**From:** Yu, Olivia, EMNRD
**To:** "zach.robbins@rxsoil.solutions"
**Cc:** "pearceranches@yahoo.com"; "Jace Caraway"; "Lynn III,John R"; "Nick Holbrook"
**Subject:** RE: 1RP-4723 Work Plan - Pogo East Caprock SWD 5
**Date:** Monday, June 11, 2018 3:12:00 PM
**Attachments:** approved_1RP-4723 Work Plan - Pogo Paladin East Caprock SWD 5 05302018.pdf

---

Mr. Robbins:

NMOCD approves of the proposed remediation plan for 1RP-4723. Please be advised that all soil samples submitted within 48 hours for BTEX and TPH analyses should have chlorides analyzed in the same time period for data consistency. Samples for chlorides analyses only should also be submitted as soon as collected for the laboratory to store samples appropriately.

Please inform NMOCD at least 2 work days in advance to provide an opportunity to witness remedial activities.

Thanks,

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



---

**From:** Yu, Olivia, EMNRD
**Sent:** Wednesday, June 6, 2018 8:46 AM
**To:** 'zach.robbins@rxsoil.solutions' <zach.robbins@rxsoil.solutions>
**Cc:** pearceranches@yahoo.com; 'Jace Caraway' <jace.caraway@rxsoil.solutions>; 'Lynn III,John R' <JLYNNIII@travelers.com>; Nick Holbrook <nick@pogoresources.com>
**Subject:** RE: 1RP-4723 Work Plan - Pogo East Caprock SWD 5

Good morning Mr. Robbins:

Thank you for the follow up. There are 6 workplans in the queue before I can address this one. Earliest expected review time is tomorrow afternoon.

Thanks,
Olivia

**From:** zach.robbins@rxsoil.solutions <zach.robbins@rxsoil.solutions>
**Sent:** Wednesday, May 30, 2018 1:22 PM
**To:** Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
**Cc:** pearceranches@yahoo.com; 'Jace Caraway' <jace.caraway@rxsoil.solutions>; 'Lynn III,John R' <JLYNNIII@travelers.com>; Nick Holbrook <nick@pogoresources.com>
**Subject:** 1RP-4723 Work Plan - Pogo East Caprock SWD 5

Ms. Yu,

Attached is our proposed Work Plan for 1RP-4723. Please reach out with any comments. Thank you.

Best,
Zach

**Zach Robbins I Technical and Engineering Analyst I RXSoil, Inc.**
**201 Main Street, Suite 1360, Fort Worth, Texas 76102**
**Cell: 210-400-7645**
**zach.robbins@rxsoil.solutions**

**From:** Yu, Olivia, EMNRD
**To:** Lynn III,John R
**Cc:** Billings, Bradford, EMNRD
**Subject:** RE: Laboratory samples for 1RP-4723; Paladin proposed remediation with Rx soil
**Date:** Friday, May 11, 2018 3:58:00 PM
**Attachments:** image001.png

---

John:

I think we are finally on the same page. NMOCD concurs with the proposed delay of addressing statistical determination until data is received.

Please submit the schematic and soil sampling protocol as available for 1RP-4723. But, please note that I will be out of town attending a work-related course next week, May 14-18, so will have limited access to email and phone.

Thanks and have a relaxing weekend,
Olivia

---

**From:** Lynn III,John R <JLYNNIII@travelers.com>
**Sent:** Friday, May 11, 2018 2:07 PM
**To:** Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
**Cc:** Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
**Subject:** RE: Laboratory samples for 1RP-4723; Paladin proposed remediation with Rx soil

Good afternoon Olivia –

I would like to restate what I am understanding from your email and our discussion earlier this week by using an example.

The initial treatment cell design is scheduled to hold 7000 cubic yards.
So if a sample is to be taken every 50 cubic yards a minimum of 140 discrete soil samples are to be collected for field screening and 70 duplicate samples are to be collected for laboratory analysis (every 100 cy) utilizing EPA method 300 for correlation and analysis.
Of the laboratory samples collected initially 15% (11 samples) will be ran to determine correlation. If the data indicates that there is sufficient correlation of precision then the lab samples can be reduced to 1 every 200 yards (so in the second cell it would be 35 samples with maybe 6 samples actually analyzed by the lab for correlation and analysis) I am assuming that field screenings would remain constant at 1 sample for every 50 cubic yards for the time being.

The current sample plan I have discussed with RX soil has 140 discrete samples taken at the soil base 38”-48” of the initial cell with 10% (14 submitted to the lab for analysis and correlation) and 70 discrete samples taken between 8” and 16” (7 submitted to the lab for analysis and correlation). All of the samples would be collected in duplicate and stored until project completion (NMOCD nfa) so that any of them could be pulled and submitted for laboratory analysis if needed. This would provide for an overall sampling rate of 1 sample per 33.33 cy and a laboratory analysis of 10% of the total

samples collected (21 out of 210) which would be much greater than the 11 samples analyzed in the 15% of 70 samples model.

