

**Soil Sampling Report
Chemtrade Performance
Chemicals US LLC Site
(aka Former Clariant Corporation Facility)**

**Kalama, Washington
Facility No. 24634187
VCP Project No. SW0492**

**H&H Job No. CLR-045
November 29, 2017**



Steven C. Hart



SMARTER ENVIRONMENTAL SOLUTIONS

Soil Sampling Report
Chemtrade Performance Chemicals US LLC Site
404 N Hendrickson Drive
Kalama, Washington
H&H Job No. CLR-045

Table of Contents

<u>Section</u>	<u>Page No.</u>
1.0 Introduction and Background	1
2.0 Previous Soil RA Activities and CULs/POCs.....	3
2.1 Previous Soil RA Activities.....	3
2.2 CULs and POCs.....	4
3.0 August 2017 Soil Sampling.....	7
3.1 Soil Boring Locations.....	7
3.2 Soil Boring Installation and Sampling Methods	9
3.3 Soil Sample Results	10
3.3.1 Cadmium	10
3.3.2 Zinc	11
4.0 Conclusions and Recommendations.....	14

List of Tables

Table 1	Summary of Remaining Soil Data
---------	--------------------------------

List of Figures

Figure 1	Site Location Map
Figure 2	Site Map
Figure 3	Remaining Soil Sample Locations
Figure 4	MPA Soil Sample Locations

List of Appendices

- Appendix A Photographs
- Appendix B Boring Logs
- Appendix C Laboratory Analytical Reports

Soil Sampling Report
Chemtrade Performance Chemicals US LLC Site
404 N Hendrickson Drive
Kalama, Washington
H&H Job No. CLR-045

1.0 Introduction and Background

On behalf of Clariant Corporation (Clariant), Hart & Hickman, PC (H&H) is submitting this report to document the methods and results of soil sampling completed during August 2017 in the Manufacturing Plant Area (MPA) of the Chemtrade Performance Chemicals US LLC site (Cleanup Site No. 1784, Facility/Site No. 24634187) located at 404 N. Hendrickson Drive in Kalama, Cowlitz County, WA. Note that we have previously referred to the site as the former Clariant Corporation facility site. The site is currently enrolled in the Washington State Department of Ecology (Ecology) Voluntary Cleanup Program (VCP Project No. SW0492). A site location map is included as Figure 1.

Previous investigations indicate that there are soil and groundwater impacts at the site, and that the compounds of concern are cadmium and zinc. There are two main areas of impact at the site: the Former Settling Basins (FSB) area and the MPA. Impacts in the FSB area are associated with former settling basin #1 (FSB1) and former settling basin #2 (FSB2), and impacts in the MPA are associated with previous manufacturing activities. A site map is provided as Figure 2.

In an opinion letter dated February 9, 2017 (February 2017 Opinion), Ecology recommended preparation and submittal of an updated conceptual site model (CSM) and that the updated CSM should evaluate the MPA as a possible source of cadmium and zinc impacts. As documented in previously submitted reports, the existing CSM incorporates the presence of cadmium and zinc impacts in MPA soil and groundwater. However, the February 2017 Opinion notes that industrial processes which utilized zinc were conducted in the MPA through October 2016 and those processes may have been a potential continuing source of environmental impacts since previous soil sampling was performed. As such, Ecology recommended additional assessment to

evaluate current conditions in the MPA prior to updating the site CSM.

H&H submitted a *Soil Sampling Work Plan* dated May 31, 2017 (Work Plan) to Ecology to address Ecology's recommendations. In addition to proposed soil sampling, the Work Plan included an evaluation of sample data for soil which remains in place following completion of soil remedial action (RA) activities previously completed in the FSBs and MPA, a discussion of soil cleanup levels (CULs) and points of compliance (POCs) currently and potentially applicable to the site, and a request for Ecology to provide comment/technical assistance regarding the applicability of soil CULs and POCs at the site. In an opinion letter dated June 28, 2017 (June 2017 Opinion), Ecology indicated that it will separately provide the requested technical assistance on setting CULs and POCs for the site, and that additional remedial investigation and reporting is needed before establishing CULs and POCs.

This report is primarily intended to present the methods and results of the soil sampling completed during August 2017 at the site. Please note that the results will be used in preparation of an updated CSM, and the updated CSM will include a detailed discussion of site background information, geology and hydrogeology, and contaminant sources and migration. Brief summaries of soil remedial action (RA) activities previously completed at the site and soil CULs and POCs which are currently and potentially applicable at the site are presented in Section 2.0, the methods and results of the August 2017 soil sampling are presented in Section 3.0, and conclusions and recommendations are presented in Section 4.0.

2.0 Previous Soil RA Activities and CULs/POCs

2.1 Previous Soil RA Activities

In September and October 2003, Clariant excavated and disposed of approximately 16,000 tons of soil from the MPA and the FSB1 and FSB2 areas. Surface soils located in the eastern and western portions of the MPA were excavated to an average depth of 1.5 ft below ground surface (bgs). Soil located under the railroad spur was not excavated in the MPA; however, this area was later paved over. Soil was removed to an average depth of approximately 7 ft bgs in the FSB1 area and to an average depth of approximately 15 ft bgs in the FSB2 area. The excavation areas are identified in Figure 3.

Soils located beneath a truck access road that crosses the southern portion of the FSB2 area were not excavated during 2003. The soil left in place below the access road was sloped away from either side of the road to prevent the excavation sidewalls from collapsing under the road. Sidewall confirmation samples collected from the walls of the excavation located along this portion of the access road contained concentrations of zinc and cadmium exceeding CULs. In addition to the soil left in place because of the access road, an approximately 4,500 sf area of soil to the southeast of the access road was excavated to a depth ranging from approximately 5.5 to 8 ft bgs, which is shallower than the standard POC for soil.

Soil removal activities targeting soil beneath the access road that crossed the southern portion of FSB2 and soil beneath the previous depth of excavation within the FSB2 area southeast of the access road were conducted at the site in August and September 2010. The excavation activities consisted of excavation and off-site disposal of impacted soils located beneath the access road to a depth of 15 ft bgs (including soil that sloped outward from either side of the access road during the 2003 excavation), and excavation of soil beneath the previous depth of excavation within the FSB2 area southeast of the access road to a depth of 15 ft bgs. In total, approximately 11,500 tons of soil were excavated and disposed off-site during the 2010 excavation activities.

Soil removed from the top four feet of the FSB2 area during the 2003 excavation activities was used to backfill the bottom five feet of the 2003 FSB2 excavation (i.e., from 10 to 15 ft bgs). Approximately one-half of this soil was subsequently removed and disposed off-site during excavation activities complete in 2010. The remainder of the 2003 and 2010 excavations were backfilled with Columbia River dredge spoils obtained from the Port of Kalama-owned property located to the south of the site.

Cadmium and zinc data for soil samples which remain in-place at the site (i.e., locations not removed during the 2003 and 2010 excavation activities) are summarized in Table 1, and the remaining soil sample locations are depicted in Figure 3.

2.2 CULs and POCs

As previously mentioned, Ecology indicated it will separately provide requested technical assistance on setting CULs and POCs for the site, and that additional remedial investigation and reporting is needed before establishing CULs and POCs. We anticipate that a compilation of additional information needed to establish CULs and POCs will be presented in the updated CSM, and that CULs and POCs acceptable to Ecology will be established prior to Feasibility Study (FS) development. A detailed discussion of CULs and POCs which are currently applicable to the site and those which we interpret to be potentially applicable to the site are presented in the Work Plan for the soil – direct contact, terrestrial environment, and protection of groundwater scenarios. The detailed CUL and POC information presented in the Work Plan will be updated and presented in the updated CSM. A summary of H&H’s soil CULs and POCs currently and potentially applicable to the site are presented below.

Soil – Direct Contact

The unrestricted land use soil – direct contact Method B CULs currently applicable to the site are 80 milligrams/kilogram (mg/kg) for cadmium and 24,000 mg/kg for zinc, and a soil – direct contact POC from the ground surface to 15 ft bgs is currently applicable throughout the site. Please note that the site may qualify for use of industrial soil CULs under Washington

Administrative Code (WAC) 173-340-745. The industrial soil – direct contact Method C soil CULs (calculated using Equation 745-1) potentially applicable to the site are 3,500 mg/kg for cadmium and 1,050,000 mg/kg for zinc. In addition, implementation of institutional and/or engineered controls to limit or prohibit activities which may result in exposure to hazardous substances via the direct contact pathway may be appropriate for the site in lieu of achieving soil – direct contact CULs.

Soil – Protection of Terrestrial Environment

Ecological indicator soil concentrations (hereafter referred to as Ecological CULs) obtained from WAC 173-340-900 Table 749-3 for cadmium and zinc are presented below.

	<u>Plants</u>	<u>Soil Biota</u>	<u>Wildlife</u>
Cadmium	4 mg/kg	20 mg/kg	14 mg/kg
Zinc	86 mg/kg	200 mg/kg	360 mg/kg

The site appears to qualify as industrial/commercial for the purposes of evaluating terrestrial wildlife protection and, therefore only the Wildlife Ecological CULs (14 mg/kg for cadmium and 360 mg/kg for zinc) should be applicable to site soil for terrestrial ecological evaluation purposes. A standard Ecological POC from the ground surface to 15 ft bgs is currently applicable throughout the site.

As discussed in the Work Plan, as part of the site-specific terrestrial ecological evaluation, and with Ecology approval, hazardous substances may be eliminated from further consideration where the ninety-five percent upper confidence limit (95% UCL) soil concentration at the site does not exceed Ecological CULs. Soil removal to reduce calculated 95% UCL soil concentrations to less than Wildlife Ecological CULs appears to be an appropriate alternative for eliminating hazardous substances from further consideration as chemicals of ecological concern at the site. In addition, implementation of institutional and/or engineered controls at the site to prevent potential threats to wildlife from hazardous substances may be appropriate in lieu of achieving Wildlife Ecological CULs and completing ecological evaluations.

Soil – Protection of Groundwater

Since 2010, depth-to-groundwater measured in wells with flush-mount construction has ranged from approximately 15.5 to 25.5 ft bgs, and the average depth-to-groundwater during these monitoring events is approximately 20.5 ft bgs. Note that the Columbia River is subject to tidal fluctuations at the location of the site and that river and historical groundwater table elevations have varied significantly at the site. As such, the unsaturated soil – protection of groundwater POC is throughout the site from the ground surface to a proposed depth of 20 ft bgs, and the saturated soil – protection of groundwater POC is throughout the site at a proposed depth of greater than 20 ft bgs.

The calculated unrestricted land use Method B unsaturated soil – protection of groundwater CULs for cadmium and zinc are 0.69 mg/kg and 5,970 mg/kg, respectively. The calculated unrestricted land use Method B saturated soil – protection of groundwater CULs for cadmium and zinc are 0.035 mg/kg and 299 mg/kg, respectively.

Implementation of institutional controls to prohibit use of site groundwater for potable purposes may be appropriate for protection of human health in lieu of achieving potable groundwater CULs for human health protection which are currently applicable to the site and in lieu of achieving soil – protection of groundwater CULs to prevent impacts to groundwater at levels which exceed the potable groundwater CULs established for human health protection. The practicability of achieving soil – protection of groundwater CULs to prevent impacts to groundwater at levels which exceed potable groundwater CULs for protection of surface water beneficial uses will be evaluated as part of the Feasibility Study (FS).

3.0 August 2017 Soil Sampling

On August 9-11, 2017, H&H completed soil assessment activities were completed to assess current cadmium and zinc concentrations in the MPA and to further evaluate zinc concentrations which were previously detected above the Wildlife Ecological CUL in the area of several of the proposed boring locations. Soil boring locations, installation and sampling methods, and sample analytical results are discussed below.

3.1 Soil Boring Locations

The Work Plan included collection of soil samples from 22 proposed soil borings located in the MPA. Based upon field observations, an additional boring was advanced during the soil sampling activities and a total of 23 soil borings (identified as SB1 through SB-23) were installed in the MPA in the locations identified in Figure 4. As shown in Figure 4, 16 of the borings were installed outside the manufacturing building. The outdoor boring locations were installed in the locations described below.

- Soil borings SB2, SB6, SB7, and SB8 were installed near the rail spur which runs adjacent to the eastern edge of the manufacturing building. The rail spur was previously used for zinc oxide loading and the area is paved with asphalt or concrete.
- Soil borings SB1, SB3, SB4, SB5, and SB18 were installed to the east of the rail spur in unpaved locations.
- Soil borings SB12 through SB16 were installed along the western edge of the site in unpaved areas.
- Soil boring SB17 was installed to the west of the manufacturing building in an unpaved area.
- Soil boring SB19 was installed adjacent to a drain identified in the tanker loading driveway located along the northern edge of the manufacturing plant building.

The outdoor borings were generally installed in the approximate locations proposed in the Work

Plan, except that soil boring SB19 was not included in the Work Plan. SB19 was located north of the manufacturing building near a drain in the tanker loading driveway between two above ground storage tank containments.

The remaining seven borings were installed inside the northern portion of the manufacturing building (where cadmium and zinc were used in manufacturing processes). Several of the indoor boring locations proposed in the Work Plan were moved based on field observations. The indoor boring locations were installed in the locations described below.

- Soil boring SB9 was installed adjacent to a baghouse located in the warehouse portion of the manufacturing building.
- Soil borings SB10 and SB11 were installed adjacent to floor drains identified in the Formulation Room and the STTP Room, respectively. These were the only two floor drains observed inside the northern portion of the manufacturing building.
- Soil borings SB20 and SB23 were installed adjacent to sumps identified in the containment area outside of the Zinc Oxide Dryer Room and inside the Formulation Room, respectively. These were the only two sumps observed in the northern portion of the manufacturing building.
- Soil boring SB21 was installed adjacent to a concrete-lined subgrade tank vault in the Make Tank Room. The Work Plan included installation of two borings within the vault; however, because the vault is a confined space and drilling/sampling personnel did not have proper confined space training, the SB21 boring was installed outside the vault and samples were collected from the boring below the depth of the vault floor (which was measured to be 10 ft bgs).
- Soil boring SB22 was installed inside the Zinc Oxide Dryer Room.

Photographs of representative boring location areas are included in Appendix A.

3.2 Soil Boring Installation and Sampling Methods

On August 9-11, 2017, the 23 soil borings discussed above were installed in the MPA by Steadfast Services NW, LLC of Vancouver, WA (Steadfast) with oversight provided by H&H personnel. Prior to installation of soil borings, subsurface utilities in the vicinity of the borings were identified and marked by a private utility locator (Locates Down Under, Inc. of Oregon City, OR). A core drill was utilized to install a 3-inch diameter boring through the building floor slab at proposed sample locations inside the building and in paved areas outside the building. A soil boring was then advanced to a depth of approximately 6 ft bgs (except in SB20, SB21, and SB22) using a decontaminated stainless steel hand auger or a direct push technology (DPT) drill rig. Hand auger refusal was encountered at 4 ft in boring SB20 and at 3 ft bgs in boring SB22 (both of which were located in the Zinc Oxide Dryer Room area). As discussed above, boring SB21 was installed adjacent to the subgrade tank vault in the Make Tank Room, and the boring was advanced to a total depth of 16 ft bgs (approximately 6 ft below the level of the adjacent vault floor).

The Work Plan included collection of soil samples from the 0 to 3 ft and 3 to 6 ft bgs depth intervals of the proposed soil borings. During the assessment activities, two samples were collected from each boring except SB22 (where hand auger refusal was encountered at 3 ft bgs). One sample was collected from the 0 to 3 ft bgs interval (as measured from the floor or ground surface) in 17 of the borings. Note that concrete/asphalt and gravel thicknesses were not accounted for in the reported depth intervals where the thicknesses did not exceed 6 inches. One sample was collected from the 1 to 3 ft bgs interval in five borings where concrete/asphalt and gravel thicknesses totaling approximately 1 ft were present. In addition, one sample was collected from the 3 to 6 ft bgs interval of each boring except SB20 and SB22 (where shallow hand auger refusal was encountered); however, a sample was collected from the 3 to 4 ft bgs interval of SB20. Finally, samples were collected from the 10 to 13 ft bgs and 13 to 16 ft bgs depth intervals of boring SB21. As previously mentioned, this boring was installed adjacent to the subgrade tank vault in the Make Tank Room and the sample depth intervals were approximately 0 to 3 ft and 3 to 6 ft below the level of the adjacent vault floor.

Soils in each boring were generally observed to be loose, gray and black, fine to medium-grained sands. Soil boring logs are included in Appendix B. Soil collected from each sample interval was homogenized prior to being placed into a laboratory-supplied container. The container was then sealed, labeled, placed into a laboratory-supplied sample cooler, and covered with ice. The cooler was delivered under standard chain-of-custody protocols to Test America of Nashville, TN (Test America) for analysis of total cadmium and zinc by EPA Method 6020A. After sample collection, soil cuttings from a boring were placed back into the same boring, bentonite hole plug was installed in the top of the boring, and boreholes through concrete and asphalt were repaired to match the surrounding surface.

