



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

4601 N Monroe Street • Spokane, Washington 99205-1295 • (509)329-3400

July 19, 2016

Mr. Scott Endres
Vice President Flat Rolled Products
Kaiser Aluminum Washington, LLC
PO Box 15108
Spokane Valley, WA 99215

RE: Kaiser Aluminum Washington LLC - NPDES Permit No. WA-0000892
Compliance Inspection

Dear Mr. Endres:

I have enclosed the inspection report from my site visit on June 24, 2015. I wish to thank Bud Leber, Brent Downey, and Ron Lehrman for their time and assistance during the inspection.

I noted the following items for correction:

- Laboratory technicians should initial bench sheets when recording any result or measurement. There were a few bench sheets for BOD tests which only had one technician's initials, where one other technician had performed some of the testing. The second technician needs to initial the applicable test on the bench sheet.
- For samples that you send offsite for analysis, you should retain the State's accreditation documentation for these contract laboratories for your records.

Please review the inspection report and if you have any questions, feel free to contact me at (509) 329-3500.

Sincerely,


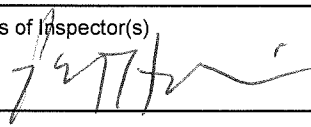
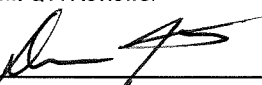
A handwritten signature in blue ink, appearing to read "Pat Hallinan", is written over the word "Sincerely,".

Pat Hallinan
Water Quality Section

PH:jab

cc/enc: Bud Leber, Kaiser Aluminum Washington, LLC



 DEPARTMENT OF ECOLOGY State of Washington		State of Washington Department of Ecology Eastern Regional Office Water Compliance Inspection Report			
Section A: National Data System Coding (i.e., PCS)					
Transaction Code 1 N 2 5	NPDES # 3 WA-0000892 11	yr/mo/day 12 16/06/24 17	Inspection Type 18 C	Inspector 19 S	Fac Type 20 2
Remarks					
21 Kaiser Aluminum Washington, LLC Class I Inspection					66
Inspection Work Days 67 1.0 69	Facility Self-Monitoring Evaluation Rating 70 5	BI 71 N	QA 72 N	-----Reserved----- 73 _____ 74 _____ 75 _____ 80	
Section B: Facility Data					
Name and Location of Facility Inspected (For industrial users discharging to POTW, also include POTW name and NPDES permit number) Kaiser Aluminum Washington, LLC Trentwood Works 15000 E Euclid Ave Spokane Valley, WA 99215			Entry Time/Date 9:45 AM 6/24/2016		Permit Effective Date 7/01/2011
			Exit Time / Date 12:05 PM 6/24/2016		Permit Expiration Date 6/30/2016
Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s) Bud Leber Environmental Engineering Manager (509) 927-6554; (509) 927-6095 fax			Other Facility Data (e.g. SIC NAICS, and other descriptive information) SIC 3353 NAICS 331315 Categorical Industry under 40 CFR Part 467, Aluminum Forming Point Source Category		
Name, Address of Responsible Official/Title/Phone and Fax Number Scott Endres Vice President Flat Rolled Products P.O. Box 15108, Spokane Valley, WA 99215-5108 (509) 924-1500					
			Contacted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Section C: Areas Evaluated During Inspection (Check only those areas evaluated)					
<input checked="" type="checkbox"/> Permit	<input checked="" type="checkbox"/> Self-Monitoring Program	<input type="checkbox"/> Pretreatment	<input type="checkbox"/> MS4		
<input checked="" type="checkbox"/> Records/Reports	<input type="checkbox"/> Compliance Schedules	<input type="checkbox"/> Pollution Prevention	<input checked="" type="checkbox"/> Other: Cooling Water Intake Structure		
<input checked="" type="checkbox"/> Facility Site Review	<input checked="" type="checkbox"/> Laboratory	<input type="checkbox"/> Stormwater			
<input checked="" type="checkbox"/> Effluent/Receiving Water	<input checked="" type="checkbox"/> Operations & Maintenance	<input type="checkbox"/> Combined Sewer Overflow			
<input type="checkbox"/> Flow Measurement	<input type="checkbox"/> Sludge Handling/Disposal	<input type="checkbox"/> Sanitary Sewer Overflow			
Section D: Summary of Findings/Comments (Attach additional sheets of narrative and checklists, including Single Event Violation codes, as necessary)					
SEV Codes ***** ***** ***** *****		SEV Description -see next page for additional narrative-			
Name(s) and Signatures of Inspector(s) Pat Hallinan 		Agency/Office/Phone and Fax Numbers Ecology/Eastern Regional Office/(509)329-3500; (509)329-3529 fax		Date 7/15/2016	
Signature of Management Q A Reviewer Diana Washington 		Agency/Office/Phone and Fax Numbers Ecology/Eastern Regional Office/(509)329-3504; (509)329-3529 fax		Date	

Water Compliance Inspection Report
Section D. Summary of Findings/Comments (continued)

Permit: Ecology issued Kaiser Aluminum Washington LLC's (Kaiser) NPDES permit in July, 2011 with an expiration date of June 30, 2016. Kaiser submitted their permit renewal application on December 15, 2015, which Ecology accepted on April 15, 2016. Ecology confirmed the administrative extension of the expired permit in a letter dated June 30, 2016. Ecology is in the process of reissuing the permit. The public comment period began on June 30th and ends on August 29th.

