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Via Electronic Mail

January 20, 2017

Joseph A. Gowers
Remedial Project Manager
Emergency and Remedial Response Division
USEPA Region II
290 Broadway, 19th Floor
New York, New York 10007-1866

Re: Ringwood Mines/Landfill Superfund Site
Letter Report of Focused OCDA Investigation

Dear Mr. Gowers:

On behalf of Ford Motor Company (Ford), this letter report presents the findings and results of the focused investigation within the O'Connor Disposal Area (OCDA) at the referenced Site, as presented in a Work Plan dated November 8, 2016, which was approved by the USEPA on November 23, 2016. The objective of the focused investigation was to assess whether or not a localized source of 1,4-dioxane exists within the former paint waste removal area within the OCDA. As shown in the enclosed Figure 1, this former paint waste removal area is hydraulically up-gradient of groundwater monitoring well OB-17 in which groundwater samples have exhibited a concentration of 1,4-dioxane above its New Jersey Interim Specific Groundwater Quality Criterion (ISGWQC).

In summary, a total of 43 samples (41 native samples and two blind duplicates) were collected from a sampling grid within the former paint waste removal area. 1,4-dioxane was not detected in any of the 43 samples collected, and a localized source of 1,4-dioxane was not identified. In addition, paint waste was not identified in any of the borings.

At the request of the USEPA, in addition to the soil samples, two samples of paint waste surficial fragments were also collected from the OCDA during the field activities, and were also analyzed for 1,4-dioxane. The laboratory analytical results indicate that no 1,4-dioxane was reported in either of the two paint waste samples.

The work scope and findings of the targeted soil investigation are provided in detail below.

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Field Procedures

Mobilization to the Site for performance of the boring program occurred on December 12, 2016, at which time the boring locations were field staked using GPS coordinates and access to the drilling locations was cleared with a small bulldozer. Five boring locations (2, 3, 5, 11, and 14) were field adjusted to enable drill rig access. The final boring locations in relation to the sampling grid shown in the approved Work Plan are shown in the attached Figure 1. As shown, the boring location adjustments were nominal and did not affect the overall program of sampling within the former paint waste removal area.

Borings were advanced using a track-mounted sonic drill rig during the period December 13-15, 2016 and all activities completed and equipment demobilized on December 16, 2016. Continuous soil cores were attempted at each location; however, due to the granular nature of the soils at some locations (i.e., loose sand, stone aggregate that would not fit in the core sleeve), continuous core sample collection was not possible at every boring due to a lack of recovery. Finer-grained soils did remain in the core sleeve which are the preferential sample material since, if 1,4-dioxane was present, it is more likely to have been retained in finer-grained soils than on coarser material. The Boring Logs are provided as Attachment A.

Soil cores were collected in acetate sleeves. Upon retrieval, each soil core was subjected to the following:

- Screening with a Photoionization Detector (PID);
- Visual inspection for any apparent evidence of waste, paint waste, discoloration, or any other indication of potential environmental concern;
- Olfactory evidence of odors; and
- Evidence of having encountered the groundwater table (i.e., saturated soil).

Samples for laboratory analysis were collected based on the results of the above screening process with samples biased towards the following:

- A PID reading;
- Evidence of discoloration, waste, etc.;
- A zone indicating any odor; or
- If none of the above were indicated, within a representative portion of the core and within finer-grained material.

The attached Table 1 summarizes the boring locations, samples collected for laboratory analysis at each boring location, and the results of the field screening process. In addition, two blind duplicate samples were collected for quality control purposes, and the locations are noted in the table.

Of note, at the time of the focused investigation, the depth to groundwater at wells OB-17 and OB-22 were checked. The groundwater elevation at OB-17 was 485.15', consistent with recent

mapping (i.e., the annual sampling event at which time the elevation was 485.7'). The groundwater elevation at OB-22 was at approximately elevation 505', or approximately 8 feet higher than recent mapping (i.e., the August 2016 annual sampling event). Therefore, within the area of the focused investigation the groundwater table was encountered at a higher elevation (i.e. at a shallower depth below ground surface) than indicated based on prior depth to overburden groundwater data, likely as a result of antecedent rainfall and ongoing snow melt. While the approved Work Plan included the collection of only one sample below the groundwater table, as a precautionary measure to account for the more typical depth to groundwater and the apparent water table fluctuation, at 12 of the 14 boring locations, more than one sample was collected in the saturated zone below the water table, and up to depths of approximately 25 feet, consistent with the intent of the approved work plan.

