varies from 65°F to 98°F. Temperatures below this slow bacteria activity. Temperatures above 135°F can destroy most bacteria. Temperatures below 50o F can stop it completely.*
- 2. PH Range - Hydrocarbon eating bacteria function best in a pH range from 6.5 to 8.5. CP-7010, in most cases, will help to keep the pH in this range. CP-6000 or pot ash can be used to combat a falling pH and bring the pH back into the proper range. At the beginning of a clean-up, seeding with bacteria may be needed if the pH is out of a working range.*
- 3. Moisture - Content-Proper levels of moisture are between 10% and 30%. The nutrient and oxygen need moisture to travel for sustaining microbial growth. This must be checked no less than weekly, preferably every three (3) days for optimum results.*

# ELEMENTS WHICH INFLUENCE A SUCCESSFUL BIOREMEDIATION

4. **Soil Type & Compaction** - Tight soil such as clays are harder to penetrate with the initial treatment. Treating with CP-7010 and extra tilling will break down clay structures. CP-7014 may need to be added to help in penetrating some clays. Sandy loams are easily and quickly penetrated therefore producing quicker results. Structures that do not easily hold moisture, such as shell, straw, rock or pure gravel must be washed with CV-2901 or have a moisture carrier added.

5. **Oxygen** - It is important to have high levels of oxygen for good bacteria growth. Higher levels of oxygen can be carried in cold water rather than hot. Also weekly or bi-weekly tillage adds oxygen, but good moisture content must accompany the tilling for it to be effective. In cases where heavier doses of oxygen need to be added CP-6000 can be used. It also effectively helps control low pH problems throughout treatment stages. Example :( H<sub>2</sub>S present)

# ELEMENTS WHICH INFLUENCE A SUCCESSFUL BIOREMEDIATION

*6. Contamination levels – Usage -The TPH level or contamination level is directly proportionate to product usage of CP-7010. The basic formula to use is as follows: (For every 20,000 ppm TPH on 30 cubic yards of soil = use one (1) gallon of CP-7010 concentrate) diluted 20 to 1.*

*7. Available Nutrients- most good soils have the necessary phosphates and other basic nutrients needed to sustain high Bacteria colony counts. In cases where tank bottoms or water surface areas are being treated, RemediAde Plus 2 can be used.*

# GUIDELINES

*One (1) gallon CP-7010 to 10 gallons water, to*

*One (1) gallon CP-7010 to 20 gallons water.*

*The moisture content of the soil at the beginning of your treatment is the deciding factor on the dilution rate. Moisture content of soil should allow for good tilling. The pH of diluting water should be between six (6) and eight (8).*

*Examples:*

- 1. 30Yd<sup>3</sup> of soil at 40,000 ppm TPH use two (2) gallons of CP-7010 concentrate.*
- 2. For 60Yd<sup>3</sup> of soil at 40,000 ppm TPH use four (4) gallons of CP-7010 concentrate.*
- 3. For 3,300Yd<sup>3</sup> of soil at 60,000 ppm TPH use 330 gallons of CP-7010 concentrate.*

# GUIDELINES

*This is meant only as a guideline. The type of soil will directly affect this rate of treatment. In sandy loam, lower levels of treatment may produce satisfactory results. In heavy clay it may take heavier treatments along with CP-7014 (Clay Buster) to help penetrate the clay quicker and more effectively.*

*In very heavy oils, where the light ends have evaporated, CS-1540 can be used to help emulsify the oil with water and oxygen to promote bioremediation of the hydrocarbon.*

*In heavy treatments the product is best applied in two (2) to three (3) intervals one (1) week apart.*

*To help CP-7010 to be thoroughly spread throughout the soil, spray half of amount to be applied that day, then till, then apply the second half.*

# SITE APPRAISAL

1. *Type of Contamination*
2. *Level of Contamination and Contributing Factors*
  - a. TPH Level
  - b. pH Range
  - c. Temperature Variables
  - d. Moisture Content
  - e. Sulfur Presence
  - f. H<sub>2</sub>S or iron sulfides
3. *Level of Contamination Required for Acceptance*
  - a. Railroad Commission
  - b. Water Quality Control
  - c. General Land Office
  - d. Customer

# SITE APPRAISAL

## *4. Depth of Contamination*

- a. Core Sampling
- b. Number of Samples - EPA - One (1) Sample per 50 cubic yards

## *5. Type of Soil*

- a. Sand
- b. Clay
- c. Shell
- d. Rock

## *6. Water Availability*

- a. *Non-chlorinated*

# INFORMATION FOR COST CALCULATIONS ESTIMATE OF COST FOR WORK

1. *Total Cubic Yards to be Remediated*
  - a. Application Rate of CP-7010
  - b. Additional Products
2. *Soil Type*
3. *TPH Level*
4. *Oxygen Source*
5. *Equipment Needed*
  - a. Depth
  - b. Soil Condition
  - c. Area to Work in
  - d. Time Frame Given
  - e. Application Method

