

U. S. Steel Gary Works - Laboratory Report Data Review					
Laboratory Report ID:				1707491	
Laboratory Name:	ALS Environmental (Holland, MI)		Report Package Date:	7/25/2017	
Project Name:	CAMU Monthly Leachate - July 2017		Review Date:	8/11/2017	
Project Number:	4262-303-01-01 Phase 03				
Reviewer Name:	Suzanne Bonola		No. of Environ. Samples?*	2	
Parameters:	PCBs, VOCs*, SVOCs*, ammonia as N, total dissolved solids, total suspended solids, total metals (As, Ba, Cd, Cr, Pb, Li, Hg, Se, Ag); hexavalent chromium (*list of compounds is in accordance with the CAMU Monitoring Program)		No. of QC Samples?*	1	
Method IDs:	SW8082; SW8260B; SW8270D; SW8270D SIM (PAHs); EPA 350.1 R2.0; A2540 C-97; A2540 D-97; SW 6020A; SW7470A; SW7196A		Rejected Results?	Yes	
Matrix:	Aqueous + QC (TB)				
*Attach copy of lab report showing sample IDs and corresponding lab IDs.			Yes	No	N/A
Report Completeness & Sample Log-In Condition					
1 Was a signature page with appropriate authority signature provided?			X		
2 Was there a case narrative noting all known problems or anomalies?			X		
3 Were all samples received under chain-of-custody (seals used) and within appropriate temperature?				X	(1)
4 Were all departures from standard conditions narrated (i.e., preservation acceptable, no headspace)?				X	No Departures
5 Are all field sample ID numbers cross-referenced to the laboratory ID numbers?			X		(1)
6 Are all laboratory ID numbers cross-referenced to the corresponding QC data (batch IDs provided)?			X		(1)
7 Were reference methods provided and cited appropriately?			X		
8 Were samples prepared and analyzed within holding times?			X		
Date Collected:	7/12/25017	Date Received:	7/12/2017		
9 Were all soil results reported on a dry-weight basis?				X	
10 Was a percent moisture result reported for all soil and sediment samples?				X	
11 If required for the project, was supporting documentation (CLP-like) provided?				X	
12 If required for the project, were TICs reported?				X	
13 Were all MDLs and/or RLs in accordance with project DQOs & reported in the test report?				X	
14 Was justification provided for elevated RLs (e.g., non-target interferences, etc.)?			X		
15 Is there a QAPP or SAP available as a reference for the project performed?			X		(1)
16 Are non-detects identified as ND at RL with a "U", or other (less than "<")?			X		
17 Are laboratory flags defined?			X		
Laboratory Method Blanks and Field Blanks					
1 Were appropriate types of laboratory method blanks analyzed?			X		
2 Were the laboratory method blanks analyzed at the appropriate frequency?			X		
3 Was the method blank free of contamination (i.e., less than the MDL or RL)?			X		
4 Did the method blank contamination affect the final results? If so, note on page 2.				X	
5 Was a trip blank required and submitted with the samples?			X		
6 Was the trip blank free of contamination (i.e., less than the MDL or RL)?			X		
7 Did the trip blank contamination affect the final results? If so, note on page 2.				X	
8 Was an equipment blank required and submitted with the samples?				X	
9 Was the equipment blank free of contamination (i.e., less than the MDL or RL)?				X	
10 Did the equipment blank contamination affect the final results? If so, note on page 2.				X	
11 Was a source water blank required and submitted with the samples?				X	
12 Was the source water blank free of contamination (i.e., less than the MDL or RL)?				X	
13 Did the source water blank contamination affect the final results? If so, note on page 2.				X	
Surrogates					
1 Were surrogates added prior to extraction for all appropriate methods?			X		
2 Were surrogate percent recoveries within laboratory control limits?				X	
3 Did the surrogate percent recoveries affect the final results? If so, note on page 2.				X	
Laboratory Control Samples					
1 Were LCS performed for all appropriate methods?			X		
2 Were LCSs spiked with appropriate list of target compounds?			X		
3 Were LCS percent recoveries within laboratory control limits?			X		(2)
4 Did the LCS percent recoveries affect the final results? If so, note on page 2.				X	
5 If performed, were LCS Duplicate data provided?				X	
6 Were the LCS/LCSD RPD values within laboratory control limits?				X	
Matrix Spikes					
1 Were MS/MSDs required to be performed on a project sample?				X	
Sample used/methods:					
2 Were MS/MSDs performed on a project sample selected by the laboratory?			X		
Sample used/methods:	LCS-1 (-01B MS/-01B MSD): VOCs LCS-02 (-01D MS/-01D MSD): Ammonia as N LCS-01 (-01H MS/-01H MSD): Hexavalent chromium				
3 Were MS/MSDs spiked with appropriate list of target compounds?			X		
4 Were MS/MSD percent recoveries within laboratory control limits?				X	
5 Did the MS/MSD percent recoveries affect the final results? If yes, narrate.			X		(2)
6 Were the MS/MSD RPD values within laboratory control limits?			X		

