

R. T. HICKS CONSULTANTS, LTD.

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Trionyx 6 Fed 5H Proposed Remedy Amendment 2 – Contractor Instructions Pilot Test of Flushing Salt from Soil without Fresh Water Importation

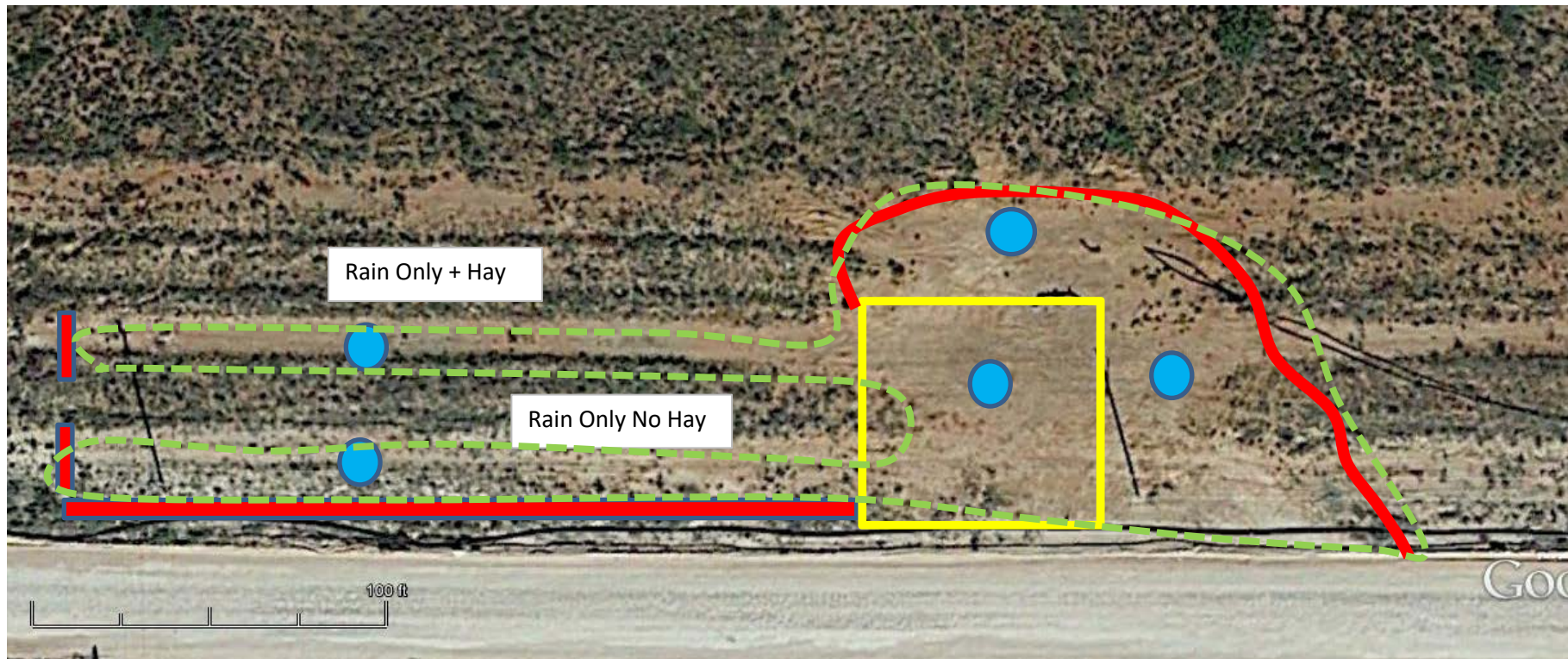
The Remediation Contractor under the direction of Hicks Consultants will:

1. Place one-call for utility location.
2. Follow all safety protocols specified by the various pipeline company representatives. As a result, the configuration of the remedy proposed herein may change to abide by all safety stipulations
3. Instruct the backhoe operator that will implement this remedy to collect samples for chloride analysis at depths of
 - a. 1-2 feet,
 - b. 4 feet,
 - c. 6 feet,
 - d. 8 and
 - e. 10 feet at locations shown on Figure 1 1
4. Till, loosen and disaggregate the top 6-18-inches of soil within the release footprint (as outlined in the field by Hicks Consultants)
5. Till in organic amendments, such as rotted hay, to increase the permeability of the soil at locations specified in Figure 1
6. Provide a good estimate of the type and amount of soil amendment added to the areas of the spill footprint schedule to receive amendments
7. Build 24-inch high reinforced and compacted as specified in the Figure 1. These berms :
 - a. Are outside of the release footprint except where specified in Figure 1
 - b. Use clean soil from excavation of a trench or depressions outside of the footprint
 - c. Are reinforced by anchoring a 2-foot tall silt fence in the center of the berm as shown in Figure 2
 - d. Are compacted with the backhoe after wetting with fresh water
 - e. Are seeded with the BLM Seed Mix shown in Appendix C of the Remediation Plan
8. Grade and construct berms to
 - a. Capture precipitation from nearby lease roads and locations for the specified area of the release footprint to create ponding within the footprint
 - b. Prevent storm water from entering specified areas of the spill footprint
 - c. Prevent overland transport of any salt or hydrocarbons from the spill footprint
9. During the final inspection Hicks Consultants will take photographs and collect data required to provide an as-built drawing of the remedy with relative elevations of
 - a. Nearby roads, production pads and other man-made features
 - b. At least 7 locations of the surface of the spill footprint after tilling
 - c. At least 7 locations along the top of berms
 - d. At least 5 locations within storm water diversions.