# INFORMATION FOR COST CALCULATIONS ESTIMATE OF COST FOR WORK

*6. Number of Trips Required (MAX.)*

*7. Total Man Hours Required*

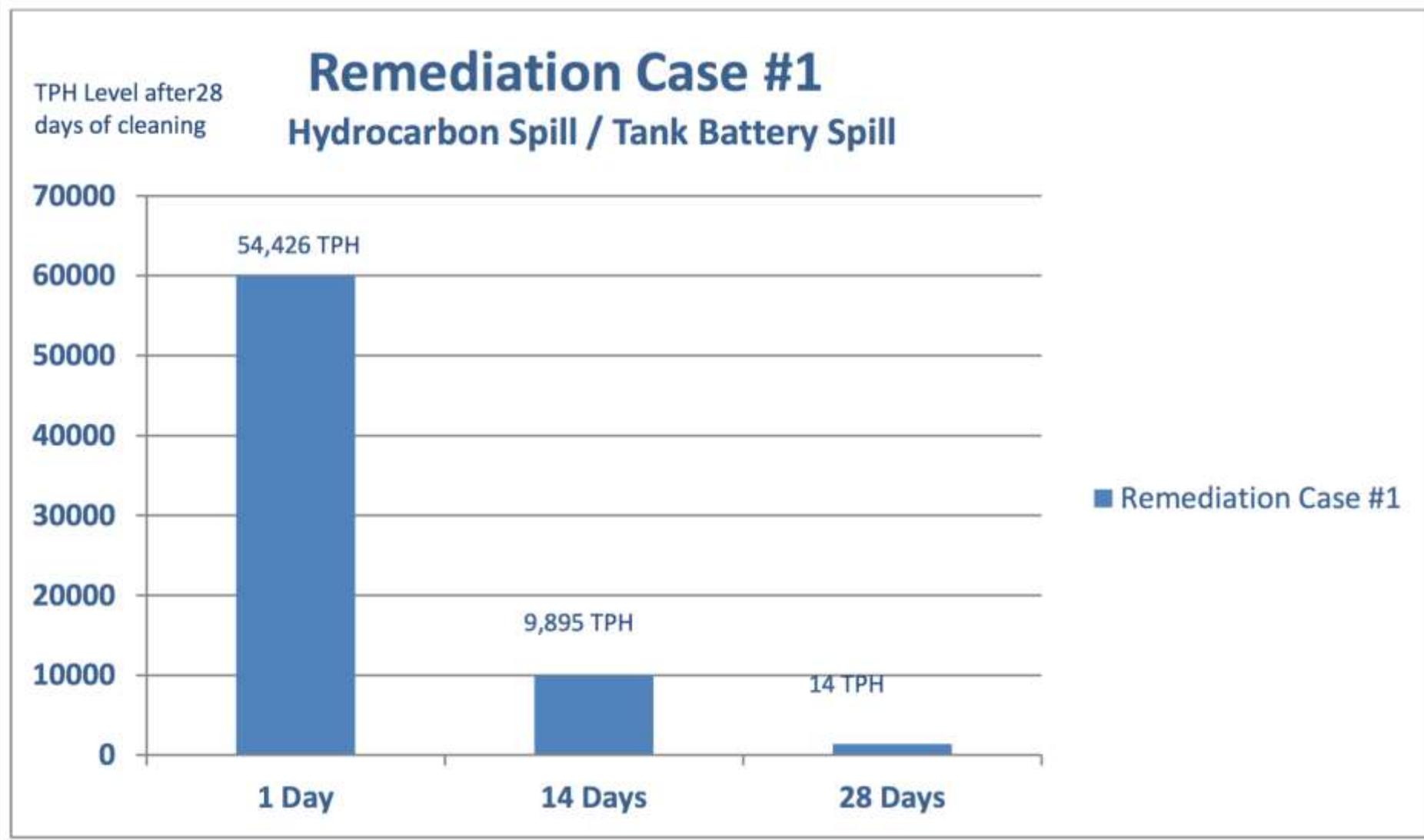
- a. Men per Job per Trip*
- b. Special Services*
- c. Water Availability*