U. S. Steel Gary Works - Laboratory Report Data Review				
Laboratory Report ID:			1707491	
Laboratory Name:	ALS Environmental (Holland, MI)	Report Package Date:	7/25/2017	
Project Name:	CAMU Monthly Leachate - July 2017	Review Date:	8/11/2017	
Project Number:	4262-303-01-01 Phase 03			
Reviewer Name:	Suzanne Bonola	No. of Environ. Samples?*	2	
Parameters:	PCBs, VOCs*, SVOCs*, ammonia as N, total dissolved solids, total suspended solids, total metals (As, Ba, Cd, Cr, Pb, Li, Hg, Se, Ag); hexavalent chromium (*list of compounds is in accordance with the CAMU Monitoring Program)	No. of QC Samples?*	1	
Method IDs:	SW8082; SW8260B; SW8270D; SW8270D SIM (PAHs); EPA 350.1 R2.0; A2540 C-97; A2540 D-97; SW 6020A; SW7470A; SW7196A	Rejected Results?	Yes	
Matrix:	Aqueous + QC (TB)			
*Attach copy of lab report showing sample IDs and corresponding lab IDs.		Yes	No	N/A
				Comment
7 Did the MS/MSD RPDs affect the final results? If so, note on page 2.			X	
Field and Laboratory Duplicates				
1 Was a field duplicate submitted with this SDG?			X	
Field Duplicate ID:				
2 Was the RPD values less than review criteria?				X
3 Did the field duplicate RPD results affect the final results? If so, narrate.				X
4 Was a laboratory method duplicate (MD) performed?			X	
MD ID:				
5 Were the RPD values less than review criteria?				X
6 Did the MD results affect the final results? If so, note on page 2.				X
Other Laboratory QC Data				
1 Were internal standard data reported? (organics and inorganics by 6020)		X		(4)
2 Were IS area counts and retention times within method required limits?			X	
3 Were data associated with manual integration flagged on the test reports?			X	
4 Did dual-column confirmation results (PCBs) meet method-required QC limits of <25% difference?		X		
5 Was an interference check sample analyzed and were percent recoveries within QC limits?			X	
6 If serial dilutions were analyzed using a project sample, were the percent differences within QC limits?			X	(5)
7 Was a CRDL check sample analyzed and were the percent recoveries within QC limits?			X	
8 If post-digestion spikes (PDS) were performed for metals, were percent recoveries within QC limits?			X	(5)
9 If ICV/CCV was reported in the case narrative, did the ICV/CCV affect the project samples?			X	
10 Were the total results greater than the dissolved results (e.g., metals)?			X	
Electronic Data Deliverable				
1 Was an EDD provided with the deliverable?		X		
2 Was the electronic data the same as the hardcopy data?			X	(6)
Comment No. Description (data usability; note any estimated and/or rejected data):				
1	<b>Sampling:</b> The samples were collected by ALS staff. <b>Login:</b> A custody seal was not used on the cooler; because the cooler was not shipped by a commercial courier, this was not mandatory protocol. <b>Dilutions:</b> Dilutions were needed for the following chemicals due to elevated concentrations: VOCs (-01, -02); SVOCs (-01); PAHs (-01, -02); ammonia as N (-01) <b>QAPP:</b> Uniform Federal Policy - Quality Assurance Project Plan, U. S. Steel Corporation, Gary Works, Gary, Indiana, April 2016.			
2	<b>LCS:</b> <u>VOCs: Iodomethane</u> (VLCWSW1-170717-R215901b) LCS %R = 160, lab "S"-flagged the result as being outside the control limit of 60-160; %R at, but not above the UCL; NQR for associated samples. <u>SVOCs: 2,4-dinitrophenol</u> (SLCSW1-104497-104497) LCS %R<LCL, but >10%; Samples -01 and -02 are non-detect; revise as "UU".			
3	<b>MS/MSD: VOCs - Sample 01B:</b> <u>4-Bromofluorobenzene</u> (surrogate) %Rec>UCL (target analytes benzene, chlorobenzene, ethylbenzene, toluene, and total xylenes); revise parent sample to "J"; <u>1,1,2,2-tetrachloroethane</u> (MS and MSD %R<LCL and <10%; parent sample ND; reject result and replace with "R"); <u>1,1-dichloroethane, 1,1-dichloroethene, 1,2-dichloropropane, methylene chloride, tetrachloroethene, trans-1,2-dichloroethene, and vinyl chloride</u> - MS %R>UCL, parent ND, NQR; <u>1,2,3-trichloropropane, 1,2-dibromo-3-chloropropane</u> - MSD %R>UCL; parent ND, NQR; <u>2-butanone, 2-hexanone, iodomethane, and trichloroethene</u> - MS and MSD %R>UCL; parent ND, NQR; <u>acetone</u> - MS and MSD %R>UCL; parent sample already "J" flagged, NQR; <u>chloroform</u> - MS %R>UCL; revise to "J". <b>General Chemistry - Sample -01D:</b> <u>Ammonia as N</u> - MS and MSD %R>UCL, sample result>4x spike amount, NQR; <b>Sample -02D:</b> <u>Ammonia as N</u> - MS and MSD %R>UCL, sample result>4x spike amount, NQR			
4	<b>Internal Standards:</b> Included in L4 lab report; no review required for general QC data evaluation. Did not receive a copy of the L4 lab report.			
5	The lab did not perform PDS or SD analysis for this batch report.			
6	<b>Reporting:</b> The laboratory provided an EDD to the database management contractor.			
Signature of Validator:		<i>Suzanne Bonola</i>	8/11/2017	
Signature of Senior Review:		<i>Walter Bonola</i>	9/27/2017	

