Field Oversight of Soil Borings and EPA Split-Sample Collection at Del Amo Superfund Site

TO: Dante Rodriguez/EPA
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FILE
From: Randy Kellerman/CH2M HILL
Kathaleen Daul/CH2M HILL
DATE: June 25, 2003

Introduction
Per the United States Environmental Protection Agency (EPA) Work Assignment Manager’s (WAM’s) Technical Direction Memorandum (TDM), Kathleen Daul and Randy Kellerman of CH2M HILL conducted oversight of the Del Amo Respondents’ field activities at the Del Amo Superfund site in Torrance, California, on behalf of EPA. The field activities were coordinated and executed by URS, Inc., on behalf of the Del Amo Respondents. The field activities included the drilling of soil borings using both hand-auger and direct-push drilling technology, and the collection of soil samples. CH2M HILL performed field oversight and collected split soil samples on behalf of EPA.

Conformance with EPA-approved Workplan
In general, the soil sampling activities were performed in accordance with the EPA-approved Workplan. Two minor issues arose during this reporting period.

• First, the cleaning solution Simple Green was used to decontaminate the stainless steel bowl and spatula used in homogenizing the primary and split samples for polycyclic aromatic hydrocarbons (PAHs). The application of Simple Green was then followed by a distilled-water rinse. The issue was addressed with URS, who responded that the Simple Green had not been intended for that use and future decontamination of the bowl and spatula would be performed using the nonphosphate detergent specified in the Workplan. The use of Simple Green during decontamination is not expected to have had a significant impact on PAH results.

• Second, split samples collected for volatile organic compound (VOC) analysis are currently accompanied by additional soil for moisture analysis to calculate dry-weight concentrations, per a request by EMAX Laboratory. URS initially indicated that it also was collecting additional soil for determination of percent moisture, but later indicated that this would no longer be the case. According to URS, this is because historical VOC concentrations were reported in wet-weight concentrations. URS field personnel indicated that a have been sent to EPA to that effect. If EPA has approved the use of a weight basis for VOC concentrations by URS, then theoretically the splits collected HILL should also be reported as wet weight for an appropriate comparison. VOC concentrations as wet weight does not appear to represent a deviation

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from the Workplan. However, EPA should confirm the use of wet-weight basis for reporting VOC concentrations; and, if necessary, EPA should request that EMAX Laboratory resubmit laboratory reports for split samples, reporting VOCs based as wet weight.

Chronology of Field Activities

The following activities occurred during the oversight of the EPA Split-Sampling field activities from April 28, 2003, through May 15, 2003. All field oversight and split-sampling activities were performed by Randy Kellerman/CH2M HILL with the exception of those conducted by Kathaleen Daul/CH2M HILL on May 15, 2003. The chronology of the field activities for each day are described below:

4/28/03

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1411</td>
<td>Randy Kellerman/CH2M HILL arrived onsite at Parcel 7351-31-17 to perform field oversight and collected split samples (2 PAH). Present onsite were Heather Dubois and Mark Wanek from URS and a drilling crew from Gregg Drilling. URS had already collected the default PAH sample from the first boring at this location, SBL0280.</td>
</tr>
<tr>
<td>1430</td>
<td>No visual or other field indications of subsurface impacts were observed in this boring. Gregg has finished this hole and is moving on. URS collected the default sample from approximately 18 inches below ground surface (bgs) for PAHs.</td>
</tr>
<tr>
<td>1447</td>
<td>Samples collected at 2 feet bgs for default PAH in SBL0281. These three borings will all be hand augered to 5 feet bgs. Shallow samples were collected using a slide hammer.</td>
</tr>
<tr>
<td>1500</td>
<td>Finished SBL0281. No visual or other field indications of subsurface impacts were observed in this boring. Will homogenize the two brass sleeves in a stainless-steel bowl and collect default sample for PAH.</td>
</tr>
<tr>
<td>1505</td>
<td>Started boring SBL0282.</td>
</tr>
<tr>
<td>1525</td>
<td>URS finished compositing default PAH sample from 18 to 24 inches bgs in boring SBL0281. Collected split sample SSS01720-EPA for PAH analysis in one 8-ounce soil jar. Initial sample collection time of 1447 used.</td>
</tr>
<tr>
<td>1605</td>
<td>Start on SBL0283.</td>
</tr>
<tr>
<td>1618</td>
<td>Collected split sample SSS01721-EPA for PAHs in one 8-oz. soil jar - composite from default depth of 2 feet bgs in SBL0282. Initial collection time of 1526 used.</td>
</tr>
<tr>
<td>1620</td>
<td>Gregg encountered refusal at 3 feet bgs in SBL0283 while hand augering.</td>
</tr>
<tr>
<td>1635</td>
<td>Refusal at 3 feet bgs again due to rocks.</td>
</tr>
<tr>
<td>1648</td>
<td>Randy Kellerman offsite to deliver samples to EMAX.</td>
</tr>
<tr>
<td>1655</td>
<td>Dropped off samples at EMAX laboratory.</td>
</tr>
</tbody>
</table>
Randy Kellerman returned to Parcel 7351-31-17. Gregg is still trying to get past 3 feet bgs in boring SBL0283. URS reported no staining or photoionization detector (PID) hits in morning sampling at the southwest corner of Knox and Pacific Gateway (Parcel 7351-34-50).