*8. Laboratory Analysis*

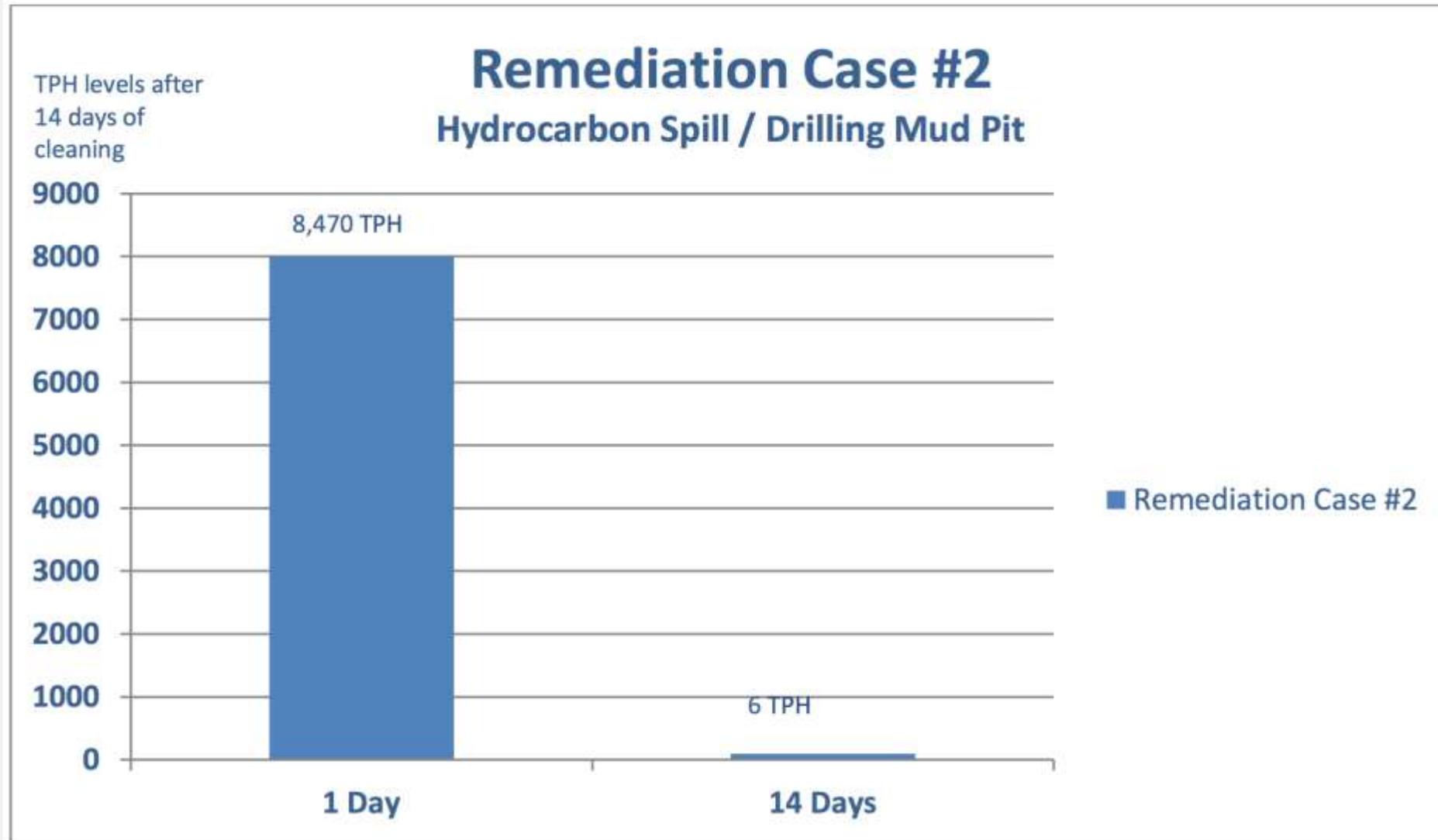
- a. Monitoring*
- b. Final Analysis*



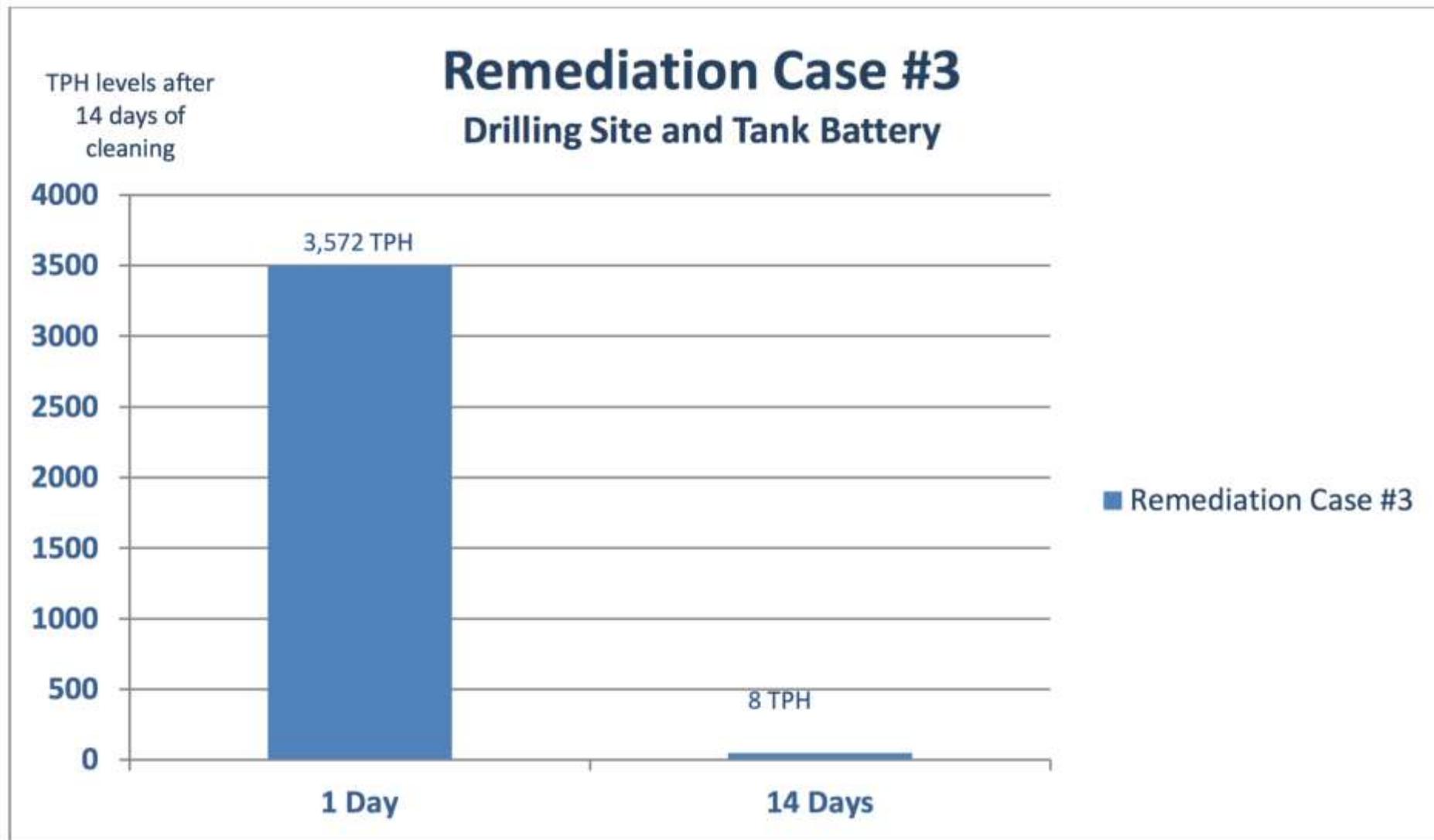