As noted above, paint waste was not observed at any of the boring locations. Since small, visible remnants of paint waste (i.e., fragments) are present on the surface within the OCDA, and at the request of the USEPA, two paint waste samples were collected for laboratory analysis of 1,4-dioxane along with the soil samples collected in the focused investigation.

Laboratory Analysis

Each soil sample collected for analysis was labeled as B-2016-(boring location)-(sample interval). The samples were shipped on ice, under chain of custody to Alpha Analytical for analysis for 1,4-dioxane via USEPA Method 8270 SIM with isotope dilution. The Alpha Analytical laboratory reports, which include the chain of custody records, and the Cadena data validation reports are enclosed as Attachments B and C, respectively. As shown, the analytical result for each of the soil samples was validated without qualification.

In addition, the two paint waste samples were designated PW-1 and PW-2. In a conversation with the laboratory, instructions were provided to collect the portion of the paint waste samples for analysis from the interior of each paint waste sample so that the portion that would have been the least subject to weathering was targeted for analysis.

Results

As shown in the Boring Logs provided as Attachment A, the soils encountered within the former paint waste removal area within the OCDA were indicative of the imported fill used to backfill the former paint waste removal area. The predominant soil type is a brown/tan sand. Typically at depth, mine tailings were also encountered and are characterized as gray, dark gray, or black fine to coarse-grained material, as described on the boring logs. Encountering mine tailings is indicative that the sample intervals were extended to points below the prior excavation in the area of investigation, as was intended in the approved work plan, and accomplished by collecting more than one sample (only one sample was planned per the approved work plan) below the water table.

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As shown in Table 1, of the soil samples collected, PID readings were measured in three samples all at the boring B-2016-3 location. Each of the samples that exhibited a PID reading was submitted for laboratory analysis of 1,4-dioxane. As also noted on Table 1, the sample from the 14'-14.5' depth interval at this location also had a petroleum-like odor, which is the only sample that exhibited a noticeable odor.

Finally, as also shown in Table 1, of the 41 soil samples collected, three exhibited faint discoloration, although, based on review of historic reports and field observation of the characteristics of the paint waste during investigation activities, not indicative of paint waste. These samples were encountered at boring locations B-2016-6, B-2016-7, and B-2016-11. Each of these samples were also submitted for laboratory analysis for 1,4-dioxane.

Review of the Alpha Analytical reports indicates that 1,4-dioxane was not detected (ND) in any of the 41 soil samples nor in the two paint waste samples collected. All results are therefore ND at a typical method detection limit of approximately 4.0 ug/kg.

Please contact us if you have questions or comments on the content of this report.