SBL0283 finished. No indications of subsurface impacts observed. URS took defaults on all four holes at this parcel. Notes for the day include:

1) URS said it is starting at Parcel 7351-31-800 tomorrow.

2) URS decontaminated the stainless steel bowl for homogenizing split and primary PAH samples using Simple Green and a distilled water rinse.

3) URS collected a rinsate blank at the end of the day by pouring distilled water (laboratory-certified and provided) through the driller’s sampler after the decontamination procedure.

Randy Kellerman offsite.

4/29/03

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1415</td>
<td>Randy Kellerman/CH2M HILL arrived onsite at Parcel 7351-34-52 to collect split samples and perform field oversight. Heather Dubois and Mark Wanek of URS, along with Gregg Drilling, were onsite. URS had collected the default PAH from the first of two holes. URS was collecting PAH and VOC defaults at 2 feet bgs and 7 feet bgs, respectively. This boring is SBL0289. Gregg was hand augering these borings to 3 feet bgs.</td>
</tr>
<tr>
<td>1428</td>
<td>Gregg moved over to start SBL0290. Gregg finished SBL0289. No visual or PID indications of chemical impacts. URS took the defaults for both PAHs and VOCs. The highest PID reading was 9 parts per million (ppm).</td>
</tr>
<tr>
<td>1435</td>
<td>Gregg collected the default sample for PAH from SBL0290. Randy Kellerman asked URS what level of PID measurement would trigger step-outs or collecting a “worst case” sample. According to URS, the PID alarm is set at 110 ppm. If the reading is over or in the ballpark of that level, URS will determine if step-outs are necessary. If over approximately 30 ppm, a sample is collected as “worst case.” However, visual observations and the nature of expected contamination also play a role.</td>
</tr>
<tr>
<td>1500</td>
<td>URS/Gregg Drilling collected default sample for VOCs at 8 to 9 feet bgs. URS submitted the default samples for PAHs and VOCs from this boring. Collected split sample SSS01732-EPA for VOCs from default depth of 8.5 to 9 feet bgs in 3 5-gram Encores. Collection time was 1459. Then collected split sample SSS01733-EPA for PAHs in one 8-oz. jar. Collection time was 1430.</td>
</tr>
<tr>
<td>1550</td>
<td>URS collected a rinsate blank. The VOCs for the rinsate blank were temporarily collected in a 1-liter amber bottle to be transferred shortly to VOA vials. All offsite. Randy Kellerman offsite to EMAX laboratory.</td>
</tr>
<tr>
<td>1615</td>
<td>Dropped off samples at EMAX and headed back to office.</td>
</tr>
</tbody>
</table>
4/30/03

Time   Event

1145   Randy Kellerman/CH2M HILL onsite to provide field oversight of URS sampling activities and collect split samples at the Del Amo Superfund Site. URS was working at Parcel 7351-34-69. Randy Kellerman will collect three split samples for PAH analysis and two samples for VOC analysis from this parcel.

Last night, EMAX laboratory indicated that it needs additional soil for soil moisture analysis when only Encores are collected for VOCs (i.e., default VOC sample), so results can be adjusted and reported in dry weight. Asked URS about this. Apparently, URS was submitting extra soil in borings that are only sampled for VOCs, but no extra soil in PAH/VOC holes where it collected default for VOCs. URS said the 25-gram Encore probably was going to cover that, but that the staff would start collecting extra soil for soil moisture where they collect a default VOC sample.

