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Appendix 2

Independent Metals

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2ai
Air Stack Test

Date Report Issued: January 27, 2011

INDEPENDENT METALS COMPANY
7814 S 8TH AVENUE
SEATTLE, WASHINGTON 98108
HAMMERMILL BAGHOUSE EXHAUST
NOVEMBER 30-DECEMBER 1, 2010
PROJECT #4098AT

AmTest Air Quality
an affiliate of Horizon Engineering, LLC
Preston, Washington

CERTIFICATIONS

SENIOR REPORT REVIEW

I certify that the information contained herein is accurate, complete, and representative of the actual emissions to the best of my knowledge.

Kris A. Hansen, QEP
Principal Scientist

I certify that the information contained herein is accurate, complete, and representative of the actual emissions to the best of my knowledge.

Angela F. Hansen, QSTI
Principal Scientist

TEST TEAM LEADER

I certify that the information contained herein is accurate, complete, and representative of the actual emissions to the best of my knowledge.

Matt S. Caron
Project Manager

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Emission Units Tested
Scrap metal recycling Hammermill shredder rated at 15 tons/hr controlled by a Magnatech Engineering pulse-jet baghouse rated at 15,000 cfm

Date of Performance Tests
November 30-December 1, 2010

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1.0
INTRODUCTION

Envirosure Solutions, LLC contracted AmTest Air Quality (ATAQ) of Preston, Washington, an affiliate of Horizon Engineering, LLC, to perform emissions tests at the Independent Metals Company scrap metal recycling facility in Seattle, Washington. The facility operates a Hammermill shredder whose emissions are controlled by a water injection system within the shredder and a baghouse system prior to exhausting to the atmosphere. Emissions of filterable particulate matter, metals, hexavalent chromium (Cr^{+6}), polychlorinated biphenyls (PCB), and organic toxic air pollutants (TAPs) were measured at the baghouse exhaust. The purpose of this project was to gather data to support a notice of construction application to the Puget Sound Clean Air Agency (PSCAA). Testing was performed on November 30-December 1, 2010.

Testing and analysis procedures used for this project are presented in EPA 40 CFR 60, Appendix A, Methods 1, 2, 3, 4, 5, 23, and 29, in 40 CFR 63, Subpart N, Appendix A, Method 306A; in the EPA Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Method TO-15; and on the EPA Technology Transfer Network Emission Measurement Center (EPA-TTN-EMC) website, Test Methods Section (www.epa.gov/ttn/emc/). EPA Methods 1 and 2 were performed to measure the stack gas velocity and temperature for calculating the volumetric flow rate. EPA Method 3 was used to calculate the molecular weight of the stack gas based on ambient concentrations of oxygen (O_2) and carbon dioxide (CO_2) in the stack gas. EPA Method 4 was performed to measure the moisture content of the stack gas. EPA Method 5 was performed to quantify filterable particulate matter emissions (front-half). EPA Method 29 was performed along with EPA Method 5 to quantify multiple metals emissions. All filterable particulate matter collected in the combined EPA Method 5/29

sample train should be considered to be less than 2.5 microns in diameter (<$PM_{2.5}$). EPA Method 23 was performed to quantify emissions of polychlorinated biphenyls (PCB). EPA Method 306A was performed to quantify emissions of hexavalent chromium (Cr^{+6}). Gas samples were collected in SUMMA® canisters and analyzed using EPA Method TO-15 for speciated organic toxic air pollutants (TAPs). The three TAPs of interest were 1,1-Dichloroethane, Benzene, and Ethylbenzene.

Mr. Matthew S. Caron and Mr. Preston Skaggs of ATAQ/Horizon Engineering performed the field sampling. Mr. C. David Bagwell of Horizon Engineering and Ms. Kristina M. Bearden of ATAQ coordinated this project. Mr. Kris A. Hansen and Ms. Angela F. Hansen of ATAQ performed the data reduction, report preparation, and quality assurance review. Antech, Inc. of Corbett, Oregon analyzed the particulate matter samples. Columbia Analytical Services of Kelso, Washington performed the metals analyses. Analytical Perspectives of Wilmington, North Carolina performed the PCB analysis. Exova Inc. in Sante Fe Springs, California performed the EPA Method 306A analysis for hexavalent chromium. Columbia Analytical Services of Simi Valley, California performed the organic TAPs analyses. Mr. Mark Guatney of Envirosure coordinated this project. Mr. Larry Brewer represented Independent Metals Company.

2.0
SUMMARY OF RESULTS

The following section of this report summarizes the results from this project. Refer to the Table of Contents to locate specific information. The summary tables in Section 2.0 contain information obtained from computer printouts of results for each individual run which are included in Appendix A. Appendix B contains process data. Appendix C contains laboratory analysis data. Appendix D contains example calculations of results and copies of the original field data sheets. Appendix E contains miscellaneous supporting information. An overview of the quality assurance requirements; discussions of any exceptions to the test plan, sampling, or analysis; and/or any process difficulties may be found in Section 3.0, "Project Overview/Exceptions."

2.1 EPA Method 5/29 – Filterable Particulate Matter and Metals Emissions

Three 120-minute EPA Method 1, 2, 3, 4, 5, and 29 runs were performed on November 30, 2010 at the baghouse exhaust to quantify filterable particulate matter and metals emissions. The particulate matter results are summarized on the following computer printout titled "Summary of Results - EPA Methods 1, 2, 3, 4, 5, and 29." The metals results are summarized on the following computer printouts titled "Summary of Average Results" and "Summary of Emission Results - EPA Method 29 - Metals." The metals results are based on analysis of both the front-half (filter) and back-half (impinger section) of the sample train.

The front-half portion of each sample train was submitted to Antech Analysis/Technology for particulate matter analysis. Filterable (front-half) particulate matter emission concentrations were calculated in grains per dry standard cubic foot (gr/dscf) and

milligrams per dry standard cubic meter (mg/dscm). Particulate matter emission rates were calculated in pounds per hour (lb/hr).

Once the particulate matter analysis of the front-half was complete, the samples were submitted to Columbia Analytical Services for analysis using Inductively Coupled Plasma (ICP) optical emission spectroscopy and cold vapor atomic absorption (CVAA) spectroscopy. The laboratory analysis results were presented in total micrograms (μg) per sample and are included in Appendix C of this report. Metals emission concentrations were calculated in micrograms per dry standard cubic meter (μg/dscm), and milligrams per dry standard cubic meter (mg/dscm). Metals emission rates were calculated in pounds per hour (lb/hr).

The metals results are reported by the laboratory as field blank-corrected per EPA Method 29. The computer spreadsheets in Appendix A of this report present the metals concentrations for each "fraction" of the sample train. The spreadsheets show the concentration for each fraction of the sample train. If a metal was undetected, the detection limit (DL) is shown and the fraction is labeled with a "U". If a metal is qualified by the lab as "J, estimated value detected outside of the quantification range" it is handled as an undetected value. The fraction concentrations are summed to obtain the front-half (FH), back-half (BH), and total concentration of each metal per run. The samples are recovered into containers labeled 1-3, 4, 5A, 5B, and 5C. Containers 1-3 (FH) consists of the filter, the acetone probe rinse residue (if used), and nitric acid (HNO_3) probe rinse and is analyzed as Fraction 1A/B. Container 4 (BH) is the HNO_3/H_2O_2 impinger catch and is analyzed as Fraction 2A/B. Container 5A is the contents of the empty impinger and is analyzed as Fraction 3A. Container 5B is the acidified potassium permanganate ($KMnO_4$) impinger catch and is analyzed as Fraction 3B. Container 5C is the hydrochloric acid (HCl) rinse of the $KMnO_4$ impingers and is

analyzed as Fraction 3C. Impinger catches from Containers 5A, 5B, and 5C were analyzed for mercury (Hg) only. Containers 1/3 and 4 were analyzed for antimony (Sb), arsenic (As), barium (Ba), beryllium (Be), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), mercury (Hg), nickel (Ni), phosphorus (P), selenium (Se), silver (Ag), thallium (Tl), and zinc (Zn).

The metals data are flagged per page 1 of EPA Guideline Document 51F issued September 16, 2009 and revised September 18, 2009 as follows:

- **BDL** (below detection level) - all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s)
- **DLL** (detection level limited) - at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s)
- **ADL** (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s)

In GD51F EPA requests that zeros not be used in sums and averages and that the in-stack detection limit be used instead. ATAQ used this protocol in preparation of the spreadsheets for this project. If the results for individual fractions of the sample train were above the detection level (ADL), they are flagged ADL. If the result for a single fraction of the sample train is below the detection limit (U) and the result for another fraction of the sample train was detected, the sum of the fractions is flagged DLL. When all fractions are below the detection limit (U) the run result is labeled BDL. When all three runs are flagged BDL, the average is flagged BDL. When all three runs are flagged DLL, the average is flagged DLL. If one or two runs is BDL, but the other runs were detected, the average is flagged DLL. When summing the fractions, the in-stack detection level is included in the sum. If all fractions of the sample train are flagged as ADL, the sum is flagged ADL. If all three runs are flagged ADL the average is flagged ADL.

SUMMARY OF RESULTS - EPA METHODS 1, 2, 3, 4, 5, AND 29
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure - M1-5,29
Client: Envirosure@Independent Metals
Location: Seattle, Washington

	Hammermill Baghouse Exhaust			
	Run 1	Run 2	Run 3	Average
Lab #:	3649-(001-007)	3649-(008-014)	3649-(015-021)	
Date:	11/30/10	11/30/10	11/30/10	
Start Time:	0745	1136	1417	
Stop Time:	1050	1357	1630	
Sample Length (minutes):	120	120	120	
Volume Sampled (ft^3):	79.979	79.010	84.465	81.151
Volume Sampled (dscf):	84.282	82.498	87.698	84.826
Volume Sampled (dscm):	2.387	2.336	2.484	2.402
Stack Gas Moisture (%):	0.88	1.01	1.43	1.11
Barometric Pressure ("Hg):	30.0	30.0	30.0	30.0
Static Pressure ("H_2O):	0.50	0.50	0.50	0.50
Stack Pressure ("Hg):	30.04	30.04	30.04	30.04
Stack Temperature (°F):	58.6	61.0	61.8	60.4
Stack Temperature (°R):	518.6	521.0	521.8	520.4
Average Concentration O_2 (%):	20.95	20.95	20.95	20.95
Average Concentration CO_2 (%):	0.03	0.03	0.03	0.03
Molecular Weight (dry, g/g-mole):	28.84	28.84	28.84	28.84
Molecular Weight (wet, g/g-mole):	28.75	28.73	28.69	28.72
Average Velocity Head ("H_2O):	0.629	0.620	0.676	0.642
Pitot Tube C_p:	0.8322	0.8218	0.8322	
Stack Gas Velocity (ft/sec):	43.7	43.0	45.5	44.1
Stack Area (ft^2):	4.91	4.91	4.91	
Stack Gas Airflow (dscf/min):	13052	12752	13427	13077
Stack Gas Airflow (acf/min):	12883	12661	13408	12984
Nozzle Diameter (inches):	0.2200	0.2192	0.2200	
Isokinetics (%):	100	101	101	
Filterable (Front-Half (FH)) Particulate Matter (PM) Emission Results				
FH PM Emission Concentration (gr/dscf):	0.0007	0.0006	0.0005	0.0006
FH PM Emission Concentration (mg/dscm):	1.67	1.32	1.24	1.41
FH PM Emission Rate (lb/hr):	0.081	0.063	0.062	0.069

SUMMARY OF AVERAGE RESULTS
EPA METHOD 29 - METALS
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure - M1-5,29
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Sample Date: November 30, 2010

		Hammermill Baghouse Exhaust		
		Average	Average	Average
ANALYTE		µg/m^3	mg/m^3	lb/hr
Mercury	Hg	136.7 DLL	0.137 DLL	6.68E-03 DLL
Antimony	Sb	0.204 DLL	0.0002 DLL	1.00E-05 DLL
Arsenic	As	0.293 DLL	0.0003 DLL	1.42E-05 DLL
Barium	Ba	2.00 ADL	0.002 ADL	9.80E-05 ADL
Beryllium	Be	0.009 BDL	0.00001 BDL	4.49E-07 BDL
Cadmium	Cd	0.432 ADL	0.0004 ADL	2.12E-05 ADL
Chromium	Cr	1.49 ADL	0.001 ADL	7.27E-05 ADL
Cobalt	Co	0.103 ADL	0.0001 ADL	5.04E-06 ADL
Copper	Cu	2.54 ADL	0.003 ADL	1.24E-04 ADL
Lead	Pb	3.09 ADL	0.003 ADL	1.52E-04 ADL
Manganese	Mn	1.95 ADL	0.002 ADL	9.55E-05 ADL
Nickel	Ni	2.22 DLL	0.002 DLL	1.09E-04 DLL
Phosphorous	P	6.25 BDL	0.006 BDL	3.06E-04 BDL
Selenium	Se	7.92 DLL	0.008 DLL	3.80E-04 DLL
Silver	Ag	0.29 ADL	0.0003 ADL	1.44E-05 ADL
Thallium	Tl	0.01 BDL	0.00001 BDL	6.73E-07 BDL
Zinc	Zn	73.8 ADL	0.074 ADL	3.61E-03 ADL

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

SUMMARY OF EMISSION RESULTS
EPA METHOD 29 - METALS
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure - M1-5,29
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Sample Date: November 30, 2010

		Hammermill Baghouse Exhaust							
		Run 1		Run 2		Run 3		Average	
ANALYTE		**µg/m³**		**µg/m³**		**µg/m³**		**µg/m³**	
Mercury	Hg	363.8	DLL	25.9	DLL	20.5	DLL	**136.7**	**DLL**
Antimony	Sb	0.268	ADL	0.180	ADL	0.165	DLL	**0.204**	**DLL**
Arsenic	As	0.184	BDL	0.518	DLL	0.177	BDL	**0.293**	**DLL**
Barium	Ba	2.51	ADL	1.44	ADL	2.04	ADL	**2.00**	**ADL**
Beryllium	Be	0.009	BDL	0.009	BDL	0.009	BDL	**0.009**	**BDL**
Cadmium	Cd	0.521	ADL	0.385	ADL	0.390	ADL	**0.432**	**ADL**
Chromium	Cr	1.55	ADL	1.57	ADL	1.34	ADL	**1.49**	**ADL**
Cobalt	Co	0.116	ADL	0.107	ADL	0.086	ADL	**0.103**	**ADL**
Copper	Cu	2.78	ADL	2.66	ADL	2.18	ADL	**2.54**	**ADL**
Lead	Pb	2.85	ADL	2.84	ADL	3.58	ADL	**3.09**	**ADL**
Manganese	Mn	2.43	ADL	1.95	ADL	1.49	ADL	**1.95**	**ADL**
Nickel	Ni	3.54	ADL	0.813	DLL	2.32	ADL	**2.22**	**DLL**
Phosphorous	P	6.28	BDL	6.42	BDL	6.04	BDL	**6.25**	**BDL**
Selenium	Se	0.712	BDL	21.2	DLL	1.81	DLL	**7.92**	**DLL**
Silver	Ag	0.254	ADL	0.370	ADL	0.258	ADL	**0.294**	**ADL**
Thallium	Tl	0.014	BDL	0.014	BDL	0.013	BDL	**0.014**	**BDL**
Zinc	Zn	77.3	ADL	80.2	ADL	63.9	ADL	**73.8**	**ADL**

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).
DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).
ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

SUMMARY OF EMISSION RESULTS
EPA METHOD 29 - METALS
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure - M1-5,29
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Sample Date: November 30, 2010

		Hammermill Baghouse Exhaust			
		Run 1	Run 2	Run 3	Average
ANALYTE		mg/m^3	mg/m^3	mg/m^3	mg/m^3
Mercury	Hg	0.364 DLL	0.026 DLL	0.020 DLL	**0.137 DLL**
Antimony	Sb	0.0003 ADL	0.0002 ADL	0.0002 DLL	**0.0002 DLL**
Arsenic	As	0.0002 BDL	0.001 DLL	0.0002 BDL	**0.0003 DLL**
Barium	Ba	0.003 ADL	0.001 ADL	0.002 ADL	**0.002 ADL**
Beryllium	Be	0.00001 BDL	0.00001 BDL	0.00001 BDL	**0.00001 BDL**
Cadmium	Cd	0.0005 ADL	0.0004 ADL	0.0004 ADL	**0.0004 ADL**
Chromium	Cr	0.002 ADL	0.002 ADL	0.001 ADL	**0.001 ADL**
Cobalt	Co	0.0001 ADL	0.0001 ADL	0.0001 ADL	**0.0001 ADL**
Copper	Cu	0.003 ADL	0.003 ADL	0.002 ADL	**0.003 ADL**
Lead	Pb	0.003 ADL	0.003 ADL	0.004 ADL	**0.003 ADL**
Manganese	Mn	0.002 ADL	0.002 ADL	0.001 ADL	**0.002 ADL**
Nickel	Ni	0.004 ADL	0.001 DLL	0.002 ADL	**0.002 DLL**
Phosphorous	P	0.006 BDL	0.006 BDL	0.006 BDL	**0.006 BDL**
Selenium	Se	0.001 BDL	0.021 DLL	0.002 DLL	**0.008 DLL**
Silver	Ag	0.0003 ADL	0.0004 ADL	0.0003 ADL	**0.0003 ADL**
Thallium	Tl	0.00001 BDL	0.00001 BDL	0.00001 BDL	**0.00001 BDL**
Zinc	Zn	0.077 ADL	0.080 ADL	0.064 ADL	**0.074 ADL**

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).
DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).
ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

SUMMARY OF EMISSION RESULTS
EPA METHOD 29 - METALS
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure - M1-5,29
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Sample Date: November 30, 2010

		Hammermill Baghouse Exhaust			
		Run 1	Run 2	Run 3	Average
ANALYTE		lb/hr	lb/hr	lb/hr	lb/hr
Mercury	Hg	1.78E-02 DLL	1.24E-03 DLL	1.03E-03 DLL	**6.68E-03 DLL**
Antimony	Sb	1.31E-05 ADL	8.59E-06 ADL	8.30E-06 DLL	**1.00E-05 DLL**
Arsenic	As	9.01E-06 BDL	2.47E-05 DLL	8.91E-06 BDL	**1.42E-05 DLL**
Barium	Ba	1.23E-04 ADL	6.89E-05 ADL	1.02E-04 ADL	**9.80E-05 ADL**
Beryllium	Be	4.51E-07 BDL	4.50E-07 BDL	4.46E-07 BDL	**4.49E-07 BDL**
Cadmium	Cd	2.55E-05 ADL	1.84E-05 ADL	1.96E-05 ADL	**2.12E-05 ADL**
Chromium	Cr	7.58E-05 ADL	7.50E-05 ADL	6.72E-05 ADL	**7.27E-05 ADL**
Cobalt	Co	5.69E-06 ADL	5.09E-06 ADL	4.33E-06 ADL	**5.04E-06 ADL**
Copper	Cu	1.36E-04 ADL	1.27E-04 ADL	1.10E-04 ADL	**1.24E-04 ADL**
Lead	Pb	1.39E-04 ADL	1.36E-04 ADL	1.80E-04 ADL	**1.52E-04 ADL**
Manganese	Mn	1.19E-04 ADL	9.30E-05 ADL	7.49E-05 ADL	**9.55E-05 ADL**
Nickel	Ni	1.73E-04 ADL	3.88E-05 DLL	1.16E-04 ADL	**1.09E-04 DLL**
Phosphorous	P	3.07E-04 BDL	3.07E-04 BDL	3.04E-04 BDL	**3.06E-04 BDL**
Selenium	Se	3.48E-05 BDL	1.01E-03 DLL	9.11E-05 DLL	**3.80E-04 DLL**
Silver	Ag	1.24E-05 ADL	1.77E-05 ADL	1.30E-05 ADL	**1.44E-05 ADL**
Thallium	Tl	6.76E-07 BDL	6.75E-07 BDL	6.68E-07 BDL	**6.73E-07 BDL**
Zinc	Zn	3.78E-03 ADL	3.83E-03 ADL	3.21E-03 ADL	**3.61E-03 ADL**

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).
DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).
ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

2.2 EPA Method 23 - Polychlorinated Biphenyls (PCB) Emissions

Three 120-minute EPA Method 1, 2, 3, 4, and 23 runs were performed on December 1, 2010 at the baghouse exhaust to measure airflow and quantify emissions of polychlorinated biphenyls (PCB). The EPA Method 23 samples were submitted to Analytical Perspectives LLC for PCB analysis using EPA Method 1668B, which uses high resolution gas chromatography with high resolution mass spectroscopy analyses (HRGC/HRMS). A field blank sample (includes filter, solvents and XAD-2 resin) was analyzed along with the samples. The field blank was obtained by charging a complete sample train and performing a leak check. The field blank sample was then recovered in the same manner as the other sample trains.

