

From: [Yu, Olivia, EMNRD](#)
To: ["Zachary Boyd"; Mann, Ryan](#)
Cc: [Christie Hanna](#); [Hernandez, Christina, EMNRD](#)
Subject: RE: 1RP5200 - Ameredev // Azalea State Com 111H Spill Report
Date: Wednesday, November 14, 2018 8:31:00 AM
Attachments: image001.png

Good morning Mr. Boyd:

Thank you for the quick response to 1RP-5200. NMOCD will grant approval for the bioremediation of 1RP-5200 with the proposed products for a solely hydrocarbon release as stated in a voicemail. Please be advised that if chloride concentrations from release characterization data demonstrate otherwise, this approval will not be valid and a revised remediation plan must be submitted.

Please submit preapplication (i.e., delineation) as soon as available for reassessment if necessary. Please remember that post-application (remediation) data and dated, georeferenced photos will be required for closure.

NMSLO approval required. NMSLO may have additional concerns and stipulations. If NMSLO does not grant approval, please submit revised remediation plan ASAP. Complete release characterization requirements are still applicable.

Thanks,
Olivia

From: Zachary Boyd <zboyd@ameredev.com>
Sent: Tuesday, November 13, 2018 9:45 AM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; Mann, Ryan <rmann@slo.state.nm.us>
Cc: Christie Hanna <channa@ameredev.com>; Hernandez, Christina, EMNRD <Christina.Hernandez@state.nm.us>; Zachary Boyd <zboyd@ameredev.com>
Subject: [EXT] RE: 1RP5200 - Ameredev // Azalea State Com 111H Spill Report

Olivia,

I have had Ryan with REX answer the questions you had Friday. I will be working as quickly as possible to get closure on this incident. I have soil sample delineation being conducted Thursday morning 0700 hrs MT on site with Topographic to survey areas and depths at points samples are taken.

Please call me if you have any concerns of questions. I will focus on handling this matter exactly as the State would like to see it handled.

Thanks,



American Resource Development LLC

Zachary Boyd | Operations Superintendent

Direct: (737) 300-4725

zboyd@ameredev.com

5707 Southwest Parkway

Building 1, Suite 275

Austin, Texas 78735

From: Yu, Olivia, EMNRD [<mailto:Olivia.Yu@state.nm.us>]
Sent: Friday, November 09, 2018 3:53 PM
To: Zachary Boyd <zboyd@ameredev.com>; Mann, Ryan <rmann@slo.state.nm.us>
Cc: Christie Hanna <channa@ameredev.com>; Hernandez, Christina, EMNRD <Christina.Hernandez@state.nm.us>
Subject: [EXTERNAL] RE: 1RP5200 - Ameredev // Azalea State Com 111H Spill Report

Mr. Boyd:

Thank you for your patience. Please clarify the type of release. The C-141 form indicated a crude oil release; however, photos in the report do not seem to show an oil spill. If not an entirely crude oil release, a proposal for bioremediation of oil may not be effective for chloride remediation. Also, please be advised that constituents (Benzene, BTEX, TPH extended, and chlorides) must be sampled for release characterization and for closure data.

Please address these concerns regarding the report submitted for 1RP-5200:

- There appears to be data from only 1 sample location with 2 samples taken at different depths. Release characterization is not complete. Release characterization needs to be complete to know the plume of impact for a remediation plan to be effective.
- The proposed bioremediation chemical includes the application of additional hydrocarbons along with the biosurfactants. Some surfactants can inhibit native microbial activity. Please explain the role and mode of action of these biosurfactants on the hydrocarbon in the soil.
- Will MicroTex II be applied concurrently with Terrahydrochem? If so, what is the interaction? Is MicroTex a microbial solution with nutrients?
- Please provide an SOP for method of application, rate, quantity of chemical applied, etc.

NMSLO may have additional questions or concerns.

Thanks,
Olivia

From: Zachary Boyd <zboyd@ameredev.com>
Sent: Monday, October 1, 2018 12:39 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; Mann, Ryan <rmann@slo.state.nm.us>
Cc: Christie Hanna <channa@ameredev.com>; Zachary Boyd <zboyd@ameredev.com>
Subject: [EXT] 1RP5200 - Ameredeve // Azalea State Com 111H Spill Report

All,

Included Dates and Geo Reference for Photos and scaled site map. Included Enviromental evaluation with Data Table, Field Data, Laboratory Results for Surface and 1ft Samples, Remediation Plan.

Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release **N/A**

Boring or excavation logs **N/A**

Laboratory data including chain of custody **2nd Soil Analysis Laboratory Data Pending**

I will keep everyone updated on secondary soil tests and remediation.