# OIL CLEAN-UP PROJECT DATA



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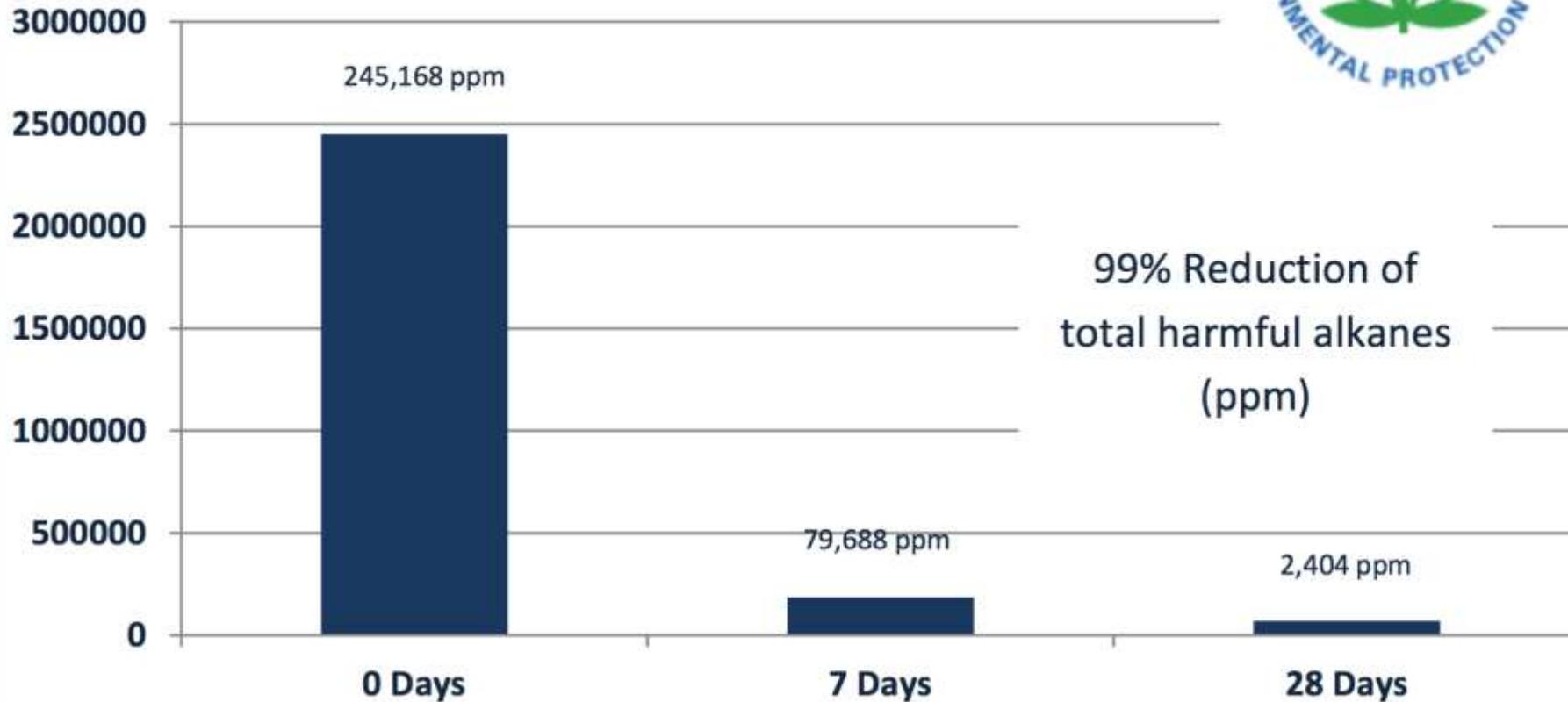