PCB laboratory analysis results were presented in picograms (pg) per sample. The results were converted to emission concentrations of nanograms per dry standard cubic meter (ng/dscm) and milligrams per dry standard cubic meter (mg/dscm). PCB emission rates were calculated in pounds per hour (lb/hr). The PCB results are summarized on the following computer printouts titled "Summary of Average Results - PCBs," "Summary of Emission Concentration Results - PCBs," and "Summary of Emission Rate Results - PCBs." Printouts for the individual runs include the field blank and detection limit values and are included in Appendix A of this report.

The minimum TEQ value was calculated with the assumption that all undetected compounds contributed zero to the total equivalent risk. The maximum TEQ value was calculated with the assumption that all undetected compounds contributed the value of the detection limit to the total equivalent risk. The summarized data are flagged per page 1 of Guideline Document 51F as described in Section 2.1 of the report.

Quantitation limits are based on the concentration of the lowest calibration standard, the volume of the final sample extract, and the amount of sample initially extracted. Quantitation limits provide reporting limits for all analytes, whereas detection limits are not reported by the laboratory if a given analyte is detected in a sample.

SUMMARY OF AVERAGE RESULTS
PCBs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure - M1-4,23-PCB
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Sample Date: November 30, 2010

ANALYTE	Hammermill Baghouse Exhaust		
	Average	Average	Average
PCBs	ng/m^3	mg/m^3	lb/hr
PCB-77	9.67 ADL	9.67E-06 ADL	4.73E-07 ADL
PCB-81	0.605 ADL	6.05E-07 ADL	2.96E-08 ADL
PCB-105	16.8 ADL	1.68E-05 ADL	8.20E-07 ADL
PCB-114	1.33 ADL	1.33E-06 ADL	6.48E-08 ADL
PCB-118	33.3 ADL	3.33E-05 ADL	1.63E-06 ADL
PCB-123	0.881 ADL	8.81E-07 ADL	4.30E-08 ADL
PCB-126	0.087 DLL	8.72E-08 DLL	4.26E-09 DLL
PCB-156/157	2.48 ADL	2.48E-06 ADL	1.21E-07 ADL
PCB-167	0.787 ADL	7.87E-07 ADL	3.84E-08 ADL
PCB-169	0.016 BDL	1.61E-08 BDL	7.98E-10 BDL
PCB-189	0.074 ADL	7.37E-08 ADL	3.60E-09 ADL
Total Mono-CBs	784.5 ADL	7.84E-04 ADL	3.87E-05 ADL
*Total Di-CBs	4392 ADL	4.39E-03 ADL	2.18E-04 ADL
Total Tri-CBs	5967 ADL	5.97E-03 ADL	2.96E-04 ADL
Total Tetra-CBs	1935 ADL	1.93E-03 ADL	9.54E-05 ADL
Total Penta-CBs	334.3 ADL	3.34E-04 ADL	1.64E-05 ADL
Total Hexa-CBs	86.8 ADL	8.68E-05 ADL	4.24E-06 ADL
Total Hepta-CBs	22.6 ADL	2.26E-05 ADL	1.11E-06 ADL
Total Octa-CBs	11.4 ADL	1.14E-05 ADL	5.60E-07 ADL
Total Nona-CBs	5.43 ADL	5.43E-06 ADL	2.68E-07 ADL
PCB-209	0.665 ADL	6.65E-07 ADL	3.29E-08 ADL
Minimum Toxic Equivalent (TEQ)	0.011	1.08E-08	5.27E-10
Maximum Toxic Equivalent (TEQ)	0.012	1.20E-08	5.87E-10

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

*Denotes values computed using Split 10 injection; this applies to the runs, not the blanks.

Minimum TEQ is based on DL = zero; EMPC = zero. Maximum TEQ is based on DL = DL; EMPC = EMPC.

SUMMARY OF EMISSION CONCENTRATION RESULTS
PCBs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure - M1-4,23-PCB
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Sample Date: November 30, 2010

	Hammermill Baghouse Exhaust			
ANALYTE	Run 1	Run 2	Run 3	Average
PCBs	ng/m^3	ng/m^3	ng/m^3	ng/m^3
PCB-77	16.4 ADL	1.81 ADL	10.8 ADL	9.67 ADL
PCB-81	0.980 ADL	0.128 ADL	0.708 ADL	0.605 ADL
PCB-105	14.3 ADL	3.89 ADL	32.2 ADL	16.8 ADL
PCB-114	1.16 ADL	0.301 ADL	2.52 ADL	1.33 ADL
PCB-118	24.12 ADL	9.41 ADL	66.5 ADL	33.3 ADL
PCB-123	0.754 ADL	0.223 ADL	1.67 ADL	0.881 ADL
PCB-126	0.091 ADL	(0.021) BDL	0.149 ADL	0.087 DLL
PCB-156/157	1.08 ADL	0.569 ADL	5.78 ADL	2.48 ADL
PCB-167	0.360 ADL	0.205 ADL	1.80 ADL	0.787 ADL
PCB-169	(0.018) BDL	(0.015) BDL	(0.015) BDL	0.016 BDL
PCB-189	0.051 ADL	0.020 ADL	0.150 ADL	0.074 ADL
Total Mono-CBs	849.9 ADL	519.5 ADL	984.1 ADL	784.5 ADL
*Total Di-CBs	4049 ADL	4351 ADL	4776 ADL	4392 ADL
Total Tri-CBs	5945 ADL	5482 ADL	6474 ADL	5967 ADL
Total Tetra-CBs	2244 ADL	1256 ADL	2305 ADL	1935 ADL
Total Penta-CBs	296.8 ADL	140.7 ADL	565.4 ADL	334.3 ADL
Total Hexa-CBs	55.7 ADL	29.0 ADL	175.7 ADL	86.8 ADL
Total Hepta-CBs	23.7 ADL	8.22 ADL	35.8 ADL	22.6 ADL
Total Octa-CBs	7.62 ADL	6.75 ADL	19.8 ADL	11.4 ADL
Total Nona-CBs	1.47 ADL	4.38 ADL	10.4 ADL	5.43 ADL
PCB-209	0.147 ADL	0.630 ADL	1.22 ADL	0.665 ADL
Minimum Toxic Equivalent (TEQ)	0.012	0.001	0.020	0.011
Maximum Toxic Equivalent (TEQ)	0.013	0.003	0.020	0.012

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

*Denotes values computed using Split 10 injection; this applies to the runs, not the blanks.

Minimum TEQ is based on DL = zero; EMPC = zero. Maximum TEQ is based on DL = DL; EMPC = EMPC.

EMISSION CONCENTRATION RESULTS
PCBs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure - M1-4,23-PCB
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Sample Date: November 30, 2010

	Hammermill Baghouse Exhaust			
ANALYTE	Run 1	Run 2	Run 3	Average
PCBs	mg/m^3	mg/m^3	mg/m^3	mg/m^3
PCB-77	1.64E-05 ADL	1.81E-06 ADL	1.08E-05 ADL	9.67E-06 ADL
PCB-81	9.80E-07 ADL	1.28E-07 ADL	7.08E-07 ADL	6.05E-07 ADL
PCB-105	1.43E-05 ADL	3.89E-06 ADL	3.22E-05 ADL	1.68E-05 ADL
PCB-114	1.16E-06 ADL	3.01E-07 ADL	2.52E-06 ADL	1.33E-06 ADL
PCB-118	2.41E-05 ADL	9.41E-06 ADL	6.65E-05 ADL	3.33E-05 ADL
PCB-123	7.54E-07 ADL	2.23E-07 ADL	1.67E-06 ADL	8.81E-07 ADL
PCB-126	9.13E-08 ADL	(2.09E-08) BDL	1.49E-07 ADL	8.72E-08 DLL
PCB-156/157	1.08E-06 ADL	5.69E-07 ADL	5.78E-06 ADL	2.48E-06 ADL
PCB-167	3.60E-07 ADL	2.05E-07 ADL	1.80E-06 ADL	7.87E-07 ADL
PCB-169	(1.83E-08) BDL	(1.46E-08) BDL	(1.53E-08) BDL	1.61E-08 BDL
PCB-189	5.15E-08 ADL	1.99E-08 ADL	1.50E-07 ADL	7.37E-08 ADL
Total Mono-CBs	8.50E-04 ADL	5.20E-04 ADL	9.84E-04 ADL	7.84E-04 ADL
*Total Di-CBs	4.05E-03 ADL	4.35E-03 ADL	4.78E-03 ADL	4.39E-03 ADL
Total Tri-CBs	5.95E-03 ADL	5.48E-03 ADL	6.47E-03 ADL	5.97E-03 ADL
Total Tetra-CBs	2.24E-03 ADL	1.26E-03 ADL	2.30E-03 ADL	1.93E-03 ADL
Total Penta-CBs	2.97E-04 ADL	1.41E-04 ADL	5.65E-04 ADL	3.34E-04 ADL
Total Hexa-CBs	5.57E-05 ADL	2.90E-05 ADL	1.76E-04 ADL	8.68E-05 ADL
Total Hepta-CBs	2.37E-05 ADL	8.22E-06 ADL	3.58E-05 ADL	2.26E-05 ADL
Total Octa-CBs	7.62E-06 ADL	6.75E-06 ADL	1.98E-05 ADL	1.14E-05 ADL
Total Nona-CBs	1.47E-06 ADL	4.38E-06 ADL	1.04E-05 ADL	5.43E-06 ADL
PCB-209	1.47E-07 ADL	6.30E-07 ADL	1.22E-06 ADL	6.65E-07 ADL
Minimum Toxic Equivalent (TEQ)	1.23E-08	6.59E-10	1.96E-08	1.08E-08
Maximum Toxic Equivalent (TEQ)	1.29E-08	3.18E-09	2.00E-08	1.20E-08

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

*Denotes values computed using Split 10 injection; this applies to the runs, not the blanks.

Minimum TEQ is based on DL = zero; EMPC = zero. Maximum TEQ is based on DL = DL; EMPC = EMPC.

SUMMARY OF EMISSION RATE RESULTS
PCBs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure - M1-4,23-PCB
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Sample Date: November 30, 2010

	Hammermill Baghouse Exhaust			
ANALYTE	Run 1	Run 2	Run 3	Average
PCBs	lb/hr	lb/hr	lb/hr	lb/hr
PCB-77	8.00E-07 ADL	9.38E-08 ADL	5.25E-07 ADL	4.73E-07 ADL
PCB-81	4.79E-08 ADL	6.61E-09 ADL	3.43E-08 ADL	2.96E-08 ADL
PCB-105	6.98E-07 ADL	2.02E-07 ADL	1.56E-06 ADL	8.20E-07 ADL
PCB-114	5.67E-08 ADL	1.56E-08 ADL	1.22E-07 ADL	6.48E-08 ADL
PCB-118	1.18E-06 ADL	4.87E-07 ADL	3.22E-06 ADL	1.63E-06 ADL
PCB-123	3.68E-08 ADL	1.15E-08 ADL	8.07E-08 ADL	4.30E-08 ADL
PCB-126	4.46E-09 ADL	(1.08E-09) BDL	7.23E-09 ADL	4.26E-09 DLL
PCB-156/157	5.30E-08 ADL	2.94E-08 ADL	2.80E-07 ADL	1.21E-07 ADL
PCB-167	1.76E-08 ADL	1.06E-08 ADL	8.69E-08 ADL	3.84E-08 ADL
PCB-169	(8.94E-10) BDL	(7.58E-10) BDL	(7.42E-10) BDL	7.98E-10 BDL
PCB-189	2.52E-09 ADL	1.03E-09 ADL	7.25E-09 ADL	3.60E-09 ADL
Total Mono-CBs	4.15E-05 ADL	2.69E-05 ADL	4.76E-05 ADL	3.87E-05 ADL
*Total Di-CBs	1.98E-04 ADL	2.25E-04 ADL	2.31E-04 ADL	2.18E-04 ADL
Total Tri-CBs	2.91E-04 ADL	2.84E-04 ADL	3.13E-04 ADL	2.96E-04 ADL
Total Tetra-CBs	1.10E-04 ADL	6.50E-05 ADL	1.12E-04 ADL	9.54E-05 ADL
Total Penta-CBs	1.45E-05 ADL	7.29E-06 ADL	2.74E-05 ADL	1.64E-05 ADL
Total Hexa-CBs	2.72E-06 ADL	1.50E-06 ADL	8.51E-06 ADL	4.24E-06 ADL
Total Hepta-CBs	1.16E-06 ADL	4.26E-07 ADL	1.73E-06 ADL	1.11E-06 ADL
Total Octa-CBs	3.72E-07 ADL	3.50E-07 ADL	9.57E-07 ADL	5.60E-07 ADL
Total Nona-CBs	7.16E-08 ADL	2.27E-07 ADL	5.06E-07 ADL	2.68E-07 ADL
PCB-209	7.20E-09 ADL	3.26E-08 ADL	5.89E-08 ADL	3.29E-08 ADL
Minimum Toxic Equivalent (TEQ)	6.02E-10	3.41E-11	9.47E-10	5.27E-10
Maximum Toxic Equivalent (TEQ)	6.28E-10	1.65E-10	9.68E-10	5.87E-10

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

*Denotes values computed using Split 10 injection; this applies to the runs, not the blanks.

Minimum TEQ is based on DL = zero; EMPC = zero. Maximum TEQ is based on DL = DL; EMPC = EMPC.

2.3 EPA Method 306A – Hexavalent Chromium Emissions

Three approximately 120-minute EPA Method 306A runs were performed on December 1, 2010 at the baghouse exhaust to quantify emissions of hexavalent chromium (Cr^{+6}). The Cr^{+6} test results are summarized on the following computer printout titled "Summary of Results - EPA Method 306A." The sample volume and airflow results are summarized in Appendix A of this report in spreadsheets titled "Summary of Results - EPA Methods 1, 2, 3, 4, and 306A."

The sample solutions and a reagent blank were submitted to Exova Inc. for Cr^{+6} analyses using an ion chromatograph equipped with a post-column reactor (IC/PCR). The laboratory analysis data are included in Appendix C of this report in total micrograms (μg) per sample. The laboratory analysis results were converted to emission concentrations of milligrams per dry standard cubic meter (mg/dscm) of gas sampled and dry parts per million (ppm) by volume. Emission rates were calculated in pounds per hour (lb/hr). The chromium results are not blank corrected.

SUMMARY OF RESULTS - EPA METHOD 306A
HEXAVALENT CHROMIUM (Cr VI)
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

Client: Envirosure@Independent Metals
Location: Seattle, Washington

	Hammermill Baghouse Exhaust				
	Run 1	Run 2	Run 3	Average	Blank
Date:	12/1/10	12/1/10	12/1/10		
Start Time:	0758	1046	1325		
Stop Time:	1000	1248	1606		
Sample Length (minutes):	120.1	120.1	119.6		
Volume Sampled (dscf):	90.239	88.209	86.833	88.427	88.427
Volume Sampled (dscm):	2.556	2.498	2.459	2.504	2.504
Average Concentration O_2 (%):	20.95	20.95	20.95	20.95	20.95
Stack Gas Airflow (dscf/min):	12978	13768	12823	13189	13189
Hexavalent Chromium (VI) Emissions					
Chromium (VI) Detection Limit (µg/L):	0.02	0.02	0.02	0.02	0.02
Volume of NaOH (L):	0.400	0.415	0.385	0.400	0.200
Chromium (VI) Detection Limit (µg):	0.008	0.008	0.008	0.008	0.004
Chromium (VI) Concentration in Sample (µg):	0.708	0.486	0.905	0.700	0.024
Chromium (VI) Concentration in Sample (mg):	0.000708	0.000486	0.000905	0.000700	0.000024
Chromium (VI) Emission Concentration (µg/dscm):	0.277	0.195	0.368	0.280	0.010
Chromium (VI) Emission Concentration (mg/dscm):	0.000277	0.000195	0.000368	0.000280	0.000010
Chromium (VI) Emission Concentration (ppm):	0.00013	0.00009	0.00017	0.00013	0.000004
Chromium (VI) Emission Rate (lb/hr):	0.000013	0.000010	0.000018	0.000014	0.0000005

2.4 EPA Method TO-15 – Organic Toxic Air Pollutants (TAPs) Emissions

Three approximately 60-minute EPA Method TO-15 samples were collected on November 30, 2010 at the baghouse exhaust to quantify emissions of three toxic air pollutants (TAPs), including 1,1-Dichloroethane, Benzene, and Ethylbenzene. The SUMMA canister samples were submitted to Columbia Analytical Services for TAPs analysis using EPA Method TO-15, which uses high resolution gas chromatography with high resolution mass spectroscopy analyses (HRGC/HRMS).

TAPs laboratory analysis results were presented in micrograms per cubic meter ($\mu g/m^3$). The emission concentration results were also converted to milligrams per dry standard cubic meter (mg/dscm). TAPs emission rates were calculated in pounds per hour (lb/hr). The TAPs results are summarized on the following computer printouts titled "Summary of Average Results – Organic TAPs," "Summary of Emission Concentration Results - Organic TAPs" and "Summary of Emission Rate Results - Organic TAPs." Printouts for the individual runs include the detection limit values and are included in Appendix A of this report.

SUMMARY OF AVERAGE RESULTS
ORGANIC TAPs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure-TO15
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Sample Date: 11/30/2010

	Hammermill Baghouse Exhaust		
ANALYTE	Average µg/m^3	Average mg/m^3	Average lb/hr
1,1-Dichloroethane	1.97 U	0.002 U	9.67E-05 U
Benzene	14.9	0.015	7.35E-04
Ethylbenzene	31.7	0.032	1.56E-03

U = undetected at specified detection limit (DL).

SUMMARY OF EMISSION CONCENTRATION RESULTS
ORGANIC TAPs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure-TO15
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Sample Date: 11/30/2010

	Hammermill Baghouse Exhaust			
	Run 1	Run 2	Run 3	Average
ANALYTE	µg/m^3	µg/m^3	µg/m^3	µg/m^3
1,1-Dichloroethane	1.3 U	1.3 U	3.3 U	1.97 U
Benzene	4.6	11	29	14.9
Ethylbenzene	15	28	52	31.7

U = undetected at specified reporting limit (DL).
J = Approximate value. Data is labeld with a J flag when one or more of the results in a set of multiple runs is under the detection limit, but at least one of the other runs is above the detection limit. Runs under the detection limit are represented as in the set average calculation.

SUMMARY OF EMISSION CONCENTRATION RESULTS
ORGANIC TAPs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure-TO15
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Sample Date: 11/30/2010

	Hammermill Baghouse Exhaust			
	Run 1	Run 2	Run 3	Average
ANALYTE	mg/m^3	mg/m^3	mg/m^3	mg/m^3
1,1-Dichloroethane	0.001 U	0.001 U	0.003 U	0.002 U
Benzene	0.005	0.011	0.029	0.015
Ethylbenzene	0.015	0.028	0.052	0.032

U = undetected at specified reporting limit (DL).

J = Approximate value. Data is labeld with a J flag when one or more of the results in a set of multiple runs is under the detection limit, but at least one of the other runs is above the detection limit. Runs under the detection limit are represented as in the set average calculation.