Facility Site Review: Kaiser Aluminum Washington, LLC (Kaiser) owns and operates an aluminum rolling mill and metal finishing plant in Spokane Valley. The facility produces aluminum sheet, plate, and coil through the melting of aluminum, casting of ingots, and then rolling with neat oils and emulsions. Supporting operations include direct chill casting and solution heat treating. The operations are also supported by additional ancillary activities such as steam generation and air compressing.

The facility discharges treated wastewater to the Spokane River (Outfall 001). The wastewater consists of a combination of non-contact and contact cooling water (internal Outfalls 004 and 005), treated industrial process wastewater (internal Outfall 002), site stormwater, and treated sanitary wastewater (internal Outfall 003). These wastestreams all flow to a 4 million gallon lined settling lagoon, then through a black walnut shell (BWS) filtration system (internal Outfall 006). Additionally, the facility generates excess groundwater flows as part of onsite remediation activities; and discharges this excess water through the final outfall (Outfall 001). Kaiser temporarily ceased discharging the excess groundwater in September 2013 and has not resumed the discharge since that time.

The industrial wastewater treatment system (internal Outfall 002) receives oil and metal contaminated wastewater from the aluminum rolling operations. Treatment consists of oil recovery, further oil water separation using an acid break process, followed by lime addition then clarification. Dewatered sludge from the clarifier is landfilled offsite.

The BWS filters backwash to an above ground tank. In the tank, backwash solids settle to the bottom, while oils float to the top. When full, Kaiser withdraws water from the middle of the tank (40,000 gallons) for discharge back to the settling lagoon system. Kaiser skims off the oils and discharges them to a second above ground oil recovery tank. Tank bottoms (5,000 gallons) are discharged back into the wastewater pits in the industrial wastewater treatment system, located between the acid break and lime addition systems.

Kaiser withdraws an average of about 3 million gallons of water from the Spokane River for facility uses. They use about 95% for non-contact and contact cooling water. The water intake structure includes a bar screen, followed by a fixed mesh screen, then a moving screen to remove solid debris. Each intake pump (a single 250 hp pump, three (3) 400 hp pumps, and two backup diesel powered pumps) also has an intake screen. The pumping layout supplies both process water needs and a separate fire suppression system.

Kaiser is cleaning up PCB contaminated soil and groundwater at the site under the Model Toxics Control Act. As part of these efforts, Kaiser is pilot testing BWS filtration for PCB removal from contaminated groundwater (see attached photos).

Records/Reports: The permit places effluent limits on the final discharge to the Spokane River (Outfall 001), the BWS effluent (Outfall 006), the sanitary treatment plant effluent (Outfall 003), and contains design criteria for the influent flow and PCB loading to the BWS filtration system. The attached table provides a summary of discharge monitoring report data from January 2013 through March 2016. The facility has met permit limits at these monitoring locations during this time period; except for exceedances for the daily maximum oil and grease limit at Outfall 006 in June 2015 and the minimum pH limit for Outfall 001 in August 2015. For the oil and grease exceedance, Kaiser suspected a laboratory error in the analysis and believed that the result did not reflect actual discharge concentrations. For the pH exceedance, it appeared a total facility power outage impacted the Outfall 001 pH sensor causing inaccurate readings. A recalibration resolved the issue.

Laboratory: Kaiser's laboratory staff collects routine compliance monitoring samples. Kaiser's onsite laboratory analyzes the samples for permit compliance, except for PCBs, cadmium and lead. On bench sheets for BOD tests, sometimes two different technicians record dissolved oxygen values (beginning versus ending). Recommended that both technicians initial these bench sheets in these cases.

Axys Analytical Services of Sidney, B.C. analyzes for PCBs (EPA method 1668) while ALS Environmental of Kelso, WA performs PCB (EPA method 8082), cadmium, and lead tests. Recommended that Kaiser retains documentation of Ecology's laboratory accreditation for these labs in their records.

Effluent/Receiving Water: The Spokane River Regional Toxics Task Force (SRRTTF) has collected Spokane River samples at 'Mirabeau Park'. This station lies adjacent to the South Ravine on the Kaiser Plant site, upstream from the river intake structure and final discharge.

Section D: COMPLETED BY: Pat Hallinan

TITLE: Permit Manager

DATE: 7/15/2016

TELEPHONE: (509)329-3500

INSTRUCTIONS**Section A: National Data System Coding (i.e., PCS)**

Column 1: Transaction Code: Use N, C, or D for New, Change, or Delete. All inspections will be *new* unless there is an error in the data entered.

Column 3 - 11: NPDES Permit No.: Enter the facility's NPDES permit number – third character in permit number indicates permit type for U=unpermitted, G=general permit, etc.. (Use the Remarks columns to record the State permit number, if necessary.)

Columns 12 - 17: Inspection Date: Insert the date entry was made into the facility. Use the year/month/day format (e.g., 94/06/30 = June 30, 1994).