# OIL CLEAN-UP PROJECT DATA

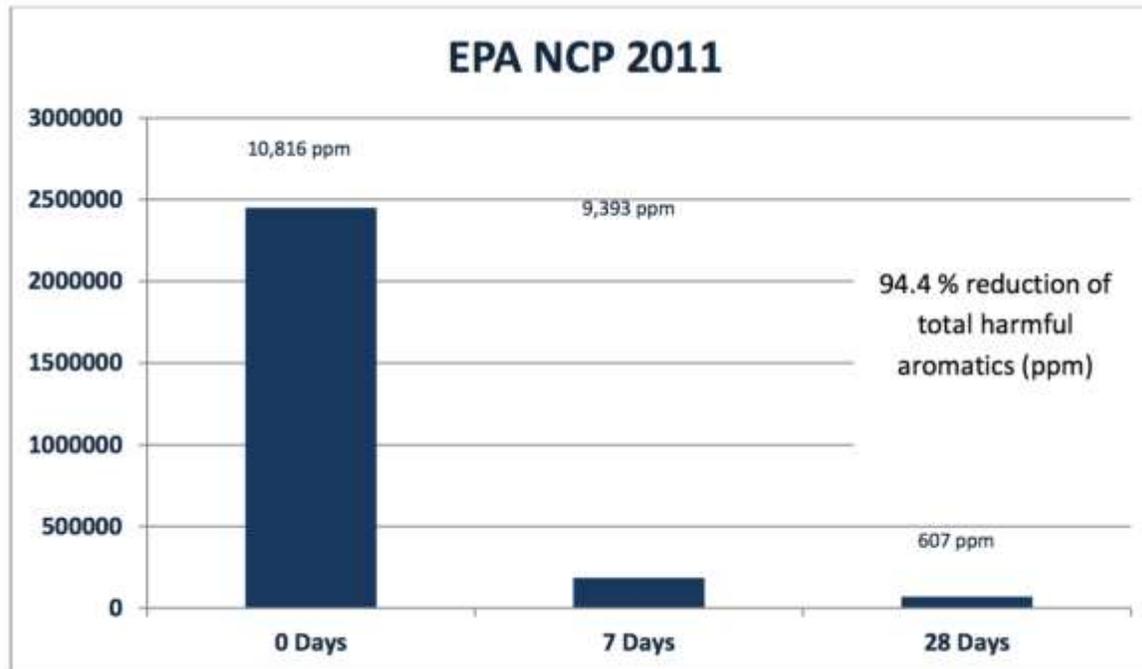


# OIL CLEAN-UP PROJECT DATA

## EPA NCP 2011 Bio Remediation Test



# OIL CLEAN-UP PROJECT DATA



**RemediAde™ is listed on the National Contingency Plan (NCP) against Pollution due to Oil and other Hazardous Substances published by the Environmental Protection Agency (EPA)**



RemediAde™ is on the U.S. Environmental Protection Agency's National Contingency Plan (NCP) Product Schedule. This listing does not mean that EPA approves, recommends, licenses, certifies, or authorizes the use of RemediAde™ on an oil discharge. This listing only means that data has been submitted to EPA as required by subpart J of the National Contingency Plan.



# ADVANTAGES TO REMEDIADE

*Three main advantages to RemediAde are:*

- 1. RemediAde is a highly effective, eco-friendly, all natural and organic solution to rapidly and effectively remediate hydrocarbon spills in both soil and water without any impact to the environment.*
- 2. RemediAde is a nutrient-based product, and does not introduce foreign bacteria to protected/sensitive environments.*
- 3. RemediAde is a true bioenvironmental agent and NOT simply a surface washing agent like “Nature Way’s HS”, nor does it introduce foreign biological additives like “Micro-Blaze”; therefore, there is no need to clean-up bacteria brought in from other parts of the world after treatment, thus effectively eliminating risk of foreign-based illnesses risks.*

