

Status Report

To: Jarrod Zweifel, ADEQ
From: EnSafe Inc.
Date: January 31, 2019
Subject: Trafalgar Road Site — Project Status

This status report summarizes field, design, and project management activities which occurred at the Trafalgar Road Site from January 24, 2019 through January 30, 2019. Objectives during this period included the following:

- Field Activities
 - Determine the depth of debris materials under the NWA Storage parking lot
 - Determine if subsurface materials within the trench indicated that the fire had migrated south, beneath the parking lot
 - If fire was absent, pack the trench with clean fill to establish a subgrade firebreak
 - Other field activities occurred concurrently — construction of the fire break by the Forestry Commission
 - Monitor for personnel protection (health and safety monitoring) during excavation activities for CO, NO₂, hydrogen cyanide, and O₂
 - Collect one surface water sample emanating from the toe of the landfill
- Design Activities
 - Complete access road drawings for ADEQ
 - Site walk/Discussions with Hellfire
 - Evaluate proposed surfactant/wetting agents and other vendor(s)
- Project Management Activities
 - Coordinate access with adjacent property owners

Field Activities

On January 24, 2019, EnSafe mobilized to the Site with Environmental Works, Inc. (excavation contractor). Bella Vista provided firefighting support. Mr. Chris Triplett (EnSafe) was onsite to manage/oversee excavation activities. Mr. Bradley Hudson (EnSafe) was onsite to perform safety monitoring and oversee backfill operations.

A trench with a minimum width of 5 feet was excavated along an east-west transect along the northern portion of the NWA Storage parking lot. The trench was excavated to native material (clay, rock). The total depth of the trench varied from 0 feet to 48 feet below ground surface (bgs), which was significantly deeper than inferred from topographic data or prior discussions with the dump operator. Excavation data suggested that the knoll shown on the contours had been removed prior to dumping/landfilling operations. As a result, previous total volume estimates provided to ADEQ may underestimate the quantity of debris present onsite.

Trench materials were described as follows (noted from ground surface to depth):

- fill materials (soil) — 3 to 15 feet thick
- wood and other debris (including car parts, tires, scrap metal, concrete) — 6 to 10 feet thick
- soil materials — 6 to 8 feet thick
- wood and other debris (concrete, plastic pipe, metal, rubber) — 6 to 15 feet thick

Most of the debris was noted from 15-25 feet bgs. Concrete was noted primarily in the bottom 15 feet.

To achieve excavation to depth, the excavation was benched multiple times on the north and south side of the excavation to allow the trackhoe arm to extend to the base of the trench. At the conclusion of the field activity, the top width of the excavation at ground surface was approximately 60 to 80 feet. Three trackhoes were used to move material. The initial fill material (absent of wood and other debris), 3 to 15 feet bgs, was placed to the southern side of the trench. The remainder of the excavated material was stockpiled north of the trench. Approximately 6,000 cubic yards of material was excavated from the 233-foot long trench over a 6-day field event. The trench and primary features are noted on the attached figure.

No fire was encountered in the trench. One smoke vent was observed in the trench at a depth of approximately 25 feet bgs. On the northern bench, one small fire was encountered and extinguished. It was unclear whether this was associated with the main fire or combustion of composting materials.

The trench was backfilled with “clean” soil from soil from the excavation and fill from offsite as an underground fire break. The southern bench was also filled with “clean” excavated material and offsite soils, to provide a 5 to 15-foot cover of the wood material. The northern bench was filled with soil segregated from the debris stockpile. Segregation separated out most of the wood and other large debris, but small debris was present in the fill soil used to fill the northern bench. The remaining stockpiled debris pile remains onsite and was sloped to drain towards the north. Cuts were installed through the material to allow storm water to drain and limit ponding in the NWA Storage parking lot.

Based on findings from these field activities, the volume of waste south of the fire break trench was calculated to range from 25,000 to 52,000 cubic yards. Isolation of this volume (and elimination of this volume from the excavation) represents an estimated savings of \$2.1M to \$4.4M from total firefighting costs (based on revised unit costs presented below).

Other field activities:

- The Forestry Commission cut the fire break on January 28-29, 2019.
- Orange construction fencing was installed between the City of Bella Vista property and the Trafalgar Road Site on the west side, and across the residential driveway on the east side to prevent people from driving/walking onto the Site.
- During trenching operations on January 27, 2019, EnSafe personnel noticed a small fire in wood material near the northern spoil pile, in the grassy hill approximately 120 feet west of the residential house. The fire was igniting the grass, so EnSafe notified the onsite firefighters of the situation. The firefighters responded by dosing the fire with approximately 2,000 gallons of water. According to the onsite firefighters, the fire department responded again during the evening.
- EnSafe and ADEQ inspected the site and noted that site conditions changed daily, with significant sloughing/collapse, increased air entry into the landfill, and increased fire/smoke activity.