Column 18: Inspection Type*: Use one of the codes listed below to describe the type of inspection:

A	Performance Audit	U	IU Inspection with Pretreatment Audit	!	Pretreatment Compliance (Oversight)
B	Compliance Biomonitoring	X	Toxics Inspection	@	Follow-up (enforcement)
C	Compliance Evaluation (non-sampling)	Z	Sludge – Biosolids	{	Stormwater-Construction-Sampling
D	Diagnostic	#	Combined Sewer Overflow-Sampling	}	Stormwater-Construction-Non-Sampling
F	Pretreatment Follow-up	\$	Combined Sewer Overflow-Non-Sampling	:	Stormwater-Non-Construction-Sampling
G	Pretreatment (Audit)	+	Sanitary Sewer Overflow-Sampling	~	Stormwater-Non-Construction-Non-Sampling
I	Industrial User (IU) Inspection	&	Sanitary Sewer Overflow-Non-Sampling	<	Stormwater-MS4-Sampling
M	Multimedia	\	CAFO-Sampling	-	Stormwater-MS4-Non-Sampling
N	Spill	=	CAFO-Non-Sampling	>	Stormwater-MS4-Audit
O	Compliance Evaluation (Oversight)	2	IU Sampling Inspection		
P	Pretreatment Compliance Inspection	3	IU Non-Sampling Inspection		
R	Reconnaissance	4	IU Toxics Inspections		
S	Compliance Sampling	5	IU Sampling Inspection With Pretreatment		
		6	IU Non-Sampling Inspection with Pretreatment		
		7	IU Toxics With Pretreatment		

Column 19: Inspector Code: Use one of the codes listed below to describe the *lead agency* in the inspection

A - State (Contractor)	O - Other Inspectors, Federal/EPA (Specify in Remarks columns)
B - EPA (Contractor)	P - Other Inspectors, State (Specify in Remarks columns)
E - Corps of Engineers	R - EPA Regional Inspector
J - Joint EPA/State Inspectors-EPA Lead	S - State Inspector
L - Local Health Department (State)	T - Joint State/EPA Inspectors-State Lead
N - NEIC Inspectors	

Column 20: Facility Type: Use one of the codes below to describe the facility.

- 1 - Municipal. Publicly Owned Treatment Works (POTWs) with 1987 Standard Industrial Code (SIC) 4952.
- 2 - Industrial. Other than municipal, agricultural, and Federal facilities.
- 3 - Agricultural. Facilities classified with 1987 SIC 0111 to 0971.
- 4 - Federal. Facilities identified as Federal by the EPA Regional Office.
- 5 - Oil & Gas. Facilities classified with 1987 SIC 1311 to 1389

Columns 21-66: Remarks: These columns are reserved for remarks at the discretion of the Region.

Columns 67-69: Inspection Work Days: Estimate the total work effort (to the nearest 0.1 work day), up to 99.9 days, that were used to complete the inspection and submit a QA reviewed report of findings. This estimate includes the accumulative effort participating inspectors; any effort for laboratory analyses, testing, and remote sensing; and the billed payroll time for travel and pre and post inspection preparation. This estimate does not require detailed documentation.

Column 70: Facility Evaluation Rating: Use information gathered during the inspection (regardless of inspection type) to evaluate the quality of the facility self-monitoring program. Grade the program using a scale of 1 to 5 with a score of 5 being used for very reliable self-monitoring programs, 3 being satisfactory, and 1 being used for very unreliable programs.

Column 71: Biomonitoring Information: Enter D for static testing. Enter F for flow through testing. Enter N for no biomonitoring.

Column 72: Quality Assurance Data Inspection: Enter Q if the inspection was conducted as follow-up on quality assurance sample results. Enter N otherwise.

Columns 73-80: These columns are reserved for regionally defined information.

Section B: Facility Data

This section is self-explanatory except for "Other Facility Data," which may include new information not in the permit or PCS (e.g., new outfalls, names of receiving waters, new ownership, and other updates to the record).

Section C: Areas Evaluated During Inspection

Check only those areas evaluated by marking the appropriate box. Use Section D and additional sheets as necessary. Support the findings, as necessary, in a brief narrative report. Use the headings given on the report form (e.g., Permit, Records/Reports) when discussing the areas evaluated during the inspection.

Section D: Summary of Findings/Comments

Briefly summarize the inspection findings. This summary should abstract the pertinent inspection findings, not replace the narrative report. Reference a list of attachments, such as completed checklists taken from the NPDES Compliance Inspection Manuals and pretreatment guidance documents, including effluent data when sampling has been done. Use extra sheets as necessary.

*Footnote: In addition to the inspection types listed above under column 18, a state may continue to use the following wet weather and CAFO inspection types until the state is brought into ICIS-NPDES: K-CAFO, V-SSO, Y-COS, W-Stormwater, 9-MS4. States may also use the new wet weather CAFO and MS4 inspection types show in column 19 of this form. The EPA regions are required to use the new wet weather CAFO and MS4 inspection types for inspections with an inspection date (DTIN) on or after July 1, 2005.