SUMMARY OF EMISSION RATE RESULTS
ORGANIC TAPs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure-TO15
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Sample Date: 11/30/2010

	Hammermill Baghouse Exhaust			
	Run 1	Run 2	Run 3	Average
ANALYTE	lb/hr	lb/hr	lb/hr	lb/hr
1,1-Dichloroethane	6.21E-05 U	6.21E-05 U	1.66E-04 U	9.67E-05 U
Benzene	2.20E-04	5.25E-04	1.46E-03	7.35E-04
Ethylbenzene	7.17E-04	1.34E-03	2.62E-03	1.56E-03

U = undetected at specified reporting limit (DL).
J = Approximate value. Data is labeld with a J flag when one or more of the results in a set of multiple runs is under the detection limit, but at least one of the other runs is above the detection limit. Runs under the detection limit are represented as in the set average calculation.

3.0
PROJECT OVERVIEW/EXCEPTIONS

An acceptable leak check of less than 0.020 cfm at the highest vacuum rate (or greater) used during the test preceded and followed each EPA Method 5/29, 23, and 306A run. The average percentage isokinetics for each EPA Method 5/29 and 23 run were within the acceptable limits of 100 ± 10.

There were some occasional process shutdowns noted on the field data sheets.

EPA Method 5 and Method 29 were combined to obtain filterable particulate matter emissions and metals emissions from the same sample train. They are discussed separately in Section 5 of this report, but were performed as a combined sample train.

EPA Method 23 and Method 306A sampling was performed simultaneously. The airflow measured during the Method 23 sampling was used to calculate the Cr^{+6} results. The EPA Method 306A field data sheet did not prompt for dry gas meter inlet and outlet temperatures, so the temperatures from the Method 23 sample trains were used to correct the sample volume to standard conditions.

Please refer to the laboratory case narratives for each method for any exceptions, including dilution and interference notes.

AmTest Air Quality used an approved EPA alternative calibration procedure for this project. It is Alternative Method 011 (ALT-011) titled "Alternative Method 2 Thermocouple Calibration Procedure." This procedure involves a single-point in-field check using a reference thermometer to confirm that the thermocouple used to measure

the stack gas temperature was operating properly. This check eliminates the need to conduct a two-point post-test calibration.

4.0
SOURCE OPERATION

Independent Metals Company operates a scrap metal recycling facility at 7814 South 8th Avenue in Seattle, Washington. A Magnatech hammermill shredder rated at 15 tons/hr is used to shred scrap metal. Emissions from the shredding process are controlled by multiclones followed by a Magnatech Engineering 156 x 120 pulse-jet baghouse rated at 15,000 cfm. The average pressure drop across the baghouse during the tests was 0.5 inches of water pressure ("H_2O). Process data collected on the test days is included in Appendix B of this report.

5.0
SAMPLING AND ANALYSIS PROCEDURES

5.1 EPA Methods 1 and 2 - Velocity, Temperature, and Airflow

EPA Method 1 procedures were used to assure that representative measurements of volumetric flow rate were obtained by dividing the cross-section of the stack into a number of equal areas, and then locating a traverse point within each of the equal areas. Refer to the data sheets in Appendix D of this report for a schematic of the stack and the point locations selected for testing. EPA Method 2 was performed to measure the stack gas velocity using a type-S pitot tube, and the gas temperature using a calibrated thermocouple probe connected to a digital thermocouple indicator. The pitot tubes were connected with tubing to an oil-filled inclined manometer. The pitot tube lines were leak-checked and the pressure measurement device was leveled and zeroed prior to use. Calibration information for each pressure and temperature measurement device used is included in the appendices of this report.

The inside diameter of the baghouse exhaust stack is 30 inches. The stack is equipped with two test ports located 90 degrees apart. The probe was traversed to 12 points in the 2 test ports during each EPA Method 5/29 and 23 run. The stack sampling locations met the EPA Method 1 minimum requirements of ½ diameter upstream and 2 diameters downstream from the nearest flow disturbance.

5.2 EPA Method 3 - Molecular Weight

EPA Method 3 was used to calculate the molecular weight of the stack gas using the assumption that the gas was ambient air with assumed concentrations of 20.95% oxygen (O_2) and 0.03% carbon dioxide (CO_2).

5.3 EPA Method 4 - Moisture

EPA Method 4 was performed inclusively with EPA Method 5/29, 23, and 306A to quantify moisture. The impingers contents were weighed to 0.1 grams before and after each test on a digital top-loading balance. The net weight (final minus initial) was used to calculate the amount of moisture condensed from the known volume of stack gas collected.

5.4 EPA Method 5 - Filterable Particulate Matter

The sample train used for filterable particulate matter sampling was an EPA Method 5 design as illustrated in the figure titled "EPA Method 5 Sample Train" in the appendices of this report. The glass sample nozzles and glass probe liners were pre-cleaned with soap and water followed by a minimum of three acetone rinses prior to sampling. The impinger contents are discussed in Section 5.6. The probe was equipped with type-S pitot tubes for measuring gas velocity and a thermocouple sensor for measuring stack gas temperature. The thermocouple sensor was connected to a digital thermocouple indicator which was used to measure the stack gas temperature at each sample point. A glass filter assembly was enclosed in a temperature-controlled heated sample box. The average box temperature was maintained at 248° F ± 25° F. The nozzle, probe liner, pre-filter connective glassware, and filter are referred to as the "front-half" of the sample train.

The EPA Method 5 sample train was connected to a control box by means of an umbilical cord which contained a vacuum hose, pitot lines, thermocouple wires, and a 4-wire electrical cord. The control box (meter box) was used to monitor stack conditions and to facilitate isokinetic sampling. The control box consisted of a diaphragm pump used to pull the stack gas through the sample train, fine and coarse metering valves to control the sampling rate, a vacuum gauge to measure the pressure drop from the sample nozzle to the metering valves, and a calibrated dry gas meter readable to 0.001 cubic feet. At the

outlet of the dry gas meter was a calibrated orifice which was used to isokinetically control the flow of gas through the metering system. The pitot tubes utilized to measure stack gas velocity were connected to the control box via the umbilical cord. The control box contained a manometer or magnehelic gauges which were used for the velocity measurement and for monitoring orifice pressure.

Stack condition measurements were made prior to collecting a sample, including measurements of velocity, temperature, and a check for cyclonic flow in the stack. A sample nozzle was chosen and isokinetic operating parameters were established utilizing a programmable calculator. The sampling nozzle, probe, and prefilter connective glassware were cleaned and rinsed prior to use. The sample train was assembled and determined to be leak free following the procedures outlined in EPA Method 5. Before each test, a final check was made to assure that the process was operating at the desired production rate and operating parameters. A final check was made of the sample box and probe heat temperatures. Crushed ice was added to the condenser section. The sample nozzle was positioned in the stack at the first sample point. The sample pump was then turned on and the gas sampling rate was adjusted for isokinetic sampling. Isokinetic sampling proceeded at each of the traverse points. Upon completion of the test, the sample probe was removed from the stack and a post-test leak check was performed according to EPA Method 5 procedures. Care was taken to assure that the nozzle tip did not touch the port nipple.

Following sample collection, the EPA Method 5 sample trains were transferred to an area free from air disturbances and airborne particulate matter. The filters were transferred to petri dishes labeled with the sample date, client name, and run number. ATAQ refers to the front-half filter portion of the particulate catch as the "A" section. Care was taken to assure that any loose particulate matter and filter mat were quantitatively transferred to

the petri dish. In the laboratory, the filters were placed in an oven and baked at 105° C for two (2) hours, then transferred to a constant humidity desiccator containing silicon dioxide (SiO_2) for at least 24 hours of desiccation prior to obtaining weights. The same weighing procedures were followed to obtain the tare weights for the filters. The tare and final weights were made using an electronic balance set to a time integrating mode with a readability of 0.1 milligrams. The filters were weighed to a constant weight of ±0.5 milligrams. The interval between weighings was at least 6 hours. These weights were recorded in a bound laboratory notebook.

Following each run, the contents of the nozzle, probe liner, and prefilter connective glassware were quantitatively transferred to the "B" section storage container labeled with sample date, client name, and run number. Several rinses of acetone, with simultaneous loosening of particulate matter using a clean nylon brush, were used for the front-half clean-up. An iodine flask with a female ball joint end was attached to the male ball joint end of the probe to assure that no particulate matter was lost during the rinsing and brushing of the probe. The contents of the iodine flask were quantitatively transferred to the "B" section storage container. In the laboratory, the "B" section acetone rinse was transferred to a tared, graduated beaker. The volume of acetone was recorded and the beakers were placed in an evaporation chamber at a temperature of approximately 75-80° F until dry and were then transferred to a constant humidity desiccator containing silicon dioxide (SiO_2) for at least 24 hours of desiccation prior to obtaining weights. The same weighing procedures were followed to obtain the tare weights for the beakers. The tare and final weights were made using an electronic balance set to a time integrating mode with a readability of 0.1 milligrams. The beakers were weighed to a constant weight of ±0.5 milligrams. The interval between weighings was at least 6 hours. These weights were recorded in a bound laboratory notebook. The particulate matter weight is the sum of the net weights of the particulate matter found on the filter, plus the net weight found

in the B section beaker, minus the acetone blank contribution. The particulate matter weights are included on the EPA Method 5 computer printouts and in copies of the laboratory analysis forms in the appendices of this report.

The content of the bubblers and impingers utilized for the condenser section, or "back-half" of the sample train were weighed with a readability of 0.1 grams before and after sampling using an electronic top loading balance. The difference between the initial and final weights of the condenser section constitutes the amount of moisture gain during the run.

5.5 EPA Method 29 - Metals

The sample train used for multiple metals sampling was an EPA Method 29 sample train as illustrated in the figure titled "EPA Method 29 Sample Train Schematic" in the appendices of this report. The sample train was comprised of two impingers containing a mixture of 10% hydrogen peroxide (H_2O_2) and 5% nitric acid (HNO_3), followed by an empty impinger and two additional impingers contained acidified potassium permanganate ($KMnO_4$) solution to absorb mercury. All components of the sample train were constructed of glass which was cleaned thoroughly rinsed with acid prior to assembly. Quartz fiber filters were used to filter particulate matter from the samples.

The sample probe was equipped with type S pitot tubes for measuring gas velocity and a thermocouple sensor for measuring stack gas temperature. The thermocouple sensor was connected to a digital thermocouple indicator which was used to measure the stack gas temperature at each sample point. The temperature of the probe liner was monitored to assure that condensation did not occur within the probe liner. A glass filter assembly was enclosed in a temperature-controlled heated sample box. The average box temperature was maintained at 248°F ± 25°F to minimize water condensation on the filter. The

nozzle, probe liner, prefilter connective glassware, and filter are referred to as the "front-half" of the sample train. Following the filter is a condenser section which, by convention, is referred to as the "back-half." The back-half was maintained at a temperature below 68°F by adding ice to the condenser section during sampling.

Prior to each run, the sample nozzle, probe liner, connective glassware, and impingers were thoroughly cleaned and rinsed with hot tap water, followed by three additional rinses with Type II deionized water (DI H_2O). All glassware was then soaked in a 10% percent (V/V) nitric acid (HNO_3) solution for a minimum of four hours, then rinsed three times with DI H_2O, rinsed a final time with acetone, and then allowed to air dry. All glassware openings were covered where contamination could occur until the sampling train was assembled for sampling. The EPA Method 29 sample train was connected to a control box by means of an umbilical cord which contained a vacuum hose, pitot lines, thermocouple wires, and a 4-wire electrical cord. The control box (meter box) was used to monitor stack conditions and to facilitate isokinetic sampling. The control box consisted of a diaphragm pump used to pull the stack gas through the sample train, fine and coarse metering valves to control the sampling rate, a vacuum gauge to measure the pressure drop from the sample nozzle to the metering valves, and a calibrated dry gas meter readable to 0.001 cubic feet. At the outlet of the dry gas meter was a calibrated orifice which was used to isokinetically control the flow of gas through the metering system. The pitot tubes utilized to measure stack gas velocity were connected to the control box via the umbilical cord. The control box contained a manometer or magnehelic gauges which were used for the velocity measurement and for monitoring orifice pressure.

Stack condition measurements were made prior to collecting a sample, including measurements of velocity, temperature, and a check for cyclonic flow in the stack. A

sample nozzle was chosen and isokinetic operating parameters were established utilizing a programmable calculator. The sampling nozzle, probe, and prefilter connective glassware were all cleaned and rinsed prior to use. The sample train was assembled and determined to be leak free following the procedures outlined in EPA Method 5. Before each test, a final check was made to assure that the process was operating at the desired production rate and operating parameters. A final check was made of the sample box and probe heat temperatures. Crushed ice was added to the condenser section. The sample nozzle was positioned in the stack at the first sample point. The sample pump was then turned on and the gas sampling rate was adjusted for isokinetic sampling. Isokinetic sampling proceeded at each of the traverse points. Upon completion of the test, the sample probe was removed from the stack and a post-test leak check was performed according to EPA Method 5 procedures. Care was taken to assure that the nozzle tip did not touch the port nipple.

Following sample collection, the sample train was transferred to a room free from air disturbances and airborne particulate matter. The filters were transferred to glass petri dishes labeled with the sample date, client name, and run number. ATAQ refers to the front-half filter portion of the particulate catch as the "A" section and the petri dish is labeled Container 1. Care was taken to assure that any loose particulate matter and filter mat were quantitatively transferred to the dish. In the laboratory, the filters for the sites where particulate matter was measured were transferred to a constant humidity desiccator containing silicon dioxide (SiO_2) for at least 24 hours of desiccation prior to obtaining weights. The same weighing procedures were followed to obtain the tare weights for the filters. The tare and final weights were made using an electronic balance set to a time integrating mode with a readability of 0.1 milligrams. The filters containing particulate matter were weighed to a constant weight of ±0.5 milligrams. The interval between

weighings was at least 6 hours. These weights were recorded in a bound laboratory notebook.

The contents of the nozzle, probe liner, and prefilter connective glassware were quantitatively transferred to Container 3 labeled with sample date, client name, and run number following each run. Several rinses of 0.1 N HNO_3, with simultaneous loosening of particulate matter using a clean nylon brush, were used for the front-half clean-up. An iodine flask with a female ball joint end was attached to the male ball joint end of the probe to assure that no particulate matter was lost during the rinsing and brushing of the probe. The contents of the iodine flask were quantitatively transferred to the storage container. The nitric acid probe rinse was submitted to the subcontract laboratory for metals analysis using ICP or CVAA. Blank filter and blank reagent samples were submitted along with the air samples as a control.

The bubblers and impingers utilized in the condenser section, or back-half of the sample train, were weighed before and after each test to determine the moisture content. The contents of the first 2 impingers containing condensed moisture and the HNO_3/H_2O_2 solution were quantitatively transferred to a glass graduated cylinder using 0.1 N HNO_3 dispensed from a squeeze bottle. The back-half of the filter holder was also rinsed into the graduated cylinder, and the total volume was recorded. This solution was transferred to Container 4. The contents of the third (empty) impinger containing any condensed moisture were quantitatively transferred to a glass graduated cylinder using 0.1 N HNO_3 dispensed from a squeeze bottle and the total volume was recorded. This solution was transferred to Container 5A. The contents of the fourth and fifth impingers containing acidified $KMnO_4$ solution were quantitatively transferred to a glass graduated cylinder using 10% sulfuric acid dispensed from a squeeze bottle, and the volume was recorded. This solution was transferred to Container 5B, which was a vented amber glass sample

bottle. After the H_2SO_4 rinse the impingers were rinsed with 25 mL of 8 normal hydrochloric acid (HCl) into a graduated cylinder. This solution was transferred to Container 5C.

The samples were transported and submitted to the subcontract laboratory metals analysis. A copy of the laboratory analysis schematic is included with a copy of the sample preparation schematic in Appendix E of this report. The multiple metals scan was performed on the digested filter and nitric acid impingers and probe rinse solution using ICP. The digested filter, both impinger solutions (HNO_3 and $KMnO_4$), and the impinger HCl rinse were analyzed for mercury using CVAA. Reagent blanks containing HNO_3/H_2O_2 solution, HNO_3 solution, acidified $KMnO_4$ solution, and DI H_2O were prepared and analyzed along with the samples.

5.6 EPA Method 23 – Polychlorinated Biphenyls (PCB)

Emissions of polychlorinated biphenyls (PCB) were quantified by collecting and analyzing semi-volatile organic sample train (semi-VOST) samples as specified in EPA Method 23. The EPA Method 23 sampling train is illustrated in the figure titled "Semi-Volatile Organic Compounds Sample Train" in the appendices of this report. Particulate phase organics are collected in the probe rinse and on an ultrapure quartz filter, and vapor phase organics are adsorbed on XAD-2 sorbent, which is packed in specially designed modules. The contract laboratory prepared the sorbent modules. After sampling, each portion of the train was recovered and extracted and the extracts were combined and concentrated for analysis. PCB analyses were performed using high-resolution gas chromatography with high-resolution mass spectroscopy (HRGC/HRMS) per EPA Method 1668B.

Prior to arriving at the job site, all sample train components, including the impingers, were rigorously cleaned to avoid organic contamination. ATAQ does not use silicon grease with the glassware which is utilized in these sample trains, which helps reduce the chances of contamination from previous use. All glassware and sample train components were rinsed with reagent grade acetone, washed with non-ionic detergent and hot water, rinsed thoroughly with hot tap water, rinsed several times with deionized water and baked for 2 hours at >500°F. Prior to use, the glassware was given a final rinse with methylene chloride (CH_2Cl_2), which has been distilled in glass. All openings where contamination could occur were kept covered with clean ground glass stoppers and plugs, or with heavy-duty aluminum foil, which had been rinsed with CH_2Cl_2.

The vapor phase semi-volatile compounds of interest were adsorbed on precleaned XAD-2 resin packed in the sorbent modules. The sorbent modules ATAQ utilizes are constructed of borosilicate glass with a ball joint on one end and a socket joint on the other end. The resin is held in place with plugs of glass wool, which have been solvent extracted and oven-dried. XAD-2 is a porous polymer resin with high surface area, which has the capability of adsorbing a broad range of organic species. The sorbent module is expected to give efficient collection of vapor phase organic materials with boiling points greater than approximately 200°F. The glass sorbent cartridges and end caps were cleaned and prepared by the analytical laboratory according to procedures specified in the reference methods. One XAD-2 cartridge was kept by the laboratory as a lab blank. A field blank sample train and XAD-2 cartridge was assembled, leak tested and recovered on-site for analysis to check the integrity of the glassware and resin preparation. One module remained in the container, which was used to store the modules and was not opened. The unexposed module was labeled as the trip (or transport). All sorbent modules were kept in cooler containing blue ice coolant packets, except during sampling.

Prior to sampling, the semi-VOST sample train was assembled and determined to be leak free following the procedures in EPA Method 5. Under no circumstances was silicon stopcock grease used to facilitate passing the leak test. A quartz sample nozzle was attached to a heated quartz probe liner, which was used to draw a sample from the gas stream. The probe liner temperature was monitored to assure that condensation did not occur. The probe liner was housed inside a stainless steel probe sheath to prevent breakage. The probe was attached to a glass filter assembly with a Teflon® filter support and Teflon® gasket, containing an ultrapure microfiber quartz filter. The filter was enclosed in a temperature controlled heated sample box. The average sample box temperature surrounding the filter was maintained at a temperature of 248 ± 25°F. Once the gas passed the quartz fiber filter, it entered an ice water-cooled coil condenser, which cooled the gas stream to a temperature below 68°F before it entered a sorbent module packed with XAD-2 resin. The sorbent module has a water-cooled jacket surrounding the resin to further cool the gas and assure that the semi-volatile compounds of interest remain trapped in the resin. The water-cooled coil condenser and sorbent module were mounted vertically atop the first impinger of the sample train. The first impinger was modified with a short stem and acts as a condensate knockout trap. The condensate percolates through the sorbent resin module for subsequent collection for organic analysis. The temperature at the inlet to the sorbent resin module was monitored with a flexible thermocouple probe, which was inserted in a well in the side of the module to assure that the temperature remained below 68°F throughout the test period.

