REVIEWED
By Olivia Yu at 9:15 am, Oct 19, 2018

Response to NMOCD email Comments Regarding Sunray State Tank Battery

General Response: The remediation/closure report has been completely revised and is accompanied with six new figures that are referred to in the response to comments below.

Response to NM OCD email dated March 30, 2018

Comment:
There are 2 USGS wells, 2 miles Southwest of the release location with average depth to groundwater at 76 ft. bgs.
Response:
Our review of the records found two wells located in adjacent sections 17 and 20 with an average depth to water of 79 feet in 1994, the last year of record. The ranking score has been changed from 0 to 10 to reflect this. OCD remediation guidance for a ranking score of 10 to 19 points is benzene at 10 ppm, total BTEX at 50 ppm and TPH at 1,000 ppm. Sampling of remediated areas detected only two small detections of DRO TPH at 20 mg/kg or less. No BTEX was detected in any of the soil samples.

Comment:
Type of fluid release and size of impacted area written on the final C-141 conflict with data and information provided in delineation and remediation/closure report.
Response:
The location of the October 2014 release report is essentially shown as the area of the excavation in Figure 5. SESI was on site for the first time in mid-June 2016, almost two years after the October 2014 release. At that time, the entire area impacted by both the recent release and an older release from an unknown date (the hydrocarbon hardpan) was mapped resulting in a total impacted area of about 28,700 square feet. The initial borings made on June 29, 2016 showed little impact except for BH-3 which is in the impacted area from the 2014 release. The hardpan was removed in October 2016 and subsequent work showed minor residual impacts in the area of the hardpan. The serious impacts in the area of the 2014 release were remediated with excavation and liner placement which is documented in the closure report.

Comment:
On an appropriately scaled map, please demarcate the sample locations from March 20, 2017 and June 30, 2017. Please be advised that soil temperatures were not within standard collection conditions.
Response:
The March and June 2017 sample locations are shown in Figures 3 and 4 in the September revised report. Samples collected on March 20 were submitted for only chloride testing; EPA does not require samples for chloride to be preserved. Samples collected on June 20, 2017 included testing for BTEX and TPH. These samples were preserved at 4.9 degrees C which is within the requirement of 6 degrees C or less.

Comments, these refer to excavation location and sampling:
Where was the 12 ft. x 12 ft. excavation? What was the excavation depth? Where was the lined area? Why were sidewall samples not submitted to a laboratory for confirmation on November 7 and 8, 2017? Please provide data from field tests.
The original 12 ft. x12 ft. excavation from the 10/17/2014 release is within the expanded excavation with dimensions of approximately 30 ft. x 35 ft. The location of the excavation and sample points are shown in *Figure 5, Excavation and Sample Point Locations*. Two samples were obtained from the bottom of the 4-foot excavation and one sample was taken from each of the four walls. Samples were tested for BTEX, TPH and chlorides. The excavation was then lined with a 20 mil poly liner. Laboratory results for the sidewall samples were less than 120 mg/kg chloride; one bottom hole sample (covered by the liner) had 900 mg/kg chloride. No detections of BTEX or TPH were found in the soil samples.

Comment:
Areas represented by BH-1 and BH-2 (data from June 29, 2016) suggest that the surface 3 ft. of soil exceeds permissible chloride levels of 600 mg/kg. These areas need to be addressed.
Response:
Data previously submitted with an earlier report and request for closure showed chloride field sample results for BH-1 (6-29-16) from the surface to a depth of 3 feet at 1030 to 1045 ppm. However, due to a transcription error, the values submitted were actually the times the samples were collected and set aside for possible future testing. Based on the field test value of <124 ppm for BH-1 at 4 feet, only that sample was sent for laboratory confirmation and the other samples were discarded. Please see the addendum to these comments showing the field book page that was the source of the error.