Design Activities

Preliminary access road drawings have been prepared for ADEQ's review. As discussed with ADEQ, the primary issue is to minimize the quantity of fill required for a temporary access road because of the dramatic changes in topography/grades. These drawings were transmitted to ADEQ via email on 30 January 2019.

On 24 January 2019, Hellfire personnel met with EnSafe onsite to evaluate the site and discuss site-specific conditions. Hellfire discussed a firefighting strategy similar to Williams; as discussed with ADEQ, they recommend total excavation and quenching to achieve the highest probability of extinguishing the fire. Quenching rates would be approximately the same as prior estimates (approximately 1000 cubic yards/day). Hellfire provided a cost estimate, along with recommendations for supplementing with local, lower-cost personnel. Based on the cost estimate provided by Hellfire, and assuming that Hellfire is an acceptable contractor to ADEQ, we have revised the all-inclusive per-yard firefighting costs to \$85/cubic yard. This is down from the initial estimate of \$150/cubic yard. Note that this does not include smoke mitigation or disposal of excavated/quenched wastes.

On 30 January 2019 EnSafe provided ADEQ with a draft evaluation of surfactants/wetting agents. Several vendors had contacted ADEQ discussing their products; we contacted them and discussed the site and application of their products in further detail. These discussions and costs per million gallons of water are summarized in the evaluation matrix. Note that Hellfire does not recommend use of a surfactant/wetting agent; if anything, they will use an over-the-counter product similar to Dawn dishwashing detergent. However, they have provided the SDS of one agent for evaluation.

At this time, EnSafe also attempted to contact High Heat Fire Specialists (HHFS), at the request of ADEQ, to discuss their approach, site specifics, and their proposed (proprietary) surfactant. HHFS indicated they would only discuss their experience and their proposed approach with ADEQ.

Project Management Activities

On January 31, 2019, ADEQ requested that EnSafe contact adjacent property owners (Bates, Young, Cooper, Gauert, Gracius, and the Bella Vista POA) to arrange access for roadway construction and additional actions. At this time, EnSafe is in discussions with these property owners.

EnSafe continues to have conversations with ADEQ, Hellfire, and vendors to refine the firefighting response approach. As data are collected, they are integrated into the conceptual site model and reviewed to determine how they impact approach and costs. For example, we are re-evaluating the impact of soil segregation from waste material on total volumes, etc.

Pending Activities

The following deliverables are pending:

- Tabulation of health and safety records from trenching activities

The following activities are pending:

- Access discussions with adjacent property owners

Photo Log
January 24-30, 2019, Status Report
Trafalgar Road Site – Bella Vista, Arkansas



Photo 1: Trench excavation (view to west). Stockpile to south (left of photo) is segregated onsite “clean” soil from 0-15-foot bgs interval, and offsite clean fill. Stockpile to north (right of photo) is debris pile.



Photo 2: Trench excavation procedures, showing benched excavation. To achieve excavation to depths >40 feet bgs, the trench was widened. One trackhoe excavated material to mid-depth. A second trackhoe lifted material to near ground surface. A third trackhole manipulated material into the debris stockpile. Note stumps and concrete in stockpile.

Photo Log
January 24-30, 2019, Status Report
Trafalgar Road Site – Bella Vista, Arkansas



Photo 3: View to north, showing excavated debris and debris pile.



Photo 4: Smoke vent with steam approximately 25 feet bgs encountered on 27 January 2019. EnSafe personnel performing air monitoring of trench.

Photo Log
January 24-30, 2019, Status Report
Trafalgar Road Site – Bella Vista, Arkansas



Photo 5: Excavated trench, view to east. Steam from composting wastes.



Photo 6: Close up of deep debris layer approximately 30-40 feet bgs (compacted soil, tree trunks, etc.)

Photo Log
January 24-30, 2019, Status Report
Trafalgar Road Site – Bella Vista, Arkansas



Photo 7: Possible car fender and suspension.



Photo 8: Possible vehicle transmission.

Photo Log
January 24-30, 2019, Status Report
Trafalgar Road Site – Bella Vista, Arkansas



Photo 9: Filling trench to construct fire break (view to west). Clean fill material from on- and offsite was used to construct the subgrade fire break and to cover the south bench. The minimum cover over the waste was 5 feet; the minimum width of the trench was 5 feet.



Photo 10: The trench and south bench area (view to west); fill and compaction activities occurring on north bench. Segregated soil from the debris pile was used to fill the north bench.

Photo Log
January 24-30, 2019, Status Report
Trafalgar Road Site – Bella Vista, Arkansas



Photo 11: The Arkansas Forest Service was onsite to clear the fire break on 28-29 January 2019.



Photo 12: Orange construction fencing was placed to restrict entry onto the Trafalgar Road Site.