3.3 Soil Sample Results

Analytical results of soil samples collected during August 2017 are summarized along with cadmium and zinc data for soil samples which remain in-place at the site (i.e., locations not removed during previous excavation activities) in Table 1 and the remaining soil sample locations are depicted in Figure 3. The laboratory analytical report for the August 2017 soil samples is included in Appendix C. Soil sample information and data were uploaded to the Environmental Information Management System (EIM) database during October 2017. A brief discussion of the analytical results is presented in the following sections. A detailed evaluation of impacts in soil which remains in-place at the site will be presented in the updated CSM.

3.3.1 Cadmium

Cadmium was detected above laboratory MRLs in samples collected from four soil borings installed during August 2017. Cadmium was detected in the SB6 (1-3), SB6 (3-6), and SB7 (1-3) samples at concentrations ranging from 5.30 to 7.37 mg/kg. These detections are less than the direct contact and Wildlife CULs of 80 mg/kg and 14 mg/kg, respectively. SB6 and SB7 are located in relatively close proximity to each other along the railroad spur adjacent to the manufacturing building, and the locations are covered with asphalt pavement. Cadmium was detected in the SB10 (0-3) and SB10 (3-6) samples at 107 mg/kg and 76.2 mg/kg, respectively,

and in the SB21 (10-13) and SB21 (13-16) samples at 91.6 mg/kg and 305 mg/kg, respectively. Each of these detections is above the Wildlife CUL and three of the detections are above the direct contact CUL. SB10 is located near a floor drain in the Formulation Room (which is near a 300-gallon tank formerly used to store cadmium sulfate solution), and SB21 is located in the Make Tank Room adjacent to the subgrade tank vault.

Each of the cadmium concentrations detected in the August 2017 samples are above the unsaturated soil – protection of groundwater CUL (0.69 mg/kg). In addition, note that the laboratory MRLs for samples which did not have a cadmium detection are above the unsaturated soil – protection of groundwater CUL.

Cadmium concentrations above the Wildlife CUL are depicted in Figures 3 and 4. Note that only the maximum concentration from a boring is depicted in the figures.

3.3.2 Zinc

Zinc was detected at concentrations ranging from 15.4 mg/kg to 9,360 mg/kg in all but four of the soil samples collected during August 2017. The detections are all below the unrestricted land use soil – direct contact CUL of 24,000 mg/kg, and only one detection is above the unrestricted land use unsaturated soil – protection of groundwater CUL (5,970 mg/kg). Zinc concentrations above the Wildlife CUL (360 mg/kg) were detected in samples collected from 12 of the 23 soil borings. Zinc concentrations above the Wildlife CUL are depicted in Figures 3 and 4. Note that only the maximum concentration from a boring is depicted in the figures.

The sample results indicate that zinc was not detected above the Wildlife CUL in five borings (SB1, SB3, SB4, SB5, and SB18) installed in unpaved locations to the east of the manufacturing building and one boring (SB2) installed in a paved location to the east of the manufacturing building. With the exception of SB18, these borings were installed to the south of the 2003 soil excavation area along the rail spur (Figures 3 and 4). Two of these borings (SB3 and SB18) were installed in the approximate locations of previous shallow soil samples (SS4 and E-8,

respectively) which contained zinc concentrations above the Wildlife CUL.

Zinc was also detected below the Wildlife CUL in the two samples collected from SB17 which was installed in an unpaved area to the west of the manufacturing building in the area of two previous soil sample locations which contained zinc above the Wildlife CUL.

The highest zinc concentrations during the August 2017 sampling event were detected in two soil borings (SB6 and SB7) installed along the rail spur outside of the southwestern portion of the 2003 soil excavation area along the spur. Zinc was detected at 5,250 mg/kg in SB6 (1-3) and at 9,360 mg/kg in SB7 (1-3). The zinc detection in SB7 (1-3) is above the unsaturated soil – protection of groundwater CUL (5,970 mg/kg); however, the zinc concentration detected in the deeper (3 to 6 ft bgs) sample interval of SB7 (2,590 mg/kg) is below the unsaturated soil – protection of groundwater CUL. As shown in Figure 3, these borings are located near previous sample location SS7 which contained the maximum zinc concentration detected in soil which remains in-place at the site (19,100 mg/kg). Zinc was also detected above the Wildlife CUL in 2017 boring SB8 (658 mg/kg) which is located along the rail spur and outside the northwestern portion of the former excavation.

Zinc concentrations above the Wildlife CUL were detected in five soil borings (SB12 through SB15) installed in unpaved locations along the western edge of the MPA, and the maximum zinc concentrations in these borings range from 387 mg/kg to 1,300 mg/kg. Maximum zinc concentrations in each boring except SB15 were detected in the 0-3 ft bgs depth interval, and the detections are generally similar to zinc concentrations detected in previous samples collected from the area. The 2017 and previous soil sample data indicate that maximum zinc concentration in this area are in soil located to the north of the pump house and approximately 100 ft west of the northern portion of the manufacturing building (where zinc was used in manufacturing processes). The unpaved area along the western edge of site and north of the pump house is separated from the manufacturing building by asphalt pavement.

Inside the manufacturing building, zinc was detected above the Wildlife CUL in borings SB10

and SB11 which were installed adjacent to floor drains in the Formulation Room and STTP Room, respectively. Maximum zinc concentrations of 627 mg/kg and 592 mg/kg were detected in SB10 (3-6) and SB11 (1-3), respectively. In addition, zinc was detected above the Wildlife CUL in borings SB20 and SB23 which were installed adjacent to sumps in the containment area next to the Zinc Oxide Dryer Room and in the Formulation Room, respectively. Maximum zinc concentrations of 813 mg/kg and 4,260 mg/kg were detected in SB20 (3-4) and SB23 (3-6), respectively. Zinc was not detected above the Wildlife CUL in the remaining borings installed inside the manufacturing building (i.e., adjacent to the baghouse, adjacent to the subgrade tank vault, and inside the Zinc Oxide Dryer Room), or in boring SB19 which was installed adjacent to the drain in the tanker loading driveway located along the northern edge of the manufacturing plant building.

4.0 Conclusions and Recommendations

On August 9-11, 2017, H&H completed soil assessment activities at the Chemtrade Performance Chemicals US LLC site to assess current cadmium and zinc concentrations in the MPA and to further evaluate zinc concentrations which were previously detected above the Wildlife Ecological CUL. Soil samples were collected from 23 borings during the assessment activities. The results of the sampling are summarized below.

- Cadmium was detected above the Wildlife CUL (14 mg/kg) and the unrestricted land use soil – direct contact CUL currently applicable to the site (80 mg/kg) in samples collected from two soil borings installed during August 2017. Maximum cadmium concentrations of 107 mg/kg and 305 mg/kg were detected in samples collected from interior boring SB10 (located near a floor drain in the Formulation Room of the manufacturing building) and interior boring SB21 (located adjacent to the subgrade tank vault in the Make Tank Room), respectively. These are the only cadmium concentrations which have been detected above the Ecological and soil – direct contact CULs in soil which remains in-place at the site. Note that that the site may qualify for use of industrial soil CULs and the industrial soil – direct contact Method C soil CUL for cadmium is 3,500 mg/kg.

Cadmium was detected in two additional soil borings during August 2017 at concentrations below the Ecological and soil – direct contact CULs. Each cadmium concentration detected in soil samples collected during August 2017 was above the unsaturated soil – protection of groundwater CUL (0.69 mg/kg).

- Zinc was detected at concentrations ranging from 15.4 mg/kg to 9,360 mg/kg in all but four of the soil samples collected during August 2017. The detections are all below the unrestricted land use soil – direct contact CUL of 24,000 mg/kg, and only one detection is above the unrestricted land use unsaturated soil – protection of groundwater CUL (5,970 mg/kg).

- Zinc was not detected above the Wildlife CUL in five borings installed in unpaved locations to the east of the manufacturing building, and in one boring installed in an unpaved location to the west of the manufacturing building. Zinc concentrations above the Wildlife CUL were detected in five soil borings installed in unpaved locations along the western edge of the MPA, and the maximum zinc concentrations in each of these borings ranged from 387 mg/kg to 1,300 mg/kg. The detections in these borings are generally similar to zinc concentrations detected in previous samples collected from the area.
- Inside the manufacturing building, zinc was detected above the Wildlife CUL in borings SB10 and SB11 (at maximum concentrations of 627 mg/kg and 592 mg/kg, respectively) which were installed adjacent to floor drains in the Formulation Room and STTP Room, respectively. In addition, zinc was detected above the Wildlife CUL in borings SB20 and SB23 (at maximum concentrations of 813 mg/kg and 4,260 mg/kg, respectively) which were installed adjacent to sumps in the containment area next to the Zinc Oxide Dryer Room and in the Formulation Room, respectively. Zinc was not detected above the Wildlife CUL in the remaining borings installed inside the manufacturing building or in a boring installed adjacent to a drain in the tanker loading driveway located along the northern edge of the manufacturing plant building.

H&H recommends preparation of an updated conceptual site model (CSM) for the site which incorporates the findings of the August 2017 soil assessment activities. The CSM will include a detailed discussion of site background information, geology and hydrogeology, and contaminant sources and migration.

Table 1
Summary of Remaining Soil Data
Former Clariant Facility
Kalama, WA
H&H Project No. CLR-045

Sample ID	Sample Date	Sample Depth (ft bgs)	Cadmium (mg/kg)	Zinc (mg/kg)
Former Settling Basin Areas				
1	09/05/2003	5	<0.53	33
3	09/05/2003	3	<0.52	33
4	09/05/2003	5	<0.51	26
5	09/05/2003	1	<0.51	33
6	09/05/2003	3	<0.51	32
8	09/05/2003	1	0.56	280
9	09/09/2003	3	<0.53	31
10	09/09/2003	5	<0.54	33
11	09/09/2003	1	0.88	270
12	09/09/2003	3	<0.54	28
13	09/09/2003	3	<0.54	27
14	09/09/2003	5	<0.54	31
15	09/09/2003	1	<0.54	31
16	09/09/2003	3	<0.54	31
17	09/09/2003	1	<0.54	32
32	10/02/2003	1	<0.52	34
34	10/02/2003	5	<0.52	47
35	10/02/2003	7	<0.52	40
45	10/08/2003	7	<0.53	24
46	09/25/2003	5	<0.53	27
47	09/16/2003	9	<0.53	22
48	09/25/2003	3	<0.53	29
49	09/16/2003	7	<0.53	29
50	09/25/2003	1	<0.53	35
51	09/16/2003	5	<0.53	32
52	09/25/2003	3	<0.53	29
53	09/16/2003	9	<0.53	29
54	09/25/2003	1	<0.53	33
55	09/16/2003	7	<0.53	23
56	09/16/2003	5	<0.53	24
57	09/16/2003	5	<0.53	24
58	09/25/2003	1	<0.53	34
59	09/16/2003	7	<0.53	32
60	09/25/2003	3	<0.53	32
61	09/16/2003	9	<0.53	36
62	09/25/2003	5	<0.53	33
2R	09/12/2003	1	--	210
33R	10/02/2003	3	<0.52	36
63R	10/06/2003	7	<0.53	34
7R	09/12/2003	5	--	100
ARSW-1	09/16/2010	7-8	<2.16	91.5
ARSW-2	09/16/2010	7-8	<2.16	283
ARSW-3	09/16/2010	7-8	<2.07	141
ARSW-4	09/16/2010	7-8	<2.08	146
B1	09/16/2003	7-8	<5.3	32
B10	09/25/2003	15	<0.53	2,400
B11	09/25/2003	15	<0.53	4,500
B12	09/19/2003	15	<0.53	2,700
B13	09/19/2003	15	<0.53	2,100
B2	09/05/2003	9	<0.53	410
B3	09/12/2003	5.5	<0.52	27
B9	10/02/2003	15	<0.53	1,300
EB-1	08/20/2010	15	0.34	780
EB-10	09/16/2010	15	<2.12	950
EB-11	09/16/2010	15	<2.12	1,160
EB-12	09/16/2010	15	<2.14	1,220
EB-13	09/16/2010	15	<2.16	729
EB-2	08/20/2010	15	0.35	480
EB-3	08/20/2010	15	0.34	560
EB-4	09/02/2010	15	<0.534	462
EB-5	09/02/2010	15	<2.68	793
EB-6	09/02/2010	15	<2.63	738
EB-7	09/16/2010	15	<2.12	2,110
EB-8	09/16/2010	15	<2.16	1,380
EB-9	09/16/2010	15	<2.14	1,800
ESW-1	08/17/2010	7-8	<2.1	55.1
ESW-2B	08/23/2010	7-8	0.15	44
ESW-3A	08/20/2010	7-8	0.32	<46.7
ESW-4A	08/20/2010	7-8	0.30	<48.0
ESW-5A	08/27/2010	7-8	<0.532	37
ESW-6A	08/27/2010	7-8	<0.521	40.1
ESW-7	08/17/2010	7-8	<2.1	43.3
ESW-8	08/27/2010	7-8	<0.532	52.1
LG5	10/23/2002	5	<0.2	376
LG6	10/23/2002	5	<0.2	47.2
NSW-0A	08/31/2010	7-8	<0.531	169
NSW-1	08/17/2010	7-8	<2.11	48.8
NSW-2	08/17/2010	7-8	<2.00	62.7
NSW-3	08/17/2010	7-8	<2.04	126
NSW-4	08/17/2010	7-8	<2.08	79
NSW-5	08/17/2010	7-8	<2.15	48.7
NSW-6	08/17/2010	7-8	<2.15	47.8
OB1*	09/16/2003	10-15	<0.52	390
OB2*	09/16/2003	10-15	0.56	510
OB3*	09/16/2003	10-15	<0.52	120
OB4*	09/16/2003	10-15	<0.52	930
SB1-Surf-1	10/16/2003	0-0.5	<0.55	35
SB1-Surf-2	10/16/2003	0-0.5	<0.54	71
SB1-Surf-3	10/16/2003	0-0.5	<0.56	98
SB1-Surf-4	10/16/2003	0-0.5	<0.55	40
SB2-Surf-1	10/16/2003	0-0.5	<0.56	99
SB2-Surf-2	10/16/2003	0-0.5	<0.56	49
SB2-Surf-3	10/16/2003	0-0.5	<0.56	38
SB2-Surf-4	10/16/2003	0-0.5	<0.56	52
SS11A	03/11/2003	0-3	<0.50	76
SS12	04/16/2003	0.5-1	<0.50	27
SS13	04/16/2003	0.5-1	<0.50	220
SSW-1	08/17/2010	7-8	<2.12	84.9
SSW-2	08/17/2010	7-8	<2.13	47.9
SSW-3	08/17/2010	7-8	<2.1	53.5
SSW-4	08/17/2010	7-8	<2.16	48.7
SSW-5	08/17/2010	7-8	<2.14	50.4
SSW-6	08/30/2010	7-8	<0.52	80.3
SSW-7	08/30/2010	7-8	<0.516	44.2
TP1	03/11/2003	7	<0.50	30
TP1	03/11/2003	5	<0.50	49
TP1	03/11/2003	3	<0.50	34
TP1	03/11/2003	1	<0.50	34
TP10	03/11/2003	3	<0.50	46
TP11	03/11/2003	7	<0.50	38
TP11	03/11/2003	5	<0.50	48
TP11	03/11/2003	3	<0.50	62
TP11	03/11/2003	1	<0.50	38
TP12	03/11/2003	3	<0.50	65
TP2	03/11/2003	7	<0.50	22
TP2	03/11/2003	5	<0.50	28
TP2	03/11/2003	3	<0.50	23
TP2	03/11/2003	1	<0.50	49
TP3	03/11/2003	0-3	<0.50	34
TP4	03/11/2003	3	<0.50	26
TP5	03/11/2003	7	<0.50	27
TP5	03/11/2003	5	<0.50	31
TP5	03/11/2003	3	<0.50	37
TP5	03/11/2003	1	<0.50	37
TP7	03/11/2003	3	<0.50	31
TP8	03/11/2003	7	<0.50	28
TP8	03/11/2003	5	<0.50	42
TP8	03/11/2003	3	<0.50	31
TP8	03/11/2003	1	<0.50	38
W1	10/15/2003	0-0.2	<0.54	160
W2	10/15/2003	0-0.2	<0.56	140
W3	10/15/2003	0-0.2	<0.67	26
W4	10/15/2003	0-0.2	<0.51	71
WSW-1	08/17/2010	7-8	<2.15	45.6
WSW-2	08/17/2010	7-8	<2.14	41.7
WSW-3	08/17/2010	7-8	<2.12	44.4
WSW-4	08/17/2010	7-8	<2.12	48.3
WSW-5	08/17/2010	7-8	<2.12	61.0
Manufacturing Plant Area				
E-1	10/08/2003	1.4	<0.56	120
E-2	10/08/2003	1.5	<0.56	250
E-3	10/08/2003	1.5	<0.56	140
E-4	10/08/2003	1	<0.56	340
E-5	10/08/2003	0-0.25	<0.56	63
E-6	10/08/2003	0-0.25	<0.56	100
E-7	10/08/2003	0-0.25	0.65	120
E-8	10/08/2003	0-0.25	<0.56	480
E-9	10/08/2003	0-0.25	<0.56	390
PZ3A	04/15/2003	1	1.5	1,300
PZ3A	04/15/2003	20	<0.50	700
PZ3A	04/15/2003	15	<0.50	370
PZ3A	04/15/2003	10	<0.50	220
PZ3A	04/15/2003	8	<0.50	230
PZ4	04/15/2003	1	0.78	270
PZ4	04/15/2003	20	1.0	280
PZ4	04/15/2003	25	5.2	250
PZ4	04/15/2003	15	<0.50	410
PZ4	04/15/2003	10	<0.50	80