1230   Start SBL0297.

1300   Finish SBL0297 and start SBL0298. There was a possible slight chemical odor at 6 feet bgs in SBL0297. There definitely was a slight chemical odor at approximately 15 feet bgs, but no staining. Mark called David Myers to get help on the decision. URS took the default because it was only a slight odor with no staining and it was below the minimum depth for this hole.

1330   Collected split sample SSS01746-EPA from a depth of 2 feet bgs in 1 8-oz. soil jar for PAH analysis. The sample time was 1240.

1340   Gregg finished SBL0298 and started SBL0299. Encountered wet soil at 5.5 feet bgs in SBL0298. Collected split sample SSS01747-EPA for VOCs at default depth of 7 feet bgs in SBL0297. Sample time was 1257. Three 5-gram Encores were collected for VOCs, and an adjacent 2-inch by 3-inch section of the acetate sample core was submitted for soil moisture analysis.

1410   Wet soil observed in core to 6.4 feet bgs. Randy Kellerman had not seen URS collect duplicate soil samples and asked the staff about it. URS said it was not collecting duplicates or matrix spike/matrix spike duplicates (MS/MSD). According to the field crew, they collected duplicates at the beginning of the program; but because they are not called out in the Workplan, they were instructed to not change the Workplan and to stop collecting them. Randy Kellerman checked the Workplan, which does not specifically call for field duplicates.

1440   A strong chemical odor and black staining were observed in soil from 5.5 to 6 feet bgs in boring SBL0299. There was not enough of the dark stained soil to collect a split sample, so URS decided to drive another sample at the same depth in a hole immediately adjacent to SBL0299. The black substance was actually measured on SBL0299 at only 3 inches thick. The PID reading associated with the stained soil was 13 ppm.

1452   Stepped over 1 foot and drilled to 7 feet bgs. No real sign of contamination.
1456  Stepped over again in another direction (toward building).

1530  Did two other holes (four total at 1 foot from SBL0299). No other black areas were observed; and, at most, a very faint odor was observed in the surrounding holes. Collected a PAH and a VOC split sample (SSS01750-EPA) from an expected impacted zone in the original SBL0299. Collected PAH in a 4-oz. jar and three Encores for VOCs. PAH was collected from the dark zone, and VOCs were collected from immediately beneath the dark zone due to a lack of soil.

1555  Moved to fifth location, at the north end of this parcel.

1557  Set up on SBL0300. Hand augered to 3 feet.

1615  Pushed to 7 or 7.5 feet bgs and encountered refusal due to a hard obstruction. Soil immediately above the hard surface had a dark stain and a strong odor.

1632  Tried to move over twice. Refusal in the second try at 7 feet bgs and in third try at 6 feet bgs. Material in shoe at 6 feet in third hole included concrete dust at the bottom, then a chunk of rotted wood (wet, soft), and contaminated soil. Contaminated soil was encountered in all three holes, but the wood and concrete dust were observed only in the third. URS has made the three attempts required in the Workplan and is finished with this location. A sample for PAHs will be collected from the zone with the highest apparent impact.

1640  Collected split sample SSS01751-EPA for PAHs from 6 feet bgs in one 8-oz. jar. Collection time was 1613, the time the first 6- to 7-foot interval was sampled. Sample was collected by homogenizing the 6- to 7-foot samples from the first two attempts.

1658  Randy Kellerman offsite to EMAX laboratory.

5/13/03

Time  Event

0825  Randy Kellerman/CH2M HILL arrived onsite to collect split samples and perform field oversight. Heather Dubois, Mark Wanek, and David Myers of URS, along with Gregg Drilling, were onsite. URS was at Parcel 7351-33-37. One split sample will be collected today from Parcel 7351-33-34 for PAHs.

0835  URS was finishing the first hole of the day (SBL0310). These borings were planned to be only 5 feet deep because URS is only targeting chromium beneath former cooling towers. URS collected one brass sleeve from 24 inches bgs (default depth) for total chromium and chromium VI. Drillers used a hand auger to drill and a slide hammer to collect the sample.