After the construction of the remedy Hicks Consultants will:

- Collect samples using hand tools to document the chloride concentration at 1 and 2 feet in order to clearly define the horizontal extent and magnitude of impact. Such sampling will be 1 sample per 1000 square feet

Figure 1 - Layout and Description of Proposed Soil Flushing Pilot Project



NO EXCAVATION OF ANY KIND WILL INTRUDE UPON THE SETBACK REQUIREMENTS OF THE VARIOUS PIPELINES

Silt fence reinforced compacted berms are red lines and yellow

No berms required where ridges will contain ponding or exclude run on

No berms required between road and ponding areas except to exclude run-on in SW

Yellow box is 50 x 50 foot area where known volumes of fresh water will be added by truck or pipeline

Rain Only areas receive no storm water run-on

Remainder of spill footprint on east receives rain plus storm water run-on as planned

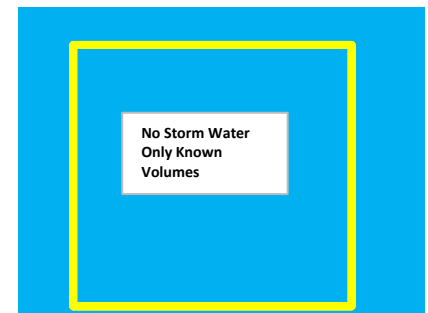
Green dashed line is approximate spill boundary

All areas subject to the remedy will be tilled/disaggregated to a depth of 6-18 inches

Hay will not be tilled into one area marked as such



Location of 10-foot deep backhoe sample trenches - will not intrude upon setback requirements of pipeline

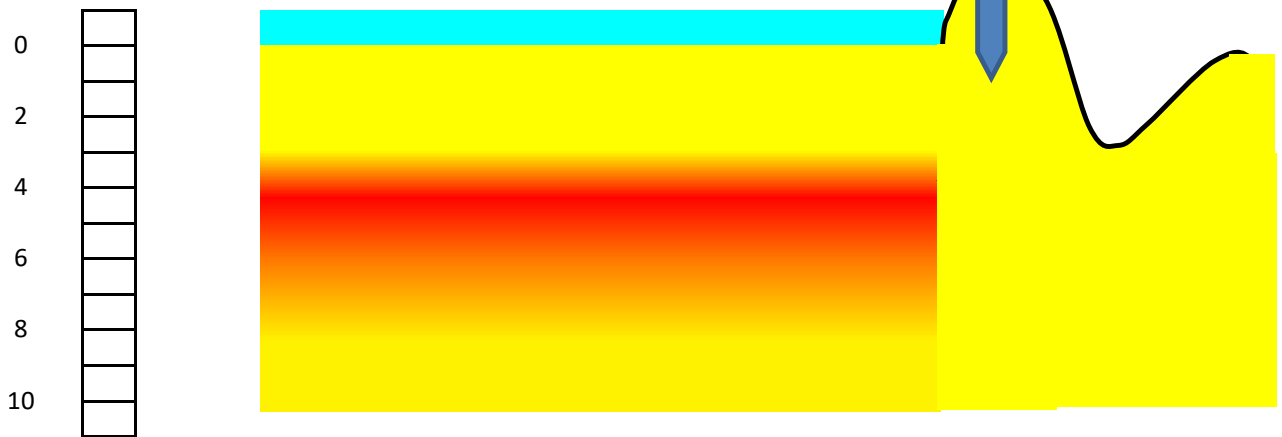


A. Condition Soon After Release



B. Condition When Flushing Nears Completion

2-ft high berm is compacted and reinforced by silt fence



C. ET Barrier Installed with Temporary Recharge Trench

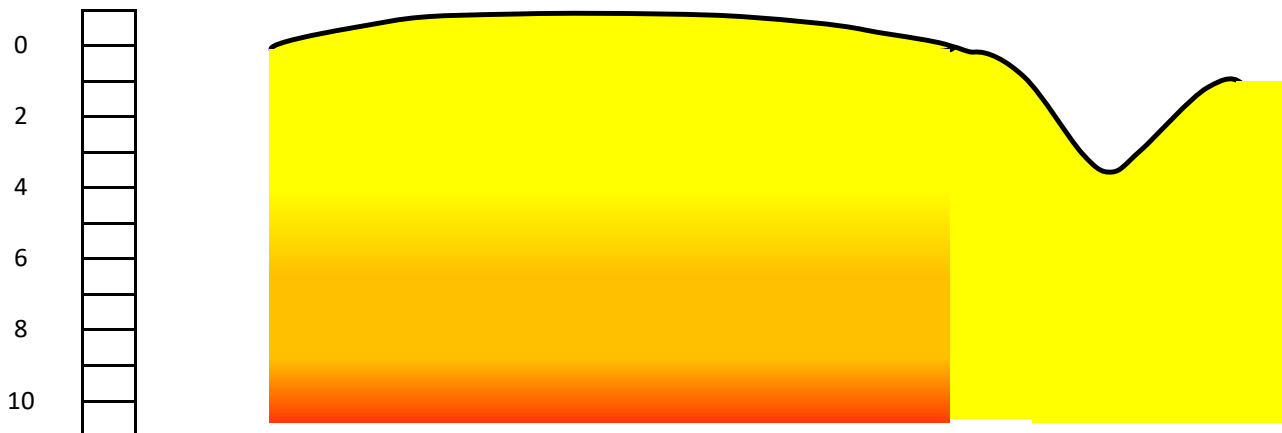


Figure 2

- A. Soon after the produced water release, salt is present near the surface. In this example chloride concentrations are present above background conditions to a depth of 3 feet
- B. Construction of compacted and reinforced berms outside of the spill footprint hold stormwater diverted to the release footprint and precipitation. Ponding of stormwater causes flushing of salt below the root zone.
- C. After soil flushing is complete, the clean soil berms are graded over the spill footprint, creating a small mound. The trench remains to capture and infiltrate stormwater.