At the downstream side of the sorbent module, four impingers were connected in series and immersed in an ice water bath. The first impinger, or condensate knockout, was connected to the outlet of the sorbent module, and collected any condensate, which percolated through the sorbent module. The second impinger was a modified Greenburg-Smith bubbler, which contained 100 milliliters of ASTM Type II water for scrubbing acid

gas from the gas stream to protect the dry gas meter and pump. The third impinger was empty, and the fourth bubbler contained indicating silica gel desiccant to absorb any moisture from the stack gas before it entered the control box. The back-half section was maintained at a temperature below 68°F by keeping the impingers cooled in an ice water bath. The temperature at the outlet of the silica gel bubbler was monitored. The sample box was connected to a control box as described for EPA Method 5 testing. Upon completion of each test, the probe was removed from the stack and a post-test leak check was performed according to EPA Method 5 procedures. Post-test leak check procedures include a check through the filter at 15" Hg (or at the maximum vacuum during the run), and a check through the nozzle at a minimum of 1" Hg.

Following sample collection, the semi-VOST sample was transferred to ATAQ's mobile laboratory for recovery. The nozzle and probe were disconnected from the sample box and the ends were capped. Any particulate matter collected on the outside of the probe was wiped off before cleaning the probe liner. The filter holder was also disconnected and the ends were capped. The contents of the nozzle, quartz probe liner and prefilter glassware were quantitatively transferred to a labeled glass sample container with a Teflon® lined lid. The glassware components in the sample train were rinsed three times with acetone (ACE), and then three times with methylene chloride (DCM) and recovered into separate sample containers. Then the components were given a final rinse with toluene into a separate sample container. The solvents were dispensed from Teflon® squeeze bottles. An iodine flask with a female ball joint end was attached to the male ball joint end of the probe to assure that no liquid was lost during the cleaning of the probe. The probe rinses were transferred to the sample container(s) and the liquid level was noted.

The quartz filter was removed from the filter assembly and transferred to a labeled glass sample container with a Teflon®-lined lid. In the laboratory, the filters were solvent extracted for subsequent organic analysis. The back-half of the filter holder and the pre-sorbent module connecting glassware, including the coil condenser, were rinsed with acetone, CH_2Cl_2, and toluene into the appropriate sample containers, which contained the solvents from the probe rinse. The impinger contents were also recovered for analysis. The impingers were rinsed with acetone, CH_2Cl_2, and toluene into the appropriate sample container. The solutions were shipped to the contract laboratory for subsequent extraction and analyses.

Immediately upon completion of a sample run, the labeled sorbent module containing XAD-2 resin was capped with ground glass plugs and stoppers, wrapped in aluminum foil and placed in bubble wrap to protect the modules from breakage, and refrigerated until their contents were extracted and analyzed. The particulate phase (filter), vapor phase (XAD trap), and aqueous phase fractions (acetone, DCM, and toluene) from each semi-VOST sample were each extracted and their extracts were combined for concentration in a Kuderna-Danish (K-D) apparatus. The concentrates were analyzed by the appropriate techniques utilizing high-resolution gas chromatography/mass spectroscopy (HRGC/MS). The sample modules had been surrogate spiked for PCB prior to being shipped from the laboratory to ATAQ for use in the field. Results were reported in picograms per sample (pg).

5.7 EPA Method 306A – Hexavalent Chromium

EPA Method 306A was performed to quantify emissions of hexavalent chromium (Cr^{+6}). This is a non-isokinetic sampling technique for use at ambient type sources. The sample train is illustrated in the figure titled "EPA Method 306 Sample Train" in the appendices of this report. The sampling probe and connective glassware were cleaned and rinsed

prior to use. All glassware including the probe liner, impingers, and connectors were cleaned in hot, soapy water followed by a deionized (DI) water rinse. The probe and connective glassware are referred to as the "front-half" of the sample train. Following the front-half is a condenser section which, by convention, is referred to as the "back-half." The back-half was maintained at a temperature below 68°F by adding ice to the condenser section throughout sampling.

The sample train was connected to a control box by means of an umbilical cord which contained a vacuum hose, pitot lines, thermocouple wires, and a 4-wire electrical cord. The control box (meter box) was used to monitor stack conditions. The control box consisted of a diaphragm pump used to pull the stack gas through the sample train, fine and coarse metering valves to control the sampling rate, and a calibrated dry gas meter readable to 0.001 cubic feet. At the outlet of the dry gas meter was a calibrated orifice which was used to isokinetically control the flow of gas through the metering system. The control box contained a manometer or magnehelic gauges which were used for the velocity measurement and for monitoring orifice pressure.

The sample train was assembled and determined to be leak free following the procedures outlined in EPA Method 4. Before each test, a final check was made to assure that the process was operating at the desired production rate and operating parameters. Crushed ice was added to the condenser section. The sample nozzle was positioned in the stack at the selected sample point. The sample pump was then turned on and the gas sampling rate was adjusted. The sample train was not traversed. Upon completion of the test, the sample probe was removed from the stack and a post-test leak check was performed according to EPA Method 4 procedures. Care was taken to assure that the nozzle tip did not touch the port nipple.

Following sample collection, the EPA Method 306A sample trains were transferred to an area free from air disturbances and airborne particulate matter. The probe liner and connecting glassware were rinsed with 0.1 N NaOH solution into a labeled sample bottle. An iodine flask with a female ball joint end was attached to the male ball joint end of the probe to assure that no condensate was lost during the rinsing of the probe. The contents of the iodine flask were transferred to the sample bottle.

In the laboratory, the probe rinse was transferred to a 1 liter (L) graduated cylinder. The contents of the first two impingers containing NaOH were quantitatively transferred to the same 1 L graduated cylinder. The first three impingers were then rinsed with 0.1 N NaOH solution and the rinsate was transferred to the graduated cylinder. The volume of the NaOH sample was recorded and transferred back to the labeled sample bottle. Each sample bottle was labeled with the sample date, client name, and run number. A reagent blank with a total volume similar to the sample volumes was prepared and submitted to the laboratory along with the samples. The sample solutions were submitted to Exova Inc. for Cr^{+6} analysis using EPA Method 306A. Laboratory analysis results were reported in micrograms (μg) of Cr^{+6} per sample.

5.8 EPA Method TO-15 - Organic TAPs

Integrated samples were collected using EPA Compendium Method TO-15 for toxic air pollutant (TAP) analysis. The TO-15 sample train is illustrated in the figure titled "TO-15 Sample System Schematic" in the appendices of this report. This ambient air testing method was used for this source testing project to collect integrated samples of gas in evacuated SUMMA® electropolished stainless steel canisters. The integrated samples were analyzed using EPA Method TO-15, which utilizes a gas chromatograph equipped with a mass spectrometer (GC-MS) to quantify several TAPs of interest.

The TO-15 sampling apparatus included a stainless steel probe, a mechanical critical orifice flow regulator or metering valve, and a 0-30 inch vacuum gauge to monitor canister vacuum. The system is specifically designed to collect uniformly integrated air samples over a predetermined time period. A stainless steel probe was inserted into the port to pull a gas sample through the flow controller and into the evacuated canister. The stainless steel sample line was attached to a stainless steel "T" connection, with the side branch connected to a vacuum gauge atop the SUMMA® canister; the other end of the "T" was connected to a valve with a sample pump attached. The sample train was evacuated to approximately one inch above absolute pressure. A leak check was performed by observing the vacuum gauge for one minute. The SUMMA® canister valve was opened and the initial vacuum was recorded. The sample line valve was then opened until the canister vacuum was zero.

CAS, the contract laboratory used to analyze these samples, own and maintain the integrity of the SUMMA® passivated canisters and perform leak tests to assure that they can contain a gas sample over time. To prepare the canisters, the contract laboratory heated them in an isothermal oven to 100° C. Once heated, the canisters were evacuated and maintained under vacuum for several hours. At the end of the heated/evacuation cycle, the canisters were pressurized with humid zero air and were quality assurance checked with a gas chromatograph equipped with a flame ionization detector. Once certified clean, the canisters were re-evacuated and remained in the evacuated state until they were used.

Each canister was labeled with an identification tag before it was returned to the contract laboratory for analysis. Upon return receipt of the canisters by the contract laboratory, the pressure of each canister was checked by attaching a pressure gauge to the canister inlet and opening the valve briefly to note the pressure. The sample canister was connected to

the inlet of the GC-MS-SCAN analytical system. A mass flow controller was placed on the canister and the canister valve was opened. Following preliminary flushing, the canister flow was vented past a tee inlet to the analytical system. The sample was pre=concentrated in a cryogenic trap, and then the trapped analytes were thermally desorbed onto the head of the column to be separated and scanned. Primary identification is based on retention time and relative abundance of eluting ions as compared to the spectral library stored on the hard disk of the GC-MS data system. The concentration of each compound was calculated using the previously established response factors. Analysis of the gas contained in the canisters was accomplished using GC-MS as described in EPA Method TO-15.

6.0
QUALITY ASSURANCE PLAN

The purpose of the quality assurance plan is to provide guidelines for achieving quality control in air pollution measurements. The detailed procedures, which are utilized, are included in the Environmental Protection Agency's (EPA's) reference manual titled Quality Assurance Handbook for Air Pollution Measurement Systems, Volume 3, EPA-600/4-77-027b. These procedures are followed throughout equipment preparation, field sampling, sample recovery, analysis, and data reduction. ATAQ's quality assurance procedures are discussed below.

6.1 Calibration Procedures and Frequency

Field equipment utilized for on-site measurements is calibrated at a frequency recommended by the equipment manufacturer or industry practice. Prior to field use, each instrument due for calibration is calibrated and the calibration value is recorded. If any measuring or test device requiring calibration cannot immediately be removed from service, the Project Manager may extend the calibration cycle providing a review of the equipment's history warrants the issuance of an extension. Equipment is not extended more than twice a calibration cycle, nor will the extension exceed one-half the prescribed calibration cycle. Test equipment consistently found to be out of calibration is repaired or replaced.

- Nozzles are checked for nicks or dents and are measured on three diameters twice each year. Nozzles are also commonly calibrated in the field by taking the average of three consecutive diameter measurements as well as checking for nicks and dents. These field calibrations will be recorded on the field data sheet for the first run the nozzle was used.

- Dry gas meters used in the manual sampling trains are calibrated at three rates using a standard dry gas meter that is never taken into the field. The standard meter is

calibration verified by the Northwest Natural Gas meter shop once every year. Dry gas meters are post-test calibrated with documentation provided in test reports.

- Every six months, S-type pitots are calibrated in a wind tunnel at three points against a standard pitot using inclined manometers. They are examined for dents and distortion to the alignment, angles, lengths, and proximity to thermocouples before each test. Pitots are protected with covers during storage and handling until they are ready to be inserted in the sample ports.

- The magnehelic gauges used for differential pressure measurements are calibrated against an oil-filled manometer. They are recalibrated at 6-month intervals.

- Sample box oven and impinger outlet thermocouples are calibration checked against an NIST traceable thermocouple and indicator system every six months at three points. Thermocouple indicators and temperature controllers are checked using a NIST traceable signal generator. Readouts are checked over their usable range and are adjusted if necessary (which is very unusual). Probe thermocouples are calibrated in the field using the ALT-011 alternate EPA Method 2 calibration procedure, which is documented on the field data sheet for the first run the probe thermocouple was used.

- A barometer readable to 0.01 inches of mercury was used in the field to obtain barometric pressure readings. The in-field barometers are periodically checked against the National Weather Service barometer at the Portland airport.

- Top loading analytical balances readable to 0.1 grams were used to weigh the impingers before and after each run where a moisture determination was made. These balances have an internal calibration procedure that is performed prior to each weighing session. The calibration of the top-loading balances is checked on a yearly basis using an outside contractor.

Copies of calibration information for each measurement device used are included in the appendices of this report. All reagents used for this project conform to the specifications established by the Committee on Analytical Reagents of the American Chemical Society, or the best available grade.

Support equipment is defined as all equipment, not previously discussed, that is required for completing an environmental monitoring or measurement task. This equipment may include storage and transportation containers, sample recovery glassware, and

communications gear. Support equipment is periodically inspected to maintain the performance standards necessary for proper and efficient execution of all tasks and responsibilities.

During a project, a systems audit is performed, consisting of an on-site qualitative inspection and review of the total measurement system. The Project Leader conducts this inspection on a daily basis. During the systems audit, the auditor observes the procedures and techniques of the field team in the following general areas:

- Setting up and leak testing the sample train
- Isokinetic sampling check (if applicable)
- Final leak check of the sample train
- Sample recovery

Visual inspections of pitot tubes, glassware, and other equipment are also made. The main purpose of a systems audit is to ensure that the measurement system will generate valid data, if operated properly.

6.2 Sample Recovery and Field Documentation

Data collected during each test, were immediately inspected for completeness and placed under the custody of the Project Leader until custody was transferred when the samples were returned to the laboratory. Sample recovery was carried out in a suitable area free from particulate matter and other outside contamination.

6.3 Chain of Custody

The history of each sample was documented from collection through all transfers of custody until it was transferred to the analytical laboratory. Copies of the chain of custody forms are included in the appendices of this report. Internal laboratory records document the custody of the samples through their final disposition. Care was taken to

record precisely the sample type, sample time, and sample location and to help ensure that the sample number on the label exactly matches those numbers on the sample log sheet and the chain-of-custody record. The persons undertaking the actual sampling in the field were responsible for the care and custody of the samples collected until they were properly transferred or dispatched. Sample labels were completed for each sample bottle using waterproof ink.

6.4 Transfer of Custody and Shipment

All sample-shipping containers were accompanied by an analysis request or chain-of-custody record form when they left the site. When transferring the possession of samples, the individuals relinquishing and receiving the samples signed, dated, and noted the time on the record. This record documents sample custody transfer from the sampler, often through another person, to the analyst in the laboratory.

The laboratory representative who accepted the incoming sample shipment signed and dated the chain-of-custody record, completing the sample transfer process. It is the laboratory's responsibility to maintain internal logbooks and custody records throughout sample preparation and analysis in accordance with the laboratory's written QA Plan.

It is important to maintain the integrity of the samples from the time of collection until the analyses are performed. The samples were preserved during transportation and storage to prevent or retard degradation or modification of chemicals in samples. The samples were kept cool with blue ice packets placed in the coolers the sample were shipped in. Empty space in the box or cooler was filled with bubble pack and Styrofoam to prevent damage during shipment. The samples were delivered directly to the laboratory.

6.5 Data Reduction, Validation, and Reporting

Raw data are handled according to strict guidelines when being transposed into computer files or to other logs. The guidelines include document receipt control procedures, file review, and sign-off by a project assistant. Raw data were entered into the appropriate computer spreadsheet by a "processor," then the entered figures were checked for accuracy by a "checker," different from the "processor." Any mistakes were corrected, and figures were rechecked and signed off by the "checker." In addition, an example calculation check of each Excel® workbook was made using separate Excel® spreadsheets showing the formulas that were used that reference the cells in the workbook and confirm the calculations. Each example calculation is labeled with the reporting units to demonstrate unit cancellation. The "senior reviewer" reviewed all of the data generated by each phase of the laboratory or field-sampling program. The "senior reviewer" signed off on the data package prior to releasing the data for report preparation.

The test results were calculated according to EPA 40 CFR 60 criteria. Copies of the pertinent equations used to derive these results are included in the appendices of this report. Standard conditions are 68°F and 29.92 inches of mercury.

7.0
METHODOLOGY REFERENCES

EPA. Title 40 Code of Federal Regulations, Part 60 (40 CFR 60), Appendix A, Reference Methods 1, 2, 3, 4, 5, 23, and 29. July 1, 2008.

EPA Guideline 51F. Located at http://www.epa.gov/ttn/emc/guidlnd.html

EPA. Title 40 Code of Federal Regulations, Part 63 (40 CFR 63), Subpart N, Appendix A, Reference Method 306A. July 1, 2008.

EPA. Compendium Method TO-15 for the Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters And Analyzed by Gas Chromatography/Mass Spectrophotometry, Method TO-15, EPA 625/R-96/010b.

EPA. Technology Transfer Network Emission Measurement Center (EPA-TTN-EMC) website, Test Methods Section, www.epa.gov/ttn/emc/.

EPA. EPA 450/2-79-006, APTI Course, "Course 450 - Source Sampling For Particulate Pollutants," December 1979.

EPA. Quality Assurance Handbook for Air Pollution Measurement Systems, Volume 3, EPA-60/4-77-027b.

APPENDIX A

Computer Printouts of Results

EPA METHODS 1, 2, 3, 4, 5, AND 29
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-5,29			
Client:	Envirosure@Independent Metals	**Lab #:**	3649-(001-007)	
Location:	Seattle, Washington	**Start Time:**	0745	hours
Sample Site:	Hammermill Baghouse Exhaust	**Stop Time:**	1050	hours
Sample Date:	11/30/10	**Sample Time:**	120	minutes
Run #:	1 - Method 5/29			
Operators:	PS,MC			

Impinger Weights/Volumes

Final Weight	Initial Wt./Vol.	Net Weight
286.0 (g)	286.0 (g)	0.0 (g)
20.0 (g)	20.0 (g)	0.0 (g)
222.0 (g)	200.0 (ml)	10.2 (g)
20.0 (g)	20.0 (g)	0.0 (g)
224.0 (g)	200.0 (ml)	-6.3 (g)
20.0 (g)	20.0 (g)	0.0 (g)
632.0 (g)	620.0 (g)	12.0 (g)
Total H_2O Gain:		15.9 (g)

Pitot Tube C_p:	0.8322		
Nozzle Diameter:	0.2200	inches	
Nozzle Area:	0.0003	ft^2	
Stack Width:		inches	
Stack Length:		inches	
Stack Diameter:	30.0	inches	
Stack Area:	4.91	ft^2	
Meter Temperature:	54.2	°F	
Barometric Pressure:	30.0	inches Hg	
Static Pressure:	0.50	inches H_2O	
Stack Pressure:	30.04	inches Hg	
Orifice Pressure:	1.531	inches H_2O	
Meter Pressure:	30.11	inches Hg	

Total Volume (scf):	0.75
Measured Moisture (%):	0.88
Measured Bws:	0.0088
Psychrometric Moisture (%):	NA
Actual Moisture (%):	0.88
Actual Bws:	0.0088
Initial Meter Volume (ft^3):	301.707
Final Meter Volume (ft^3):	
Initial Meter Volume (ft^3):	
Final Meter Volume (ft^3):	381.686
Volume Sampled (ft^3):	79.979
Standard Volume (dscf):	84.282
Standard Volume (dscm):	2.387
Y Factor:	1.01976
Delta H @:	1.80952

Average Conc. O_2:	20.95	percent
Average Conc. CO_2:	0.03	percent
Molecular Weight:	28.84	g/g-mole-dry
Molecular Weight:	28.75	g/g-mole-wet
Y Factor Cal. Check:	1.021	
Percent Error:	0.2	%

Sample Point	Velocity (" of H_2O)	Temperature °F	Sample Point	Velocity (" of H_2O)	Temperature °F
1	0.80	54	1	0.44	59
2	0.65	55	2	0.46	60
3	0.60	55	3	0.49	61
4	0.60	52	4	0.45	60
5	0.70	53	5	0.43	60
6	0.62	55	6	0.47	59
7	0.58	59	7	0.61	59
8	0.63	58	8	0.74	62
9	0.66	59	9	0.81	62
10	0.74	61	10	0.87	62
11	0.71	61	11	0.88	62
12	0.48	59	12	0.88	59

Percent Isokinetics:	100	%		
Stack Gas Temperature:	58.6	°F	518.6	°R
Average Velocity Head:	0.629	" of H_2O		
Stack Gas Velocity:			43.7	ft/second
Stack Gas Airflow:	12883	acf/min	13052	dscf/min

Filterable (FH) Particulate Matter Emission Concentration:	0.0007	gr/dscf
Filterable (FH) Particulate Matter Emission Concentration:	1.67	mg/dscm
Filterable (FH) Particulate Matter Emission Rate:	0.081	lb/hr

Filterable (Front-Half (FH)) Particulate Matter Mass

Filter Number:	10-M29-39
Tare Weight of Filter (g):	0.3825
Final Weight of Filter (g):	0.3845
Net Weight of Particulate Matter (g):	0.0020
Beaker Number:	33711
Tare Weight of Beaker (g):	88.3476
Final Weight of Beaker (g):	88.3497
Net Weight of Particulate Matter (g):	0.0021
Volume of Acetone (mL):	90
Weight of Acetone Blank (g):	0.0002
Volume of Acetone Blank (milliliters):	146
Wt./Vol. of Acetone Blank (mg/mL):	0.0014
Net Weight of PM Due to Acetone (g):	0.0001
Net Weight of Particulate Matter - blank corrected (g):	0.00198
Total Filterable (FH) Particulate Matter (g):	0.0040

(If the final wt is less than the tare wt, the difference is expressed as 0.)
(If the net wt is less than the blank wt, the difference is expressed as 0.)
(If the blank is greater than 0.0079 mg/mL then 0.0079 mg/mL is used.)

