Bayliss, Randolph, EMNRD

From: Bayliss, Randolph, EMNRD
Sent: Friday, July 20, 2018 10:49 AM
To: 'Cliff Brunson'
Cc: 'Wade Dittrich'; 'Becky Moore'; 'Ken Swinney'; 'Jennifer Gilkey'; 'Kathy Purvis'; Jones, William V, EMNRD; Bratcher, Mike, EMNRD; Yu, Olivia, EMNRD; Hernandez, Christina, EMNRD; Pruett, Maria, EMNRD
Subject: OXY PW Spills Gypsum Rx 4RP-11 and 4RP-12
Attachments: ProduceWaterCleanup BLM.PDF; TETRA Tech Salt-Affected Soil_ Problems and Solutions.pdf; CSU Managing Sodia Soli.pdf

Good day Cliff, others.

I have reviewed your proposed delineation and remediation workplans. I agree we need to approve these workplans soon, before the new spill rules come into effect, probably mid-August.

OCD has approved gypsum amendments for soils impacted by produced water (PW) spills. We have experience and guidance from such treatments in the San Juan Basin. To be consistent with our past approvals, we follow the protocols outlined in **PRODUCED WATER SPILLS SOIL RECLAMATION TREATMENT**, copy attached. Gypsum can be justified for amendments in sodic soils where the exchangeable sodium percentage (ESP) exceeds 15 and the soil pH > 8.5 and gypsum applications in sandy soils usually range from four to six tons per acre.

Therefore your workplan must delineate the areal boundaries of affected soil where the ESP>15 and soil pH is 8.5 or greater. We will need to define the area affected, as in square feet or acres.

Revegetation prospects for salt-tolerant range and pasture species are well described in your submittals, but require some information on electrical conductivity (EC) of the soil. Soil samples in both the affected area and the background area should also include EC testing.

More guidance can be found in TETRA Tech's **Salt-Affected Soil: Problems and Solutions** and Colorado State University's **Managing Sodic Soils** (both also attached), which shows how to calculate the gypsum loading in tons per acre based on reducing the existing ESP down to ESP<15.

I believe this gypsum PW treatment has great promise in Southeast NM and I would like to work with you to set up a good precedent for its use. Any precedent normally involves more monitoring, and I refer you to the Matrix Solutions Inc document you submitted with your last workplans, **REMEDIATION OF SALT AFFECTED SITES BY LEACHING**, which provides guidelines for monitoring spills on p24 and 25.

Depth to water information for Bravo Dome is not available online from the OSE office, but the OXY compressor station should have some DTW information and several windmills can be seen within a mile of both spills and land owners might help with DTW. Surface impoundments or waterways are within 300 feet of both spills, so shallow DTW would be expected.

I'll be out of the office until 06Aug, but I'll plan to review your submittals quickly.

Cheers,

Randolph Bayliss, P.E.
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From: Cliff Brunson [mailto:cbrunson@bbcinternational.com]
Sent: Monday, July 9, 2018 5:59 PM
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Cc: 'Wade Dittrich' <Wade_Dittrich@oxy.com>; 'Becky Moore' <rebecca_moore@oxy.com>; 'Ken Swinney' <kswinney@bbcinternational.com>; 'Jennifer Gilkey' <jgilkey@bbcinternational.com>; 'Kathy Purvis' <kathy@bbcinternational.com>
Subject: OXY Bravo Dome Leg 7 (4RP-11) - Delineation Workplan

Randy,

Please find attached the delineation/remediation plan for the OXY Bravo Dome Leg 7 (4RP-11). Oxy is requesting that you review the proposed remediation process. Oxy looks forward to receiving the approval to proceed.

If you have any questions, please let me know.

Thanks, Cliff

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