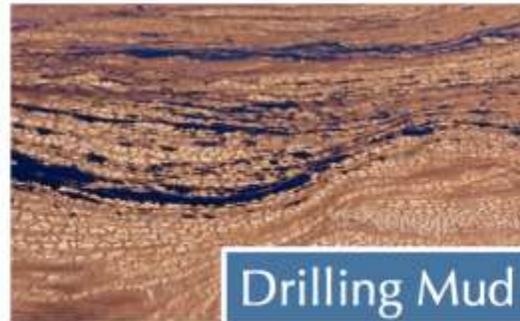
# SCOPE AND SERVICES OF REMEDIADE

## REMEDIADE EFFECTIVELY CLEANS UP

- Drilling Muds contaminated with hydrocarbons
- Pipeline breaks and spills
- Storage tank overflows
- Hydrocarbon contaminated sand and soil
- Oil contamination cleanup in marshlands and on beaches
- Oil spills in open water and water ways
- Soil remediation at and around tank farms
- Wellhead clean ups
- Hydrocarbon dump yard soil remediation
- Refinery cleanups
- Frac ponds and fluids
- Salt contamination and leaks

# SCOPE AND SERVICES OF REMEDIADE

## REMEDICATION SERVICES FOR:



# AFTER-USE RESULT OF REMEDIADE (Product comparison...)

RemediAde	Micro-Blaze
Works with local bacteria	Works with foreign bacteria
Application: 1 Gal. (4L) covers 30 Yds <sup>3</sup> at TPH of 20,000	Application: 1 Gal. (4L) covers 10 Yds <sup>3</sup> No information on TPH
TPH reduction in 7 hours	TPH reduction in 7 to 12 hours
It requires NO more than 3 applications	The number of applications depends on the depth and temperature of the contamination
Treats Gasoline in 5 to 7 days	There is no information on Gasoline treatment
Treats Crude in 2 to 3 weeks	Treats Crude in 2 to 8 weeks
In the market for 20 years	In the market for 20 years
TPH reduction according to the EPA study page (99%)	There is no information on TPH reduction

# COST ADVANTAGE OF REMEDIADE (1:1 Comparison)

Please input your own calculations in the table below.  
The table below is for illustration purposes only

Distributor's cost	RemediAde	Micro-Blaze
Price per gallon	(insert here)	USD\$38 - 42
Application dosage	1 Gal. (4L) covers 30Yd <sup>3</sup>	1 Gal. (4L) covers 10Yd <sup>3</sup>
Price per dosage (1:1)	(insert calculation here)	USD\$3.8 - 4.2

NOTE 1: RemediAde yields at 1 Gal. To 30Yd<sup>3</sup>

NOTE: Micro-Blaze costs typically USD\$38-42, and its yield is 1Gal./10Yd<sup>3</sup>

# REMEDIADE EPA CERTIFICATION



**U.S. ENVIRONMENTAL PROTECTION AGENCY  
NATIONAL CONTINGENCY PLAN  
PRODUCT SCHEDULE**

**NOVEMBER 2017  
(11/01/2017)**



Prepared by:

U.S. Environmental Protection Agency  
NCP Product Schedule Manager  
Office of Emergency Management (OEM)  
Regulations Implementation Division (RID)  
William Jefferson Clinton Building  
1200 Pennsylvania Avenue, NW (Mail Code 5104A, Room 6450CC)  
Washington, DC 20460

For Information Contact:

NCP Subpart J Information Line, at (202) 260-2342

*Disclaimer: [Product Name] is on the U.S. Environmental Protection Agency's NCP Product Schedule. This listing does NOT mean that EPA approves, recommends, licenses, certifies, or authorizes the use of [Product Name] on an oil discharge. The listing means only that data have been submitted to EPA as required by Subpart J of the National Oil and Hazardous Substances Pollution Contingency Plan, Section 300.915. (Source: 40 CFR §300.920 (e))*

BULLETIN NUMBER	PRODUCT TYPE LISTED	PRODUCT NAME	SUBMITTER	DATE LISTED, RELISTED, REMOVED
<b>BIOREMEDIATION AGENTS (continued)</b>				
B-64	MC	DRYLET™ MB BIO	DryLet, LLC 8300 FM 1960 West Suite #450 Houston, TX 77070 PHONE: (346) 980-9570 E-MAIL: <a href="mailto:sales@drylet.com">sales@drylet.com</a> (Mr. Scott Conley)	02/22/11
B-65	MC	DUALZORB® (aka, TRAILZORB, WHITZORB)	LBI Renewable P.O. Box 637 22 Plains Drive Buffalo, WY 82834 CUSTOMER SERVICE: PHONE: (307) 684-9340 FAX: (307) 684-5815 E-MAIL: <a href="mailto:aaron@lbi-renewable.com">aaron@lbi-renewable.com</a> (Mr. Aaron Larsen)	05/18/11
B-66	NA	REMEDIADE™ (aka, SP 7010)	GrowMate International, LLC 17150 Butte Creek Drive, Suite 100 Houston, TX 77090 PHONE: (281) 866-9042 FAX: (281) 866-9714 E-MAIL: <a href="mailto:victor@growmateintl.com">victor@growmateintl.com</a> WEBSITE: <a href="http://www.growmateintl.com">www.growmateintl.com</a> (Mr. Victor J. Cardenas)	06/08/11
B-67	MC/EA/NA	ERGOFIT MICROMIX AQUA	Evadine Technologies, LLC 217 Deborah Drive New Braunfels, TX 78130 PHONE: (310) 929-7925 E-MAIL: <a href="mailto:info@evadinetech.com">info@evadinetech.com</a> (Mr. Warren Russell)	07/27/11
B-68	NA	SHAMANTRA GREEN (aka, SHAMANTRA BIO)	Molecular Mediation LLC C/- Molecular Mediation Pty Ltd Level 3, Suite 405 152 Bunnerong Road Eastgardens 2036 Australia PHONE: +612-9659-4553 FAX: +612-9659-5594 E-MAIL: <a href="mailto:info@molecularmediation.com">info@molecularmediation.com</a> E-MAIL: <a href="mailto:mark@molecularmediation.com">mark@molecularmediation.com</a> (Mr. Mark Pilgrim, Manager)	08/17/11