EPA METHODS 1, 2, 3, 4, 5, AND 29
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-5,29			
Client:	Envirosure@Independent Metals	**Lab #:**	3649-(008-014)	
Location:	Seattle, Washington	**Start Time:**	1136	hours
Sample Site:	Hammermill Baghouse Exhaust	**Stop Time:**	1357	hours
Sample Date:	11/30/10	**Sample Time:**	120	minutes
Run #:	2- Method 5/29			
Operators:	PS,MC			

Impinger Weights/Volumes

Final Weight	Initial Wt./Vol.	Net Weight
303.0 (g)	303.0 (g)	0.0 (g)
20.0 (g)	20.0 (g)	0.0 (g)
224.0 (g)	200.0 (ml)	12.2 (g)
20.0 (g)	20.0 (g)	0.0 (g)
223.0 (g)	200.0 (ml)	-7.3 (g)
20.0 (g)	20.0 (g)	0.0 (g)
633.0 (g)	620.0 (g)	13.0 (g)
Total H_2O Gain:		17.9 (g)
Total Volume (scf):		0.84
Measured Moisture (%):		1.01
Measured Bws:		0.0101
Psychrometric Moisture (%):		NA
Actual Moisture (%):		1.01
Actual Bws:		0.0101
Initial Meter Volume (ft^3):		383.560
Final Meter Volume (ft^3):		
Initial Meter Volume (ft^3):		
Final Meter Volume (ft^3):		462.570
Volume Sampled (ft^3):		79.010
Standard Volume (dscf):		82.498
Standard Volume (dscm):		2.336
Y Factor:		1.01976
Delta H @:		1.80952

Pitot Tube C_p:	0.8218	
Nozzle Diameter:	0.2192	inches
Nozzle Area:	0.0003	ft^2
Stack Width:		inches
Stack Length:		inches
Stack Diameter:	30.0	inches
Stack Area:	4.91	ft^2
Meter Temperature:	58.9	°F
Barometric Pressure:	30.0	inches Hg
Static Pressure:	0.50	inches H_2O
Stack Pressure:	30.04	inches Hg
Orifice Pressure:	1.461	inches H_2O
Meter Pressure:	30.11	inches Hg
Average Conc. O_2:	20.95	percent
Average Conc. CO_2:	0.03	percent
Molecular Weight:	28.84	g/g-mole-dry
Molecular Weight:	28.73	g/g-mole-wet
Y Factor Cal. Check:	1.015	
Percent Error:	-0.5	%

Sample Point	Velocity (" of H_2O)	Temperature °F	Sample Point	Velocity (" of H_2O)	Temperature °F
1	0.42	61	1	0.80	61
2	0.42	60	2	0.75	62
3	0.43	61	3	0.68	62
4	0.43	62	4	0.64	62
5	0.50	62	5	0.58	61
6	0.47	61	6	0.54	61
7	0.63	60	7	0.55	59
8	0.74	61	8	0.62	59
9	0.84	63	9	0.65	61
10	0.86	61	10	0.67	58
11	0.73	62	11	0.66	61
12	0.78	60	12	0.67	62

Percent Isokinetics:	101	%		
Stack Gas Temperature:	61.0	°F	521.0	°R
Average Velocity Head:	0.62	" of H_2O		
Stack Gas Velocity:			43.0	ft/second
Stack Gas Airflow:	12661	acf/min	12752	dscf/min
Filterable (FH) Particulate Matter Emission Concentration:			0.0006	gr/dscf
Filterable (FH) Particulate Matter Emission Concentration:			1.32	mg/dscm
Filterable (FH) Particulate Matter Emission Rate:			0.063	lb/hr

Filterable (Front-Half (FH)) Particulate Matter Mass

Filter Number:	10-M29-40
Tare Weight of Filter (g):	0.3748
Final Weight of Filter (g):	0.3769
Net Weight of Particulate Matter (g):	0.0021
Beaker Number:	33712
Tare Weight of Beaker (g):	73.9509
Final Weight of Beaker (g):	73.9520
Net Weight of Particulate Matter (g):	0.0011
Volume of Acetone (mL):	92
Weight of Acetone Blank (g):	0.0002
Volume of Acetone Blank (milliliters):	146
Wt./Vol. of Acetone Blank (mg/mL):	0.0014
Net Weight of PM Due to Acetone (g):	0.0001
Net Weight of Particulate Matter - blank corrected (g):	0.00097
Total Filterable (FH) Particulate Matter (g):	0.0031

(If the final wt is less than the tare wt, the difference is expressed as 0.)
(If the net wt is less than the blank wt, the difference is expressed as 0.)
(If the blank is greater than 0.0079 mg/mL then 0.0079 mg/mL is used.)

EPA METHODS 1, 2, 3, 4, 5, AND 29
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-5,29			
Client:	Envirosure@Independent Metals	**Lab #:**	3649-(015-021)	
Location:	Seattle, Washington	**Start Time:**	1417	hours
Sample Site:	Hammermill Baghouse Exhaust	**Stop Time:**	1630	hours
Sample Date:	11/30/10	**Sample Time:**	120	minutes
Run #:	3 - Method 5/29			
Operators:	PS,MC			

Impinger Weights/Volumes

Final Weight	Initial Wt./Vol.	Net Weight
303.0 (g)	303.0 (g)	0.0 (g)
20.0 (g)	20.0 (g)	0.0 (g)
230.0 (g)	200.0 (ml)	18.2 (g)
20.0 (g)	20.0 (g)	0.0 (g)
225.0 (g)	200.0 (ml)	-5.3 (g)
20.0 (g)	20.0 (g)	0.0 (g)
634.0 (g)	620.0 (g)	14.0 (g)
Total H_2O Gain:		26.9 (g)
Total Volume (scf):		1.27
Measured Moisture (%):		1.43
Measured Bws:		0.0143
Psychrometric Moisture (%):		NA
Actual Moisture (%):		1.43
Actual Bws:		0.0143
Initial Meter Volume (ft^3):		462.980
Final Meter Volume (ft^3):		
Initial Meter Volume (ft^3):		
Final Meter Volume (ft^3):		547.445
Volume Sampled (ft^3):		84.465
Standard Volume (dscf):		87.698
Standard Volume (dscm):		2.484
Y Factor:		1.01976
Delta H @:		1.80952

Pitot Tube C_p:	0.8322	
Nozzle Diameter:	0.2200	inches
Nozzle Area:	0.0003	ft^2
Stack Width:		inches
Stack Length:		inches
Stack Diameter:	30.0	inches
Stack Area:	4.91	ft^2
Meter Temperature:	62.1	°F
Barometric Pressure:	30.0	inches Hg
Static Pressure:	0.50	inches H_2O
Stack Pressure:	30.04	inches Hg
Orifice Pressure:	1.675	inches H_2O
Meter Pressure:	30.12	inches Hg
Average Conc. O_2:	20.95	percent
Average Conc. CO_2:	0.03	percent
Molecular Weight:	28.84	g/g-mole-dry
Molecular Weight:	28.69	g/g-mole-wet
Y Factor Cal. Check:	1.02	
Percent Error:	-0.1	%

Sample Point	Velocity (" of H_2O)	Temperature °F	Sample Point	Velocity (" of H_2O)	Temperature °F
1	0.87	59	1	0.48	63
2	0.81	59	2	0.49	62
3	0.83	60	3	0.45	61
4	0.72	59	4	0.48	63
5	0.66	61	5	0.48	62
6	0.60	63	6	0.53	62
7	0.69	59	7	0.71	62
8	0.74	61	8	0.80	64
9	0.74	60	9	0.83	65
10	0.65	61	10	0.92	65
11	0.60	60	11	0.87	65
12	0.60	62	12	0.87	65

Percent Isokinetics:	101	%		
Stack Gas Temperature:	61.8	°F	521.8	°R
Average Velocity Head:	0.68	" of H_2O		
Stack Gas Velocity:			45.5	ft/second
Stack Gas Airflow:	13408	acf/min	13427	dscf/min

Filterable (FH) Particulate Matter Emission Concentration:	0.0005	gr/dscf
Filterable (FH) Particulate Matter Emission Concentration:	1.24	mg/dscm
Filterable (FH) Particulate Matter Emission Rate:	0.062	lb/hr

Filterable (Front-Half (FH)) Particulate Matter Mass

Filter Number:	10-M29-38
Tare Weight of Filter (g):	0.3746
Final Weight of Filter (g):	0.3765
Net Weight of Particulate Matter (g):	0.0019
Beaker Number:	33713
Tare Weight of Beaker (g):	66.8725
Final Weight of Beaker (g):	66.8738
Net Weight of Particulate Matter (g):	0.0013
Volume of Acetone (mL):	94
Weight of Acetone Blank (g):	0.0002
Volume of Acetone Blank (milliliters):	146
Wt./Vol. of Acetone Blank (mg/mL):	0.0014
Net Weight of PM Due to Acetone (g):	0.0001
Net Weight of Particulate Matter - blank corrected (g):	0.00117
Total Filterable (FH) Particulate Matter (g):	0.0031

(If the final wt is less than the tare wt, the difference is expressed as 0.)
(If the net wt is less than the blank wt, the difference is expressed as 0.)
(If the blank is greater than 0.0079 mg/mL then 0.0079 mg/mL is used.)

METALS EMISSION RESULTS - EPA METHOD 29
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-5,29	Sample Site:	Hammermill Baghouse Exhaust	Lab ID:	3649-(001-007)
Client:	Envirosure@Independent Metals	Sample Date:	11/30/10	Sample Volume:	2.387 dscm
Location:	Seattle, Washington	Start Time:	0745	Airflow:	13052 dscfm
Run Number:	1 - Method 5/29	Stop Time:	1050		

ANALYTE		DETECTION LIMIT						EMISSION CONCENTRATION						
		Fraction 1A/B (FH) µg/dscm	Fraction 2A/B (BH) µg/dscm	Fraction 3A µg/dscm	Fraction 3B µg/dscm	Fraction 3C µg/dscm	Total µg/dscm	Fraction 1A/B (FH) µg/dscm	Fraction 2A/B (BH) µg/dscm	Fraction 3A µg/dscm	Fraction 3B µg/dscm	Fraction 3C µg/dscm	Total µg/dscm	
Mercury	Hg		0.008	0.001			**0.009**	0.104	0.008 U	0.001 U	7.54	356.1	**363.8**	**DLL**
Antimony	Sb							0.251	0.017				**0.268**	**ADL**
Arsenic	As	0.168	0.017				**0.184**	0.168 U	0.017 U				**0.184**	**BDL**
Barium	Ba							2.35	0.163				**2.51**	**ADL**
Beryllium	Be	0.008	0.0008				**0.009**	0.008 U	0.001 U				**0.009**	**BDL**
Cadmium	Cd							0.490	0.031				**0.521**	**ADL**
Chromium	Cr							1.26	0.293				**1.55**	**ADL**
Cobalt	Co							0.096	0.020				**0.116**	**ADL**
Copper	Cu							1.17	1.60				**2.78**	**ADL**
Lead	Pb							2.69	0.158				**2.85**	**ADL**
Manganese	Mn							1.99	0.440				**2.43**	**ADL**
Nickel	Ni							3.06	0.478				**3.54**	**ADL**
Phosphorous	P	2.09	4.19				**6.28**	2.09 U	4.19 U				**6.28**	**BDL**
Selenium	Se	0.628	0.084				**0.712**	0.628 U	0.084 U				**0.712**	**BDL**
Silver	Ag							0.235	0.019				**0.254**	**ADL**
Thallium	Tl	0.013	0.001				**0.014**	0.013 U	0.001 U				**0.014**	**BDL**
Zinc	Zn							68.7	8.55				**77.3**	**ADL**

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

Note: Detection Limits (DL) are only reported above if the results are under the DL (U). See lab report for actual DL's.

METALS EMISSION RESULTS - EPA METHOD 29
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-5,29	Sample Site:	Hammermill Baghouse Exhaust	Lab ID:	3649-(008-014)
Client:	Envirosure@Independent Metals	Sample Date:	11/30/10	Sample Volume:	2.336 dscm
Location:	Seattle, Washington	Start Time:	1136	Airflow:	12752 dscfm
Run Number:	2- Method 5/29	Stop Time:	1357		

ANALYTE		DETECTION LIMIT						EMISSION CONCENTRATION						
		Fraction 1A/B (FH) µg/dscm	Fraction 2A/B (BH) µg/dscm	Fraction 3A µg/dscm	Fraction 3B µg/dscm	Fraction 3C µg/dscm	Total µg/dscm	Fraction 1A/B (FH) µg/dscm	Fraction 2A/B (BH) µg/dscm	Fraction 3A µg/dscm	Fraction 3B µg/dscm	Fraction 3C µg/dscm	Total µg/dscm	
Mercury	Hg	0.002	0.009	0.001			**0.012**	0.002 U	0.009 U	0.001 U	0.175	25.7	**25.9**	**DLL**
Antimony	Sb							0.171	0.009				**0.180**	**ADL**
Arsenic	As	0.171					**0.171**	0.171 U	0.347				**0.518**	**DLL**
Barium	Ba							1.33	0.116				**1.44**	**ADL**
Beryllium	Be	0.009	0.001				**0.009**	0.009 U	0.001 U				**0.009**	**BDL**
Cadmium	Cd							0.308	0.077				**0.385**	**ADL**
Chromium	Cr							1.07	0.501				**1.57**	**ADL**
Cobalt	Co							0.056	0.051				**0.107**	**ADL**
Copper	Cu							1.11	1.55				**2.66**	**ADL**
Lead	Pb							2.01	0.826				**2.84**	**ADL**
Manganese	Mn							1.43	0.522				**1.95**	**ADL**
Nickel	Ni	0.086					**0.086**	0.086 U	0.728				**0.813**	**DLL**
Phosphorous	P	2.14	4.28				**6.42**	2.14 U	4.28 U				**6.42**	**BDL**
Selenium	Se	0.642					**0.642**	0.642 U	20.6				**21.2**	**DLL**
Silver	Ag							0.338	0.032				**0.370**	**ADL**
Thallium	Tl	0.013	0.001				**0.014**	0.013 U	0.001 U				**0.014**	**BDL**
Zinc	Zn							74.0	6.16				**80.2**	**ADL**

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

Note: Detection Limits (DL) are only reported above if the results are under the DL (U). See lab report for actual DL's.

METALS EMISSION RESULTS - EPA METHOD 29
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-5,29	Sample Site:	Hammermill Baghouse Exhaust	Lab ID:	3649-(015-021)
Client:	Envirosure@Independent Metals	Sample Date:	11/30/10	Sample Volume:	2.484 dscm
Location:	Seattle, Washington	Start Time:	1417	Airflow:	13427 dscfm
Run Number:	3 - Method 5/29	Stop Time:	1630		

		DETECTION LIMIT						EMISSION CONCENTRATION						
ANALYTE		Fraction 1A/B (FH) µg/dscm	Fraction 2A/B (BH) µg/dscm	Fraction 3A µg/dscm	Fraction 3B µg/dscm	Fraction 3C µg/dscm	Total µg/dscm	Fraction 1A/B (FH) µg/dscm	Fraction 2A/B (BH) µg/dscm	Fraction 3A µg/dscm	Fraction 3B µg/dscm	Fraction 3C µg/dscm	Total µg/dscm	
Mercury	Hg	0.002	0.008	0.001			**0.011**	0.002 U	0.008 U	0.001 U	8.17	12.3	**20.5**	**DLL**
Antimony	Sb		0.004				**0.004**	0.161	0.004 U				**0.165**	**DLL**
Arsenic	As	0.161	0.016				**0.177**	0.161 U	0.016 U				**0.177**	**BDL**
Barium	Ba							1.17	0.870				**2.04**	**ADL**
Beryllium	Be	0.008	0.001				**0.009**	0.008 U	0.001 U				**0.009**	**BDL**
Cadmium	Cd							0.378	0.011				**0.390**	**ADL**
Chromium	Cr							1.13	0.209				**1.34**	**ADL**
Cobalt	Co							0.072	0.014				**0.086**	**ADL**
Copper	Cu							1.05	1.13				**2.18**	**ADL**
Lead	Pb							3.47	0.113				**3.58**	**ADL**
Manganese	Mn							1.28	0.204				**1.49**	**ADL**
Nickel	Ni							0.765	1.55				**2.32**	**ADL**
Phosphorous	P	2.01	4.03				**6.04**	2.01 U	4.03 U				**6.04**	**BDL**
Selenium	Se	0.604					**0.604**	0.604 U	1.21				**1.81**	**DLL**
Silver	Ag							0.250	0.009				**0.258**	**ADL**
Thallium	Tl	0.012	0.001				**0.013**	0.012 U	0.001 U				**0.013**	**BDL**
Zinc	Zn							60.0	3.87				**63.9**	**ADL**

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

Note: Detection Limits (DL) are only reported above if the results are under the DL (U). See lab report for actual DL's.

METALS EMISSION RESULTS - EPA METHOD 29
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-5,29	Start Time:	0745
Client:	Envirosure@Independent Metals	Stop Time:	1050
Location:	Seattle, Washington	Sample Volume:	2.387 dscm
Sample Site:	Hammermill Baghouse Exhaust	Oxygen:	21.0 %
Sample Date:	11/30/10		
Run Number:	1 - Method 5/29		
Lab ID:	3649-(001-007		

EMISSION CONCENTRATION

ANALYTE		Fraction 1A/B (FH) mg/dscm	Fraction 2A/B (BH) mg/dscm	Fraction 3A mg/dscm	Fraction 3B mg/dscm	Fraction 3C mg/dscm	Total mg/dscm	
Mercury	Hg	0.0001	0.00001 U	0.000001 U	0.008	0.356	**0.364**	**DLL**
Antimony	Sb	0.0003	0.00002				**0.0003**	**ADL**
Arsenic	As	0.0002 U	0.00002 U				**0.0002**	**BDL**
Barium	Ba	0.0023	0.0002				**0.003**	**ADL**
Beryllium	Be	0.00001 U	0.000001 U				**0.00001**	**BDL**
Cadmium	Cd	0.0005	0.00003				**0.001**	**ADL**
Chromium	Cr	0.001	0.0003				**0.002**	**ADL**
Cobalt	Co	0.0001	0.00002				**0.0001**	**ADL**
Copper	Cu	0.001	0.002				**0.003**	**ADL**
Lead	Pb	0.003	0.0002				**0.003**	**ADL**
Manganese	Mn	0.002	0.0004				**0.002**	**ADL**
Nickel	Ni	0.003	0.0005				**0.004**	**ADL**
Phosphorous	P	0.002 U	0.004 U				**0.006**	**BDL**
Selenium	Se	0.001 U	0.0001 U				**0.001**	**BDL**
Silver	Ag	0.0002	0.00002				**0.0003**	**ADL**
Thallium	Tl	0.00001 U	0.000001 U				**0.00001**	**BDL**
Zinc	Zn	0.069	0.009				**0.077**	**ADL**

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

Note: Detection Limits (DL) are only reported above if the results are under the DL (U). See lab report for actual DL's.