Sincerely,

CORNERSTONE ENGINEERING GROUP, LLC

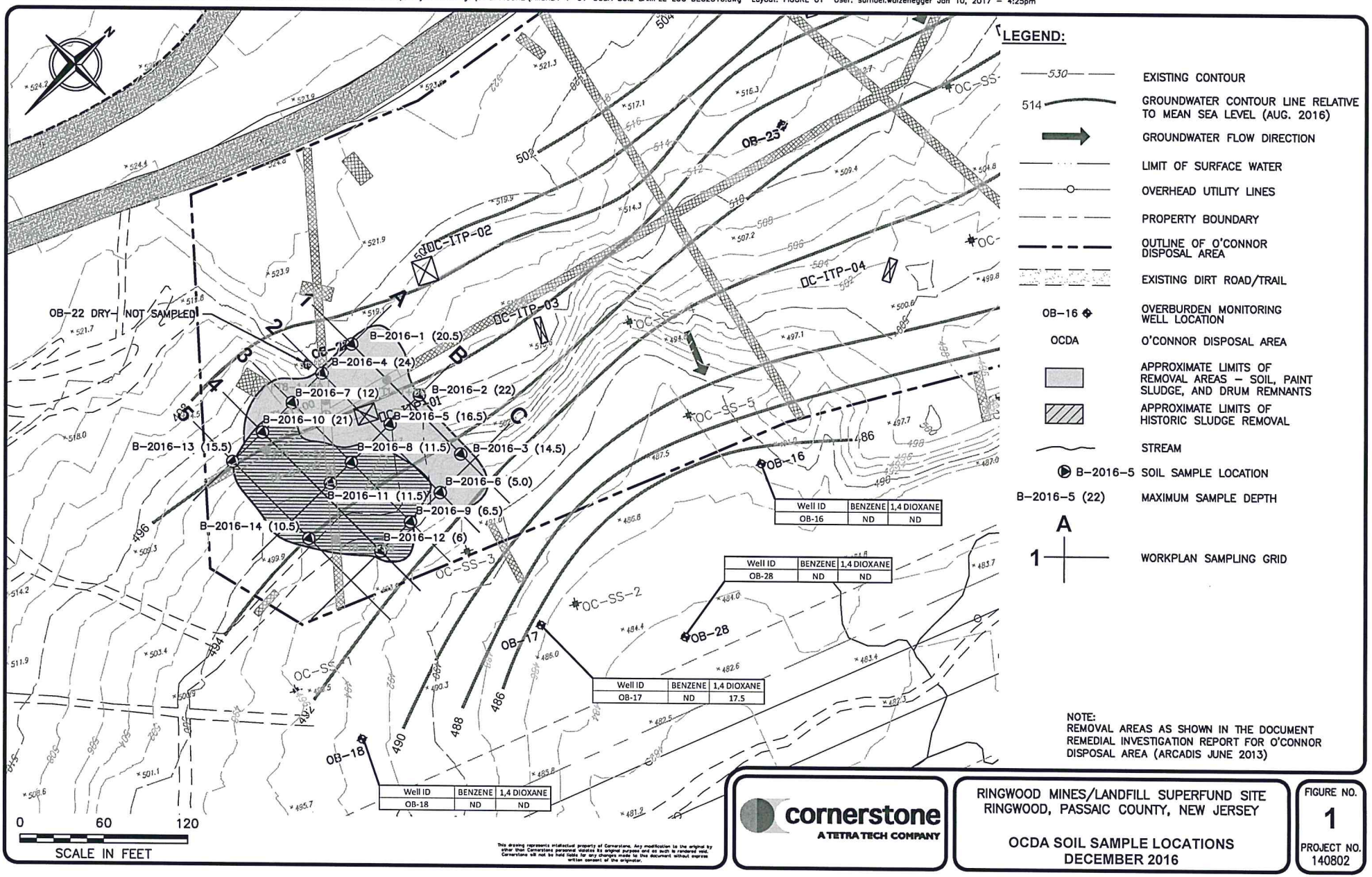
Gary J. DiPippo, Professional Engineer.
NJ Lic. # 24GE02646100

Timothy R. Roeper, PG
Client Manager, Hydrogeology

Figure 1: OCDA Sample Locations, December 2016
Table 1: OCDA Soil Sample Summery Table
Attachment A: Boring Logs
Attachment B: Alpha Analytical Laboratory Reports
Attachment C: Cadena Validation Reports

cc: B. Bussa, Ford
T. Green, Ford OGC.
J. Lagrotteria, LeClairRyan
D. Laguzza, LeClairRyan
K. Petrone, NJDEP
L. Dodge, Excel
R. Harwood, Excel
W. Monahan
C. Coslett, de maximis

File: X:\PROJECTS\FORD MOTOR COMPANY\140802 – RINGWOOD MINES_LANDFILL SUPERFUND SITE_Project Drawings\GRID FIGURE\FMCRD1-F-01-OCDA SOIL SAMPLE LOC DEC2016.dwg Layout: FIGURE 01 User: samuel.waizenegger Jan 10, 2017 – 4:25pm



NOTE:
REMOVAL AREAS AS SHOWN IN THE DOCUMENT REMEDIAL INVESTIGATION REPORT FOR O'CONNOR DISPOSAL AREA (ARCADIS JUNE 2013)

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RINGWOOD MINES/LANDFILL SUPERFUND SITE
RINGWOOD, PASSAIC COUNTY, NEW JERSEY

OCDA SOIL SAMPLE LOCATIONS
DECEMBER 2016

FIGURE NO. 1

PROJECT NO. 140802