Attachment 1: Cross-reference of field IDs with laboratory IDs.

#### Acronyms:

CCV: Continuing Calibration Verification  
 CLP-Like: Level 4 Report  
 CL: Control Limit  
 DQOs: Data Quality Objectives  
 EDD: Electronic Deliverable Data  
 FD: Field Duplicate  
 GC/MS: Gas Chromatography/ Mass Spectrometry  
 ICV: Initial Calibration Verification  
 IS: Internal Standard  
 LCL: Lower Control Limit

LCS/LCSD: Laboratory Control Sample/Duplicate  
 MB: Method Blank  
 MD: Method Duplicate  
 MDL: Method Detection Limit  
 MS/MSD: Matrix Spike/Duplicate  
 ND: Non Detected  
 NFQR: No Further Qualification Required  
 NQR: No Qualification Required  
 PDS: Post Digestion Spike  
 %R: Percent Recovery

RL: Reporting Limit  
 RPD: Relative Percent Difference  
 SAP: Sampling Analysis Plan  
 SDG: Sampling Delivery Group  
 SVOC: Semi-Volatile Organic Compounds  
 TIC: Tentatively Identified Compound  
 QA/QC: Quality Assurance/Quality Control  
 QAPP: Quality Assurance Project Plan  
 UCL: Upper Control limit  
 VOC: Volatile organic compounds

**Client:** U.S. Steel - Gary Works  
**Project:** (USS- Gary) CAMU Monthly Leachate 7.2017  
**Work Order:** 1707491

## Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1707491-01	LCS-01	Aqueous	LCS-01	7/12/2017 09:55	7/12/2017 16:16	<input type="checkbox"/>
1707491-02	LCS-02	Aqueous	LCS-02	7/12/2017 09:40	7/12/2017 16:16	<input type="checkbox"/>
1707491-03	Trip Blank	Aqueous	Trip Blank	7/12/2017 08:00	7/12/2017 16:16	<input type="checkbox"/>