Attachment - Single Event Violation Table - Codes and Descriptions*

CODE	DESCRIPTION
Effluent Violations	
A0018	Approved Bypass
A0013	Failed Toxicity Test
A0023	Industrial Spill
A0017	Inspection sample above historic DMR range
A0022	Narrative Effluent Violation
A0012	Numeric effluent violation
A0016	Reported Fish Kill
A0011	Unapproved Bypass
A0015	Unauthorized Discharge of Brine
Management Practice Violations	
B0019	Best Management Practice Deficiencies
B0024	Biosolids/Sewage Sludge Violation (Part 503)
B0026	Failure to Allow Entry
B0012	Failure to Conduct Inspections
B0027	Failure to Develop Adequate SPCC Plan
B0017	Failure to develop any or adequate SWPPP/SWMP
B0011	Failure to Develop/Enforce Standards
B0028	Failure to Implement SPCC Plan
B0018	Failure to Implement SWPPP/SWMP
B0041	Failure to Maintain Records
B0040	Improper Chemical Handling
B0023	Improper Land Application (non-503, non-CAFO)
B0020	Improper Operation and Maintenance
B0025	Inflow/Infiltration (I/I)
B0021	Laboratory Not Certified
B0022	No Licensed/Certified Operator
B0042	Violation of a milestone in an order
Monitoring Violations	
C0017	Analysis not Conducted
C0011	Failure to Monitor for non-Toxicity Requirements

CODE	DESCRIPTION
CSO	
A0C18	Approved Bypass
A0024	Dry weather overflow
B0030	Failure to Develop Adequate LTCP
B0031	Failure to Implement LTCP
B0029	Failure to Implement Nine Minimum Controls (NMCs)
BC291	Failure to implement required NMC #1 (Proper operation and maintenance)
BC292	Failure to implement required NMC #2 (Maximum use of the collection system)
BC293	Failure to implement required NMC #3 (Review pretreatment requirements)
BC294	Failure to implement required NMC #4 (Maximization of flow)
BC295	Failure to implement required NMC #5 (Elimination of dry weather flow)
BC296	Failure to implement required NMC #6 (Control of solids)
BC297	Failure to implement required NMC #7 (Pollution prevention programs)
BC298	Failure to implement required NMC #8 (Public notification)
BC299	Failure to implement required NMC #9 (Monitoring)
B0C41	Failure to Maintain Records or Meet Record Keeping Requirements
C0C11	Failure to monitor
E0C16	Failure to submit required report (non-DMR)
E0C13	Improper/Incorrect reporting
B0044	LTCP implementation schedule milestone missed
A0C22	Narrative effluent violation
E0C14	Noncompliance with section 308 Information Request
A0C12	Numeric effluent violation
A0C11	Related Unapproved Bypass
A0021	Unauthorized CSO Discharge to Waters/Wet Weather
A0025	Unauthorized overflow to dry land or building backup
B0045	Violation of a milestone in a permit
B0C42	Violation of a milestone in an order
SSO	
A0S18	Approved Bypass
A0020	Discharge to Waters

CODE	DESCRIPTION
C0021	Failure to Monitor for Toxicity Requirements
C0015	Frequency of Sampling Violation
C0018	Improper Analysis or Lab Error
C0014	Invalid/Unrepresentative Sample
C0016	No Flow Measurement Device
Permitting Violations	
D0014	Application Incomplete
D0011	Discharge Without a Valid Permit
D0012	Failure to Apply for a Permit
D0015	Failure to Pay Fees
D0016	Failure to Submit Timely Permit Renewal Application
D0013	Unapproved Operation
D0017	Violation Specified in Comment

Reporting Violations	
E0017	Failure to Notify
E0012	Failure to Submit DMRs
E0016	Failure to submit required report (non-DMR, non-pretreatment)
E0013	Improper/ Incorrect Reporting
E0011	Late Submittal of DMRs
E0014	Noncompliance with Section 308 Information Request
Pretreatment	
C0012	Baseline Monitoring Report Violation
B0P12	Failure to Conduct Inspections
B0P11	Failure to Develop/Enforce Standards
B0013	Failure to Enforce Against I/U
B0015	Failure to Establish Local Limits
C0013	Failure to Establish Self-Monitoring Requirements
B0014	Failure to Issue SIU Permits
B0016	Failure to Meet Inspection and Sampling Plan for SIUs
E0015	Failure to submit required report (non-DMR)
B0P40	Improper Chemical Handling

CODE	DESCRIPTION
D0S11	Discharge without a valid permit (includes satellite systems)
B0S41	Failure to Maintain Records or Meet Record Keeping Requirements
C0S11	Failure to monitor
E0018	Failure to report other violation
E0019	Failure to report violation that may endanger public health 122.41(l)(7)
D0S12	Failure to submit required permit application info (includes satellite systems)
B0S20	Improper Operation and Maintenance
A0S22	Narrative effluent violation
E0S14	Noncompliance with section 308 Information Request
A0S12	Numeric effluent violation
A0026	Overflow to Dry Land or Building Backup
A0S11	Related Unapproved Bypass
BS42A	Violation of milestone in an administrative order
BS42J	Violation of milestone in judicial decree
B0046	Violation of sewer moratorium or restriction
Stormwater Construction	
D0R11	Discharge without a permit
D0R18	Failure to apply for a notice of termination
B0R12	Failure to Conduct Inspections
B0C17	Failure to develop any or adequate SWPPP/SWMP
B0C18	Failure to Implement SWPPP/SWMP
B0R41	Failure to Maintain Records
C0R11	Failure to Monitor
BR19A	Failure to properly install/implement BMPs
BR19B	Failure to properly operate and maintain BMPs
D0R12	Failure to submit required permit application information
E0R16	Failure to submit required report (non-DMR)
A0R22	Narrative effluent violation
E0R14	Noncompliance with section 308 Information Request
A0R12	Numeric Effluent Violation
B0R42	Violation of a milestone in an order
Stormwater MS4	
D0M11	Discharge without a permit