# REMEDIADE CASE STUDIES

## Fort Riley AGL Terminus

August 2012



Point of Contact: Phil Dula, PG, CHMM  
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Email: [pdula@cape-inc.com](mailto:pdula@cape-inc.com)

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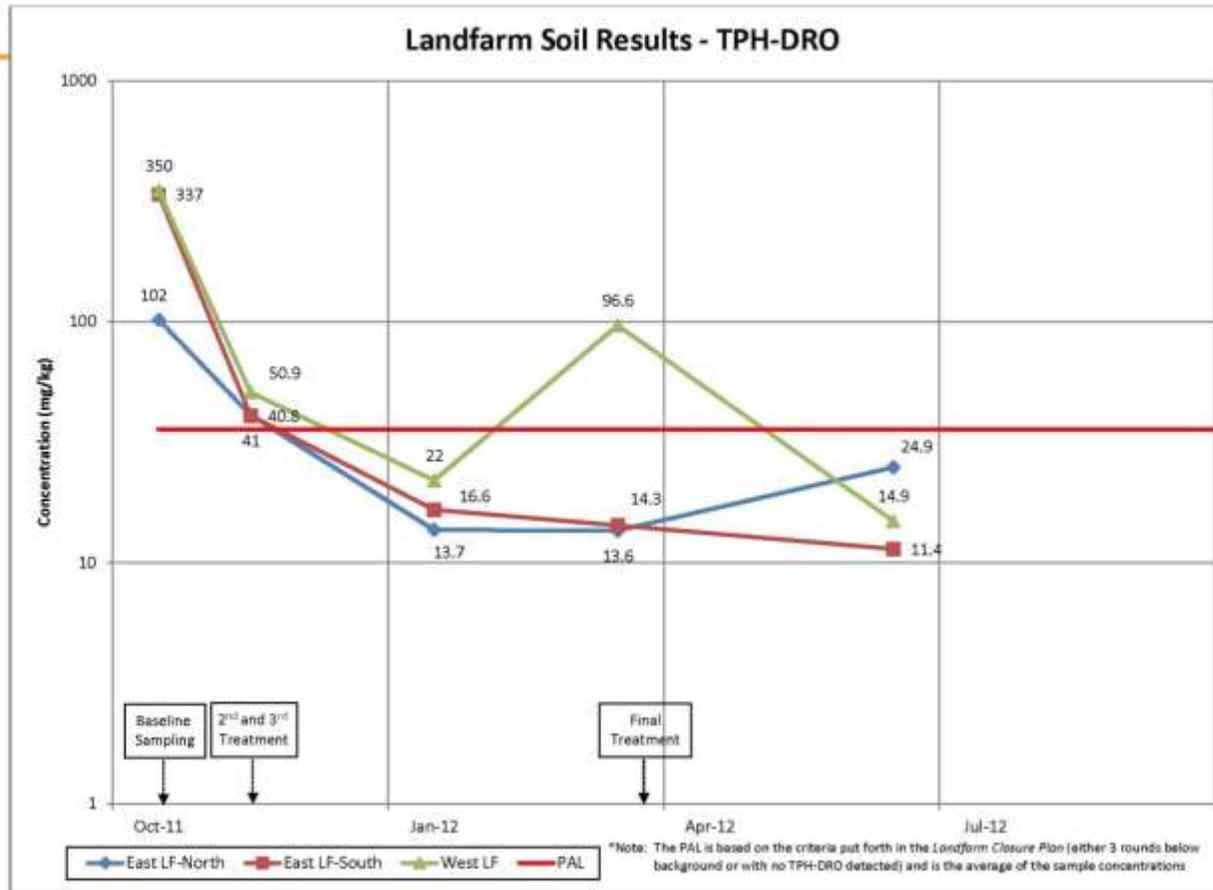
**CAPE**™