Table 1
Summary of Remaining Soil Data
Former Clariant Facility
Kalama, WA
H&H Project No. CLR-045

Sample ID	Sample Date	Sample Depth (ft bgs)	Cadmium (mg/kg)	Zinc (mg/kg)
PZ4	04/15/2003	5	<0.50	45
PZ5	04/15/2003	5	0.88	530
PZ5	04/15/2003	10	1.5	1,300
PZ5	04/15/2003	20	4.2	200
PZ5	04/15/2003	25	13	240
PZ5	04/15/2003	15	<0.50	180
PZ5	04/15/2003	1	<0.50	100
PZ6	04/15/2003	25	<0.50	110
PZ6	04/15/2003	20	<0.50	180
PZ6	04/15/2003	15	<0.50	190
PZ6	04/15/2003	10	<0.50	180
PZ6	04/15/2003	5	<0.50	360
PZ6	04/15/2003	1	<0.50	150
PZ7	04/15/2003	5	0.61	470
PZ7	04/15/2003	25	0.75	180
PZ7	04/15/2003	1	3.4	2,100
PZ7	04/15/2003	20	<0.50	86
PZ7	04/15/2003	15	<0.50	130
PZ7	04/15/2003	10	<0.50	530
PZ8	04/15/2003	25	<0.50	66
PZ8	04/15/2003	20	<0.50	29
PZ8	04/15/2003	15	<0.50	36
PZ8	04/15/2003	10	<0.50	61
PZ8	04/15/2003	5	<0.50	34
PZ8	04/15/2003	1	<0.50	84
PZ9	05/06/2003	20	<0.50	33
PZ9	05/06/2003	15	<0.50	32
PZ9	05/06/2003	10	<0.50	28
PZ9	05/06/2003	5	<0.50	26
PZ9	05/06/2003	1	<0.50	37
SS1	10/23/2002	0-0.5	0.60	400
SS10	04/16/2003	0.5-1	<0.50	170
SS11B	04/16/2003	0.5-1	0.78	1,200
SS2	10/23/2002	0.5-1	1.8	1,290
SS3	10/23/2002	0-0.5	1.7	868
SS4	10/24/2002	0-0.5	1.1	2,330
SS5	10/24/2002	0-0.5	<0.2	116
SS7	10/24/2002	0-0.5	8.5	19,100
W-1	10/02/2003	1.5	<0.53	210
W10	04/16/2003	1	0.65	280
W10	04/16/2003	20	<0.50	56
W10	04/16/2003	15	<0.50	510
W10	04/16/2003	10	<0.50	180
W10	04/16/2003	5	<0.50	88
W11	04/16/2003	20	<0.50	38
W11	04/16/2003	15	<0.50	30
W11	04/16/2003	10	<0.50	35
W11	04/16/2003	5	<0.50	22
W11	04/16/2003	1	<0.50	31
W12	04/16/2003	1	5.5	620
W12	04/16/2003	20	<0.50	360
W12	04/16/2003	15	<0.50	260
W12	04/16/2003	10	<0.50	330
W12	04/16/2003	5	<0.50	330
W-2	10/02/2003	1.5	<0.53	26
W-3	10/02/2003	1.5	<0.53	420
W-4	10/02/2003	1	<0.53	60
W6	04/16/2003	25	<0.50	150
W6	04/16/2003	20	<0.50	88
W6	04/16/2003	15	<0.50	89
W6	04/16/2003	10	<0.50	74
W6	04/16/2003	5	<0.50	160
W6	04/16/2003	1	<0.50	490
W7	04/16/2003	1	0.82	900
W7	04/16/2003	25	<0.50	160
W7	04/16/2003	20	<0.50	110
W7	04/16/2003	15	<0.50	91
W7	04/16/2003	10	<0.50	500
W7	04/16/2003	5	<0.50	170
W8	04/16/2003	10	2.3	61
W8	04/16/2003	25	<0.50	75
W8	04/16/2003	20	<0.50	180
W8	04/16/2003	15	<0.50	140
W8	04/16/2003	5	<0.50	350
W8	04/16/2003	1	<0.50	230
W9	04/16/2003	20	<0.50	110
W9	04/16/2003	15	<0.50	330
W9	04/16/2003	10	<0.50	45
W9	04/16/2003	5	<0.50	36
W9	04/16/2003	1	<0.50	37
SB-1	08/10/2017	0-3	<1.29	15.4
SB-1	08/10/2017	3-6	<1.32	<13.2
SB-2	08/09/2017	0-3	<1.26	94.5
SB-2	08/09/2017	3-6	<1.30	209
SB-3	08/10/2017	0-3	<1.29	299
SB-3	08/10/2017	3-6	<1.33	17.9
SB-4	08/10/2017	0-3	<1.29	36.3
SB-4	08/10/2017	3-6	<1.31	<13.1
SB-5	08/10/2017	0-3	<5.12	238
SB-5	08/10/2017	3-6	<5.13	119
SB-6	08/09/2017	1-3	5.92	5,250
SB-6	08/09/2017	3-6	5.30	3,200
SB-7	08/09/2017	1-3	7.37	9,360
SB-7	08/09/2017	3-6	<5.29	2,590
SB-8	08/10/2017	1-3	<5.33	652
SB-8	08/10/2017	3-6	<5.21	441
SB-9	08/10/2017	0-3	<5.00	97.4
SB-9	08/10/2017	3-6	<4.92	91.9
SB-10	08/10/2017	0-3	107	367
SB-10	08/10/2017	3-6	76.2	627
SB-11	08/10/2017	1-3	<5.03	592
SB-11	08/10/2017	3-6	<5.01	166
SB-12	08/10/2017	0-3	<4.99	754
SB-12	08/10/2017	3-6	<5.18	91.9
SB-13	08/10/2017	0-3	<5.19	1,300
SB-13	08/10/2017	3-6	<5.13	113
SB-14	08/10/2017	0-3	<2.54	488
SB-14	08/10/2017	3-6	<2.60	109
SB-15	08/10/2017	0-3	<2.51	372
SB-15	08/10/2017	3-6	<2.62	513
SB-16	08/10/2017	0-3	<2.52	387
SB-16	08/10/2017	3-6	<2.59	32.7
SB-17	08/10/2017	0-3	<2.55	303
SB-17	08/10/2017	3-6	<2.66	166
SB-18	08/10/2017	0-3	<2.59	46.8
SB-18	08/10/2017	3-6	<2.69	38.4
SB-19	08/11/2017	0-3	<2.58	<25.8
SB-19	08/11/2017	3-6	<2.60	<26.0
SB-20	08/11/2017	0-3	<2.67	594
SB-20	08/11/2017	3-4	<2.56	813
SB-21	08/11/2017	10-13	91.6	150
SB-21	08/11/2017	13-16	305	255
SB-22	08/11/2017	0-3	<2.56	160
SB-23	08/10/2017	1-3	<5.04	728
SB-23	08/10/2017	3-6	<5.26	4,260
Backfill and Background Samples				
Backfill	08/18/2010	0-15	<2.05	39.4
SP1	09/19/2003	0-15	<0.53	37
SP2	09/19/2003	0-15	<0.53	32
SP3	09/19/2003	0-15	<0.53	38
SP4	09/19/2003	0-15	<0.53	31
SP5	09/19/2003	0-15	<0.53	27
BG1	10/23/2002	0-0.5	<0.6	83
BG2	10/23/2002	0-0.5	<0.2	49.1
BG3	10/23/2002	0-0.5	0.30	43.3
Soil Cleanup Levels (CULs)¹				
Direct Contact			80	24,000
Wildlife Ecological Indicator			14	360
Unsaturated Soil - Protection of Groundwater²			0.69	5,970
Saturated Soil - Protection of Groundwater²			0.035	299

Notes

bgs = below ground surface; mg/kg = milligrams per kilogram; -- Indicates not analyzed

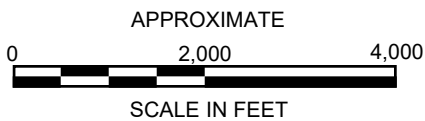
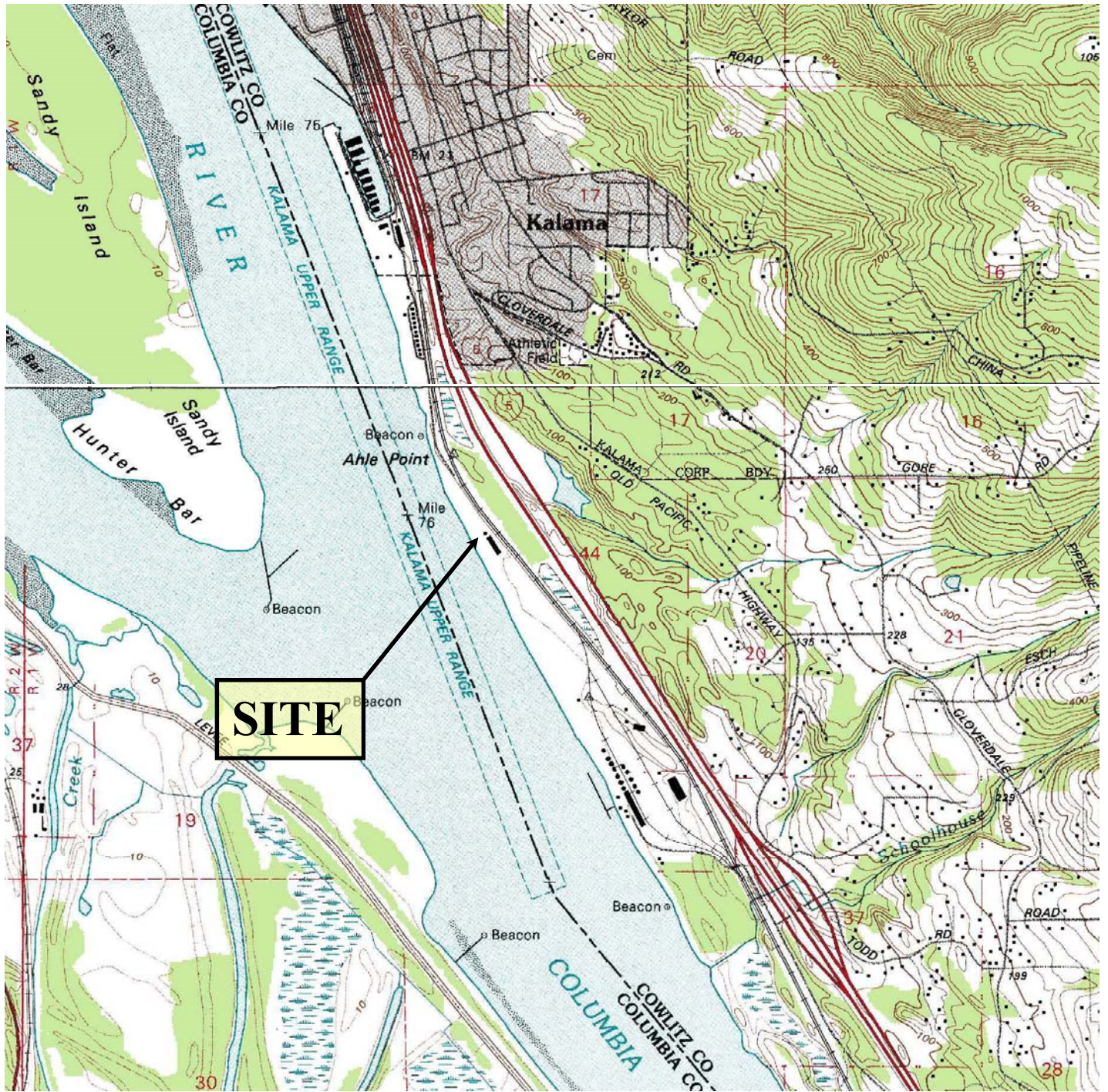
¹ Refer to the Section 2.2 of the Soil Sampling Report for discussion of CULs

² Concentrations above protection of groundwater CULs are not identified in table

Bold concentration exceeds Wildlife Ecological Indicator CUL (within the standard point of compliance of 0-15 ft bgs)

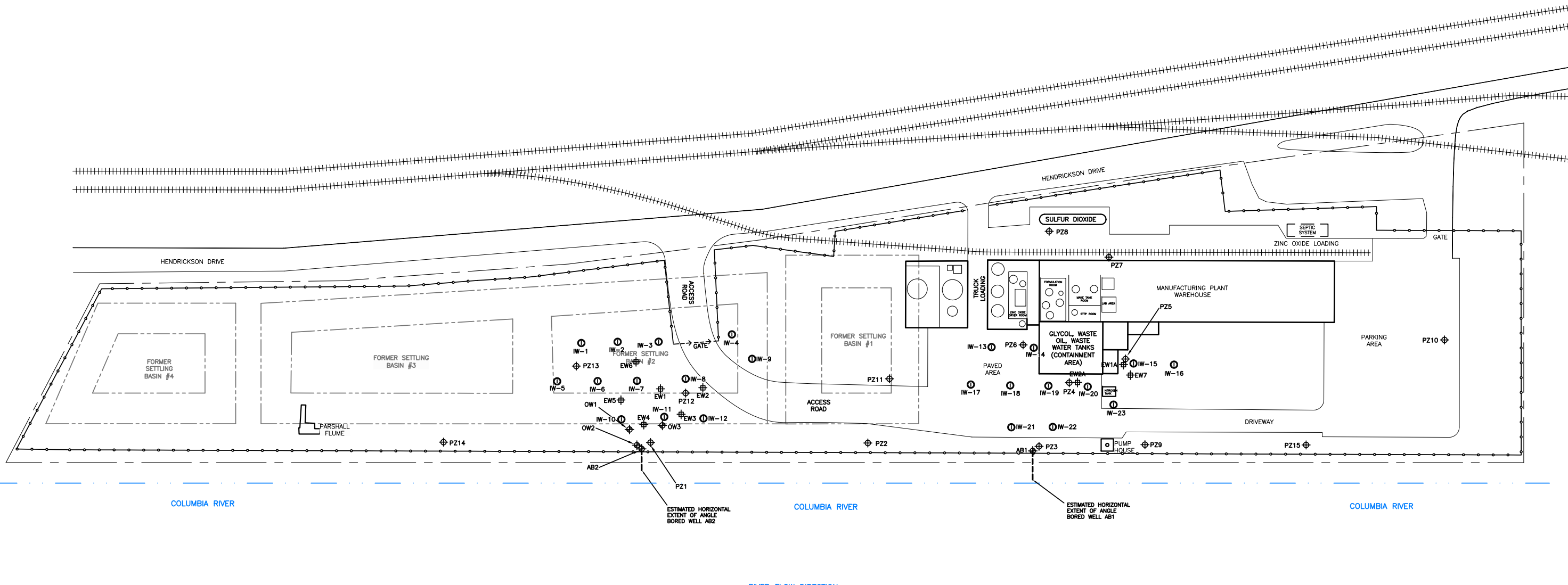
Highlighted Bold concentration exceeds Direct Contact CUL (within the standard point of compliance of 0-15 ft bgs)

*Samples OB1 through OB4 were collected from overburden soil removed from the top of former settling basin #2 (FSB2) and used as backfill in the bottom 5 ft of FSB2 during 2003 excavation activities. Approximately 1/2 of the soil was removed during 2010 excavation activities.