CODE	DESCRIPTION
A0014	IU Violation of Pretreatment Standards
CAFO	
B0A19	Best Management Practice Deficiencies
B0038	Direct Animal Contact with Waters of US
D0A11	Discharge without a permit
B0A12	Failure to Conduct Inspections
B0032	Failure to Develop any or adequate NMP
B0033	Failure to Implement NMP
B0A41	Failure to Maintain Records or Meet Record Keeping Requirements
B0043	Failure to meet order final compliance date
C0A11	Failure to Monitor
D0A12	Failure to submit required permit application information
C0019	Failure to Test Manure
B0A40	Improper Chemical Handling
B0A23	Improper Land Application
B0039	Improper Manure Handling (not including land application)
B0037	Improper Mortality Management
B0036	Improper O&M of Storage Facility
E0A13	Improper/Incorrect reporting
B0034	Insufficient Buffers/Setbacks
B0035	Insufficient Storage Capacity
A0A22	Narrative effluent violation
E0A16	No Annual Report Submitted
C0020	No Depth Marker
E0A14	Noncompliance with section 308 Information Request
A0A12	Numeric effluent violation
A0019	Production Area Runoff
B0A42	Violation of a milestone in an order

CODE	DESCRIPTION
D0M18	Failure to apply for a notice of termination
B0M12	Failure to Conduct Inspections
B0M17	Failure to develop any or adequate SWPPP/SWMP
B0M18	Failure to Implement SWPPP/SWMP
B0M41	Failure to Maintain Records or Meet Record Keeping
C0M11	Failure to Monitor
BM19A	Failure to properly install/implement BMPs
BM19B	Failure to properly operate and maintain BMPs
D0M12	Failure to submit required permit application information
E0M16	Failure to submit required report (non-DMR)
A0M22	Narrative effluent violation
E0M14	Noncompliance with section 308 Information Request
A0M12	Numeric Effluent Violation
B0M42	Violation of a milestone in an order
Stormwater Non-Construction	
D0N11	Discharge without a permit
D0N18	Failure to apply for a notice of termination
B0N12	Failure to Conduct Inspections
B0N17	Failure to develop any or adequate SWPPP/SWMP
B0N18	Failure to Implement SWPPP/SWMP
B0N41	Failure to Maintain Records
C0N11	Failure to Monitor
BN19A	Failure to properly install/implement BMPs
BN19B	Failure to properly operate and maintain BMPs
D0N12	Failure to submit required permit application information
E0N16	Failure to submit required report (non-DMR)
A0N22	Narrative effluent violation
E0N14	Noncompliance with section 308 Information Request
A0N12	Numeric Effluent Violation
B0N42	Violation of a milestone in an order

* N. B. The codes and code names listed herein may change over time. Please consult ICIS-NPDES and PCS system documentation for updated lists.

Water Quality Photolog

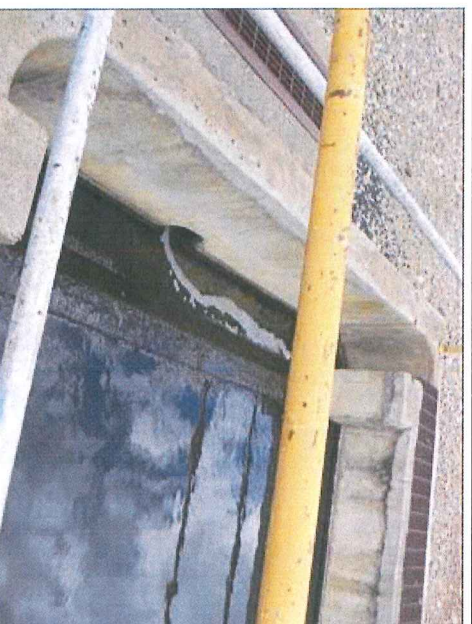
Facility: Kaiser Aluminum Washington, LLC

Location: Spokane Valley
Date Photos Taken: June 24, 2016

Permit No.: WA-0000892
Photographer: Pat Hallinan



Trickling filter at sanitary wastewater treatment plant.



Effluent weir of secondary clarifier at sanitary wastewater treatment plant.



Downstream of internal north outfall (outfall 004) flume structure. Settled backwash from the effluent black walnut shell filters discharges here, along with treated sanitary and industrial process wastewaters.



Wastewater settling lagoon, prior to black walnut shell filtration.

Water Quality Photolog

Facility: Kaiser Aluminum Washington, LLC

Location: Spokane Valley

Permit No.: WA-0000892

Date Photos Taken: June 24, 2016

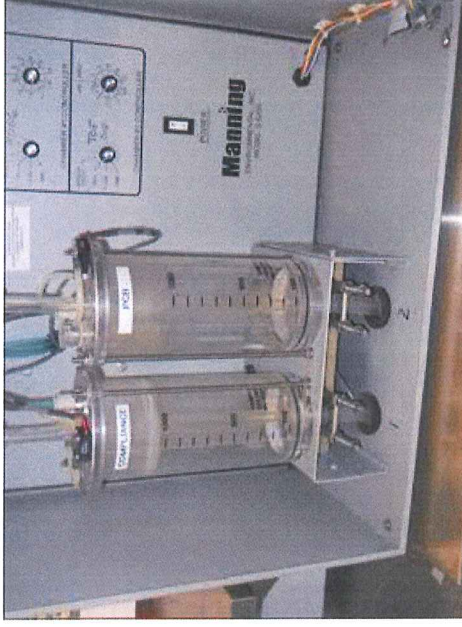
Photographer: Pat Hallinan



Outlet of wastewater settling lagoon. Plant personnel remove oil accumulated on the surface via a pumper truck.