As stated above, BH-1 (6-29-16) and also BH-2 (6-29-16) were not sampled for chlorides above 4 feet in the June 29, 2016 sampling. At 4 feet laboratory samples for both samples were less than 32.0 mg/kg. Surface and near surface sampling of the test trenches on June 20, 2017 and of BH-1 (6-25-18) and BH-2 (6-25-18) did not show excessive levels of chlorides. The maximums were 285 mg/kg at 3 feet in test trench 1, and 238 mg/kg in the surface sample for BH-1 (Note: June 2018 borehole locations are different from 2016 locations, hence the date identification). No BTEX or TPH detections were found in the June 2018 samples. Two TPH detections were found in the 2017 test trench samples: Test trench 1 had DRO TPH detection of 20.0 mg/kg at 1 foot and Test trench 2 had a DRO TPH detection of 16.7 mg/kg at 3 feet. However, laboratory results showed elevated levels of chloride were found in the two boreholes (BH-3, BH-3A) at the site of October 2014 release and resulted in excavation and liner placement at the site of that release.

Response to NM OCD email dated September 5, 2018:

Comment:
1. Where were the confirmation samples taken? Figure 2 does not have the locations of bottom and sidewall samples from November 2017 (SP-1 to SP-6) marked.
The location of the confirmation samples are shown in new *Figure 5, Excavation and Sample Point Locations*.

2. On Figure 2, when was the samples represented by Sample Point 1, 2 and 3 taken? Are these bottom or sidewall samples? Is there laboratory data?
Figure 2 has been replaced with individual figures locating sample types and dates separately. Please refer to the text for a description of the sampling, sample depths and results.

3. Were BH-1 and BH-2 samples, collected on June 25, 2018, from the same original locations in June 2016? Was the impacted 3-4 ft. of soil removed and backfilled? In which case, the data presented in June 2018 are confirming that the backfill material is clean.
The BH-1 and BH-2 samples were collected from different locations, which are why dates are attached on the figures; see Figures 2 and 6 for the locations. There were two different removals of material. The hydrocarbon hardpan from a much older crude release of unknown date was removed in October 2016 and replaced with sandy material. Subsequently strong winds blew aside much of the material leaving native soil exposed. The June 2018 sampling was from the former hardpan locations. Some chloride remains in that soil as seen in BH-1 (6-25-18) where the surface sample has a maximum of 238 mg/kg and lower depths are less than 200 mg/kg. The area of impact from the 2014 release was excavated to a depth of 4 feet as described above (the 12x12 excavation was expanded and became a 30x35 excavation), and a liner was placed followed by clean backfill. That backfill was not tested.

4. What does BH-3A denote on Figure 2? There are not associated laboratory data for BH-3A.
BH-3A is located adjacent to BH-3 and was drilled with a Geoprobe on July 1, 2016. The two boreholes are located within the footprint of the November 2017 excavation and sampling as shown on *Figure 5, Excavation and Sample Point Locations.*

5. Based on the scale of the release and the estimated depth to groundwater <100 ft. bgs, if a 1 or 4 ft. excavation was conducted over the release area, confirmation sidewall and bottom samples, at no greater than50 ft. apart, are required. Neither Figure 2 nor the text state to what depth the release area was excavated? Which area had 1 ft. or 4 ft. of impacted soil removed?
Hydrocarbon hardpan from a much older crude release occupied most of the area. This material was only several inches thick and was removed from the site in October 2016 as described above. The underlying native soil has some slightly elevated chloride in some locations as described in #3 response above. Impacts from the 2014 release were excavated to a depth 4 feet. Confirmation sidewall and bottom hole samples were taken from this area with the results provided in the report.

Comment:
Moreover, the original concerns from the email dated March 30, 2018 have not been addressed. Is the area that is lined, denoted by a purple polygon? Is this the lined 12 x 12 ft. area? What depth is this excavation area?
The concerns from the March 30 email are addressed above. The purple polygon has been replaced by a figure (*Figure 5, Excavation and Sample Point Locations*) showing the final excavation size (about 30 x 35 ft.), its location, and sidewall and bottom hole sample points. The depth of excavation of impacted material from the October 2014 release is 4 feet; this material was removed and remaining impacted bottom hole material was sampled and then isolated by a 20-mil poly liner.