METALS EMISSION RESULTS - EPA METHOD 29
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-5,29	Start Time:	1136
Client:	Envirosure@Independent Metals	Stop Time:	1357
Location:	Seattle, Washington	Sample Volume:	2.336 dscm
Sample Site:	Hammermill Baghouse Exhaust	Oxygen:	21.0 %
Sample Date:	11/30/10		
Run Number:	2- Method 5/29		
Lab ID:	3649-(008-01		

EMISSION CONCENTRATION

ANALYTE		Fraction 1A/B (FH) mg/dscm		Fraction 2A/B (BH) mg/dscm		Fraction 3A mg/dscm		Fraction 3B mg/dscm	Fraction 3C mg/dscm	Total mg/dscm	
Mercury	Hg	0.000002	U	0.00001	U	0.000001	U	0.0002	0.026	**0.026**	**DLL**
Antimony	Sb	0.0002		0.00001						**0.0002**	**ADL**
Arsenic	As	0.0002	U	0.0003						**0.0005**	**DLL**
Barium	Ba	0.0013		0.0001						**0.001**	**ADL**
Beryllium	Be	0.00001	U	0.000001	U					**0.00001**	**BDL**
Cadmium	Cd	0.0003		0.0001						**0.0004**	**ADL**
Chromium	Cr	0.001		0.0005						**0.002**	**ADL**
Cobalt	Co	0.0001		0.0001						**0.0001**	**ADL**
Copper	Cu	0.001		0.002						**0.003**	**ADL**
Lead	Pb	0.002		0.0008						**0.003**	**ADL**
Manganese	Mn	0.001		0.0005						**0.002**	**ADL**
Nickel	Ni	0.0001	U	0.001						**0.001**	**DLL**
Phosphorous	P	0.002	U	0.004	U					**0.006**	**BDL**
Selenium	Se	0.001	U	0.021						**0.021**	**DLL**
Silver	Ag	0.0003		0.00003						**0.0004**	**ADL**
Thallium	Tl	0.00001	U	0.000001	U					**0.00001**	**BDL**
Zinc	Zn	0.074		0.006						**0.080**	**ADL**

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

Note: Detection Limits (DL) are only reported above if the results are under the DL (U). See lab report for actual DL's.

METALS EMISSION RESULTS - EPA METHOD 29
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-5,29	Start Time:	1417
Client:	Envirosure@Independent Metals	Stop Time:	1630
Location:	Seattle, Washington	Sample Volume:	2.484 dscm
Sample Site:	Hammermill Baghouse Exhaust	Oxygen:	21.0 %
Sample Date:	11/30/10		
Run Number:	3 - Method 5/29		
Lab ID:	3649-(015-021		

EMISSION CONCENTRATION

ANALYTE		Fraction 1A/B (FH) mg/dscm		Fraction 2A/B (BH) mg/dscm		Fraction 3A mg/dscm		Fraction 3B mg/dscm	Fraction 3C mg/dscm	Total mg/dscm	
Mercury	Hg	0.000002	U	0.00001	U	0.000001	U	0.008	0.012	**0.020**	**DLL**
Antimony	Sb	0.0002		0.000004	U					**0.0002**	**DLL**
Arsenic	As	0.0002	U	0.00002	U					**0.0002**	**BDL**
Barium	Ba	0.0012		0.0009						**0.002**	**ADL**
Beryllium	Be	0.00001	U	0.000001	U					**0.00001**	**BDL**
Cadmium	Cd	0.0004		0.00001						**0.0004**	**ADL**
Chromium	Cr	0.001		0.0002						**0.001**	**ADL**
Cobalt	Co	0.0001		0.00001						**0.0001**	**ADL**
Copper	Cu	0.001		0.001						**0.002**	**ADL**
Lead	Pb	0.003		0.0001						**0.004**	**ADL**
Manganese	Mn	0.001		0.0002						**0.001**	**ADL**
Nickel	Ni	0.001		0.002						**0.002**	**ADL**
Phosphorous	P	0.002	U	0.004	U					**0.006**	**BDL**
Selenium	Se	0.001	U	0.001						**0.002**	**DLL**
Silver	Ag	0.0002		0.00001						**0.0003**	**ADL**
Thallium	Tl	0.00001	U	0.000001	U					**0.00001**	**BDL**
Zinc	Zn	0.060		0.004						**0.064**	**ADL**

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

Note: Detection Limits (DL) are only reported above if the results are under the DL (U). See lab report for actual DL's.

METALS EMISSION RESULTS - EPA METHOD 29
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-5,29	Start Time:	0745
Client:	Envirosure@Independent Metals	Stop Time:	1050
Location:	Seattle, Washington	Sample Volume:	2.387 dscm
Sample Site:	Hammermill Baghouse Exhaust	Oxygen:	21.0 %
Sample Date:	11/30/10	Airflow:	13052 dscfm
Run Number:	1 - Method 5/29		
Lab ID:	3649-(001-007)		

ANALYTE		EMISSION RATE						
		Fraction 1A/B (FH) lb/hr	Fraction 2A/B (BH) lb/hr	Fraction 3A lb/hr	Fraction 3B lb/hr	Fraction 3C lb/hr	Total lb/hr	
Mercury	Hg	5.08E-06	4.10E-07 U	4.10E-08 U	3.69E-04	1.74E-02	**1.78E-02**	**DLL**
Antimony	Sb	1.23E-05	8.19E-07				**1.31E-05**	**ADL**
Arsenic	As	8.19E-06 U	8.19E-07 U				**9.01E-06**	**BDL**
Barium	Ba	1.15E-04	7.99E-06				**1.23E-04**	**ADL**
Beryllium	Be	4.10E-07 U	4.10E-08 U				**4.51E-07**	**BDL**
Cadmium	Cd	2.40E-05	1.52E-06				**2.55E-05**	**ADL**
Chromium	Cr	6.15E-05	1.43E-05				**7.58E-05**	**ADL**
Cobalt	Co	4.71E-06	9.83E-07				**5.69E-06**	**ADL**
Copper	Cu	5.74E-05	7.85E-05				**1.36E-04**	**ADL**
Lead	Pb	1.32E-04	7.72E-06				**1.39E-04**	**ADL**
Manganese	Mn	9.71E-05	2.15E-05				**1.19E-04**	**ADL**
Nickel	Ni	1.50E-04	2.34E-05				**1.73E-04**	**ADL**
Phosphorous	P	1.02E-04 U	2.05E-04 U				**3.07E-04**	**BDL**
Selenium	Se	3.07E-05 U	4.10E-06 U				**3.48E-05**	**BDL**
Silver	Ag	1.15E-05	9.42E-07				**1.24E-05**	**ADL**
Thallium	Tl	6.15E-07 U	6.15E-08 U				**6.76E-07**	**BDL**
Zinc	Zn	3.36E-03	4.18E-04				**3.78E-03**	**ADL**

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

Note: Detection Limits (DL) are only reported above if the results are under the DL (U). See lab report for actual DL's.

METALS EMISSION RESULTS - EPA METHOD 29
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-5,29	Start Time:	1136
Client:	Envirosure@Independent Metals	Stop Time:	1357
Location:	Seattle, Washington	Sample Volume:	2.336 dscm
Sample Site:	Hammermill Baghouse Exhaust	Oxygen:	21.0 %
Sample Date:	11/30/10	Airflow:	12752 dscfm
Run Number:	2- Method 5/29		
Lab ID:	3649-(008-014)		

ANALYTE		EMISSION RATE Fraction 1A/B (FH) lb/hr	Fraction 2A/B (BH) lb/hr	Fraction 3A lb/hr	Fraction 3B lb/hr	Fraction 3C lb/hr	Total lb/hr	
Mercury	Hg	1.02E-07 U	4.09E-07 U	4.09E-08 U	8.38E-06	1.23E-03	**1.24E-03**	**DLL**
Antimony	Sb	8.18E-06	4.09E-07				**8.59E-06**	**ADL**
Arsenic	As	8.18E-06 U	1.66E-05				**2.47E-05**	**DLL**
Barium	Ba	6.34E-05	5.52E-06				**6.89E-05**	**ADL**
Beryllium	Be	4.09E-07 U	4.09E-08 U				**4.50E-07**	**BDL**
Cadmium	Cd	1.47E-05	3.66E-06				**1.84E-05**	**ADL**
Chromium	Cr	5.11E-05	2.39E-05				**7.50E-05**	**ADL**
Cobalt	Co	2.66E-06	2.43E-06				**5.09E-06**	**ADL**
Copper	Cu	5.32E-05	7.40E-05				**1.27E-04**	**ADL**
Lead	Pb	9.61E-05	3.95E-05				**1.36E-04**	**ADL**
Manganese	Mn	6.81E-05	2.49E-05				**9.30E-05**	**ADL**
Nickel	Ni	4.09E-06 U	3.48E-05				**3.88E-05**	**DLL**
Phosphorous	P	1.02E-04 U	2.04E-04 U				**3.07E-04**	**BDL**
Selenium	Se	3.07E-05 U	9.83E-04				**1.01E-03**	**DLL**
Silver	Ag	1.62E-05	1.53E-06				**1.77E-05**	**ADL**
Thallium	Tl	6.13E-07 U	6.13E-08 U				**6.75E-07**	**BDL**
Zinc	Zn	3.54E-03	2.94E-04				**3.83E-03**	**ADL**

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

Note: Detection Limits (DL) are only reported above if the results are under the DL (U). See lab report for actual DL's.

METALS EMISSION RESULTS - EPA METHOD 29
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-5,29	Start Time:	1417
Client:	Envirosure@Independent Metals	Stop Time:	1630
Location:	Seattle, Washington	Sample Volume:	2.484 dscm
Sample Site:	Hammermill Baghouse Exhaust	Oxygen:	21.0 %
Sample Date:	11/30/10	Airflow:	13427 dscfm
Run Number:	3 - Method 5/29		
Lab ID:	3649-(015-021)		

EMISSION RATE

ANALYTE		Fraction 1A/B (FH) lb/hr	Fraction 2A/B (BH) lb/hr	Fraction 3A lb/hr	Fraction 3B lb/hr	Fraction 3C lb/hr	Total lb/hr	
Mercury	Hg	1.01E-07 U	4.05E-07 U	4.05E-08 U	4.11E-04	6.18E-04	**1.03E-03**	**DLL**
Antimony	Sb	8.10E-06	2.03E-07 U				**8.30E-06**	**DLL**
Arsenic	As	8.10E-06 U	8.10E-07 U				**8.91E-06**	**BDL**
Barium	Ba	5.87E-05	4.37E-05				**1.02E-04**	**ADL**
Beryllium	Be	4.05E-07 U	4.05E-08 U				**4.46E-07**	**BDL**
Cadmium	Cd	1.90E-05	5.67E-07				**1.96E-05**	**ADL**
Chromium	Cr	5.67E-05	1.05E-05				**6.72E-05**	**ADL**
Cobalt	Co	3.65E-06	6.89E-07				**4.33E-06**	**ADL**
Copper	Cu	5.27E-05	5.69E-05				**1.10E-04**	**ADL**
Lead	Pb	1.74E-04	5.69E-06				**1.80E-04**	**ADL**
Manganese	Mn	6.46E-05	1.02E-05				**7.49E-05**	**ADL**
Nickel	Ni	3.85E-05	7.80E-05				**1.16E-04**	**ADL**
Phosphorous	P	1.01E-04 U	2.03E-04 U				**3.04E-04**	**BDL**
Selenium	Se	3.04E-05 U	6.08E-05				**9.11E-05**	**DLL**
Silver	Ag	1.26E-05	4.46E-07				**1.30E-05**	**ADL**
Thallium	Tl	6.08E-07 U	6.08E-08 U				**6.68E-07**	**BDL**
Zinc	Zn	3.02E-03	1.94E-04				**3.21E-03**	**ADL**

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

Note: Detection Limits (DL) are only reported above if the results are under the DL (U). See lab report for actual DL's.

Laboratory Input - Page 1

Note: Colored areas are input values; black areas are calculated. All "U"s and " "s and averages are calculated.

File Name:	4098AT\Envirosure - M1-5,29	Lab ID:	3649-(001-007)
Client:	Envirosure@Independent Metals	Sample Volume:	2.387 dscm
Location:	Seattle, Washington	Airflow:	13052 dscfm
Sample Site:	Hammermill Baghouse Exhaust		
Run Number:	1 - Method 5/29		
Sample Date:	11/30/10		
Start Time:	0745		
Stop Time:	1050		

		CONTAINER 1/3 - FILTER/PROBE RINSE				CONTAINER 4 - HNO_3/H_2O_2 IMPINGERS			
Analyte		Sample Fraction 1A/B (FH) µg	Detection Limit µg	Corrected Result µg	Corrected Result µg/dscm	Sample Fraction 2A/B (BH) µg	Detection Limit µg	Corrected Result µg	Corrected Result µg/dscm
Mercury	Hg	0.248	0.000	0.248	0.104	0.02 U	0.02	0.02 U	0.008 U
Antimony	Sb	0.6	0.0	0.60	0.251	0.04	0.0	0.04	0.017
Arsenic	As	0.4 U	0.4	0.40 U	0.168 U	0.04 U	0.04	0.04 U	0.017 U
Barium	Ba	5.6	0.0	5.60	2.35	0.39	0.0	0.39	0.163
Beryllium	Be	0.02 U	0.02	0.02 U	0.008 U	0.002 U	0.002	0.002 U	0.001 U
Cadmium	Cd	1.17	0.0	1.17	0.490	0.074	0.0	0.074	0.031
Chromium	Cr	3.0	0.0	3.0	1.26	0.70	0.0	0.70	0.293
Cobalt	Co	0.23	0.0	0.23	0.096	0.048	0.0	0.048	0.020
Copper	Cu	2.8	0.0	2.80	1.17	3.83	0.0	3.83	1.60
Lead	Pb	6.42	0.0	6.42	2.69	0.377	0.0	0.377	0.158
Manganese	Mn	4.74	0.0	4.74	1.99	1.05	0.0	1.05	0.440
Nickel	Ni	7.3	0.0	7.3	3.06	1.14	0.0	1.14	0.478
Phosphorous	P	5 U	5	5 U	2.09 U	10 U	10	10 U	4.19 U
Selenium	Se	1.5 U	1.5	1.5 U	0.628 U	0.2 U	0.2	0.20 U	0.084 U
Silver	Ag	0.56	0.0	0.56	0.235	0.046	0.0	0.046	0.019
Thallium	Tl	0.03 U	0.03	0.03 U	0.013 U	0.003 U	0.003	0.003 U	0.001 U
Zinc	Zn	164	0.0	164	68.7	20.4	0.0	20.4	8.55

Note: Detection Limits (DL) are only reported above if the results are under the DL. See lab report for actual DL's.
Note: Values flagged by the lab as "J" (approximate) are reported as DL values.

Laboratory Input - Page 2

Note: Colored areas are input values; black areas are calculated. All "U"s and " "s and averages are calculated.

File Name:	4098AT\Envirosure - M1-5,29	Lab ID:	3649-(001-007)	
Client:	Envirosure@Independent Metals	Sample Volume:	2.387	dscm
Location:	Seattle, Washington	Airflow:	13052	dscfm
Sample Site:	Hammermill Baghouse Exhaust			
Run Number:	1 - Method 5/29			
Sample Date:	11/30/10			
Start Time:	0745			
Stop Time:	1050			

	CONTAINER 5A				CONTAINER 5B				CONTAINER 5C			
Analyte	Sample Fraction 3A µg	Detection Limit µg	Corrected Result µg	Corrected Result µg/dscm	Sample Fraction 3B µg	Detection Limit µg	Corrected Result µg	Corrected Result µg/dscm	Sample Fraction 3C µg	Detection Limit µg	Corrected Result µg	Corrected Result µg/dscm
Mercury Hg	0.002 U	0.002	0.002 U	0.001 U	18.0	0.00	18.0	7.54	850	0.00	850	356.1

Note: Detection Limits (DL) are only reported above if the results are under the DL. See lab report for actual DL's.

Note: Values flagged by the lab as "J" (approximate) are reported as DL values.

Laboratory Input - Page 1

Note: Colored areas are input values; black areas are calculated. All "U"s and " "s and averages are calculated.

File Name:	4098AT\Envirosure - M1-5,29	Lab ID:	3649-(008-014)
Client:	Envirosure@Independent Metals	Sample Volume:	2.336 dscm
Location:	Seattle, Washington	Airflow:	12752 dscfm
Sample Site:	Hammermill Baghouse Exhaust		
Run Number:	2- Method 5/29		
Sample Date:	11/30/10		
Start Time:	1136		
Stop Time:	1357		

		CONTAINER 1/3 - FILTER/PROBE RINSE				CONTAINER 4 - HNO_3/H_2O_2 IMPINGERS			
Analyte		Sample Fraction 1A/B (FH) µg	Detection Limit µg	Corrected Result µg	Corrected Result µg/dscm	Sample Fraction 2A/B (BH) µg	Detection Limit µg	Corrected Result µg	Corrected Result µg/dscm
Mercury	Hg	0.005 U	0.005	0.005 U	0.002 U	0.02 U	0.02	0.02 U	0.009 U
Antimony	Sb	0.4	0.0	0.4	0.171	0.02	0.0	0.02	0.009
Arsenic	As	0.4 U	0.4	0.4 U	0.171 U	0.81	0.0	0.81	0.347
Barium	Ba	3.1	0.0	3.10	1.33	0.27	0.0	0.27	0.116
Beryllium	Be	0.02 U	0.02	0.02 U	0.009 U	0.002 U	0.002	0.002 U	0.001 U
Cadmium	Cd	0.72	0.0	0.72	0.308	0.179	0.0	0.179	0.077
Chromium	Cr	2.5	0.0	2.5	1.07	1.17	0.0	1.17	0.501
Cobalt	Co	0.13	0.0	0.13	0.056	0.119	0.0	0.119	0.051
Copper	Cu	2.6	0.0	2.6	1.11	3.62	0.0	3.62	1.55
Lead	Pb	4.70	0.0	4.7	2.01	1.93	0.0	1.93	0.826
Manganese	Mn	3.33	0.0	3.33	1.43	1.22	0.0	1.22	0.522
Nickel	Ni	0.2 U	0.2	0.2 U	0.086 U	1.70	0.0	1.70	0.728
Phosphorous	P	5.0 U	5	5.0 U	2.14 U	10 U	10	10 U	4.28 U
Selenium	Se	1.5 U	1.5	1.5 U	0.642 U	48.1	0.0	48.1	20.6
Silver	Ag	0.79	0.0	0.79	0.338	0.075	0.0	0.075	0.032
Thallium	Tl	0.03 U	0.03	0.03 U	0.013 U	0.003 U	0.003	0.003 U	0.001 U
Zinc	Zn	173	0.0	173	74.0	14.4	0.0	14.4	6.16

Note: Detection Limits (DL) are only reported above if the results are under the DL. See lab report for actual DL's.
Note: Values flagged by the lab as "J" (approximate) are reported as DL values.

Laboratory Input - Page 2

Note: Colored areas are input values; black areas are calculated. All "U"s and " "s and averages are calculated.

File Name:	4098AT\Envirosure - M1-5,29	Lab ID:	3649-(008-014)	
Client:	Envirosure@Independent Metals	Sample Volume:	2.336	dscm
Location:	Seattle, Washington	Airflow:	12752	dscfm
Sample Site:	Hammermill Baghouse Exhaust			
Run Number:	2- Method 5/29			
Sample Date:	11/30/10			
Start Time:	1136			
Stop Time:	1357			

	CONTAINER 5A				CONTAINER 5B				CONTAINER 5C			
Analyte	Sample Fraction 3A µg	Detection Limit µg	Corrected Result µg	Corrected Result µg/dscm	Sample Fraction 3B µg	Detection Limit µg	Corrected Result µg	Corrected Result µg/dscm	Sample Fraction 3C µg	Detection Limit µg	Corrected Result µg	Corrected Result µg/dscm
Mercury Hg	0.002 U	0.002	0.002 U	0.001 U	0.41	0.00	0.41	0.175	60.0	0.00	60.0	25.7

Note: Detection Limits (DL) are only reported above if the results are under the DL. See lab report for actual DL's.

Note: Values flagged by the lab as "J" (approximate) are reported as DL values.

Laboratory Input - Page 1

Note: Colored areas are input values; black areas are calculated. All "U"s and " "s and averages are calculated.