Monitoring station for blank walnut shell filtration system.



Composite sampling equipment for black walnut shell filtration system (internal Outfall 006) for both filtered effluent (compliance) and influent (PCB).



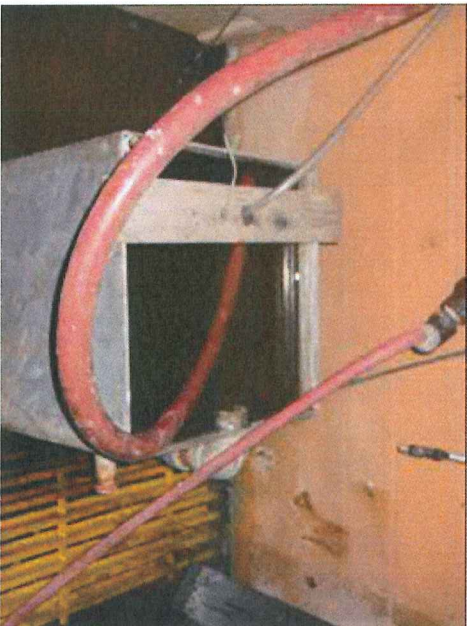
Effluent monitoring station for final effluent (outfall 001).

Water Quality Photolog

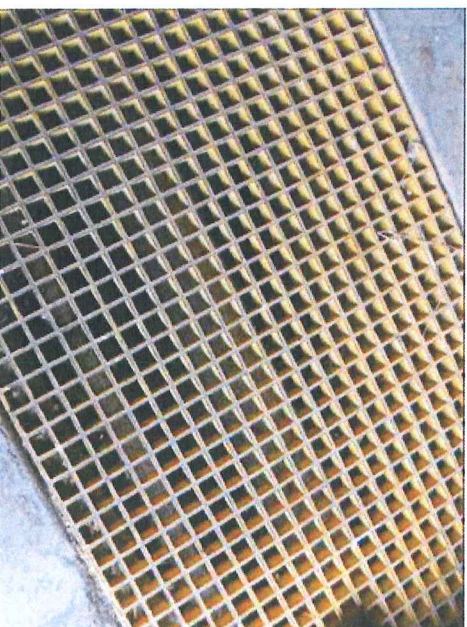
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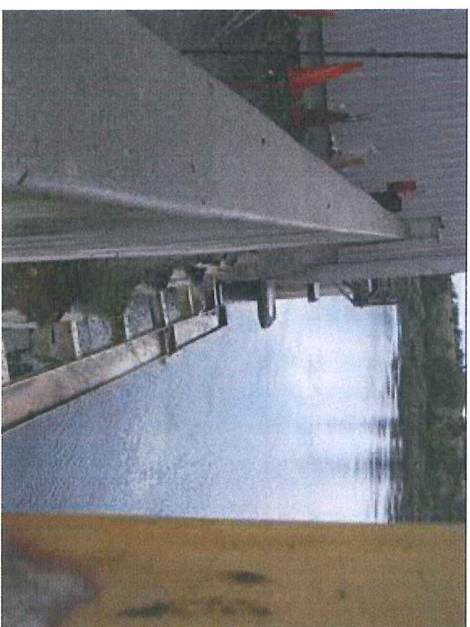
Monitoring station for river intake samples located in river pump house building.



Fixed screens at river intake structure.



Traveling screens at river intake structure.



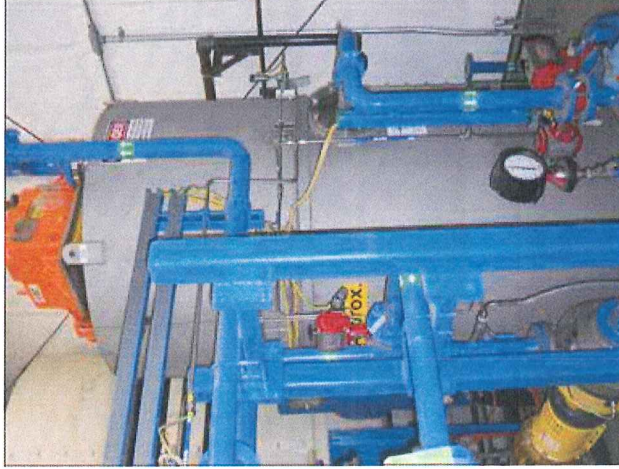
River intake structure.

Water Quality Photolog

Facility: Kaiser Aluminum Washington, LLC

Location: Spokane Valley
Date Photos Taken: June 24, 2016

Permit No.: WA-0000892
Photographer: Pat Hallinan



Pilot black walnut shell filtration system for onsite groundwater cleanup activities.



Location of oil reclamation building (foreground). The facility reclaims oil from wastewater generated from the aluminum rolling processes. The wastewater receives further treatment at the industrial wastewater treatment plant.