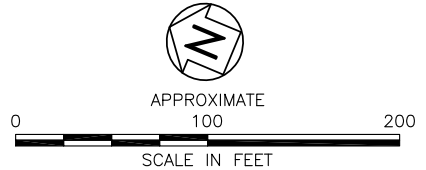
U.S.G.S. QUADRANGLE MAP
DEER ISLAND & KALAMA, WA 7.5 MIN.
TOPOGRAPHIC QUADRANGLES
 QUADRANGLE
 7.5 MINUTE SERIES (TOPOGRAPHIC)

TITLE		SITE LOCATION MAP	
PROJECT		CHEMTRADE PERFORMANCE CHEMICALS SITE FACILITY/SITE ID No. 24634187 KALAMA, WASHINGTON	
		2923 South Tryon Street – Suite 100 Charlotte, North Carolina 28203 704-586-0007 (p) 704-586-0373 (f)	
DATE: 05/12/17		REVISION NO. 0	
JOB NO: CLR-045		FIGURE NO. 1	



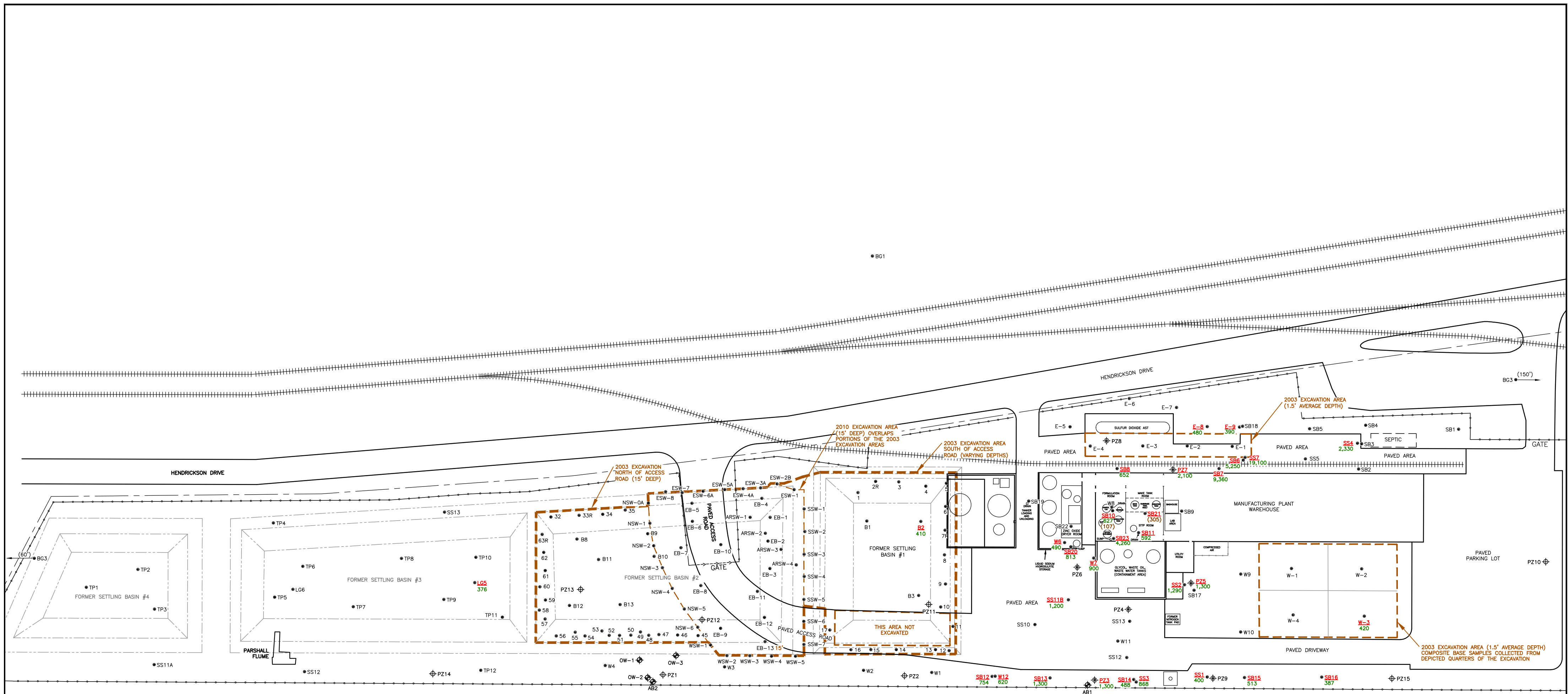
- LEGEND:**
- — — — — PROPERTY LINE
 - ○ — ○ — FENCE LINE
 - + + + + + RAILROAD TRACK
 - · · · — APPROXIMATE EAST EDGE OF COLUMBIA RIVER
 - - - - - EXTENT OF FORMER SETTLING BASIN
 - ⊕ MONITORING/OBSERVATION WELL
 - ⊕ PIEZOMETER
 - ⊙ INJECTION WELL
 - ⊕ RECOVERY WELL

← RIVER FLOW DIRECTION



TITLE SITE MAP	
PROJECT CHEMTRADE PERFORMANCE CHEMICALS SITE FACILITY/SITE No. 24634187 KALAMA, WA	
 2923 South Tryon Street-Suite 100 Charlotte, North Carolina 28203 704-586-0007 (p) 704-586-0373 (f) License # C-1269 / #C-245 Geology	
DATE: 10-16-17	REVISION NO. 0
JOB NO. CLR-045	FIGURE NO. 2

3/16/2017 10:00 AM C:\Users\jshelton\OneDrive\Documents\Chemtrade\24634187\24634187.dwg



← RIVER FLOW DIRECTION

COLUMBIA RIVER

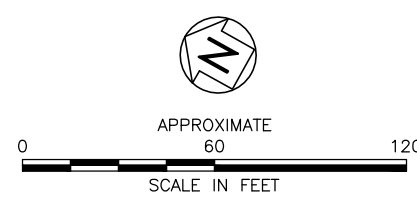
COLUMBIA RIVER

COLUMBIA RIVER

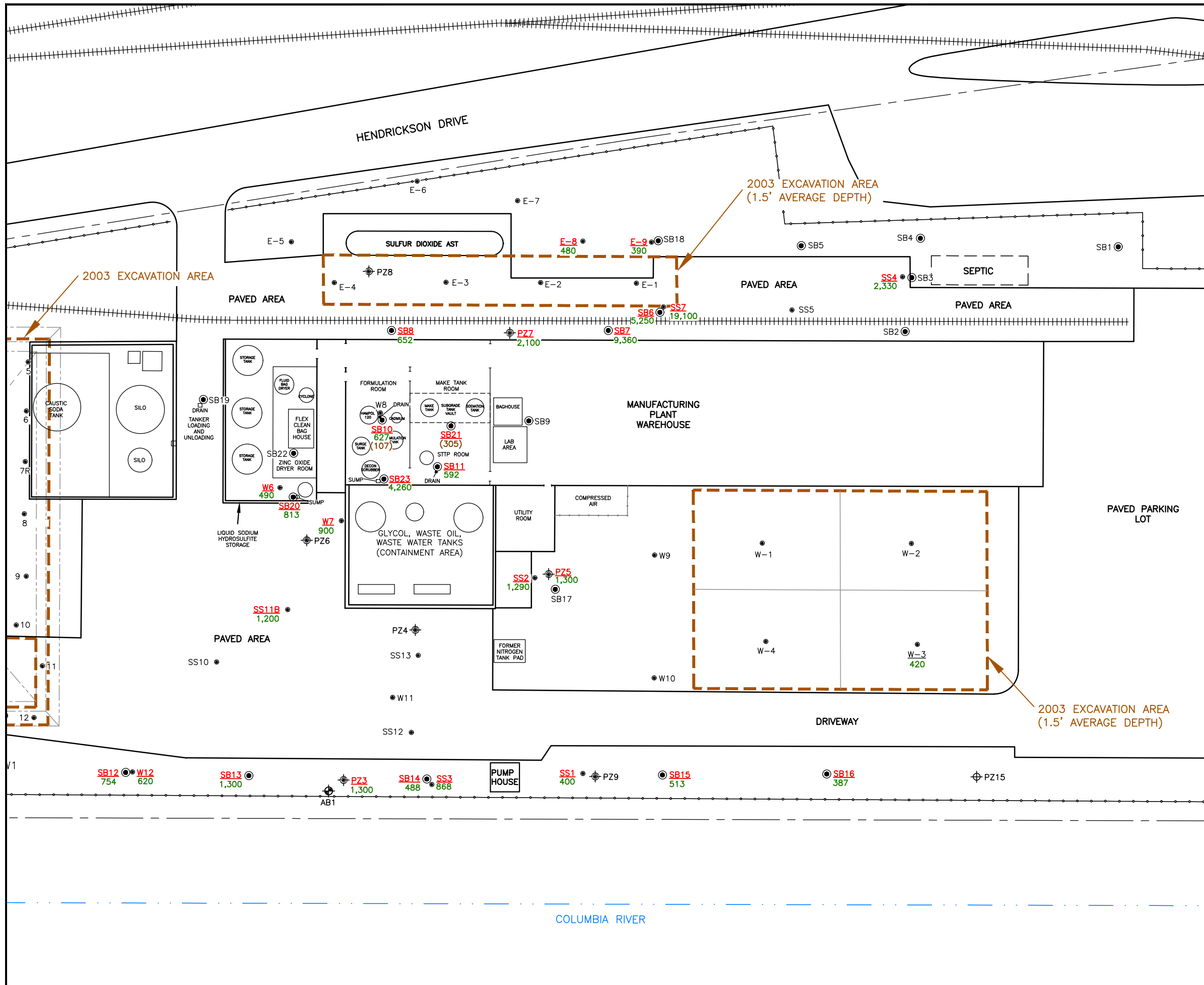
- LEGEND**
- PROPERTY LINE
 - FENCE LINE
 - APPROXIMATE EAST EDGE OF COLUMBIA RIVER
 - ||||| RAILROAD TRACK
 - - - - - EXTENT OF FORMER SETTLING BASIN (FSB)
 - - - - - PERIMETER OF FORMER SOIL EXCAVATION
 - ⊕ MONITORING/OBSERVATION WELL
 - ⊕ PIEZOMETER
 - SOIL SAMPLE LOCATION
 - PZ5 SAMPLE LOCATION WITH ZINC/CADMIUM ABOVE WILDLIFE ECOLOGICAL INDICATOR CLEANUP LEVEL
 - 627 ZINC CONCENTRATION (mg/kg)
 - (107) CADMIUM CONCENTRATION (mg/kg)

NOTES

- SOIL SAMPLE LOCATIONS ARE FROM SOIL WHICH REMAINS IN PLACE AT THE SITE AFTER COMPLETION OF EXCAVATION ACTIVITIES. SOIL SAMPLE LOCATIONS WHICH WERE REMOVED BY EXCAVATION ACTIVITIES ARE NOT DEPICTED.
- IMPORTED COLUMBIA RIVER DREDGE SPOILS OBTAINED FROM ADJACENT PROPERTY SOUTH OF THE SITE WERE USED TO BACKFILL EXCAVATIONS.
- SAMPLES OB1 THROUGH OB4, SB1-SURF-1/2/3/4, AND SB2-SURF-1/2/3/4 REPRESENT SOIL WITHIN THE EXTENTS OF FSB1 AND FSB2, BUT EXACT LOCATIONS ARE NOT KNOWN AND THE SAMPLES ARE NOT DEPICTED.
- ONLY ZINC AND CADMIUM CONCENTRATIONS ABOVE WILDLIFE ECOLOGICAL INDICATOR CLEANUP LEVELS (360 AND 14 mg/kg, RESPECTIVELY) DEPICTED, AND ONLY THE MAXIMUM CONCENTRATION DETECTED TO THE STANDARD POINT OF COMPLIANCE IN A BORING (0-15 FT) IS DEPICTED.



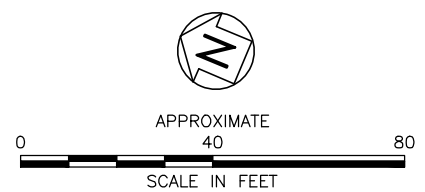
REMAINING SOIL SAMPLE LOCATIONS	
PROJECT CHEMTRADE PERFORMANCE CHEMICALS SITE FACILITY/SITE No. 24634187 KALAMA, WA	
	
2923 South Tryon Street-Suite 100 Charlotte, North Carolina 28203 704-586-0007(p) 704-586-0373(f) License # C-1269 / #C-245 Geology	
DATE: 10-16-17	REVISION NO. 0
JOB NO. CLR-045	FIGURE NO. 3




- LEGEND**
- PROPERTY LINE
 - FENCE LINE
 - APPROXIMATE EAST EDGE OF COLUMBIA RIVER
 - ++++ RAILROAD TRACK
 - EXTENT OF FORMER SETTLING BASIN (FSB)
 - PERIMETER OF FORMER SOIL EXCAVATION
 - ⊕ MONITORING/OBSERVATION WELL
 - ⊕ PIEZOMETER
 - PRE-2017 SOIL SAMPLE LOCATION
 - 2017 SOIL SAMPLE LOCATION
 - PZ5 SAMPLE LOCATION WITH ZINC/CADMIUM ABOVE WILDLIFE ECOLOGICAL INDICATOR CLEANUP LEVEL
 - 627 ZINC CONCENTRATION (mg/kg)
 - (107) CADMIUM CONCENTRATION (mg/kg)

NOTES

1. SOIL SAMPLE LOCATIONS ARE FROM SOIL WHICH REMAINS IN PLACE AT THE SITE AFTER COMPLETION OF EXCAVATION ACTIVITIES. SOIL SAMPLE LOCATIONS WHICH WERE REMOVED BY EXCAVATION ACTIVITIES ARE NOT DEPICTED.
2. IMPORTED COLUMBIA RIVER DREDGE SPOILS OBTAINED FROM ADJACENT PROPERTY SOUTH OF THE SITE WERE USED TO BACKFILL EXCAVATIONS.
3. ONLY ZINC AND CADMIUM CONCENTRATIONS ABOVE WILDLIFE ECOLOGICAL INDICATOR CLEANUP LEVELS (360 AND 14 mg/kg, RESPECTIVELY) DEPICTED, AND ONLY THE MAXIMUM CONCENTRATION DETECTED TO THE STANDARD POINT OF COMPLIANCE IN A BORING (0-15 FT) IS DEPICTED.



TITLE MPA SOIL SAMPLE LOCATIONS	
PROJECT CHEMTRADE PERFORMANCE CHEMICALS SITE FACILITY/SITE No. 24634187 KALAMA, WA	
 2923 South Tryon Street-Suite 100 Charlotte, North Carolina 28203 704-586-0007(p) 704-586-0373(f) License # C-1269 / #C-245 Geology	
DATE: 10-16-17	REVISION NO. 0
JOB NO. CLR-045	FIGURE NO. 4

Appendix A
Photographs



Photograph 1: Rail spur along east side of manufacturing plant building (SB8 in foreground)



Photograph 2: Unpaved area along western edge of MPA (SB13 in foreground, pump house in background)



Photograph 3: Baghouse inside manufacturing plant warehouse (SB9 location)



Photograph 4: Drain in tanker loading driveway (SB19 location)



Photograph 5: Subgrade tanks/vault in Make Tank Room



Photograph 6: SB21 adjacent to subgrade tank vault in Make Tank Room



Photograph 7: Drain in Formulation Room (SB10)



Photograph 8: Sump in Formulation Room (SB23)



Photograph 9: Zinc Oxide Dryer Room



Photograph 10: Sump outside Zinc Oxide Dryer Room (SB20)

Appendix B
Boring Logs

BORING NUMBER SB-1

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						(SP) Slightly moist, loose, grey and black fine to medium SAND		0.0
2.5								2.5
5.0								5.0
7.5						Bottom of borehole at 6.0 feet.		7.5

BORING LOG - HART HICKMAN.GDT - 10/23/17 08:00 - S:\B\BBB MASTER GINT PROJECTS\CLR-045.GPJ

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / DPT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 6 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
Sampled at 0'-3' & 3'-6'

BORING NUMBER SB-2

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0					CONCRETE			0.0
					(SP) Slightly moist, loose, grey and black fine to medium SAND			
2.5								2.5
5.0								5.0
7.5								7.5
Bottom of borehole at 6.0 feet.								