File Name:	4098AT\Envirosure - M1-5,29	Lab ID:	3649-(015-021)
Client:	Envirosure@Independent Metals	Sample Volume:	2.484 dscm
Location:	Seattle, Washington	Airflow:	13427 dscfm
Sample Site:	Hammermill Baghouse Exhaust		
Run Number:	3 - Method 5/29		
Sample Date:	11/30/10		
Start Time:	1417		
Stop Time:	1630		

		CONTAINER 1/3 - FILTER/PROBE RINSE				CONTAINER 4 - HNO_3/H_2O_2 IMPINGERS			
Analyte		Sample Fraction 1A/B (FH) µg	Detection Limit µg	Corrected Result µg	Corrected Result µg/dscm	Sample Fraction 2A/B (BH) µg	Detection Limit µg	Corrected Result µg	Corrected Result µg/dscm
Mercury	Hg	0.005 U	0.005	0.005 U	0.002 U	0.02 U	0.02	0.02 U	0.008 U
Antimony	Sb	0.4	0.0	0.4	0.161	0.01 U	0.01	0.01 U	0.004 U
Arsenic	As	0.4 U	0.4	0.4 U	0.161 U	0.04 U	0.04	0.04 U	0.016 U
Barium	Ba	2.9	0.0	2.90	1.17	2.16	0.0	2.16	0.870
Beryllium	Be	0.02 U	0.02	0.02 U	0.008 U	0.002 U	0.002	0.002 U	0.001 U
Cadmium	Cd	0.94	0.0	0.94	0.378	0.028	0.0	0.028	0.011
Chromium	Cr	2.8	0.0	2.8	1.13	0.52	0.0	0.52	0.209
Cobalt	Co	0.18	0.0	0.18	0.072	0.034	0.0	0.034	0.014
Copper	Cu	2.6	0.0	2.60	1.05	2.81	0.0	2.81	1.13
Lead	Pb	8.61	0.0	8.61	3.47	0.281	0.0	0.281	0.113
Manganese	Mn	3.19	0.0	3.19	1.28	0.506	0.0	0.506	0.204
Nickel	Ni	1.9	0.0	1.9	0.765	3.85	0.0	3.85	1.55
Phosphorous	P	5 U	5	5.0 U	2.01 U	10 U	10	10 U	4.03 U
Selenium	Se	1.5 U	1.5	1.5 U	0.604 U	3.0	0.0	3.0	1.21
Silver	Ag	0.62	0.0	0.62	0.250	0.022	0.0	0.022	0.009
Thallium	Tl	0.03 U	0.03	0.03 U	0.012 U	0.003 U	0.003	0.003 U	0.001 U
Zinc	Zn	149	0.0	149	60.0	9.6	0.0	9.6	3.87

Note: Detection Limits (DL) are only reported above if the results are under the DL. See lab report for actual DL's.
Note: Values flagged by the lab as "J" (approximate) are reported as DL values.

Laboratory Input - Page 2

Note: Colored areas are input values; black areas are calculated. All "U"s and " "s and averages are calculated.

File Name:	4098AT\Envirosure - M1-5,29	Lab ID:	3649-(015-021)	
Client:	Envirosure@Independent Metals	Sample Volume:	2.484	dscm
Location:	Seattle, Washington	Airflow:	13427	dscfm
Sample Site:	Hammermill Baghouse Exhaust			
Run Number:	3 - Method 5/29			
Sample Date:	11/30/10			
Start Time:	1417			
Stop Time:	1630			

	CONTAINER 5A				CONTAINER 5B				CONTAINER 5C			
Analyte	Sample Fraction 3A µg	Detection Limit µg	Corrected Result µg	Corrected Result µg/dscm	Sample Fraction 3B µg	Detection Limit µg	Corrected Result µg	Corrected Result µg/dscm	Sample Fraction 3C µg	Detection Limit µg	Corrected Result µg	Corrected Result µg/dscm
Mercury Hg	0.002 U	0.002	0.002 U	0.001 U	20.3	0.00	20.3	8.17	30.5	0.00	30.5	12.3

Note: Detection Limits (DL) are only reported above if the results are under the DL. See lab report for actual DL's.

Note: Values flagged by the lab as "J" (approximate) are reported as DL values.

SUMMARY OF RESULTS - EPA METHODS 1, 2, 3A, 4, AND 23-PCBs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure - M1-4,23-PCB
Client: Envirosure@Independent Metals
Location: Seattle, Washington

	Hammermill Baghouse Exhaust			
	Run 1	Run 2	Run 3	Average
Date:	12/1/10	12/1/10	12/1/10	
Start Time:	0755	1046	1525	
Stop Time:	1016	1249	1607	
Sample Length (minutes):	120	120	120	
Volume Sampled (ft^3):	79.695	83.300	78.945	80.647
Volume Sampled (dscf):	84.339	86.318	81.809	84.155
Volume Sampled (dscm):	2.389	2.445	2.317	2.383
Stack Gas Moisture (%):	0.67	0.80	0.97	0.82
Barometric Pressure ("Hg):	30.0	30.0	30.0	30.0
Static Pressure ("H_2O):	-0.5	-0.5	-0.5	-0.5
Stack Pressure ("Hg):	29.96	29.96	29.96	29.96
Stack Temperature (°F):	57.7	62.0	62.9	60.9
Stack Temperature (°R):	517.7	522.0	522.9	520.9
Average Concentration O_2 (%):	20.95	20.95	20.95	20.95
Average Concentration CO_2 (%):	0.03	0.03	0.03	0.03
Molecular Weight (dry, g/g-mole):	28.84	28.84	28.84	28.84
Molecular Weight (wet, g/g-mole):	28.77	28.76	28.74	28.75
Average Velocity Head ("H_2O):	0.643	0.712	0.641	0.665
Pitot Tube C_p:	0.8218	0.8322	0.8218	
Stack Gas Velocity (ft/sec):	43.7	46.7	43.8	44.7
Stack Area (ft^2):	4.91	4.91	4.91	
Stack Gas Airflow (dscf/min):	13046	13824	12925	13265
Stack Gas Airflow (acf/min):	12859	13759	12907	13175
Nozzle Diameter (inches):	0.219	0.219	0.219	
Isokinetics (%):	101	98	99	

EPA METHODS 1, 2, 3A, 4, AND 23-PCBs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-4,23-PCB			
Client:	Envirosure@Independent Metals	**Start Time:**	0755	hours
Location:	Seattle, Washington	**Stop Time:**	1016	hours
Sample Site:	Hammermill Baghouse Exhaust	**Sample Time:**	120	minutes
Sample Date:	12/1/10			
Run #:	1 - Method 23-PCB			
Operators:	PS,MSC			

Impinger Weights

Final grams	Initial grams	Net grams
452.7	257.7	195.0
0.0 (ml)	200.0 (ml)	-199.6 (g)
0.0	0.0	0.0
0.0	0.0	0.0
536.8	520.0	16.8

Total H_2O Gain:	12.2		
Total Volume (scf):	0.57		
Measured Moisture (%):	0.67		
Measured Bws:	0.0067		
Psychrometric Moisture (%):	NA		
Actual Moisture (%):	0.67		
Actual Bws:	0.0067		
Initial Meter Volume (ft^3):	547.950		
Final Meter Volume (ft^3):			
Initial Meter Volume (ft^3):			
Final Meter Volume (ft^3):	627.645		
Volume Sampled (ft^3):	79.695		
Standard Volume (dscf):	84.339		
Standard Volume (dscm):	2.389		

Pitot Tube C_p:	0.8218	
Nozzle Diameter:	0.2192	inches
Nozzle Area:	0.0003	ft^2
Stack Width:		inches
Stack Length:		inches
Stack Diameter:	30.0	inches
Stack Area:	4.91	ft^2
Meter Temperature:	52.0	°F
Barometric Pressure:	30.0	inches Hg
Static Pressure:	-0.5	inches H_2O
Stack Pressure:	29.96	inches Hg
Orifice Pressure:	1.520	inches H_2O
Meter Pressure:	30.11	inches Hg
Average Conc. O_2:	20.95	percent
Average Conc. CO_2:	0.03	percent
Molecular Weight:	28.84	g/g-mole-dry
Molecular Weight:	28.77	g/g-mole-wet
Y Factor:	1.01976	
Delta H @:	1.80952	
Y Factor Cal. Check:	1.019	
Percent Error:	-0.1	%

Sample Point	Velocity (" of H_2O)	Temperature °F	Sample Point	Velocity (" of H_2O)	Temperature °F
1	0.80	54	1	0.45	53
2	0.82	56	2	0.46	55
3	0.71	56	3	0.46	57
4	0.66	58	4	0.47	55
5	0.64	58	5	0.48	58
6	0.60	58	6	0.51	57
7	0.55	59	7	0.71	60
8	0.61	60	8	0.81	59
9	0.65	60	9	0.86	59
10	0.67	60	10	0.92	61
11	0.59	55	11	0.80	60
12	0.60	55	12	0.78	61

Percent Isokinetics:	101	%		
Stack Gas Temperature:	57.7	°F	517.7	°R
Average Velocity Head:	0.643	" of H_2O		
Stack Gas Velocity:			43.7	ft/second
Stack Gas Airflow:	12859	acf/min	13046	dscf/min

EPA METHODS 1, 2, 3A, 4, AND 23-PCBs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-4,23-PCB			
Client:	Envirosure@Independent Metals	**Start Time:**	1046	hours
Location:	Seattle, Washington	**Stop Time:**	1249	hours
Sample Site:	Hammermill Baghouse Exhaust	**Sample Time:**	120	minutes
Sample Date:	12/1/10			
Run #:	2 - Method 23-PCB			
Operators:	PS,MSC			

Impinger Weights

Final grams	Initial grams	Net grams
454.8	257.5	197.3
0.0 (ml)	200.0 (ml)	-199.6 (g)
0.0	0.0	0.0
0.0	0.0	0.0
637.2	620.0	17.2

Total H_2O Gain:	14.9		
Total Volume (scf):	0.70		
Measured Moisture (%):	0.80		
Measured Bws:	0.0080		
Psychrometric Moisture (%):	NA		
Actual Moisture (%):	0.80		
Actual Bws:	0.0080		
Initial Meter Volume (ft^3):	628.700		
Final Meter Volume (ft^3):			
Initial Meter Volume (ft^3):			
Final Meter Volume (ft^3):	712.000		
Volume Sampled (ft^3):	83.300		
Standard Volume (dscf):	86.318		
Standard Volume (dscm):	2.445		

Pitot Tube C_p:	0.8322	
Nozzle Diameter:	0.2192	inches
Nozzle Area:	0.0003	ft^2
Stack Width:		inches
Stack Length:		inches
Stack Diameter:	30.0	inches
Stack Area:	4.91	ft^2
Meter Temperature:	63.1	°F
Barometric Pressure:	30.0	inches Hg
Static Pressure:	-0.5	inches H_2O
Stack Pressure:	29.96	inches Hg
Orifice Pressure:	1.667	inches H_2O
Meter Pressure:	30.12	inches Hg
Average Conc. O_2:	20.95	percent
Average Conc. CO_2:	0.03	percent
Molecular Weight:	28.84	g/g-mole-dry
Molecular Weight:	28.76	g/g-mole-wet
Y Factor:	1.01976	
Delta H @:	1.80952	
Y Factor Cal. Check:	1.032	
Percent Error:	1.2	%

Sample Point	Velocity (" of H_2O)	Temperature °F	Sample Point	Velocity (" of H_2O)	Temperature °F
1	0.87	60	1	0.51	64
2	0.90	59	2	0.52	61
3	0.81	60	3	0.51	61
4	0.75	61	4	0.56	61
5	0.71	63	5	0.56	61
6	0.66	63	6	0.56	61
7	0.61	63	7	0.73	62
8	0.66	63	8	0.79	64
9	0.80	63	9	0.84	63
10	0.72	63	10	0.91	62
11	0.67	63	11	0.98	63
12	0.64	62	12	0.98	63

Percent Isokinetics:	98	%		
Stack Gas Temperature:	62.0	°F	522.0	°R
Average Velocity Head:	0.712	" of H_2O		
Stack Gas Velocity:			46.7	ft/second
Stack Gas Airflow:	13759	acf/min	13824	dscf/min

EPA METHODS 1, 2, 3A, 4, AND 23-PCBs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-4,23-PCB			
Client:	Envirosure@Independent Metals	**Start Time:**	1525	hours
Location:	Seattle, Washington	**Stop Time:**	1607	hours
Sample Site:	Hammermill Baghouse Exhaust	**Sample Time:**	120	minutes
Sample Date:	12/1/10			
Run #:	3 - Method 23-PCB			
Operators:	PS,MSC			

Impinger Weights

Final grams	Initial grams	Net grams
456.9	257.3	199.6
0.0 (ml)	200.0 (ml)	-199.6 (g)
0.0	0.0	0.0
0.0	0.0	0.0
537.1	520.0	17.1

Total H_2O Gain:	17.1	Meter Temperature:	62.9 °F
Total Volume (scf):	0.80	Barometric Pressure:	30.0 inches Hg
Measured Moisture (%):	0.97	Static Pressure:	-0.5 inches H_2O
Measured Bws:	0.0097	Stack Pressure:	29.96 inches Hg
Psychrometric Moisture (%):	NA	Orifice Pressure:	1.475 inches H_2O
Actual Moisture (%):	0.97	Meter Pressure:	30.11 inches Hg
Actual Bws:	0.0097		
		Average Conc. O_2:	20.95 percent
Initial Meter Volume (ft^3):	713.400	Average Conc. CO_2:	0.03 percent
Final Meter Volume (ft^3):		Molecular Weight:	28.84 g/g-mole-dry
Initial Meter Volume (ft^3):		Molecular Weight:	28.74 g/g-mole-wet
Final Meter Volume (ft^3):	792.345	Y Factor:	1.01976
Volume Sampled (ft^3):	78.945	Delta H @:	1.80952
Standard Volume (dscf):	81.809	Y Factor Cal. Check:	1.024
Standard Volume (dscm):	2.317	Percent Error:	0.4 %

Pitot Tube C_p:	0.8218	
Nozzle Diameter:	0.2192	inches
Nozzle Area:	0.0003	ft^2
Stack Width:		inches
Stack Length:		inches
Stack Diameter:	30.0	inches
Stack Area:	4.91	ft^2

Sample Point	Velocity (" of H_2O)	Temperature °F	Sample Point	Velocity (" of H_2O)	Temperature °F
1	0.48	63	1	0.79	61
2	0.48	64	2	0.75	63
3	0.48	64	3	0.71	63
4	0.45	63	4	0.65	63
5	0.45	62	5	0.61	63
6	0.48	63	6	0.61	63
7	0.55	62	7	0.56	65
8	0.68	63	8	0.67	64
9	0.78	63	9	0.67	64
10	0.86	64	10	0.67	62
11	0.94	63	11	0.67	61
12	0.94	63	12	0.63	61

Percent Isokinetics:	99	%		
Stack Gas Temperature:	62.9	°F	522.9	°R
Average Velocity Head:	0.641	" of H_2O		
Stack Gas Velocity:			43.8	ft/second
Stack Gas Airflow:	12907	acf/min	12925	dscf/min

EMISSION CONCENTRATION RESULTS
PCBs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-4,23-PCB			
Client:	Envirosure@Independent Metals	**Sample Volume:**	2.389	dscm
Location:	Seattle, Washington	**Airflow:**	13046	dscf/min
Sample Dates:	12/1/10			
Sample Times:	0755 - 1016			

	Hammermill Baghouse Exhaust		
	Sample Run 1	Method Blank	Field Blank
ANALYTE	ng/m^3	ng/m^3	ng/m^3
PCBs			
PCB-77	16.4 ADL	(0.001) BDL	(0.003) BDL
PCB-81	0.980 ADL	(0.001) BDL	(0.002) BDL
PCB-105	14.3 ADL	0.002 ADL	0.008 ADL
PCB-114	1.16 ADL	(0.001) BDL	(0.002) BDL
PCB-118	24.1 ADL	0.004 ADL	0.019 ADL
PCB-123	0.754 ADL	(0.001) BDL	(0.002) BDL
PCB-126	0.091 ADL	(0.0004) BDL	(0.002) BDL
PCB-156/157	1.08 ADL	(0.001) BDL	(0.002) BDL
PCB-167	0.360 ADL	(0.0005) BDL	(0.002) BDL
PCB-169	(0.018) BDL	(0.0005) BDL	(0.002) BDL
PCB-189	0.051 ADL	(0.0005) BDL	(0.001) BDL
Total Mono-CBs	849.9 ADL	0.050 ADL	0.071 ADL
*Total Di-CBs	4049 ADL	0.440 ADL	0.586 ADL
Total Tri-CBs	5945 ADL	0.280 ADL	0.486 ADL
Total Tetra-CBs	2244 ADL	0.097 ADL	0.259 ADL
Total Penta-CBs	296.8 ADL	0.034 ADL	0.129 ADL
Total Hexa-CBs	55.7 ADL	0.011 ADL	0.040 ADL
Total Hepta-CBs	23.7 ADL	0.003 ADL	0.010 ADL
Total Octa-CBs	7.62 ADL	(0.0005) BDL	(0.002) BDL
Total Nona-CBs	1.47 ADL	(0.002) BDL	(0.006) BDL
PCB-209	0.147 ADL	(0.001) BDL	0.006 ADL
Minimum Toxic Equivalent (TEQ)	0.012		0.000001
Maximum Toxic Equivalent (TEQ)	0.013		0.0002

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

*Denotes values computed using Split 10 injection; this applies to the runs, not the blanks.

Minimum TEQ is based on DL = zero; EMPC = zero. Maximum TEQ is based on DL = DL; EMPC = EMPC.

EMISSION CONCENTRATION RESULTS
PCBs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-4,23-PCB			
Client:	Envirosure@Independent Metals	**Sample Volume:**	2.445	dscm
Location:	Seattle, Washington	**Airflow:**	13824	dscf/min
Sample Dates:	12/1/10			
Sample Times:	1046 - 1249			

	Hammermill Baghouse Exhaust		
	Sample Run 2	Method Blank	Field Blank
ANALYTE	ng/m^3	ng/m^3	ng/m^3
PCBs			
PCB-77	1.81 ADL	(0.001) BDL	(0.003) BDL
PCB-81	0.128 ADL	(0.001) BDL	(0.002) BDL
PCB-105	3.89 ADL	0.002 ADL	0.008 ADL
PCB-114	0.301 ADL	(0.001) BDL	(0.002) BDL
PCB-118	9.41 ADL	0.004 ADL	0.019 ADL
PCB-123	0.223 ADL	(0.001) BDL	(0.002) BDL
PCB-126	(0.021) BDL	(0.0004) BDL	(0.002) BDL
PCB-156/157	0.569 ADL	(0.001) BDL	(0.002) BDL
PCB-167	0.205 ADL	(0.0005) BDL	(0.002) BDL
PCB-169	(0.015) BDL	(0.0005) BDL	(0.002) BDL
PCB-189	0.020 ADL	(0.0004) BDL	(0.001) BDL
Total Mono-CBs	519.5 ADL	0.049 ADL	0.069 ADL
*Total Di-CBs	4351 ADL	0.430 ADL	0.573 ADL
Total Tri-CBs	5482 ADL	0.274 ADL	0.475 ADL
Total Tetra-CBs	1256 ADL	0.094 ADL	0.253 ADL
Total Penta-CBs	140.7 ADL	0.033 ADL	0.126 ADL
Total Hexa-CBs	29.0 ADL	0.011 ADL	0.040 ADL
Total Hepta-CBs	8.22 ADL	0.003 ADL	0.010 ADL
Total Octa-CBs	6.75 ADL	(0.0005) BDL	(0.002) BDL
Total Nona-CBs	4.38 ADL	(0.002) BDL	(0.006) BDL
PCB-209	0.630 ADL	(0.001) BDL	0.006 ADL
Minimum Toxic Equivalent (TEQ)	0.001		0.000001
Maximum Toxic Equivalent (TEQ)	0.003		0.0002

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

*Denotes values computed using Split 10 injection; this applies to the runs, not the blanks.

Minimum TEQ is based on DL = zero; EMPC = zero. Maximum TEQ is based on DL = DL; EMPC = EMPC.

