

From: Fred Holmes
To: [Yu, Olivia, EMNRD](#)
Cc: ["Mann, Ryan"; Billings, Bradford, EMNRD; "Ashley Moore"; "Mark Andersen"](#)
Subject: RE: Endeavor State NC: 1RP-4710 Assessment & Update
Date: Tuesday, April 24, 2018 5:56:06 PM

Thank you for all of your assistance Olivia. We will proceed with initiating the corrective action plan. I anticipate we will begin the first of next week. I will keep you advised.

Fred Holmes
Etech Environmental & Safety Solutions, Inc.
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From: Yu, Olivia, EMNRD [mailto:Olivia.Yu@state.nm.us]
Sent: Tuesday, April 24, 2018 12:42 PM
To: Fred Holmes
Cc: 'Mann, Ryan'; Billings, Bradford, EMNRD; Ashley Moore; Mark Andersen
Subject: RE: Endeavor State NC: 1RP-4710 Assessment & Update

Dear Mr. Holmes:

Thank you for the summary regarding the release location for 1RP-4710. NMOCD will approve of the proposed remedial activities with the understand that closure of 1RP-4710 will be deferred until complete remediation at time of abandonment, retrofit, or inactivity.

Please be advised that sidewall confirmation samples are required, in addition to any bottom confirmation samples in areas that do not necessitate a liner (e.g., eastern pasture area). Please include a scaled map with the dimensions of lined area(s) in the subsequent remediation report for documentation. Tabulate GPS coordinates for release point, confirmation sample locations, and dimensions of lined areas. As in other similar situations, NMOCD requests that any lined areas < 4 ft bgs. be identified with highly visible pipeline-like markers.

Like approval from NMSLO required.

Thanks,
Olivia

From: Fred Holmes <fred@etechenv.com>

Sent: Wednesday, April 11, 2018 10:21 AM

To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>

Cc: 'Mann, Ryan' <rmann@slo.state.nm.us>; Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>; Ashley Moore <APMoore@eeronline.com>; Mark Andersen <MAnderesen@eeronline.com>

Subject: Endeavor State NC: 1RP-4710 Assessment & Update

Good Morning Olivia,

I have performed a physical assessment of the facility on March 2nd. A summary of my findings, along with the results of my meeting with Endeavor on the assessment and project are as follows:

1. The pad is overall level, thicker on the south side (~18") then is lesser on the north side (~6"). There is a slight gradient of SSE.
2. Probing areas of the pad found rock within 1' of the pad on the south side and 3-6" on the north side.
3. There are two pipelines bounding the east side of the pad. One is a gas line with a bull plug, the other is a water line (type unknown).
4. In areas off of the pad to the east, top soil is approximately 3-6 inches then rock is encountered. Surface soils are a mixture of silts and windblown sands with rock interspersed. This is consistent for the entire area.
5. The Injection well lies within the impacted area. The injection line (~32 linear feet) runs from the injection pump located inside the containment to east to the injection well. The line makes a 90 degree turn to make the connection.
6. To the east within the spill area are lines leading from the separator to the east tank battery. The lines are above ground and on supports (stanchions) one of which is in the spill area.
7. There is a transfer pump and electrical panel located directly north of the east tank battery. These are currently outside of the impacted area noted on the original delineation plan.

Meeting with Endeavor

1. Earlier this week I had a meeting with Endeavors HSE Department on the findings of my assessment and discussion on the corrective action(s) for the site which resulted in the following:
2. Endeavor does concur with excavation of the impacted soils to 2 feet and installation of the liner per specifications.

3. Endeavor does understand that this is not a permanent solution to the release and will be considered a deferral until the site is closed.
4. I do have a seed mix from Ryan that is acceptable for the SLO that will be applied to pasture areas that are reclaimed.
5. Berms will be placed on the south and east side of the pad upon completion. These are shown in the attachment.
6. Endeavour has a strict Safety policy of not mechanically excavating directly over, under, or directly adjacent to production, pressurized lines, or buried pipelines. Manual excavation on the lines or hydro-vacuuming was discussed. However the rock in the immediately underlying soils prohibits this from happening. Following Endeavors policy, the closest we can get to any line is 2 feet (based upon the specifications of our excavation for this project). I have one calls in place on the site and I am waiting on the results to contact the pipeline owners to determine if this is acceptable to them as well, or if they have more stringent protocols. Also, Endeavour uses a 10 foot radius of exclusion around pressurized well heads. Excavating closer to them causes safety issues.
7. Endeavor concurred this Etech's assessment that the impact was not fully assessed horizontally. Before starting full excavation of the site, we will perform additional excavation of the area at specific points to determine more accurately how far the release extends horizontally. Within the attachment to this email I have prepared a sample points map. There are a total of 30 points with an average spacing of 45' or less. These will be first used to excavate to 2' bgl and extend outward from the spill perimeter to find the true horizontal aspects of the release. When completed this will allow us to accurately determine the liner required for installation and expedite the corrective action process. Note: Sample Points 7, 13, 21, & 22 will likely be adjusted some due to the proximity to lines and the wellhead. But this should not affect the spacing requirements of 50 feet or less. Also, these sample points will be used throughout the project for consistency in clearance sampling.
8. Lastly, in my search for materials I have found it difficult to find any suitable road base material for backfill. All of the pits in the area are on State lands and are committed to road projects and cannot sell to others. The materials I did find do not have sufficient clay content. However, I have found a clay material that is very suitable for this project and would like to use it for 12" above the sand layer on the liner then finish with 6" of a coarser grade caliche.