Water Quality Photolog

Facility: Kaiser Aluminum Washington, LLC

Location: Spokane Valley
Date Photos Taken: June 24, 2016

Permit No.: WA-00000892
Photographer: Pat Hallinan



Looking toward the Spokane River at the location of the South Ravine. The Spokane River monitoring station 'Mirabeau Park' for the Spokane River Regional Toxics Task Force PCB sampling is located in the river at this location.

	Min	Avg	Max	# Samples	Permit Limit	# Violations
BLACK WALNUT SHELL EFFLUENT						
Aluminum						
Average Monthly						
Total						
Lbs/Day	1	2.91	5.4	35	23.4	0
Milligrams/L (mg/L)	0.03	0.05	0.1	35		
Maximum						
Total						
Lbs/Day	1.9	4.76	8.5	35	46.8	0
Milligrams/L (mg/L)	0.04	0.08	0.127	35		
Chromium						
Average Monthly						
Total						
Lbs/Day	-0.1	0.03	0.3	35	2.1	0
Milligrams/L (mg/L)	0	0.00	0.005	35		
Maximum						
Total						
Lbs/Day	0	0.18	1.3	35	5.1	0
Milligrams/L (mg/L)	0	0.00	0.01	35		
Cyanide						
Average Monthly						
Total						
<						
Milligrams/L (mg/L)	0.01	0.01	0.01	2		
Lbs/Day	0	0.00	0	4	0.53	0
Milligrams/L (mg/L)	0	0.00	0	2		
Maximum						
Total						
<						
Milligrams/L (mg/L)	0.01	0.01	0.01	2		
Lbs/Day	0	0.00	0	4		
Milligrams/L (mg/L)	0	0.00	0	2		
Flow						
Average Monthly						
Million Gallons/Day (MGD)	7.01	8.52	10.48	35	11	0
Maximum						
Million Gallons/Day (MGD)	7.75	9.49	15.08	35		
Oil & Grease						
Average Monthly						
Total recoverable, FOG,HEM						
Lbs/Day	19	74.34	273.2	35	655.1	0
Milligrams/L (mg/L)	0.5	1.36	4.2	35		
Maximum						
Total recoverable, FOG,HEM						
Lbs/Day	48.1	178.70	1016	35	710.5	1
Milligrams/L (mg/L)	1.1	2.86	13.1	35		
Solids (Residue)						
Average Monthly						
Total						
Lbs/Day	28.4	75.47	116.9	35	709.4	0
Total suspended (TSS)						
Milligrams/L (mg/L)	1	1.33	1.7	35		
Maximum						
Total						
Lbs/Day	84.4	150.81	337.7	35	1142.1	0
Total suspended (TSS)						
Milligrams/L (mg/L)	1.5	2.48	4.6	35		

	Min	Avg	Max	# Samples	Permit Limit	# Violations
BLACK WALNUT SHELL INFLUENT						
Flow						
Average Monthly						
Million Gallons/Day (MGD)	7.01	8.52	10.48	35	11	0
PCBs (polychlorinated biphenyls)						
Average Monthly						
Total						
Grams/Day	0.07	0.23	0.45	34	0.78	0
Maximum						
Total						
Grams/Day	0.07	0.28	0.65	34		

	Min	Avg	Max	# Samples	Permit Limit	# Violations
FINAL EFFLUENT						
Ammonia						
Average Monthly						
Total						
Lbs/Day	0.7	1.87	3.5	35		
Milligrams/L (mg/L)	0.01	0.02	0.04	35		
Maximum						
Total						
Lbs/Day	1.4	4.27	8.1	35		
Milligrams/L (mg/L)	0.02	0.06	0.13	35		
Cadmium						
Average Monthly						
Total						
Micrograms/L (ug/L)	0.01	0.02	0.04	35	1.3	0
Maximum						
Total						
Micrograms/L (ug/L)	0.02	0.04	0.11	35	2.2	0
Carbonaceous Biochemical Oxygen Demand (CBOD5)						
Average Monthly						
Total						
Lbs/Day	42.6	168.95	309.9	35		
Milligrams/L (mg/L)	1.2	2.26	3.3	35		
Maximum						
Total						
Lbs/Day	152.9	243.77	410.8	35		
Milligrams/L (mg/L)	2	3.26	5.4	35		
Flow						
Average Monthly						
MGD	15	15.87	16.7	3		
Million Gallons/Day (MGD)	7	8.54	15.6	32		
Maximum						
MGD	17.4	17.53	17.8	3		
Million Gallons/Day (MGD)	7.8	9.68	17	32		
Lead						
Average Monthly						
Total						
Micrograms/L (ug/L)	0.05	0.16	1.7	35	7	0
Maximum						
Total						
Micrograms/L (ug/L)	0.09	0.52	10.3	35	12.1	0
pH (Hydrogen Ion) Daily Max						
Maximum						
Standard Units	6.8	7.56	8.9	35	9	0
pH (Hydrogen Ion) Daily Min						
Minimum						
Standard Units	5.8	6.43	7.1	35	6	1