Thanks,



American Resource Development LLC

Zachary Boyd | Operations Superintendent

Direct: (737) 300-4725

zboyd@ameredev.com

5707 Southwest Parkway

Building 1, Suite 275

Austin, Texas 78735

From: Yu, Olivia, EMNRD [<mailto:Olivia.Yu@state.nm.us>]
Sent: Monday, September 24, 2018 4:31 PM
To: Zachary Boyd <zboyd@ameredev.com>; Mann, Ryan <rmann@slo.state.nm.us>
Cc: Christie Hanna <channa@ameredev.com>

Subject: [EXTERNAL] RE: Ameredev // Azalea State Com 111H

Mr. Boyd:

Notes:

- Thank you for the photos. Please date and geo-reference the photo documentation, in order to provide verification that the release has been contained.
- Include NMSLO in all communications and report submittals as this release occurred on State surface and mineral ownerships.

Please be advised that

1. The initial portion of the C-141 form does not include the calculations to determine the release volume. Visual estimation is not sufficient nor adequate. Please submit measurements in volume estimation; including dimensions, soil parameters (porosity, texture, bulk density, etc).
2. Per 19.15.29.13 NMAC, regulations of corresponding agencies supersede NMOCD's.

The 1RP for this incident is

5200	9/24/2018	A	Ameredev	Azalea Central tank battery	30-025-44104	26S-36E-28D	9/1/2018
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Please remember to include this 1RP identifier to all communications. Revised NMAC 19.15.29 was effective on August 14, 2018. Delineate and remediate per regulation. Mind the timelines for submittal of requisite information.

NMOCD will review the submitted information for an alternative remediation plan. Please keep in mind that complete site characterization and horizontal & vertical delineation of the release area must be completed in order for any approval towards closure, regardless of the remedial activity proposed.

Thanks,

Olivia Yu
Environmental Specialist
NMOCD, District I
Olivia.yu@state.nm.us
575-393-6161 x113

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

From: Zachary Boyd <zboyd@ameredev.com>
Sent: Thursday, September 13, 2018 2:57 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Cc: Zachary Boyd <zboyd@ameredev.com>; Christie Hanna <channa@ameredev.com>
Subject: Ameredev // Azalea State Com 111H

Olivia,

Please see the attached C141 Part 1 of 4 as discussed, we will begin testing soil and I will soon have the "Site Assessment/Characterization", "Remediation Plan", and Closure.

Thanks,



American Resource Development LLC

Zachary Boyd | Operations Superintendent

Direct: (737) 300-4725

zboyd@ameredev.com

5707 Southwest Parkway

Building 1, Suite 275

Austin, Texas 78735

From Olivia:

Please address these concerns regarding the report submitted for 1RP-5200:

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- Will MicroTex II be applied concurrently with Terrahydrochem? If so, what is the interaction? Is MicroTex a microbial solution with nutrients?
- Please provide an SOP for method of application, rate, quantity of chemical applied, etc.

REX Responses:

There appears to be data from only 1 sample location with 2 samples taken at different depths. Release characterization is not complete. Release characterization needs to be complete to know the plume of impact for a remediation plan to be effective.

Release will be characterized this Thursday, November 15, 2018. Excavation logs and field test data will be submitted along with analytical report for confirmation.

The proposed bioremediation chemical includes the application of additional hydrocarbons along with the biosurfactants. Some surfactants can inhibit native microbial activity. Please explain the role and mode of action of these biosurfactants on the hydrocarbon in the soil.

While it is true that surfactants possess properties that may allow them to inhibit native microbial activity, REX is well aware of this potential issue. We have conducted much research into this area and have developed methodology that includes rates at which the surfactants are used as to not inhibit any microbial activity. Through this aforementioned research we have made known the concentration at which we begin to see a decline in microbial activity. Knowing this allows us to maintain a surfactant concentration 30% below inhibitory levels. Through basic knowledge of the chemical properties of surfactants, one could conclude that the biosurfactants facilitate the mixture of hydrophobic compounds (hydrocarbon contaminants) with water. These surfactants are applied with water in an effort to remove the hydrocarbons from the soil and solubilize them into the water.

Will MicroTex II be applied concurrently with Terrahydrochem? If so, what is the interaction? Is MicroTex a microbial solution with nutrients?

MicroTex II is applied concurrently with Terrahydrochem products. As stated previously, we are aware of the potential for a negative relationship between the two and maintain a 30% buffer below the inhibitory surfactant concentration. MicroTex II is a microbial solution that is manufactured and produced by REX. The only nutrients within the solution are specific levels of organic matter that are altered depending upon the intended application.

Please provide an SOP for method of application, rate, quantity of chemical applied, etc.

REX's uses a proprietary blend of biosurfactants and microbial products, diluted into a volume of water that are then applied to hydrocarbon contaminated soil. Biosurfactants in concentrated form (please note that the provided SDS correspond to the concentrated form of all products) are diluted down to a concentration below 25%, depending upon the nature of application. Microbial products are diluted into water at concentrations below 25%, depending upon the nature of application. Once blended, this mixture of biosurfactants and microbial products is applied using sprayers to thoroughly saturate the contaminated soil with treatment product. Depending upon the concentration of contaminants, the contaminated soil will be allowed an incubation period of 7 to 21 days. After which, the contaminated soil will be reanalyzed to verify the degradation of contaminants and/or quantify any remaining amount so that it may be retreated.