I have provided in the attachment annotated areal images and photographs of my findings to assist. Also, I have copied in Endeavor personnel including the director of the health, safety, and environmental department.

Thank you for all of your assistance on this. While I know this project has had some delays, the overall safety of all personnel is of key importance to Endeavor, Etech and NMOCD. Once we have

concurrency Endeavor plans to start the project within 10 working days. In the interim, should you have any questions or need additional information.

Sincerely

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From: Yu, Olivia, EMNRD [<mailto:Olivia.Yu@state.nm.us>]
Sent: Wednesday, April 04, 2018 3:58 PM
To: Fred Holmes
Cc: 'Mann, Ryan'; Billings, Bradford, EMNRD
Subject: RE: Endeavor State NC: 1RP-4710 remediation proposal

Mr. Holmes:

Thanks for the update. Please be advised that a deferral means that 1RP-4710 will remain open.

Olivia

From: Fred Holmes <fred@etechenvironment.com>
Sent: Wednesday, April 4, 2018 1:24 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Cc: 'Mann, Ryan' <rmann@slo.state.nm.us>; Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Subject: RE: Endeavor State NC: 1RP-4710 remediation proposal

Olivia: I thought I would give you a quick update on this site.

First, to recap: When I prepared the proposal I had not been to the site. I had been brought into this by Endeavour after delineation had been completed and submitted by others.

I did conduct a site visit on Monday, April 2nd. I have prepared some additional findings from my site visit which I must first present to Endeavor then send forward to you. It does not change a lot of the aspects of the proposed corrective actions or your stipulations. Endeavor has conveyed from an

earlier meeting last week that they will opt for the interim approach of excavation and capping to 2 feet bgl per specifications.

I do have one question for Ryan: Can you send me the seed mix specifications that you would like to use in the off pad areas? This would be very helpful. Or, I can defer to the BLM Rock Surface Mix (modified to exclude Boer Lovegrass) which would be the following:

Species	% of Mix	PLS/Acre
Side Oats Grama	30%	3.5
Blue Grama	30%	2.5
Arizona Fescue	10%	1.0
Prairie June Grass	20%	1.0
Annual Rye	10%	7.0
Total PLS		15

I believe based upon surface conditions I observed at the site this would be a good blend for this particular site.

Thank you again for all of your assistance. I look forward to working with you on this project.

Sincerely

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From: Yu, Olivia, EMNRD [<mailto:Olivia.Yu@state.nm.us>]
Sent: Wednesday, March 28, 2018 9:00 AM
To: Fred Holmes
Cc: Mann, Ryan; Billings, Bradford, EMNRD
Subject: Endeavor State NC: 1RP-4710 remediation proposal

Good morning Mr. Holmes:

Notes

- Permissible chloride level for delineation and remediation is 600 mg/kg, not 650 mg/kg.

NMOCD approves of the proposed convex-shaped design, key-seated liner. The liner used must be at least 20 mil thickness.

- Laboratory analyses for chlorides of confirmation sidewall samples must be no greater than 50 ft. apart.

NMOCD and NMSLO have reviewed the proposed remediation plan for 1RP-4710 and present the following options. Please inform NMOCD and NMSLO of decision.

1. For full closure, the areas identified with chloride-impacted soil exceeding permissible levels of 600 mg/kg at 4 ft. bgs must be excavated to a maximum of 4 ft. with the proposed liner design. Aerial imagery of the release area does not demonstrate infrastructure that would prevent a 4 ft. excavation due to feasibility or practicability concerns. Methods exist to excavate safely around poly flowlines and steel pipelines.
2. For deferral, the proposed 2 ft. excavation with minimal 20 mil liner is approved. The remaining in situ chloride-impacted soil will be remediation upon abandonment, retrofit, or inactivity of the location.

All excavated areas, without a liner, must have discrete confirmatory bottom samples as well: i.e., the areas represented by SP12 and SP13 may not necessitate a 4 ft. excavation with 20 mil liner.

Please be advised that NMSLO may have additional stipulations, such as revegetation and noxious weed control, for any proposed surface modification or usage.

Thanks,

Olivia Yu
Environmental Specialist
NMOCD, District I
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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.