	Min	Avg	Max	# Samples	Permit Limit	# Violations
FINAL EFFLUENT						
Phosphorus						
Average Monthly						
Soluble Reactive						
Lbs/Day	0.14	0.28	0.45	32		
Micrograms/L (ug/L)	1.9	4.01	7.6	32		
Total						
Lbs/Day	0.7	1.17	2.11	36	3.8	0
Micrograms/L (ug/L)	9	15.26	22	35		
Total Reactive						
Lbs/Day	0.42	0.52	0.64	3		
Micrograms/L (ug/L)	3	4.17	5.25	3		
Maximum						
Soluble Reactive						
Lbs/Day	0.33	0.69	1.23	32		
Micrograms/L (ug/L)	5	9.97	18	32		
Total						
Lbs/Day	1.2	2.01	3.84	36	6.8	0
Micrograms/L (ug/L)	13	26.57	58	35		
Total Reactive						
Lbs/Day	1.17	1.24	1.29	3		
Micrograms/L (ug/L)	9	10.67	14	3		
Temperature						
Average Monthly						
Measured						
Degrees F	53.3	66.00	73.5	35		
Maximum						
Measured						
Degrees F	56.3	69.97	92.4	35		
Zinc						
Average Monthly						
Total						
Micrograms/L (ug/L)	4	12.60	22	35	75	0
Maximum						
Total						
Micrograms/L (ug/L)	8	22.34	77	35	146	0

	Min	Avg	Max	# Samples	Permit Limit	# Violations
OUTFALL 003 - SANITARY						
Biochemical Oxygen Demand (BOD5)						
Average Monthly						
Total						
Lbs/Day	2.47	5.88	13.24	35	48	0
Milligrams/L (mg/L)	3.74	7.11	11.95	35	30	0
Maximum						
Total						
Lbs/Day	3.54	10.50	42.18	35	72	0
Milligrams/L (mg/L)	4.52	11.16	32.32	35	45	0
Fecal Coliform						
Average Monthly						
#/100ml	0	0.14	5	35	200	0
Maximum						
#/100ml	0	0.69	24	35	400	0
Flow						
Average Monthly						
MGD	0.04	0.10	0.15	35		
Maximum						
MGD	0.06	0.13	0.3	35		
pH (Hydrogen Ion) Daily Max						
Maximum						
Standard Units	6.7	7.27	7.9	34		
pH (Hydrogen Ion) Daily Min						
Minimum						
Standard Units	5.4	6.36	7	34		
Phosphorus						
Average Monthly						
Total						
Lbs/Day	0.9	1.00	1.1	3		
Milligrams/L (mg/L)	0.87	0.92	1.02	3		
Maximum						
Total						
Lbs/Day	1.3	1.37	1.4	3		
Milligrams/L (mg/L)	1.09	1.18	1.27	3		
Solids (Residue)						
Average Monthly						
Total suspended (TSS)						
Lbs/Day	0.96	2.63	4.28	35	48	0
Milligrams/L (mg/L)	2.04	3.22	4.66	35	30	0
Maximum						
Total suspended (TSS)						
Lbs/Day	1.61	4.47	8.9	35	72	0
Milligrams/L (mg/L)	2.6	5.06	9.3	35	45	0

	Min	Avg	Max	# Samples	Permit Limit	# Violations
RIVER INTAKE						
Aluminum						
Average Monthly						
Total						
Lbs/Day	0	0.63	2.7	35		
Milligrams/L (mg/L)	0.003	0.03	0.148	35		
Maximum						
Total						
Lbs/Day	0.1	1.30	5.8	35		
Milligrams/L (mg/L)	0.012	0.06	0.285	35		
Chromium						
Average Monthly						
Total						
Lbs/Day	0	0.01	0.13	35		
Milligrams/L (mg/L)	0	0.00	0.004	35		
Maximum						
Total						
Lbs/Day	0	0.05	0.35	35		
Milligrams/L (mg/L)	0	0.00	0.008	35		
Flow						
Average Monthly						
Million Gallons/Day (MGD)	0.6	2.54	3.8	35		
Maximum						
Million Gallons/Day (MGD)	1.5	3.07	4.5	35		
Oil & Grease						
Average Monthly						
Total recoverable, FOG,HEM						
Lbs/Day	3.14	25.07	62.09	35		
Milligrams/L (mg/L)	0.3	1.13	2.3	35		
Maximum						
Total recoverable, FOG,HEM						
Lbs/Day	13.54	56.06	278.85	35		
Milligrams/L (mg/L)	0.8	2.51	10.6	35		
Phosphorus						
Average Monthly						
Total						
Lbs/Day	0.26	0.32	0.39	3		
Micrograms/L (ug/L)	9	10.67	13	3		
Maximum						
Total						
Lbs/Day	0.45	0.54	0.61	3		
Micrograms/L (ug/L)	14	18.00	22	3		
Solids (Residue)						
Average Monthly						
Total suspended (TSS)						
Lbs/Day	3.08	18.19	52.7	35		1
Milligrams/L (mg/L)	0.4	0.87	2.6	35		
Maximum						
Total suspended (TSS)						
Lbs/Day	14.69	44.07	135.67	35		
Milligrams/L (mg/L)	0.8	2.12	6.7	35		
Zinc						
Average Monthly						
Total						
Lbs/Day	1.28	1.48	1.78	3		
Milligrams/L (mg/L)	0.044	0.05	0.055	3		
Maximum						
Total						
Lbs/Day	1.39	1.64	1.93	3		
Milligrams/L (mg/L)	0.047	0.05	0.06	3		