I am not sure what the best statistical method will be determine correlation as field screening generally have issues at  very low chloride levels. I would like to propose that we evaluate the data after we receive the initial set. There may be more appropriate methods than standard deviation to determine correlation such as variance or root mean squared analysis and these methods may change for different levels of chlorides. The most important thing for us is to be able to definitively prove that the sample results are representative of a soil profile that is protective to the waters of the state to your satisfaction. All of the samples collected will be preserved during the project for future analysis of needed.

I will be in my office the rest of the afternoon if you wish to discuss or clarify. I look forward to getting this project underway. Best regards,

John

**John R. Lynn III | Forensic Specialist | Forensic Laboratory - Claim Liaison Group**
Travelers
1301 East Collins Blvd | 2nd Floor
Richardson, Texas 75081
W: 214.570.6655 F: 877.786.5577 C:214.356.6218 C:214.394.4700

TRAVELERS

---

**From:** Yu, Olivia, EMNRD [mailto:Olivia.Yu@state.nm.us]
**Sent:** Friday, May 11, 2018 10:20 AM
**To:** Lynn III,John R <JLYNNIII@travelers.com>
**Cc:** Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
**Subject:** Laboratory samples for 1RP-4723; Paladin proposed remediation with Rx soil

Good morning John:

To clarify your concern regarding the number or proportion of samples required for field and laboratory samples for the proposed remediation plan for 1RP-4723, NMOCD advises the following:

For the treatment area with chlorides-impacted soil, NMOCD still requires field testing at every 50 cubic yards from the base and representative depths of the treatment area. One discrete soil sample is to be collected for laboratory analyses at every 100 cubic yards. To assess the precision between field tests and laboratory analysis of chlorides, using EPA method 300, 15% of samples will be ran in the first stage. If the data indicate sufficient correlation of precision (+/- 5% standard deviation), then the frequency of soil samples for laboratory analyses may increase to one every 200 cubic yards. Soil samples submitted to an accredited laboratory must have depth of sample identified.

For the smaller volume of TPH-impacted soil to be treated, the same scheme is applicable: one sample per 50 cubic yards for field testing and 100 cubic yards for laboratory analyses.

Please confirm or inform for further clarifications.

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:** | Yu, Olivia, EMNRD |
| **To:** | zach.robbins@rxsoil.solutions; Billings, Bradford, EMNRD |
| **Cc:** | "Jace Caraway"; stan.mickle@rxsoil.solutions; "Lynn III,John R"; pearceranches@yahoo.com |
| **Subject:** | RE: 1RP-4723 Remediation Work Plan |
| **Date:** | Tuesday, May 8, 2018 10:12:00 AM |

Good morning Mr. Robbins:

For complete documentation and as there is no certainty that NMOCD will be available for a field visit during the remediation stage, NMOCD requests a cross-section schematic of the treatment area. A green box, without dimensions, does not provide sufficient or adequate information regarding the proposed remediation for 1RP-4723, especially as there is limited information provided about the sampling methodology.

Furthermore, as mentioned during the phone meeting on April 27, 2018, at 1pm MST, 100 cubic yards per sample is not acceptable for evaluation of the treatment process. Generally, NMOCD requires soil to be tested every 50 cubic yards to confirm that remediated soil is within permissible levels. As a modification, NMOCD will agree to 100 cubic yards tested for the surface samples (< 1 ft.) of the treatment area, with the base samples to be laboratory-tested every 50 cubic yards. Please be advised that NMOCD requires NRSC standard field soil sampling protocol to be followed, in addition to EPA SW-846 or ASTM Method 4547 procedures, as these provide more explicit and recent guidance than the 1993 document.

Thanks,
Olivia

---

**From:** zach.robbins@rxsoil.solutions <zach.robbins@rxsoil.solutions>
**Sent:** Wednesday, May 2, 2018 10:30 AM
**To:** Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
**Cc:** 'Jace Caraway' <jace.caraway@rxsoil.solutions>; stan.mickle@rxsoil.solutions; 'Lynn III,John R' <JLYNNIII@travelers.com>; pearceranches@yahoo.com
**Subject:** 1RP-4723 Remediation Work Plan

Ms. Yu,

Thank you for taking time on Friday to discuss this remediation project. Attached is the updated Work Plan. Please feel free to reach out with any questions.

I have also included Benjamin Pearce (landowner) on this email chain.

We look forward to your approval.

Thank you,
Zach

**Zach Robbins I Technical and Engineering Analyst I RXSoil, Inc.**

**201 Main Street, Suite 1360, Fort Worth, Texas 76102**
**Cell: 210-400-7645**
**zach.robbins@rxsoil.solutions**