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / HA
SAMPLING METHOD: Auger Bucket
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 6 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
Sampled at 0'-3' & 3'-6'

BORING NUMBER SB-3

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						(SP) Slightly moist, loose, grey and black fine to medium SAND		0.0
2.5								2.5
5.0								5.0
7.5						Bottom of borehole at 6.0 feet.		7.5

BORING LOG - HART HICKMAN.GDT - 10/23/17 08:00 - S:\B\B\B\MASTER GINT PROJECTS\CLR-045.GPJ

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / DPT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 6 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
Sampled at 0'-3' & 3'-6'

BORING NUMBER SB-4

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						(SP) Slightly moist, loose, grey and black fine to medium SAND		0.0
2.5								2.5
5.0								5.0
6.0						Bottom of borehole at 6.0 feet.		6.0
7.5								7.5

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / DPT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 6 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
Sampled at 0'-3' & 3'-6'

BORING NUMBER SB-5

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						(SP) Slightly moist, loose, grey and black fine to medium SAND		0.0
2.5								2.5
5.0								5.0
7.5						Bottom of borehole at 6.0 feet.		7.5

BORING LOG - HART HICKMAN.GDT - 10/23/17 08:00 - S:\BBB MASTER GINT PROJECTS\CLR-045.GPJ

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / DPT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 6 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
Sampled at 0'-3' & 3'-6'

BORING NUMBER SB-6

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0					ASPHALT			0.0
					Gravel FILL			
					(SP) Slightly moist, loose, grey and black fine to medium SAND			
2.5								2.5
5.0								5.0
7.5								7.5
Bottom of borehole at 6.0 feet.								

BORING LOG - HART HICKMAN.GDT - 10/23/17 08:00 - S:\B\BB MASTER GINT PROJECTS\CLR-045.GPJ

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / HA
SAMPLING METHOD: Auger Bucket
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 6 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
Sampled at 1'-3' & 3'-6'

BORING NUMBER SB-7

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0					ASPHALT			0.0
					Gravel FILL			
					(SP) Slightly moist, loose, grey and black fine to medium SAND			
2.5								2.5
5.0								5.0
7.5								7.5
Bottom of borehole at 6.0 feet.								

BORING LOG - HART HICKMAN.GDT - 10/23/17 08:00 - S:\B\BB MASTER GINT PROJECTS\CLR-045.GPJ

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / HA
SAMPLING METHOD: Auger Bucket
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 6 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
Sampled at 1'-3' & 3'-6'

BORING NUMBER SB-8

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0					ASPHALT			0.0
					Gravel FILL			
					(SP) Slightly moist, loose, grey and black fine to medium SAND			
2.5								2.5
5.0								5.0
7.5								7.5
Bottom of borehole at 6.0 feet.								

BORING LOG - HART HICKMAN.GDT - 10/23/17 08:00 - S:\B\BB MASTER GINT PROJECTS\CLR-045.GPJ

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / DPT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 6 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
Sampled at 1'-3' & 3'-6'

BORING NUMBER SB-9

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0					CONCRETE			0.0
					(SP) Slightly moist, loose, grey and black fine to medium SAND			
2.5								2.5
5.0								5.0
7.5								7.5
Bottom of borehole at 6.0 feet.								

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / HA
SAMPLING METHOD: Auger Bucket
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 6 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
Sampled at 0'-3' & 3'-6'

BORING NUMBER SB-10

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0					CONCRETE			0.0
					(SP) Slightly moist, loose, grey and black fine to medium SAND			
2.5								2.5
5.0								5.0
7.5								7.5
Bottom of borehole at 6.0 feet.								

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / HA
SAMPLING METHOD: Auger Bucket
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 6 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
Sampled at 0'-3' & 3'-6'

BORING NUMBER SB-11

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0					CONCRETE			0.0
					Gravel FILL			
					(SP) Slightly moist, loose, grey and black fine to medium SAND			
2.5								2.5
5.0								5.0
7.5								7.5
Bottom of borehole at 6.0 feet.								

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / HA
SAMPLING METHOD: Auger Bucket
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 6 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
Sampled at 1'-3' & 3'-6'

BORING NUMBER SB-12

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						(SP) Slightly moist, loose, grey and black fine to medium SAND		0.0
2.5								2.5
5.0								5.0
7.5						Bottom of borehole at 6.0 feet.		7.5

BORING LOG - HART HICKMAN.GDT - 10/23/17 08:00 - S:\BBB MASTER GINT PROJECTS\CLR-045.GPJ

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / DPT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 6 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
Sampled at 0'-3' & 3'-6'

BORING NUMBER SB-13

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						(SP) Slightly moist, loose, grey and black fine to medium SAND		0.0
2.5								2.5
5.0								5.0
7.5						Bottom of borehole at 6.0 feet.		7.5

BORING LOG - HART HICKMAN.GDT - 10/23/17 08:00 - S:\BBB MASTER GINT PROJECTS\CLR-045.GPJ

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / DPT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 6 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
Sampled at 0'-3' & 3'-6'

BORING NUMBER SB-14

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						(SP) Slightly moist, loose, grey and black fine to medium SAND		0.0
2.5								2.5
5.0								5.0
7.5						Bottom of borehole at 6.0 feet.		7.5

BORING LOG - HART HICKMAN.GDT - 10/23/17 08:00 - S:\BBB MASTER GINT PROJECTS\CLR-045.GPJ

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / DPT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 6 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
Sampled at 0'-3' & 3'-6'

BORING NUMBER SB-15

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						(SP) Slightly moist, loose, grey and black fine to medium SAND		0.0
2.5								2.5
5.0								5.0
7.5						Bottom of borehole at 6.0 feet.		7.5

BORING LOG - HART HICKMAN.GDT - 10/23/17 08:00 - S:\BBB MASTER GINT PROJECTS\CLR-045.GPJ

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / DPT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 6 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
Sampled at 0'-3' & 3'-6'

BORING NUMBER SB-16

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						(SP) Slightly moist, loose, grey and black fine to medium SAND		0.0
2.5								2.5
5.0								5.0
7.5						Bottom of borehole at 6.0 feet.		7.5

BORING LOG - HART HICKMAN.GDT - 10/23/17 08:00 - S:\B\BBB MASTER GINT PROJECTS\CLR-045.GPJ

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / DPT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 6 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
Sampled at 0'-3' & 3'-6'

BORING NUMBER SB-17

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						(SP) Slightly moist, loose, grey and black fine to medium SAND		0.0
2.5								2.5
5.0								5.0
7.5						Bottom of borehole at 6.0 feet.		7.5

BORING LOG - HART HICKMAN.GDT - 10/23/17 08:00 - S:\BIBB MASTER GINT PROJECTS\CLR-045.GPJ

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / DPT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 6 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
Sampled at 0'-3' & 3'-6'

BORING NUMBER SB-18

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						(SP) Slightly moist, loose, grey and black fine to medium SAND		0.0
2.5								2.5
5.0								5.0
7.5						Bottom of borehole at 6.0 feet.		7.5

BORING LOG - HART HICKMAN.GDT - 10/23/17 08:00 - S:\BBB MASTER GINT PROJECTS\CLR-045.GPJ

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / DPT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 6 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
Sampled at 0'-3' & 3'-6'

BORING NUMBER SB-19

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0					ASPHALT			0.0
					Gravel FILL			
					(SP) Slightly moist, loose, grey and black fine to medium SAND			
2.5								2.5
5.0								5.0
7.5								7.5
Bottom of borehole at 6.0 feet.								

BORING LOG - HART HICKMAN.GDT - 10/23/17 08:00 - S:\BBB MASTER GINT PROJECTS\CLR-045.GPJ

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / HA
SAMPLING METHOD: Auger Bucket
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 6 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
Sampled at 0'-3' & 3'-6'

BORING NUMBER SB-20

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0					CONCRETE			0
0.5					(SP) Slightly moist, loose, grey and black fine to medium SAND			0.5
1								1
2								2
3								3
4						Bottom of borehole at 4.0 feet.		4
5								5
6								6

BORING LOG - HART HICKMAN.GDT - 10/23/17 08:00 - S:\BIBB MASTER GINT PROJECTS\CLR-045.GPJ

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / HA
SAMPLING METHOD: Auger Bucket
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 4 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
HA refusal at 4'; Sampled at 0-3' & 3-4'

BORING NUMBER SB-21

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						CONCRETE		0
						(SP) Slightly moist, loose, grey and black fine to medium SAND		
5								5
10								10
15						(SP) Slightly moist, loose, grey and black gravelly SAND		15
						Bottom of borehole at 16.0 feet.		

BORING LOG - HART HICKMAN.GDT - 10/23/17 08:00 - S:\BIBB MASTER GINT PROJECTS\CLR-045.GPJ

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 420M / DPT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 16 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
No soil collection 0'-10'; Sampled at 10'-13' & 13'-16'

BORING NUMBER SB-22

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0					CONCRETE			0
1					(SP) Slightly moist, loose, grey and black fine to medium SAND			1
2								2
3						Bottom of borehole at 3.0 feet.		3
4								4
5								5

BORING LOG - HART HICKMAN.GDT - 10/23/17 08:00 - S:\BIBB MASTER GINT PROJECTS\CLR-045.GPJ

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / HA
SAMPLING METHOD: Auger Bucket
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 3 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
HA refusal at 3'; Sampled at 0'-3'

BORING NUMBER SB-23

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Clariant - Kalama RA
JOB NUMBER: CLR-045
LOCATION: Kalama, Washington

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0					CONCRETE			0.0
					Gravel FILL			
					(SP) Slightly moist, loose, grey and black fine to medium SAND			
2.5								2.5
5.0								5.0
7.5								7.5
Bottom of borehole at 6.0 feet.								

BORING LOG - HART HICKMAN.GDT - 10/23/17 08:00 - S:\B\BB MASTER GINT PROJECTS\CLR-045.GPJ

DRILLING CONTRACTOR: Steadfast Services NW
DRILL RIG/ METHOD: Geoprobe 7822 DT / HA
SAMPLING METHOD: Auger Bucket
LOGGED BY: RHS
DRAWN BY: RHS

BORING STARTED:
BORING COMPLETED:
TOTAL DEPTH: 6 ft.
TOP OF CASING ELEV:
DEPTH TO WATER:

Remarks:
Sampled at 1'-3' & 3'-6'

Appendix C
Laboratory Analytical Report

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

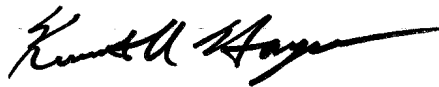
ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-134610-1
TestAmerica Sample Delivery Group: CLR.045
Client Project/Site: Clariant Kalama (WA)
Revision: 1

For:
Hart & Hickman, PC
2923 S Tryon Street
Suite 100
Charlotte, North Carolina 28203

Attn: Mr. Scott Drury



Authorized for release by:
8/25/2017 12:29:20 PM

Ken Hayes, Project Manager II
(615)301-5035
ken.hayes@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1

2

3

4

5

6

7

8

9

10

11

12

13



Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Case Narrative	4
Definitions	5
Client Sample Results	6
QC Sample Results	51
QC Association	55
Chronicle	60
Method Summary	70
Certification Summary	71
Chain of Custody	72
Receipt Checklists	77

Sample Summary

Client: Hart & Hickman, PC
Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
SDG: CLR.045

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-134610-1	SB-1 (0-3)	Solid	08/10/17 14:05	08/12/17 10:15
490-134610-2	SB-1 (3-6)	Solid	08/10/17 14:10	08/12/17 10:15
490-134610-3	SB-2 (0-3)	Solid	08/09/17 13:20	08/12/17 10:15
490-134610-4	SB-2 (3-6)	Solid	08/09/17 13:25	08/12/17 10:15
490-134610-5	SB-3 (0-3)	Solid	08/10/17 13:35	08/12/17 10:15
490-134610-6	SB-3 (3-6)	Solid	08/10/17 13:40	08/12/17 10:15
490-134610-7	SB-4 (0-3)	Solid	08/10/17 13:50	08/12/17 10:15
490-134610-8	SB-4 (3-6)	Solid	08/10/17 13:55	08/12/17 10:15
490-134610-9	SB-5 (0-3)	Solid	08/10/17 13:20	08/12/17 10:15
490-134610-10	SB-5 (3-6)	Solid	08/10/17 13:25	08/12/17 10:15
490-134610-11	SB-6 (1-3)	Solid	08/09/17 14:35	08/12/17 10:15
490-134610-12	SB-6 (3-6)	Solid	08/09/17 14:40	08/12/17 10:15
490-134610-13	SB-7 (1-3)	Solid	08/09/17 15:05	08/12/17 10:15
490-134610-14	SB-7 (3-6)	Solid	08/09/17 15:10	08/12/17 10:15
490-134610-15	SB-8 (1-3)	Solid	08/10/17 12:40	08/12/17 10:15
490-134610-16	SB-8 (3-6)	Solid	08/10/17 12:45	08/12/17 10:15
490-134610-17	SB-9 (0-3)	Solid	08/10/17 11:35	08/12/17 10:15
490-134610-18	SB-9 (3-6)	Solid	08/10/17 11:40	08/12/17 10:15
490-134610-19	SB-10 (0-3)	Solid	08/10/17 10:20	08/12/17 10:15
490-134610-20	SB-10 (3-6)	Solid	08/10/17 10:30	08/12/17 10:15
490-134610-21	SB-11 (1-3)	Solid	08/10/17 08:50	08/12/17 10:15
490-134610-22	SB-11 (3-6)	Solid	08/10/17 08:55	08/12/17 10:15
490-134610-23	SB-23 (1-3)	Solid	08/10/17 09:45	08/12/17 10:15
490-134610-24	SB-23 (3-6)	Solid	08/10/17 09:50	08/12/17 10:15
490-134610-25	SB-12 (0-3)	Solid	08/10/17 12:25	08/12/17 10:15
490-134610-26	SB-12 (3-6)	Solid	08/10/17 12:25	08/12/17 10:15
490-134610-27	SB-13 (0-3)	Solid	08/10/17 12:20	08/12/17 10:15
490-134610-28	SB-13 (3-6)	Solid	08/10/17 12:20	08/12/17 10:15
490-134610-29	SB-14 (0-3)	Solid	08/10/17 12:15	08/12/17 10:15
490-134610-30	SB-14 (3-6)	Solid	08/10/17 12:15	08/12/17 10:15
490-134610-31	SB-15 (0-3)	Solid	08/10/17 12:05	08/12/17 10:15
490-134610-32	SB-15 (3-6)	Solid	08/10/17 12:05	08/12/17 10:15
490-134610-33	SB-16 (0-3)	Solid	08/10/17 12:00	08/12/17 10:15
490-134610-34	SB-16 (3-6)	Solid	08/10/17 12:05	08/12/17 10:15
490-134610-35	SB-17 (0-3)	Solid	08/10/17 12:10	08/12/17 10:15
490-134610-36	SB-17 (3-6)	Solid	08/10/17 12:10	08/12/17 10:15
490-134610-37	SB-18 (0-3)	Solid	08/10/17 13:05	08/12/17 10:15
490-134610-38	SB-18 (3-6)	Solid	08/10/17 13:10	08/12/17 10:15
490-134610-39	SB-19 (0-3)	Solid	08/11/17 09:05	08/12/17 10:15
490-134610-40	SB-19 (3-6)	Solid	08/11/17 09:10	08/12/17 10:15
490-134610-41	SB-20 (0-3)	Solid	08/11/17 10:25	08/12/17 10:15
490-134610-42	SB-20 (3-4)	Solid	08/11/17 10:30	08/12/17 10:15
490-134610-43	SB-21 (10-13)	Solid	08/11/17 14:03	08/12/17 10:15
490-134610-44	SB-21 (13-16)	Solid	08/11/17 14:10	08/12/17 10:15
490-134610-45	SB-22 (0-3)	Solid	08/11/17 15:03	08/12/17 10:15

Case Narrative

Client: Hart & Hickman, PC
Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
SDG: CLR.045

Job ID: 490-134610-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-134610-1

Comments

No additional comments.