0846  URS collected a sample from 24 inches bgs in boring SBL0311. No yellow soil was observed in this boring or in boring SBL0310. However, David Myers noticed an orange nodule and instructed URS to wait and see if it changed colors when left out in the open air. It did not.

0852  Soil from 3.5 feet bgs had a PID reading above background. URS will see what happens at 5 feet.
0900 No significant PID readings or staining was observed. URS took the default sample from 24 inches. Moving to north side of building.

0920 Started SBL0312 on the north side of the building. Randy Kellerman asked if URS was planning to go back to Parcel 7351-34-69, where borings encountered refusal due to a hard surface and one sample brought up a piece of wood beneath contaminated soil. Mark said that URS believes the refusal could have been due to a previous tank footing, but no plans were made to go beneath. Step-outs were done, though.

0943 Completed SBL0312 to 5 feet bgs. URS collected the default sample for total chromium/chrome VI.

1000 Gregg started hole SBL0313 on Parcel 7351-33-34 using a hand auger.

1005 URS collected two brass sleeves for PAH at the default depth of 18 to 24 inches and 24 to 30 inches. A slight chemical odor was observed in drill cuttings.

1022 URS informed Randy Kellerman that it was no longer collecting extra soil for soil moisture analysis for VOCs because results were historically reported as wet weights. Heather did not know if results of other analyses (metals, PAH) will be reported as wet weight as well. The driller pushed the hand-auger cuttings back into the hole for stability during direct-push drilling.

1027 The core through the slough from 0 to 4 feet had a slight, sweet, chemical odor.

1030 The core from 4 to 8 feet bgs had a moderate sweet chemical odor and a PID reading of 92.5 ppm.

1037 Core down to 12 feet bgs had a PID reading of 984 ppm. URS will treat as worst case, but there was no plan to analyze for VOCs, even though it seemed unlikely that semivolatile organic compounds (SVOCs) or PAHs would yield that high a PID reading with no apparent staining. The highest PID reading from the boring is 1,607 ppm at approximately 9.5 or 10 feet bgs.

1048 Collected SSS01769-EPA (time=1036) for PAHs in one 8-oz. soil jar. Sample was collected by homogenizing the 10- to 12-foot interval in a stainless-steel bowl.

1055 Randy Kellerman contacted David Myers by telephone to ask about analyzing for VOCs. He said the Workplan was written that way (i.e., only PAH in this location) because there is either no previous indication of VOC use in this area or URS already has VOC data from a soil gas survey. David said that because of the elevated PID readings it is reasonable to consider VOCs and he would look into previous soil gas coverage.

1130 Finished boring SBL0314. Lower PID readings, but still same odor. David Myers called back and said that URS does have previous soil gas results in this area, including VOC detections at over 1,000 ppm-volume (ppm-v). Therefore, URS will not add VOC analysis to these samples.

1150 Randy Kellerman offsite to EMAX laboratory.

1158 Randy Kellerman offsite to office.
5/15/03

**Time** | **Event**
---|---
0700 | Kathaleen Daul/CH2M HILL arrived onsite at Parcel 7351-34-45. Heather Dubois and Mark Wanek with URS team onsite.
0705 | Bag ice for cooler.
0715 | Gregg Drilling company arrived onsite with Santiago and Eduardo (drillers). Health and Safety briefing conducted by URS. Traffic control contractor also onsite.
0720 | URS set up sampling station near boring SBL0329, located in a handicapped parking area of parking lot.
0740 | Driller began hand augering at boring SBL0329.
0744 | URS collected default soil sample at 24 inches bgs for potential PAH analysis. Mark Wanek/URS characterized soil on boring log, and Heather Dubois took measurements with PID and recorded them on sample forms. PID measurements are provided in a table below:

<table>
<thead>
<tr>
<th>Time</th>
<th>Depth</th>
<th>PID Measurement</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0745</td>
<td>4-8 feet bgs</td>
<td>0.1 to 0.2 ppm</td>
<td>No odor/staining</td>
</tr>
<tr>
<td>0750</td>
<td>8-12 feet bgs</td>
<td>0.1 ppm</td>
<td>No odor/staining</td>
</tr>
</tbody>
</table>
0804 | URS collected soil sample SSS01791 from 7 feet bgs (default depth) at boring SBL0329 for VOC analysis using Encore samplers.
0810 | Driller continued boring to 12 feet bgs. No odors or staining noted and no elevated PID measurements. URS will use default sample collected at 2 feet bgs at 0744 for PAH analysis. Sample ID is SSS01790.
0815 | Driller sealed boring with asphalt cap.
0830 | Driller mobilized at boring SBL0330 location in Magellan Street, approximately 2 feet from the sidewalk on Parcel 7351-34-45.
0835 | Driller hand augered to 2 feet beneath road base at boring SBL0330. Mark with URS measured the depth at 2 feet bgs.
0842 | URS collected default soil sample for potential PAH analysis at approximately 2.5 feet bgs. Heather capped the sleeve and temporarily placed it on the cooler. The PID measurement was 0.5-ppm at 2.5 feet bgs.
0902 | Driller continued to 4 feet bgs. URS discarded the soil in the sleeve.
0905 | URS measured soil with PID from 4 to 8 feet bgs at 0.1- to 0.3-ppm.
0908 | URS collected a soil sample and Randy Kellerman collected a split sample (SSS01793-EPA) at approximately 8.5 feet bgs for VOC analysis using Encore samplers. Heather took PID measurement of soil in 8- to 12-foot-bgs sample sleeve at 0.1-ppm.
Driller continued to 16 feet bgs. PID measurement is 0.1-ppm. Because there were no odors or staining, URS decided to submit the default soil sample collected at 0842 from 2.5 feet bgs for PAH analysis. EPA split ID is SSS01792-EPA. Heather homogenized the split sample and the primary sample. Samples were placed in chilled coolers.

Drillers sealed boring SBL0330 and added asphalt cap.

Drillers mobilized to soil boring SBL0323 at Parcel 7351-34-65. Boring location has been pushed approximately 15 feet into the street from the original location on a grassy sloped area of the property where previous attempts to drill were unsuccessful.

URS collected default soil sample at 18 inches bgs for potential PAH analysis. Heather took a PID measurement of 0.1-ppm. See table below:

<table>
<thead>
<tr>
<th>Time</th>
<th>Depth</th>
<th>PID Measurement</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1042</td>
<td>18 inches bgs</td>
<td>0.1-ppm</td>
<td>No odor or staining noted</td>
</tr>
<tr>
<td>1047</td>
<td>4.5-8.5 feet bgs</td>
<td>1.0-10.5 ppm</td>
<td>Odor and staining noted</td>
</tr>
<tr>
<td>1054</td>
<td>8.5-12.5 feet bgs</td>
<td>0.1-ppm</td>
<td>Odor and staining noted</td>
</tr>
<tr>
<td>1056</td>
<td>12.5-16.5 feet bgs</td>
<td>0.1-1.8 ppm</td>
<td>Odor and staining noted</td>
</tr>
</tbody>
</table>

Odor noted from soil at 4 feet bgs.

URS collected a soil sample at 4.5 feet bgs based on PID measurements and observations. Soil sample ID is SSS01794.

Drillers sealed boring SBL0323 and added asphalt cap.

Driller mobilized to boring SBL0324, located in street approximately 3 feet from sidewalk at Parcel 7351-34-65.

URS measured the bottom of the road base at 2 feet bgs. URS collected the default soil sample at 2.5 feet bgs. PID measurement is 0.4-ppm.

Strong odor noted at approximately 3 feet bgs. Soil appeared dark olive gray color.

URS collected soil sample SSS01795 at approximately 5.5 feet bgs for PAH and VOC analysis using a jar and Encore samplers, because PID measurements of soil were elevated at 8.8 ppm to 11.8 ppm. URS discarded the default sample collected at 1115.

PID measurements ranged from 2.8 ppm to 4.1 ppm to 12 ppm (dark olive gray color) for soil between 7 and 11 feet bgs.

Soil interval of 11 to 15 feet bgs also dark olive gray in color, with PID measurements of 2.4 ppm to 10 ppm.

Drillers sealed boring and added asphalt cap.

Lunch break.
1300  URS collected a Rinsate Blank sample at SBL0324.

1302  Kathaleen Daul/CH2M HILL departed site to deliver split samples to EMAX laboratory.

1318  Transferred split samples to EMAX under chain of custody.

1325  Departed for CH2M HILL office.