# REMEDIADE CASE STUDIES

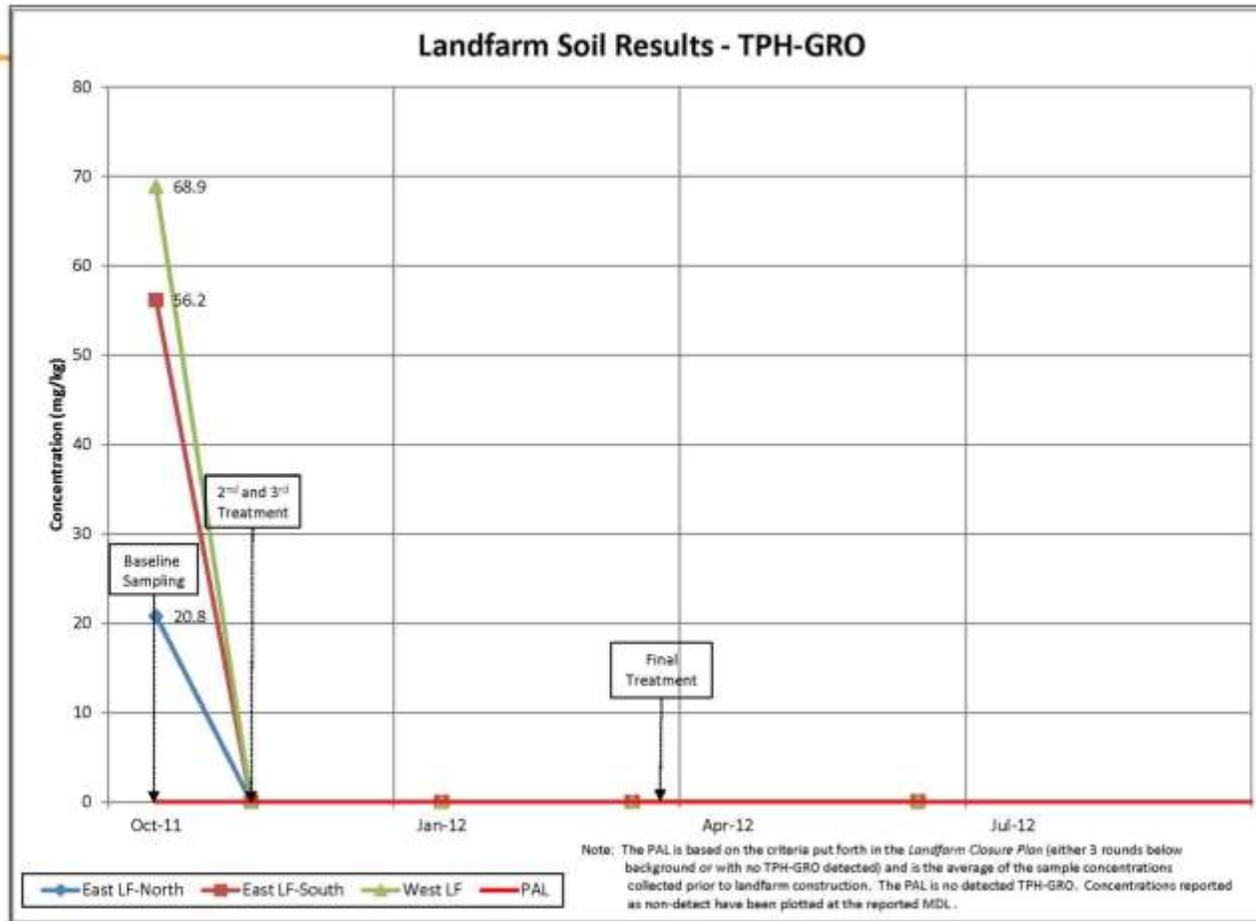
## Contaminant Behavior - Soil

- The contaminated soil was treated using RemediAde™ and has shown a marked decrease in concentration of site COCs.
- Per the approved landfarm application and closure plan the criteria for closure of the landfarm is three consecutive sampling events where concentrations are either non-detect for contaminants or below background levels determined by sampling the area prior to the landfarm construction.
- The only contaminants that have been detected in the landfarmed soils are TPH-DRO and TPH-GRO. No VOCs have been detected in the treated soils since placement in the landfarm.

# REMEDIADE CASE STUDIES



# REMEDIADE CASE STUDIES



# PRODUCT LINE

**\*CP-8010 Soil Ignite** - This is a blend of plant extracts that ignites the growth of the bacteria in the soil. It is very effective after a hard winter to wake up the soil and helps in cutting back on fertilizer needs. In poor soil conditions, fertilizers are being washed away by rain before the bacteria can break them down so the plants can absorb the nutrients. Soil ignite will bring extreme high plate counts from the lows of 500 to up to 6 billion in 3 days.\*

**CP-8020 Root Revival** - This is a product that stop transplant shock and gives 2 inch root growth in 3 days. It can be sprayed on the soil before planting or poured into the planting hole before planting.

**CP-8030 Foliar Spray** - This is a water soluble form sprayed onto the leaves and stems of plants. It will leave a coating that reduces plant transpiration and increases the sugar count of the plants. It will help lower freeze points for plants and sweeten fruits.

**CP-8040 Seed Ignite** – This is a plant extract designed to stabilize soil while enhancing the germination of seeds in hydro seeding operations. Large tracts of land and slopes can be hydro seeded by blending Seed Ignite with the seeds, nutrients, and water for a direct 1 shot application. Our product brings a high water holding capacity to enable quick germination and root growth.



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