Receipt

The samples were received on 8/12/2017 10:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.0° C.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Definitions/Glossary

Client: Hart & Hickman, PC
Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
SDG: CLR.045

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-1 (0-3)
Date Collected: 08/10/17 14:05
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-1
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.29		mg/Kg	☼	08/15/17 13:54	08/19/17 07:27	5
Zinc	15.4		12.9		mg/Kg	☼	08/15/17 13:54	08/19/17 07:27	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	95.2		0.1		%			08/15/17 07:04	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-1 (3-6)
Date Collected: 08/10/17 14:10
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-2
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.32		mg/Kg	☼	08/15/17 13:54	08/19/17 07:33	5
Zinc	ND		13.2		mg/Kg	☼	08/15/17 13:54	08/19/17 07:33	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	94.1		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-2 (0-3)
Date Collected: 08/09/17 13:20
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-3
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.26		mg/Kg	☼	08/15/17 13:54	08/19/17 07:39	5
Zinc	248		12.6		mg/Kg	☼	08/15/17 13:54	08/19/17 07:39	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	94.5		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-2 (3-6)
Date Collected: 08/09/17 13:25
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-4
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.30		mg/Kg	☼	08/15/17 13:54	08/19/17 07:55	5
Zinc	209		13.0		mg/Kg	☼	08/15/17 13:54	08/19/17 07:55	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93.9		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-3 (0-3)
Date Collected: 08/10/17 13:35
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-5
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.29		mg/Kg	☒	08/15/17 13:54	08/19/17 08:01	5
Zinc	299		12.9		mg/Kg	☒	08/15/17 13:54	08/19/17 08:01	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	95.2		0.1		%	---		08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-3 (3-6)
Date Collected: 08/10/17 13:40
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-6
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.33		mg/Kg	☼	08/15/17 13:54	08/19/17 08:06	5
Zinc	17.9		13.3		mg/Kg	☼	08/15/17 13:54	08/19/17 08:06	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93.7		0.1		%	-		08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-4 (0-3)
Date Collected: 08/10/17 13:50
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-7
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.29		mg/Kg	☼	08/15/17 13:54	08/19/17 08:12	5
Zinc	36.3		12.9		mg/Kg	☼	08/15/17 13:54	08/19/17 08:12	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	96.6		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-4 (3-6)
Date Collected: 08/10/17 13:55
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-8
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.31		mg/Kg	☼	08/15/17 13:54	08/19/17 08:18	5
Zinc	ND		13.1		mg/Kg	☼	08/15/17 13:54	08/19/17 08:18	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93.9		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-5 (0-3)
Date Collected: 08/10/17 13:20
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-9
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	F1	5.12		mg/Kg	☼	08/15/17 14:03	08/24/17 02:36	10
Zinc	238		25.6		mg/Kg	☼	08/15/17 14:03	08/23/17 00:14	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	94.3		0.1		%	-		08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-5 (3-6)
Date Collected: 08/10/17 13:25
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-10
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		5.13		mg/Kg	☼	08/15/17 14:03	08/24/17 02:57	10
Zinc	119		51.3		mg/Kg	☼	08/15/17 14:03	08/24/17 02:57	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93.4		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-6 (1-3)
Date Collected: 08/09/17 14:35
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-11
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	5.92		5.06		mg/Kg	☼	08/15/17 14:03	08/24/17 03:00	10
Zinc	5250		50.6		mg/Kg	☼	08/15/17 14:03	08/24/17 03:00	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	94.5		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-6 (3-6)
Date Collected: 08/09/17 14:40
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-12
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	5.30		5.14		mg/Kg	☼	08/15/17 14:03	08/24/17 03:03	10
Zinc	3200		51.4		mg/Kg	☼	08/15/17 14:03	08/24/17 03:03	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93.9		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-7 (1-3)
Date Collected: 08/09/17 15:05
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-13
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	7.37		5.16		mg/Kg	☼	08/15/17 14:03	08/24/17 03:06	10
Zinc	9380		51.6		mg/Kg	☼	08/15/17 14:03	08/24/17 03:06	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	92.2		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-7 (3-6)
Date Collected: 08/09/17 15:10
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-14
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		5.29		mg/Kg	☼	08/15/17 14:03	08/24/17 03:09	10
Zinc	2590		52.9		mg/Kg	☼	08/15/17 14:03	08/24/17 03:09	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	90.7		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-8 (1-3)
Date Collected: 08/10/17 12:40
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-15
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		5.33		mg/Kg	☼	08/15/17 14:03	08/24/17 03:12	10
Zinc	652		26.7		mg/Kg	☼	08/15/17 14:03	08/23/17 01:20	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	94.1		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-8 (3-6)
Date Collected: 08/10/17 12:45
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-16
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		5.21		mg/Kg	☼	08/15/17 14:03	08/24/17 03:15	10
Zinc	441		26.0		mg/Kg	☼	08/15/17 14:03	08/23/17 01:26	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	94.0		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-9 (0-3)
Date Collected: 08/10/17 11:35
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-17
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		5.00		mg/Kg	☼	08/15/17 14:03	08/24/17 03:18	10
Zinc	97.4		50.0		mg/Kg	☼	08/15/17 14:03	08/24/17 03:18	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	96.7		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-9 (3-6)
Date Collected: 08/10/17 11:40
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-18
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		4.92		mg/Kg	☼	08/15/17 14:03	08/24/17 03:21	10
Zinc	91.9		49.2		mg/Kg	☼	08/15/17 14:03	08/24/17 03:21	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	96.8		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-10 (0-3)
Date Collected: 08/10/17 10:20
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-19
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	107		5.19		mg/Kg	☼	08/15/17 14:03	08/24/17 03:24	10
Zinc	367		25.9		mg/Kg	☼	08/15/17 14:03	08/23/17 01:42	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	95.2		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-10 (3-6)
Date Collected: 08/10/17 10:30
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-20
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	76.2		5.02		mg/Kg	☼	08/15/17 14:03	08/24/17 03:33	10
Zinc	627		25.1		mg/Kg	☼	08/15/17 14:03	08/23/17 01:48	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	95.3		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-11 (1-3)
Date Collected: 08/10/17 08:50
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-21
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		5.03		mg/Kg	☼	08/15/17 14:03	08/24/17 03:36	10
Zinc	592		50.3		mg/Kg	☼	08/15/17 14:03	08/24/17 03:36	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	94.9		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-11 (3-6)

Lab Sample ID: 490-134610-22

Date Collected: 08/10/17 08:55

Matrix: Solid

Date Received: 08/12/17 10:15

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		5.01		mg/Kg	☼	08/15/17 14:03	08/24/17 03:39	10
Zinc	166		25.0		mg/Kg	☼	08/15/17 14:03	08/23/17 01:59	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	96.2		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-23 (1-3)

Lab Sample ID: 490-134610-23

Date Collected: 08/10/17 09:45

Matrix: Solid

Date Received: 08/12/17 10:15

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		5.04		mg/Kg	☼	08/15/17 14:03	08/24/17 03:43	10
Zinc	728		25.2		mg/Kg	☼	08/15/17 14:03	08/23/17 02:16	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	94.7		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-23 (3-6)
Date Collected: 08/10/17 09:50
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-24
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		5.26		mg/Kg	☼	08/15/17 14:03	08/24/17 03:46	10
Zinc	4260		52.6		mg/Kg	☼	08/15/17 14:03	08/24/17 03:46	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93.1		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-12 (0-3)

Lab Sample ID: 490-134610-25

Date Collected: 08/10/17 12:25

Matrix: Solid

Date Received: 08/12/17 10:15

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		4.99		mg/Kg	☼	08/15/17 14:03	08/24/17 03:49	10
Zinc	754		49.9		mg/Kg	☼	08/15/17 14:03	08/24/17 03:49	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	95.4		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-12 (3-6)

Lab Sample ID: 490-134610-26

Date Collected: 08/10/17 12:25

Matrix: Solid

Date Received: 08/12/17 10:15

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		5.18		mg/Kg	☼	08/15/17 14:03	08/24/17 03:52	10
Zinc	91.9		51.8		mg/Kg	☼	08/15/17 14:03	08/24/17 03:52	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	94.4		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-13 (0-3)
Date Collected: 08/10/17 12:20
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-27
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		5.19		mg/Kg	☼	08/15/17 14:03	08/24/17 03:55	10
Zinc	1300		51.9		mg/Kg	☼	08/15/17 14:03	08/24/17 03:55	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	91.7		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-13 (3-6)

Lab Sample ID: 490-134610-28

Date Collected: 08/10/17 12:20

Matrix: Solid

Date Received: 08/12/17 10:15

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		5.13		mg/Kg	☼	08/15/17 14:03	08/24/17 03:58	10
Zinc	113		51.3		mg/Kg	☼	08/15/17 14:03	08/24/17 03:58	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	94.2		0.1		%	-		08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-14 (0-3)

Lab Sample ID: 490-134610-29

Date Collected: 08/10/17 12:15

Matrix: Solid

Date Received: 08/12/17 10:15

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		2.54		mg/Kg	☼	08/15/17 14:08	08/17/17 02:16	5
Zinc	488		25.4		mg/Kg	☼	08/15/17 14:08	08/17/17 02:16	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	95.8		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-14 (3-6)
Date Collected: 08/10/17 12:15
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-30
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		2.60		mg/Kg	☼	08/15/17 14:08	08/17/17 02:44	5
Zinc	109		26.0		mg/Kg	☼	08/15/17 14:08	08/17/17 02:44	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	92.3		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-15 (0-3)
Date Collected: 08/10/17 12:05
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-31
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		2.51		mg/Kg	☼	08/15/17 14:08	08/17/17 02:49	5
Zinc	372		25.1		mg/Kg	☼	08/15/17 14:08	08/17/17 02:49	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	95.0		0.1		%	-		08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-15 (3-6)
Date Collected: 08/10/17 12:05
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-32
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		2.62		mg/Kg	☼	08/15/17 14:08	08/17/17 02:55	5
Zinc	513		26.2		mg/Kg	☼	08/15/17 14:08	08/17/17 02:55	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93.7		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-16 (0-3)
Date Collected: 08/10/17 12:00
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-33
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		2.52		mg/Kg	☼	08/15/17 14:08	08/17/17 03:11	5
Zinc	387		25.2		mg/Kg	☼	08/15/17 14:08	08/17/17 03:11	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	96.1		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-16 (3-6)

Lab Sample ID: 490-134610-34

Date Collected: 08/10/17 12:05

Matrix: Solid

Date Received: 08/12/17 10:15

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		2.59		mg/Kg	☼	08/15/17 14:08	08/17/17 03:17	5
Zinc	32.7		25.9		mg/Kg	☼	08/15/17 14:08	08/17/17 03:17	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93.9		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-17 (0-3)
Date Collected: 08/10/17 12:10
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-35
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		2.55		mg/Kg	☼	08/15/17 14:08	08/17/17 03:22	5
Zinc	303		25.5		mg/Kg	☼	08/15/17 14:08	08/17/17 03:22	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	95.0		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-17 (3-6)
Date Collected: 08/10/17 12:10
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-36
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		2.66		mg/Kg	☼	08/15/17 14:08	08/17/17 03:28	5
Zinc	166		26.6		mg/Kg	☼	08/15/17 14:08	08/17/17 03:28	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	91.6		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-18 (0-3)
Date Collected: 08/10/17 13:05
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-37
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		2.59		mg/Kg	☒	08/15/17 14:08	08/17/17 03:33	5
Zinc	46.8		25.9		mg/Kg	☒	08/15/17 14:08	08/17/17 03:33	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	94.2		0.1		%			08/15/17 08:03	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-18 (3-6)
Date Collected: 08/10/17 13:10
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-38
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		2.69		mg/Kg	☼	08/15/17 14:08	08/17/17 03:39	5
Zinc	38.4		26.9		mg/Kg	☼	08/15/17 14:08	08/17/17 03:39	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	92.0		0.1		%			08/15/17 08:40	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-19 (0-3)

Lab Sample ID: 490-134610-39

Date Collected: 08/11/17 09:05

Matrix: Solid

Date Received: 08/12/17 10:15

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		2.58		mg/Kg	☼	08/15/17 14:08	08/17/17 03:44	5
Zinc	ND		25.8		mg/Kg	☼	08/15/17 14:08	08/17/17 03:44	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	92.6		0.1		%			08/15/17 08:40	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-19 (3-6)
Date Collected: 08/11/17 09:10
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-40
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		2.60		mg/Kg	☼	08/15/17 14:08	08/17/17 03:50	5
Zinc	ND		26.0		mg/Kg	☼	08/15/17 14:08	08/17/17 03:50	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	91.4		0.1		%			08/15/17 08:40	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-20 (0-3)

Lab Sample ID: 490-134610-41

Date Collected: 08/11/17 10:25

Matrix: Solid

Date Received: 08/12/17 10:15

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		2.67		mg/Kg	☼	08/15/17 14:08	08/17/17 03:55	5
Zinc	594		26.7		mg/Kg	☼	08/15/17 14:08	08/17/17 03:55	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93.2		0.1		%			08/15/17 08:40	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-20 (3-4)
Date Collected: 08/11/17 10:30
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-42
Matrix: Solid

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		2.56		mg/Kg	☼	08/15/17 14:08	08/17/17 04:01	5
Zinc	813		25.6		mg/Kg	☼	08/15/17 14:08	08/17/17 04:01	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93.0		0.1		%	-		08/15/17 08:40	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-21 (10-13)

Lab Sample ID: 490-134610-43

Date Collected: 08/11/17 14:03

Matrix: Solid

Date Received: 08/12/17 10:15

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	91.6		2.60		mg/Kg	☼	08/15/17 14:08	08/17/17 04:17	5
Zinc	150		26.0		mg/Kg	☼	08/15/17 14:08	08/21/17 10:29	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	96.5		0.1		%	-		08/15/17 08:40	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-21 (13-16)

Lab Sample ID: 490-134610-44

Date Collected: 08/11/17 14:10

Matrix: Solid

Date Received: 08/12/17 10:15

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	305		3.43		mg/Kg	☼	08/15/17 14:08	08/17/17 04:22	5
Zinc	255		34.3		mg/Kg	☼	08/15/17 14:08	08/21/17 10:35	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	72.2		0.1		%			08/15/17 08:40	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-22 (0-3)

Lab Sample ID: 490-134610-45

Date Collected: 08/11/17 15:03

Matrix: Solid

Date Received: 08/12/17 10:15

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		2.56		mg/Kg	☼	08/15/17 14:08	08/17/17 04:28	5
Zinc	160		25.6		mg/Kg	☼	08/15/17 14:08	08/21/17 10:41	5

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	95.4		0.1		%			08/15/17 08:40	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

QC Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LLCS 490-451395/9-A
Matrix: Solid
Analysis Batch: 454307

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 451395

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	Limits
Cadmium	0.00200	0.002128	J	mg/Kg		106	70 - 130
Zinc	0.0250	0.02926		mg/Kg		117	70 - 130

Lab Sample ID: MB 490-452838/1-A
Matrix: Solid
Analysis Batch: 453884

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452838

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.247		mg/Kg		08/15/17 13:54	08/19/17 05:42	1
Zinc	ND		2.47		mg/Kg		08/15/17 13:54	08/19/17 05:42	1

Lab Sample ID: LCS 490-452838/2-A
Matrix: Solid
Analysis Batch: 453884

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452838

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Cadmium	9.75	8.663		mg/Kg		89	80 - 120
Zinc	9.75	8.794		mg/Kg		90	80 - 120

Lab Sample ID: 490-134608-A-29-B MS
Matrix: Solid
Analysis Batch: 453884

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 452838

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Cadmium	ND		11.2	10.35		mg/Kg	☼	93	75 - 125
Zinc	16.9		11.2	30.58		mg/Kg	☼	122	75 - 125

Lab Sample ID: 490-134608-A-29-C MSD
Matrix: Solid
Analysis Batch: 453884

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 452838

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Cadmium	ND		11.3	10.29		mg/Kg	☼	91	75 - 125	1	20
Zinc	16.9		11.3	27.35		mg/Kg	☼	92	75 - 125	11	20

Lab Sample ID: MB 490-452841/1-A
Matrix: Solid
Analysis Batch: 454567

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452841

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	ND		4.76		mg/Kg		08/15/17 14:03	08/23/17 00:03	1

Lab Sample ID: MB 490-452841/1-A
Matrix: Solid
Analysis Batch: 454874

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452841

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.476		mg/Kg		08/15/17 14:03	08/24/17 02:30	1

TestAmerica Nashville

QC Sample Results

Client: Hart & Hickman, PC
Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
SDG: CLR.045

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 490-452841/2-A
Matrix: Solid
Analysis Batch: 454567

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452841

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Zinc	20.0	19.02		mg/Kg		95	80 - 120

Lab Sample ID: LCS 490-452841/2-A
Matrix: Solid
Analysis Batch: 454874

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452841

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Cadmium	20.0	19.76		mg/Kg		99	80 - 120

Lab Sample ID: 490-134610-9 MS
Matrix: Solid
Analysis Batch: 454567

Client Sample ID: SB-5 (0-3)
Prep Type: Total/NA
Prep Batch: 452841

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Zinc	238		20.2	253.0	4	mg/Kg	☼	72	75 - 125

Lab Sample ID: 490-134610-9 MS
Matrix: Solid
Analysis Batch: 454874

Client Sample ID: SB-5 (0-3)
Prep Type: Total/NA
Prep Batch: 452841

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Cadmium	ND	F1	20.2	45.29	F1	mg/Kg	☼	224	75 - 125

Lab Sample ID: 490-134610-9 MSD
Matrix: Solid
Analysis Batch: 454567

Client Sample ID: SB-5 (0-3)
Prep Type: Total/NA
Prep Batch: 452841

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Zinc	238		20.8	291.4	4	mg/Kg	☼	255	75 - 125	14	20

Lab Sample ID: 490-134610-9 MSD
Matrix: Solid
Analysis Batch: 454874

Client Sample ID: SB-5 (0-3)
Prep Type: Total/NA
Prep Batch: 452841

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Cadmium	ND	F1	20.8	45.01	F1	mg/Kg	☼	217	75 - 125	1	20

Lab Sample ID: MB 490-452843/1-A
Matrix: Solid
Analysis Batch: 453237

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452843

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.476		mg/Kg		08/15/17 14:08	08/17/17 02:06	1
Zinc	ND		4.76		mg/Kg		08/15/17 14:08	08/17/17 02:06	1

QC Sample Results

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 490-452843/2-A
Matrix: Solid
Analysis Batch: 453722

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452843

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Cadmium	19.2	17.12		mg/Kg		89	80 - 120
Zinc	19.2	17.39		mg/Kg		91	80 - 120

Lab Sample ID: 490-134610-29 MS
Matrix: Solid
Analysis Batch: 453237

Client Sample ID: SB-14 (0-3)
Prep Type: Total/NA
Prep Batch: 452843

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Cadmium	ND		21.0	18.94		mg/Kg	☼	90	75 - 125
Zinc	488		21.0	516.2	4	mg/Kg	☼	134	75 - 125

Lab Sample ID: 490-134610-29 MSD
Matrix: Solid
Analysis Batch: 453237

Client Sample ID: SB-14 (0-3)
Prep Type: Total/NA
Prep Batch: 452843

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Cadmium	ND		20.6	18.57		mg/Kg	☼	90	75 - 125	2	20
Zinc	488		20.6	449.7	4	mg/Kg	☼	-186	75 - 125	14	20

Method: Moisture - Percent Moisture

Lab Sample ID: 490-134608-A-29 DU
Matrix: Solid
Analysis Batch: 452657

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Percent Solids	88.3		89.5		%			20

Lab Sample ID: 490-134610-2 DU
Matrix: Solid
Analysis Batch: 452671

Client Sample ID: SB-1 (3-6)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Percent Solids	94.1		94.3		%			20

Lab Sample ID: 490-134610-14 DU
Matrix: Solid
Analysis Batch: 452671

Client Sample ID: SB-7 (3-6)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Percent Solids	90.7		91.1		%			20

Lab Sample ID: 490-134610-26 DU
Matrix: Solid
Analysis Batch: 452671

Client Sample ID: SB-12 (3-6)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Percent Solids	94.4		94.5		%			20

TestAmerica Nashville

QC Sample Results

Client: Hart & Hickman, PC
Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
SDG: CLR.045

Method: Moisture - Percent Moisture (Continued)

Lab Sample ID: 490-134610-39 DU
Matrix: Solid
Analysis Batch: 452676

Client Sample ID: SB-19 (0-3)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Percent Solids	92.6		92.7		%			20

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

QC Association Summary

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Metals

Prep Batch: 451395

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LLCS 490-451395/9-A	Lab Control Sample	Total/NA	Solid	200.8	

Prep Batch: 452838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134610-1	SB-1 (0-3)	Total/NA	Solid	3051A	
490-134610-2	SB-1 (3-6)	Total/NA	Solid	3051A	
490-134610-3	SB-2 (0-3)	Total/NA	Solid	3051A	
490-134610-4	SB-2 (3-6)	Total/NA	Solid	3051A	
490-134610-5	SB-3 (0-3)	Total/NA	Solid	3051A	
490-134610-6	SB-3 (3-6)	Total/NA	Solid	3051A	
490-134610-7	SB-4 (0-3)	Total/NA	Solid	3051A	
490-134610-8	SB-4 (3-6)	Total/NA	Solid	3051A	
MB 490-452838/1-A	Method Blank	Total/NA	Solid	3051A	
LCS 490-452838/2-A	Lab Control Sample	Total/NA	Solid	3051A	
490-134608-A-29-B MS	Matrix Spike	Total/NA	Solid	3051A	
490-134608-A-29-C MSD	Matrix Spike Duplicate	Total/NA	Solid	3051A	

Prep Batch: 452841

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134610-9	SB-5 (0-3)	Total/NA	Solid	3051A	
490-134610-10	SB-5 (3-6)	Total/NA	Solid	3051A	
490-134610-11	SB-6 (1-3)	Total/NA	Solid	3051A	
490-134610-12	SB-6 (3-6)	Total/NA	Solid	3051A	
490-134610-13	SB-7 (1-3)	Total/NA	Solid	3051A	
490-134610-14	SB-7 (3-6)	Total/NA	Solid	3051A	
490-134610-15	SB-8 (1-3)	Total/NA	Solid	3051A	
490-134610-16	SB-8 (3-6)	Total/NA	Solid	3051A	
490-134610-17	SB-9 (0-3)	Total/NA	Solid	3051A	
490-134610-18	SB-9 (3-6)	Total/NA	Solid	3051A	
490-134610-19	SB-10 (0-3)	Total/NA	Solid	3051A	
490-134610-20	SB-10 (3-6)	Total/NA	Solid	3051A	
490-134610-21	SB-11 (1-3)	Total/NA	Solid	3051A	
490-134610-22	SB-11 (3-6)	Total/NA	Solid	3051A	
490-134610-23	SB-23 (1-3)	Total/NA	Solid	3051A	
490-134610-24	SB-23 (3-6)	Total/NA	Solid	3051A	
490-134610-25	SB-12 (0-3)	Total/NA	Solid	3051A	
490-134610-26	SB-12 (3-6)	Total/NA	Solid	3051A	
490-134610-27	SB-13 (0-3)	Total/NA	Solid	3051A	
490-134610-28	SB-13 (3-6)	Total/NA	Solid	3051A	
MB 490-452841/1-A	Method Blank	Total/NA	Solid	3051A	
LCS 490-452841/2-A	Lab Control Sample	Total/NA	Solid	3051A	
490-134610-9 MS	SB-5 (0-3)	Total/NA	Solid	3051A	
490-134610-9 MSD	SB-5 (0-3)	Total/NA	Solid	3051A	

Prep Batch: 452843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134610-29	SB-14 (0-3)	Total/NA	Solid	3051A	
490-134610-30	SB-14 (3-6)	Total/NA	Solid	3051A	
490-134610-31	SB-15 (0-3)	Total/NA	Solid	3051A	
490-134610-32	SB-15 (3-6)	Total/NA	Solid	3051A	
490-134610-33	SB-16 (0-3)	Total/NA	Solid	3051A	

TestAmerica Nashville

QC Association Summary

Client: Hart & Hickman, PC
Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
SDG: CLR.045

Metals (Continued)

Prep Batch: 452843 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134610-34	SB-16 (3-6)	Total/NA	Solid	3051A	
490-134610-35	SB-17 (0-3)	Total/NA	Solid	3051A	
490-134610-36	SB-17 (3-6)	Total/NA	Solid	3051A	
490-134610-37	SB-18 (0-3)	Total/NA	Solid	3051A	
490-134610-38	SB-18 (3-6)	Total/NA	Solid	3051A	
490-134610-39	SB-19 (0-3)	Total/NA	Solid	3051A	
490-134610-40	SB-19 (3-6)	Total/NA	Solid	3051A	
490-134610-41	SB-20 (0-3)	Total/NA	Solid	3051A	
490-134610-42	SB-20 (3-4)	Total/NA	Solid	3051A	
490-134610-43	SB-21 (10-13)	Total/NA	Solid	3051A	
490-134610-44	SB-21 (13-16)	Total/NA	Solid	3051A	
490-134610-45	SB-22 (0-3)	Total/NA	Solid	3051A	
MB 490-452843/1-A	Method Blank	Total/NA	Solid	3051A	
LCS 490-452843/2-A	Lab Control Sample	Total/NA	Solid	3051A	
490-134610-29 MS	SB-14 (0-3)	Total/NA	Solid	3051A	
490-134610-29 MSD	SB-14 (0-3)	Total/NA	Solid	3051A	

Analysis Batch: 453237

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134610-29	SB-14 (0-3)	Total/NA	Solid	6020A	452843
490-134610-30	SB-14 (3-6)	Total/NA	Solid	6020A	452843
490-134610-31	SB-15 (0-3)	Total/NA	Solid	6020A	452843
490-134610-32	SB-15 (3-6)	Total/NA	Solid	6020A	452843
490-134610-33	SB-16 (0-3)	Total/NA	Solid	6020A	452843
490-134610-34	SB-16 (3-6)	Total/NA	Solid	6020A	452843
490-134610-35	SB-17 (0-3)	Total/NA	Solid	6020A	452843
490-134610-36	SB-17 (3-6)	Total/NA	Solid	6020A	452843
490-134610-37	SB-18 (0-3)	Total/NA	Solid	6020A	452843
490-134610-38	SB-18 (3-6)	Total/NA	Solid	6020A	452843
490-134610-39	SB-19 (0-3)	Total/NA	Solid	6020A	452843
490-134610-40	SB-19 (3-6)	Total/NA	Solid	6020A	452843
490-134610-41	SB-20 (0-3)	Total/NA	Solid	6020A	452843
490-134610-42	SB-20 (3-4)	Total/NA	Solid	6020A	452843
490-134610-43	SB-21 (10-13)	Total/NA	Solid	6020A	452843
490-134610-44	SB-21 (13-16)	Total/NA	Solid	6020A	452843
490-134610-45	SB-22 (0-3)	Total/NA	Solid	6020A	452843
MB 490-452843/1-A	Method Blank	Total/NA	Solid	6020A	452843
490-134610-29 MS	SB-14 (0-3)	Total/NA	Solid	6020A	452843
490-134610-29 MSD	SB-14 (0-3)	Total/NA	Solid	6020A	452843

Analysis Batch: 453722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 490-452843/2-A	Lab Control Sample	Total/NA	Solid	6020A	452843

Analysis Batch: 453884

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134610-1	SB-1 (0-3)	Total/NA	Solid	6020A	452838
490-134610-2	SB-1 (3-6)	Total/NA	Solid	6020A	452838
490-134610-3	SB-2 (0-3)	Total/NA	Solid	6020A	452838
490-134610-4	SB-2 (3-6)	Total/NA	Solid	6020A	452838
490-134610-5	SB-3 (0-3)	Total/NA	Solid	6020A	452838

TestAmerica Nashville

QC Association Summary

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Metals (Continued)

Analysis Batch: 453884 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134610-6	SB-3 (3-6)	Total/NA	Solid	6020A	452838
490-134610-7	SB-4 (0-3)	Total/NA	Solid	6020A	452838
490-134610-8	SB-4 (3-6)	Total/NA	Solid	6020A	452838
MB 490-452838/1-A	Method Blank	Total/NA	Solid	6020A	452838
LCS 490-452838/2-A	Lab Control Sample	Total/NA	Solid	6020A	452838
490-134608-A-29-B MS	Matrix Spike	Total/NA	Solid	6020A	452838
490-134608-A-29-C MSD	Matrix Spike Duplicate	Total/NA	Solid	6020A	452838

Analysis Batch: 454307

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134610-43	SB-21 (10-13)	Total/NA	Solid	6020A	452843
490-134610-44	SB-21 (13-16)	Total/NA	Solid	6020A	452843
490-134610-45	SB-22 (0-3)	Total/NA	Solid	6020A	452843
LLCS 490-451395/9-A	Lab Control Sample	Total/NA	Solid	6020A	451395

Analysis Batch: 454567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134610-9	SB-5 (0-3)	Total/NA	Solid	6020A	452841
490-134610-15	SB-8 (1-3)	Total/NA	Solid	6020A	452841
490-134610-16	SB-8 (3-6)	Total/NA	Solid	6020A	452841
490-134610-19	SB-10 (0-3)	Total/NA	Solid	6020A	452841
490-134610-20	SB-10 (3-6)	Total/NA	Solid	6020A	452841
490-134610-22	SB-11 (3-6)	Total/NA	Solid	6020A	452841
490-134610-23	SB-23 (1-3)	Total/NA	Solid	6020A	452841
MB 490-452841/1-A	Method Blank	Total/NA	Solid	6020A	452841
LCS 490-452841/2-A	Lab Control Sample	Total/NA	Solid	6020A	452841
490-134610-9 MS	SB-5 (0-3)	Total/NA	Solid	6020A	452841
490-134610-9 MSD	SB-5 (0-3)	Total/NA	Solid	6020A	452841

Analysis Batch: 454874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134610-9	SB-5 (0-3)	Total/NA	Solid	6020A	452841
490-134610-10	SB-5 (3-6)	Total/NA	Solid	6020A	452841
490-134610-11	SB-6 (1-3)	Total/NA	Solid	6020A	452841
490-134610-12	SB-6 (3-6)	Total/NA	Solid	6020A	452841
490-134610-13	SB-7 (1-3)	Total/NA	Solid	6020A	452841
490-134610-14	SB-7 (3-6)	Total/NA	Solid	6020A	452841
490-134610-15	SB-8 (1-3)	Total/NA	Solid	6020A	452841
490-134610-16	SB-8 (3-6)	Total/NA	Solid	6020A	452841
490-134610-17	SB-9 (0-3)	Total/NA	Solid	6020A	452841
490-134610-18	SB-9 (3-6)	Total/NA	Solid	6020A	452841
490-134610-19	SB-10 (0-3)	Total/NA	Solid	6020A	452841
490-134610-20	SB-10 (3-6)	Total/NA	Solid	6020A	452841
490-134610-21	SB-11 (1-3)	Total/NA	Solid	6020A	452841
490-134610-22	SB-11 (3-6)	Total/NA	Solid	6020A	452841
490-134610-23	SB-23 (1-3)	Total/NA	Solid	6020A	452841
490-134610-24	SB-23 (3-6)	Total/NA	Solid	6020A	452841
490-134610-25	SB-12 (0-3)	Total/NA	Solid	6020A	452841
490-134610-26	SB-12 (3-6)	Total/NA	Solid	6020A	452841
490-134610-27	SB-13 (0-3)	Total/NA	Solid	6020A	452841
490-134610-28	SB-13 (3-6)	Total/NA	Solid	6020A	452841

TestAmerica Nashville

QC Association Summary

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Metals (Continued)

Analysis Batch: 454874 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 490-452841/1-A	Method Blank	Total/NA	Solid	6020A	452841
LCS 490-452841/2-A	Lab Control Sample	Total/NA	Solid	6020A	452841
490-134610-9 MS	SB-5 (0-3)	Total/NA	Solid	6020A	452841
490-134610-9 MSD	SB-5 (0-3)	Total/NA	Solid	6020A	452841

General Chemistry

Analysis Batch: 452657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134610-1	SB-1 (0-3)	Total/NA	Solid	Moisture	
490-134608-A-29 DU	Duplicate	Total/NA	Solid	Moisture	

Analysis Batch: 452671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134610-2	SB-1 (3-6)	Total/NA	Solid	Moisture	
490-134610-3	SB-2 (0-3)	Total/NA	Solid	Moisture	
490-134610-4	SB-2 (3-6)	Total/NA	Solid	Moisture	
490-134610-5	SB-3 (0-3)	Total/NA	Solid	Moisture	
490-134610-6	SB-3 (3-6)	Total/NA	Solid	Moisture	
490-134610-7	SB-4 (0-3)	Total/NA	Solid	Moisture	
490-134610-8	SB-4 (3-6)	Total/NA	Solid	Moisture	
490-134610-9	SB-5 (0-3)	Total/NA	Solid	Moisture	
490-134610-10	SB-5 (3-6)	Total/NA	Solid	Moisture	
490-134610-11	SB-6 (1-3)	Total/NA	Solid	Moisture	
490-134610-12	SB-6 (3-6)	Total/NA	Solid	Moisture	
490-134610-13	SB-7 (1-3)	Total/NA	Solid	Moisture	
490-134610-14	SB-7 (3-6)	Total/NA	Solid	Moisture	
490-134610-15	SB-8 (1-3)	Total/NA	Solid	Moisture	
490-134610-16	SB-8 (3-6)	Total/NA	Solid	Moisture	
490-134610-17	SB-9 (0-3)	Total/NA	Solid	Moisture	
490-134610-18	SB-9 (3-6)	Total/NA	Solid	Moisture	
490-134610-19	SB-10 (0-3)	Total/NA	Solid	Moisture	
490-134610-20	SB-10 (3-6)	Total/NA	Solid	Moisture	
490-134610-21	SB-11 (1-3)	Total/NA	Solid	Moisture	
490-134610-22	SB-11 (3-6)	Total/NA	Solid	Moisture	
490-134610-23	SB-23 (1-3)	Total/NA	Solid	Moisture	
490-134610-24	SB-23 (3-6)	Total/NA	Solid	Moisture	
490-134610-25	SB-12 (0-3)	Total/NA	Solid	Moisture	
490-134610-26	SB-12 (3-6)	Total/NA	Solid	Moisture	
490-134610-27	SB-13 (0-3)	Total/NA	Solid	Moisture	
490-134610-28	SB-13 (3-6)	Total/NA	Solid	Moisture	
490-134610-29	SB-14 (0-3)	Total/NA	Solid	Moisture	
490-134610-30	SB-14 (3-6)	Total/NA	Solid	Moisture	
490-134610-31	SB-15 (0-3)	Total/NA	Solid	Moisture	
490-134610-32	SB-15 (3-6)	Total/NA	Solid	Moisture	
490-134610-33	SB-16 (0-3)	Total/NA	Solid	Moisture	
490-134610-34	SB-16 (3-6)	Total/NA	Solid	Moisture	
490-134610-35	SB-17 (0-3)	Total/NA	Solid	Moisture	
490-134610-36	SB-17 (3-6)	Total/NA	Solid	Moisture	
490-134610-37	SB-18 (0-3)	Total/NA	Solid	Moisture	

TestAmerica Nashville

QC Association Summary

Client: Hart & Hickman, PC
Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
SDG: CLR.045

General Chemistry (Continued)

Analysis Batch: 452671 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134610-2 DU	SB-1 (3-6)	Total/NA	Solid	Moisture	
490-134610-14 DU	SB-7 (3-6)	Total/NA	Solid	Moisture	
490-134610-26 DU	SB-12 (3-6)	Total/NA	Solid	Moisture	

Analysis Batch: 452676

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-134610-38	SB-18 (3-6)	Total/NA	Solid	Moisture	
490-134610-39	SB-19 (0-3)	Total/NA	Solid	Moisture	
490-134610-40	SB-19 (3-6)	Total/NA	Solid	Moisture	
490-134610-41	SB-20 (0-3)	Total/NA	Solid	Moisture	
490-134610-42	SB-20 (3-4)	Total/NA	Solid	Moisture	
490-134610-43	SB-21 (10-13)	Total/NA	Solid	Moisture	
490-134610-44	SB-21 (13-16)	Total/NA	Solid	Moisture	
490-134610-45	SB-22 (0-3)	Total/NA	Solid	Moisture	
490-134610-39 DU	SB-19 (0-3)	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Hart & Hickman, PC
Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
SDG: CLR.045

Client Sample ID: SB-1 (0-3)

Date Collected: 08/10/17 14:05

Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.510 g	50 mL	452838	08/15/17 13:54	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453884	08/19/17 07:27	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452657	08/15/17 07:04	BAA	TAL NSH

Client Sample ID: SB-1 (3-6)

Date Collected: 08/10/17 14:10

Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.505 g	50 mL	452838	08/15/17 13:54	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453884	08/19/17 07:33	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-2 (0-3)

Date Collected: 08/09/17 13:20

Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.525 g	50 mL	452838	08/15/17 13:54	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453884	08/19/17 07:39	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-2 (3-6)

Date Collected: 08/09/17 13:25

Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.511 g	50 mL	452838	08/15/17 13:54	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453884	08/19/17 07:55	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-3 (0-3)

Date Collected: 08/10/17 13:35

Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-5

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.509 g	50 mL	452838	08/15/17 13:54	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453884	08/19/17 08:01	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

TestAmerica Nashville

Lab Chronicle

Client: Hart & Hickman, PC
Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
SDG: CLR.045

Client Sample ID: SB-3 (3-6)

Lab Sample ID: 490-134610-6

Date Collected: 08/10/17 13:40

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.503 g	50 mL	452838	08/15/17 13:54	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453884	08/19/17 08:06	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-4 (0-3)

Lab Sample ID: 490-134610-7

Date Collected: 08/10/17 13:50

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.502 g	50 mL	452838	08/15/17 13:54	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453884	08/19/17 08:12	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-4 (3-6)

Lab Sample ID: 490-134610-8

Date Collected: 08/10/17 13:55

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.508 g	50 mL	452838	08/15/17 13:54	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453884	08/19/17 08:18	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-5 (0-3)

Lab Sample ID: 490-134610-9

Date Collected: 08/10/17 13:20

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.518 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		5			454567	08/23/17 00:14	BLG	TAL NSH
Total/NA	Prep	3051A			0.518 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		10			454874	08/24/17 02:36	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-5 (3-6)

Lab Sample ID: 490-134610-10

Date Collected: 08/10/17 13:25

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.522 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		10			454874	08/24/17 02:57	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

TestAmerica Nashville

Lab Chronicle

Client: Hart & Hickman, PC
Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
SDG: CLR.045

Client Sample ID: SB-6 (1-3)

Date Collected: 08/09/17 14:35

Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-11

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.523 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		10			454874	08/24/17 03:00	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-6 (3-6)

Date Collected: 08/09/17 14:40

Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-12

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.518 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		10			454874	08/24/17 03:03	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-7 (1-3)

Date Collected: 08/09/17 15:05

Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-13

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.525 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		10			454874	08/24/17 03:06	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-7 (3-6)

Date Collected: 08/09/17 15:10

Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-14

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.521 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		10			454874	08/24/17 03:09	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-8 (1-3)

Date Collected: 08/10/17 12:40

Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-15

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.498 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		5			454567	08/23/17 01:20	BLG	TAL NSH
Total/NA	Prep	3051A			0.498 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		10			454874	08/24/17 03:12	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

TestAmerica Nashville

Lab Chronicle

Client: Hart & Hickman, PC
Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
SDG: CLR.045

Client Sample ID: SB-8 (3-6)

Date Collected: 08/10/17 12:45

Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-16

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			.511 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		5			454567	08/23/17 01:26	BLG	TAL NSH
Total/NA	Prep	3051A			.511 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		10			454874	08/24/17 03:15	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-9 (0-3)

Date Collected: 08/10/17 11:35

Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-17

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.517 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		10			454874	08/24/17 03:18	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-9 (3-6)

Date Collected: 08/10/17 11:40

Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-18

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.525 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		10			454874	08/24/17 03:21	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-10 (0-3)

Date Collected: 08/10/17 10:20

Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-19

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.506 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		5			454567	08/23/17 01:42	BLG	TAL NSH
Total/NA	Prep	3051A			0.506 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		10			454874	08/24/17 03:24	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-10 (3-6)

Date Collected: 08/10/17 10:30

Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-20

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.522 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		5			454567	08/23/17 01:48	BLG	TAL NSH

TestAmerica Nashville

Lab Chronicle

Client: Hart & Hickman, PC
Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
SDG: CLR.045

Client Sample ID: SB-10 (3-6)

Lab Sample ID: 490-134610-20

Date Collected: 08/10/17 10:30

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.522 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		10			454874	08/24/17 03:33	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-11 (1-3)

Lab Sample ID: 490-134610-21

Date Collected: 08/10/17 08:50

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.524 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		10			454874	08/24/17 03:36	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-11 (3-6)

Lab Sample ID: 490-134610-22

Date Collected: 08/10/17 08:55

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.519 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		5			454567	08/23/17 01:59	BLG	TAL NSH
Total/NA	Prep	3051A			0.519 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		10			454874	08/24/17 03:39	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-23 (1-3)

Lab Sample ID: 490-134610-23

Date Collected: 08/10/17 09:45

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.524 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		5			454567	08/23/17 02:16	BLG	TAL NSH
Total/NA	Prep	3051A			0.524 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		10			454874	08/24/17 03:43	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-23 (3-6)

Lab Sample ID: 490-134610-24

Date Collected: 08/10/17 09:50

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.511 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		10			454874	08/24/17 03:46	BLG	TAL NSH

TestAmerica Nashville

Lab Chronicle

Client: Hart & Hickman, PC
Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
SDG: CLR.045

Client Sample ID: SB-23 (3-6)

Date Collected: 08/10/17 09:50

Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-24

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-12 (0-3)

Date Collected: 08/10/17 12:25

Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-25

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.525 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		10			454874	08/24/17 03:49	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-12 (3-6)

Date Collected: 08/10/17 12:25

Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-26

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.511 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		10			454874	08/24/17 03:52	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-13 (0-3)

Date Collected: 08/10/17 12:20

Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-27

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.525 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		10			454874	08/24/17 03:55	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-13 (3-6)

Date Collected: 08/10/17 12:20

Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-28

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.517 g	100 mL	452841	08/15/17 14:03	BVH	TAL NSH
Total/NA	Analysis	6020A		10			454874	08/24/17 03:58	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Lab Chronicle

Client: Hart & Hickman, PC
Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
SDG: CLR.045

Client Sample ID: SB-14 (0-3)

Lab Sample ID: 490-134610-29

Date Collected: 08/10/17 12:15

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.514 g	100 mL	452843	08/15/17 14:08	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453237	08/17/17 02:16	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-14 (3-6)

Lab Sample ID: 490-134610-30

Date Collected: 08/10/17 12:15

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.520 g	100 mL	452843	08/15/17 14:08	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453237	08/17/17 02:44	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-15 (0-3)

Lab Sample ID: 490-134610-31

Date Collected: 08/10/17 12:05

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.525 g	100 mL	452843	08/15/17 14:08	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453237	08/17/17 02:49	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-15 (3-6)

Lab Sample ID: 490-134610-32

Date Collected: 08/10/17 12:05

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.510 g	100 mL	452843	08/15/17 14:08	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453237	08/17/17 02:55	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-16 (0-3)

Lab Sample ID: 490-134610-33

Date Collected: 08/10/17 12:00

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.516 g	100 mL	452843	08/15/17 14:08	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453237	08/17/17 03:11	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

TestAmerica Nashville

Lab Chronicle

Client: Hart & Hickman, PC
Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
SDG: CLR.045

Client Sample ID: SB-16 (3-6)

Lab Sample ID: 490-134610-34

Date Collected: 08/10/17 12:05

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.515 g	100 mL	452843	08/15/17 14:08	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453237	08/17/17 03:17	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-17 (0-3)

Lab Sample ID: 490-134610-35

Date Collected: 08/10/17 12:10

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.515 g	100 mL	452843	08/15/17 14:08	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453237	08/17/17 03:22	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-17 (3-6)

Lab Sample ID: 490-134610-36

Date Collected: 08/10/17 12:10

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.512 g	100 mL	452843	08/15/17 14:08	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453237	08/17/17 03:28	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-18 (0-3)

Lab Sample ID: 490-134610-37

Date Collected: 08/10/17 13:05

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.513 g	100 mL	452843	08/15/17 14:08	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453237	08/17/17 03:33	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452671	08/15/17 08:03	BAA	TAL NSH

Client Sample ID: SB-18 (3-6)

Lab Sample ID: 490-134610-38

Date Collected: 08/10/17 13:10

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.506 g	100 mL	452843	08/15/17 14:08	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453237	08/17/17 03:39	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452676	08/15/17 08:40	BAA	TAL NSH

Lab Chronicle

Client: Hart & Hickman, PC
Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
SDG: CLR.045

Client Sample ID: SB-19 (0-3)

Date Collected: 08/11/17 09:05
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-39

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.524 g	100 mL	452843	08/15/17 14:08	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453237	08/17/17 03:44	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452676	08/15/17 08:40	BAA	TAL NSH

Client Sample ID: SB-19 (3-6)

Date Collected: 08/11/17 09:10
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-40

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.525 g	100 mL	452843	08/15/17 14:08	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453237	08/17/17 03:50	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452676	08/15/17 08:40	BAA	TAL NSH

Client Sample ID: SB-20 (0-3)

Date Collected: 08/11/17 10:25
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-41

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.502 g	100 mL	452843	08/15/17 14:08	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453237	08/17/17 03:55	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452676	08/15/17 08:40	BAA	TAL NSH

Client Sample ID: SB-20 (3-4)

Date Collected: 08/11/17 10:30
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-42

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.525 g	100 mL	452843	08/15/17 14:08	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453237	08/17/17 04:01	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452676	08/15/17 08:40	BAA	TAL NSH

Client Sample ID: SB-21 (10-13)

Date Collected: 08/11/17 14:03
Date Received: 08/12/17 10:15

Lab Sample ID: 490-134610-43

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.498 g	100 mL	452843	08/15/17 14:08	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453237	08/17/17 04:17	BLG	TAL NSH
Total/NA	Prep	3051A			0.498 g	100 mL	452843	08/15/17 14:08	BVH	TAL NSH
Total/NA	Analysis	6020A		5			454307	08/21/17 10:29	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452676	08/15/17 08:40	BAA	TAL NSH

TestAmerica Nashville

Lab Chronicle

Client: Hart & Hickman, PC
 Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
 SDG: CLR.045

Client Sample ID: SB-21 (13-16)

Lab Sample ID: 490-134610-44

Date Collected: 08/11/17 14:10

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.505 g	100 mL	452843	08/15/17 14:08	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453237	08/17/17 04:22	BLG	TAL NSH
Total/NA	Prep	3051A			0.505 g	100 mL	452843	08/15/17 14:08	BVH	TAL NSH
Total/NA	Analysis	6020A		5			454307	08/21/17 10:35	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452676	08/15/17 08:40	BAA	TAL NSH

Client Sample ID: SB-22 (0-3)

Lab Sample ID: 490-134610-45

Date Collected: 08/11/17 15:03

Matrix: Solid

Date Received: 08/12/17 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			0.512 g	100 mL	452843	08/15/17 14:08	BVH	TAL NSH
Total/NA	Analysis	6020A		5			453237	08/17/17 04:28	BLG	TAL NSH
Total/NA	Prep	3051A			0.512 g	100 mL	452843	08/15/17 14:08	BVH	TAL NSH
Total/NA	Analysis	6020A		5			454307	08/21/17 10:41	BLG	TAL NSH
Total/NA	Analysis	Moisture		1			452676	08/15/17 08:40	BAA	TAL NSH

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Method Summary

Client: Hart & Hickman, PC
Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
SDG: CLR.045

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL NSH
Moisture	Percent Moisture	EPA	TAL NSH

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Accreditation/Certification Summary

Client: Hart & Hickman, PC
Project/Site: Clariant Kalama (WA)

TestAmerica Job ID: 490-134610-1
SDG: CLR.045

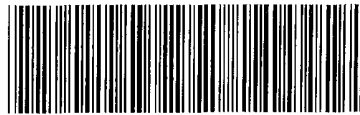
Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
North Carolina (WW/SW)	State Program	4	387	12-31-17

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
6020A	3051A	Solid	Cadmium
6020A	3051A	Solid	Zinc
Moisture		Solid	Percent Solids



COOLER RECEIPT FORM

490-134610 Chain of Custody

Cooler Received/Opened On 8/12/2017 @ 1015

Time Samples Removed From Cooler 1320 Time Samples Placed In Storage 1343 (2 Hour Window)

1. Tracking # 0406 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 31470368 pH Strip Lot NA Chlorine Strip Lot NA

2. Temperature of rep. sample or temp blank when opened: 2.0 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) HG

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # _____

I certify that I unloaded the cooler and answered questions 7-14 (initial) HG

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

b. Did the bottle labels indicate that the correct preservatives were used YES..NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) HG

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) HG

I certify that I attached a label with the unique LIMS number to each container (initial) HG

21. Were there Non-Conformance issues at login? YES..NO Was a NCM generated? YES..NO..# _____

Chain of Custody Record

Temperature on Receipt _____
 Drinking Water? Yes No

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007) Client: Hart & Hiemenz Project Manager: Scott Dunn Date: 8/11/17 Chain of Custody Number: 282722

Address: 2923 S Tryon Street Suite 100 Telephone Number (Area Code)/Fax Number: 704-586-6007 Lab Number: _____

City: Charlotte State: NC Zip Code: 28203 Site Contact: Patrick Stevens Lab Contact: Ken Hayes Page: 4 of 4

Project Name and Location (State): Glaxovent Kelowne (NC) Carrier/Waybill Number: _____

Contract/Purchase Order/Quote No.: CL2-045

Sample I.D. No. and Description <small>(Containers for each sample may be combined on one line)</small>	Date	Time	Matrix				Containers & Preservatives					Analysis (Attach list if more space is needed)	Special Instructions/ Conditions of Receipt		
			Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH			ZnAc/ NaOH	
31 SB-18 (0-3)	8/10/17	1805					X								*Lowest reporting limits * Report to PLS
32 SB-18 (3-6)	8/10/17	1310					X								
33 SB-19 (0-3)	8/11/17	905					X								
40 SB-19 (3-6)	8/11/17	910					X								
41 SB-20 (0-3)	8/11/17	1025					X								
42 SB-20 (3-14)	8/11/17	1030					X								
43 SB-21 (10-13)	8/11/17	1405					X								
44 SB-21 (13-16)	8/11/17	1410					X								
45 SB-22 (0-3)	8/11/17	1503					X								

Loc: 490
134610

Possible Hazard Identification: Non-Hazard Flammable Skin Irritant Poison B Unknown Return To Client Disposal By Lab Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: 24 Hours 48 Hours 7 Days 14 Days 21 Days Other: Next Std

1. Relinquished By: Patrick A Date: 8/11/17 Time: _____
 2. Received By: Falk Date: 8/11/17 Time: _____
 3. Received By: M. [Signature] Date: 8/21/17 Time: 1015

Comments: _____
 DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Login Sample Receipt Checklist

Client: Hart & Hickman, PC

Job Number: 490-134610-1

SDG Number: CLR.045

Login Number: 134610

List Number: 1

Creator: Gundi, Hozar K

List Source: TestAmerica Nashville

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