EMISSION CONCENTRATION RESULTS
PCBs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-4,23-PCB			
Client:	Envirosure@Independent Metals	**Sample Volume:**	2.317	dscm
Location:	Seattle, Washington	**Airflow:**	12925	dscf/min
Sample Dates:	12/1/10			
Sample Times:	1525 - 1607			

	Hammermill Baghouse Exhaust		
	Sample Run 3	Method Blank	Field Blank
ANALYTE	ng/m^3	ng/m^3	ng/m^3
PCBs			
PCB-77	10.8 ADL	(0.001) BDL	(0.003) BDL
PCB-81	0.708 ADL	(0.001) BDL	(0.002) BDL
PCB-105	32.2 ADL	0.002 ADL	0.008 ADL
PCB-114	2.52 ADL	(0.001) BDL	(0.002) BDL
PCB-118	66.5 ADL	0.004 ADL	0.020 ADL
PCB-123	1.67 ADL	(0.001) BDL	(0.002) BDL
PCB-126	0.149 ADL	(0.0004) BDL	(0.002) BDL
PCB-156/157	5.78 ADL	(0.001) BDL	(0.002) BDL
PCB-167	1.80 ADL	(0.001) BDL	(0.002) BDL
PCB-169	(0.015) BDL	(0.001) BDL	(0.002) BDL
PCB-189	0.150 ADL	(0.0005) BDL	(0.001) BDL
Total Mono-CBs	984.1 ADL	0.051 ADL	0.073 ADL
*Total Di-CBs	4776 ADL	0.453 ADL	0.604 ADL
Total Tri-CBs	6474 ADL	0.289 ADL	0.501 ADL
Total Tetra-CBs	2305 ADL	0.100 ADL	0.267 ADL
Total Penta-CBs	565.4 ADL	0.035 ADL	0.133 ADL
Total Hexa-CBs	175.7 ADL	0.011 ADL	0.042 ADL
Total Hepta-CBs	35.8 ADL	0.003 ADL	0.010 ADL
Total Octa-CBs	19.8 ADL	(0.001) BDL	(0.002) BDL
Total Nona-CBs	10.4 ADL	(0.002) BDL	(0.006) BDL
PCB-209	1.22 ADL	(0.001) BDL	0.007 ADL
Minimum Toxic Equivalent (TEQ)	0.020		0.000001
Maximum Toxic Equivalent (TEQ)	0.020		0.0002

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

*Denotes values computed using Split 10 injection; this applies to the runs, not the blanks.

Minimum TEQ is based on DL = zero; EMPC = zero. Maximum TEQ is based on DL = DL; EMPC = EMPC.

EMISSION CONCENTRATION RESULTS
PCBs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-4,23-PCB			
Client:	Envirosure@Independent Metals	**Sample Volume:**	2.389	dscm
Location:	Seattle, Washington	**Airflow:**	13046	dscf/min
Sample Dates:	12/1/10			
Sample Times:	0755 - 1016			

	Hammermill Baghouse Exhaust		
	Sample Run 1	Method Blank	Field Blank
ANALYTE	mg/m^3	mg/m^3	mg/m^3
PCBs			
PCB-77	1.64E-05 ADL	(7.08E-10) BDL	(2.58E-09) BDL
PCB-81	9.80E-07 ADL	(6.66E-10) BDL	(2.42E-09) BDL
PCB-105	1.43E-05 ADL	1.93E-09 ADL	8.00E-09 ADL
PCB-114	1.16E-06 ADL	(5.15E-10) BDL	(1.75E-09) BDL
PCB-118	2.41E-05 ADL	4.35E-09 ADL	1.93E-08 ADL
PCB-123	7.54E-07 ADL	(5.15E-10) BDL	(1.72E-09) BDL
PCB-126	9.13E-08 ADL	(3.96E-10) BDL	(1.56E-09) BDL
PCB-156/157	1.08E-06 ADL	(6.20E-10) BDL	(2.31E-09) BDL
PCB-167	3.60E-07 ADL	(4.90E-10) BDL	(1.77E-09) BDL
PCB-169	(1.83E-08) BDL	(4.86E-10) BDL	(1.75E-09) BDL
PCB-189	5.15E-08 ADL	(4.56E-10) BDL	(1.21E-09) BDL
Total Mono-CBs	8.50E-04 ADL	4.98E-08 ADL	7.08E-08 ADL
*Total Di-CBs	4.05E-03 ADL	4.40E-07 ADL	5.86E-07 ADL
Total Tri-CBs	5.95E-03 ADL	2.80E-07 ADL	4.86E-07 ADL
Total Tetra-CBs	2.24E-03 ADL	9.67E-08 ADL	2.59E-07 ADL
Total Penta-CBs	2.97E-04 ADL	3.36E-08 ADL	1.29E-07 ADL
Total Hexa-CBs	5.57E-05 ADL	1.11E-08 ADL	4.05E-08 ADL
Total Hepta-CBs	2.37E-05 ADL	3.32E-09 ADL	1.01E-08 ADL
Total Octa-CBs	7.62E-06 ADL	(4.94E-10) BDL	(1.60E-09) BDL
Total Nona-CBs	1.47E-06 ADL	(1.60E-09) BDL	(6.11E-09) BDL
PCB-209	1.47E-07 ADL	(6.82E-10) BDL	6.41E-09 ADL
Minimum Toxic Equivalent (TEQ)	1.23E-08		8.16E-13
Maximum Toxic Equivalent (TEQ)	1.29E-08		2.11E-10

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

*Denotes values computed using Split 10 injection; this applies to the runs, not the blanks.

Minimum TEQ is based on DL = zero; EMPC = zero. Maximum TEQ is based on DL = DL; EMPC = EMPC.

EMISSION CONCENTRATION RESULTS
PCBs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-4,23-PCB			
Client:	Envirosure@Independent Metals	**Sample Volume:**	2.445	dscm
Location:	Seattle, Washington	**Airflow:**	13824	dscf/min
Sample Dates:	12/1/10			
Sample Times:	1046 - 1249			

	Hammermill Baghouse Exhaust		
	Sample Run 2	Method Blank	Field Blank
ANALYTE	mg/m^3	mg/m^3	mg/m^3
PCBs			
PCB-77	1.81E-06 ADL	(6.91E-10) BDL	(2.52E-09) BDL
PCB-81	1.28E-07 ADL	(6.50E-10) BDL	(2.37E-09) BDL
PCB-105	3.89E-06 ADL	1.89E-09 ADL	7.81E-09 ADL
PCB-114	3.01E-07 ADL	(5.03E-10) BDL	(1.71E-09) BDL
PCB-118	9.41E-06 ADL	4.25E-09 ADL	1.89E-08 ADL
PCB-123	2.23E-07 ADL	(5.03E-10) BDL	(1.68E-09) BDL
PCB-126	(2.09E-08) BDL	(3.87E-10) BDL	(1.53E-09) BDL
PCB-156/157	5.69E-07 ADL	(6.05E-10) BDL	(2.26E-09) BDL
PCB-167	2.05E-07 ADL	(4.79E-10) BDL	(1.73E-09) BDL
PCB-169	(1.46E-08) BDL	(4.75E-10) BDL	(1.71E-09) BDL
PCB-189	1.99E-08 ADL	(4.46E-10) BDL	(1.19E-09) BDL
Total Mono-CBs	5.20E-04 ADL	4.87E-08 ADL	6.91E-08 ADL
*Total Di-CBs	4.35E-03 ADL	4.30E-07 ADL	5.73E-07 ADL
Total Tri-CBs	5.48E-03 ADL	2.74E-07 ADL	4.75E-07 ADL
Total Tetra-CBs	1.26E-03 ADL	9.45E-08 ADL	2.53E-07 ADL
Total Penta-CBs	1.41E-04 ADL	3.28E-08 ADL	1.26E-07 ADL
Total Hexa-CBs	2.90E-05 ADL	1.08E-08 ADL	3.96E-08 ADL
Total Hepta-CBs	8.22E-06 ADL	3.24E-09 ADL	9.86E-09 ADL
Total Octa-CBs	6.75E-06 ADL	(4.83E-10) BDL	(1.56E-09) BDL
Total Nona-CBs	4.38E-06 ADL	(1.56E-09) BDL	(5.97E-09) BDL
PCB-209	6.30E-07 ADL	(6.67E-10) BDL	6.26E-09 ADL
Minimum Toxic Equivalent (TEQ)	6.59E-10		7.98E-13
Maximum Toxic Equivalent (TEQ)	3.18E-09		2.06E-10

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

*Denotes values computed using Split 10 injection; this applies to the runs, not the blanks.

Minimum TEQ is based on DL = zero; EMPC = zero. Maximum TEQ is based on DL = DL; EMPC = EMPC.

EMISSION CONCENTRATION RESULTS
PCBs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-4,23-PCB			
Client:	Envirosure@Independent Metals	**Sample Volume:**	2.317	dscm
Location:	Seattle, Washington	**Airflow:**	12925	dscf/min
Sample Dates:	12/1/10			
Sample Times:	1525 - 1607			

	Hammermill Baghouse Exhaust		
	Sample Run 3	Method Blank	Field Blank
ANALYTE	mg/m^3	mg/m^3	mg/m^3
PCBs			
PCB-77	1.08E-05 ADL	(7.29E-10) BDL	(2.66E-09) BDL
PCB-81	7.08E-07 ADL	(6.86E-10) BDL	(2.50E-09) BDL
PCB-105	3.22E-05 ADL	1.99E-09 ADL	8.24E-09 ADL
PCB-114	2.52E-06 ADL	(5.31E-10) BDL	(1.81E-09) BDL
PCB-118	6.65E-05 ADL	4.49E-09 ADL	1.99E-08 ADL
PCB-123	1.67E-06 ADL	(5.31E-10) BDL	(1.77E-09) BDL
PCB-126	1.49E-07 ADL	(4.08E-10) BDL	(1.61E-09) BDL
PCB-156/157	5.78E-06 ADL	(6.39E-10) BDL	(2.38E-09) BDL
PCB-167	1.80E-06 ADL	(5.05E-10) BDL	(1.82E-09) BDL
PCB-169	(1.53E-08) BDL	(5.01E-10) BDL	(1.80E-09) BDL
PCB-189	1.50E-07 ADL	(4.70E-10) BDL	(1.25E-09) BDL
Total Mono-CBs	9.84E-04 ADL	5.14E-08 ADL	7.29E-08 ADL
*Total Di-CBs	4.78E-03 ADL	4.53E-07 ADL	6.04E-07 ADL
Total Tri-CBs	6.47E-03 ADL	2.89E-07 ADL	5.01E-07 ADL
Total Tetra-CBs	2.30E-03 ADL	9.97E-08 ADL	2.67E-07 ADL
Total Penta-CBs	5.65E-04 ADL	3.46E-08 ADL	1.33E-07 ADL
Total Hexa-CBs	1.76E-04 ADL	1.14E-08 ADL	4.17E-08 ADL
Total Hepta-CBs	3.58E-05 ADL	3.42E-09 ADL	1.04E-08 ADL
Total Octa-CBs	1.98E-05 ADL	(5.09E-10) BDL	(1.64E-09) BDL
Total Nona-CBs	1.04E-05 ADL	(1.65E-09) BDL	(6.30E-09) BDL
PCB-209	1.22E-06 ADL	(7.04E-10) BDL	6.60E-09 ADL
Minimum Toxic Equivalent (TEQ)	1.96E-08		8.42E-13
Maximum Toxic Equivalent (TEQ)	2.00E-08		2.17E-10

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

*Denotes values computed using Split 10 injection; this applies to the runs, not the blanks.

Minimum TEQ is based on DL = zero; EMPC = zero. Maximum TEQ is based on DL = DL; EMPC = EMPC.

EMISSION RATE RESULTS
PCBs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-4,23-PCB			
Client:	Envirosure@Independent Metals	**Sample Volume:**	2.389	dscm
Location:	Seattle, Washington	**Airflow:**	13046	dscf/min
Sample Dates:	12/1/10			
Sample Times:	0755 - 1016			

	Hammermill Baghouse Exhaust		
	Sample Run 1	Method Blank	Field Blank
ANALYTE	lb/hr	lb/hr	lb/hr
PCBs			
PCB-77	8.00E-07 ADL	(3.46E-11) BDL	(1.26E-10) BDL
PCB-81	4.79E-08 ADL	(3.25E-11) BDL	(1.18E-10) BDL
PCB-105	6.98E-07 ADL	9.43E-11 ADL	3.91E-10 ADL
PCB-114	5.67E-08 ADL	(2.52E-11) BDL	(8.57E-11) BDL
PCB-118	1.18E-06 ADL	2.13E-10 ADL	9.43E-10 ADL
PCB-123	3.68E-08 ADL	(2.52E-11) BDL	(8.41E-11) BDL
PCB-126	4.46E-09 ADL	(1.94E-11) BDL	(7.63E-11) BDL
PCB-156/157	5.30E-08 ADL	(3.03E-11) BDL	(1.13E-10) BDL
PCB-167	1.76E-08 ADL	(2.39E-11) BDL	(8.63E-11) BDL
PCB-169	(8.94E-10) BDL	(2.37E-11) BDL	(8.53E-11) BDL
PCB-189	2.52E-09 ADL	(2.23E-11) BDL	(5.93E-11) BDL
Total Mono-CBs	4.15E-05 ADL	2.43E-09 ADL	3.46E-09 ADL
*Total Di-CBs	1.98E-04 ADL	2.15E-08 ADL	2.86E-08 ADL
Total Tri-CBs	2.91E-04 ADL	1.37E-08 ADL	2.37E-08 ADL
Total Tetra-CBs	1.10E-04 ADL	4.73E-09 ADL	1.26E-08 ADL
Total Penta-CBs	1.45E-05 ADL	1.64E-09 ADL	6.30E-09 ADL
Total Hexa-CBs	2.72E-06 ADL	5.40E-10 ADL	1.98E-09 ADL
Total Hepta-CBs	1.16E-06 ADL	1.62E-10 ADL	4.93E-10 ADL
Total Octa-CBs	3.72E-07 ADL	(2.41E-11) BDL	(7.80E-11) BDL
Total Nona-CBs	7.16E-08 ADL	(7.82E-11) BDL	(2.99E-10) BDL
PCB-209	7.20E-09 ADL	(3.34E-11) BDL	3.13E-10 ADL
Minimum Toxic Equivalent (TEQ)	6.02E-10	0.00E+00	3.99E-14
Maximum Toxic Equivalent (TEQ)	6.28E-10	0.00E+00	1.03E-11

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

*Denotes values computed using Split 10 injection; this applies to the runs, not the blanks.

Minimum TEQ is based on DL = zero; EMPC = zero. Maximum TEQ is based on DL = DL; EMPC = EMPC.

EMISSION RATE RESULTS
PCBs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-4,23-PCB			
Client:	Envirosure@Independent Metals	**Sample Volume:**	2.445	dscm
Location:	Seattle, Washington	**Airflow:**	13824	dscf/min
Sample Dates:	12/1/10			
Sample Times:	1046 - 1249			

	Hammermill Baghouse Exhaust		
	Sample Run 2	Method Blank	Field Blank
ANALYTE	lb/hr	lb/hr	lb/hr
PCBs			
PCB-77	9.38E-08 ADL	(3.58E-11) BDL	(1.30E-10) BDL
PCB-81	6.61E-09 ADL	(3.37E-11) BDL	(1.23E-10) BDL
PCB-105	2.02E-07 ADL	9.77E-11 ADL	4.05E-10 ADL
PCB-114	1.56E-08 ADL	(2.61E-11) BDL	(8.88E-11) BDL
PCB-118	4.87E-07 ADL	2.20E-10 ADL	9.77E-10 ADL
PCB-123	1.15E-08 ADL	(2.61E-11) BDL	(8.71E-11) BDL
PCB-126	(1.08E-09) BDL	(2.00E-11) BDL	(7.90E-11) BDL
PCB-156/157	2.94E-08 ADL	(3.14E-11) BDL	(1.17E-10) BDL
PCB-167	1.06E-08 ADL	(2.48E-11) BDL	(8.94E-11) BDL
PCB-169	(7.58E-10) BDL	(2.46E-11) BDL	(8.83E-11) BDL
PCB-189	1.03E-09 ADL	(2.31E-11) BDL	(6.14E-11) BDL
Total Mono-CBs	2.69E-05 ADL	2.52E-09 ADL	3.58E-09 ADL
*Total Di-CBs	2.25E-04 ADL	2.22E-08 ADL	2.97E-08 ADL
Total Tri-CBs	2.84E-04 ADL	1.42E-08 ADL	2.46E-08 ADL
Total Tetra-CBs	6.50E-05 ADL	4.89E-09 ADL	1.31E-08 ADL
Total Penta-CBs	7.29E-06 ADL	1.70E-09 ADL	6.52E-09 ADL
Total Hexa-CBs	1.50E-06 ADL	5.59E-10 ADL	2.05E-09 ADL
Total Hepta-CBs	4.26E-07 ADL	1.68E-10 ADL	5.11E-10 ADL
Total Octa-CBs	3.50E-07 ADL	(2.50E-11) BDL	(8.07E-11) BDL
Total Nona-CBs	2.27E-07 ADL	(8.09E-11) BDL	(3.09E-10) BDL
PCB-209	3.26E-08 ADL	(3.45E-11) BDL	3.24E-10 ADL
Minimum Toxic Equivalent (TEQ)	3.41E-11	0.00E+00	4.13E-14
Maximum Toxic Equivalent (TEQ)	1.65E-10	0.00E+00	1.07E-11

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

*Denotes values computed using Split 10 injection; this applies to the runs, not the blanks.

Minimum TEQ is based on DL = zero; EMPC = zero. Maximum TEQ is based on DL = DL; EMPC = EMPC.

EMISSION RATE RESULTS
PCBs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-4,23-PCB			
Client:	Envirosure@Independent Metals	**Sample Volume:**	2.317	dscm
Location:	Seattle, Washington	**Airflow:**	12925	dscf/min
Sample Dates:	12/1/10			
Sample Times:	1525 - 1607			

	Hammermill Baghouse Exhaust		
	Sample Run 3	Method Blank	Field Blank
ANALYTE	lb/hr	lb/hr	lb/hr
PCBs			
PCB-77	5.25E-07 ADL	(3.53E-11) BDL	(1.29E-10) BDL
PCB-81	3.43E-08 ADL	(3.32E-11) BDL	(1.21E-10) BDL
PCB-105	1.56E-06 ADL	9.63E-11 ADL	3.99E-10 ADL
PCB-114	1.22E-07 ADL	(2.57E-11) BDL	(8.76E-11) BDL
PCB-118	3.22E-06 ADL	2.17E-10 ADL	9.63E-10 ADL
PCB-123	8.07E-08 ADL	(2.57E-11) BDL	(8.59E-11) BDL
PCB-126	7.23E-09 ADL	(1.98E-11) BDL	(7.79E-11) BDL
PCB-156/157	2.80E-07 ADL	(3.09E-11) BDL	(1.15E-10) BDL
PCB-167	8.69E-08 ADL	(2.44E-11) BDL	(8.82E-11) BDL
PCB-169	(7.42E-10) BDL	(2.42E-11) BDL	(8.71E-11) BDL
PCB-189	7.25E-09 ADL	(2.28E-11) BDL	(6.06E-11) BDL
Total Mono-CBs	4.76E-05 ADL	2.49E-09 ADL	3.53E-09 ADL
*Total Di-CBs	2.31E-04 ADL	2.19E-08 ADL	2.93E-08 ADL
Total Tri-CBs	3.13E-04 ADL	1.40E-08 ADL	2.42E-08 ADL
Total Tetra-CBs	1.12E-04 ADL	4.83E-09 ADL	1.29E-08 ADL
Total Penta-CBs	2.74E-05 ADL	1.68E-09 ADL	6.44E-09 ADL
Total Hexa-CBs	8.51E-06 ADL	5.52E-10 ADL	2.02E-09 ADL
Total Hepta-CBs	1.73E-06 ADL	1.66E-10 ADL	5.04E-10 ADL
Total Octa-CBs	9.57E-07 ADL	(2.47E-11) BDL	(7.96E-11) BDL
Total Nona-CBs	5.06E-07 ADL	(7.98E-11) BDL	(3.05E-10) BDL
PCB-209	5.89E-08 ADL	(3.41E-11) BDL	3.20E-10 ADL
Minimum Toxic Equivalent (TEQ)	9.47E-10	0.00E+00	4.07E-14
Maximum Toxic Equivalent (TEQ)	9.68E-10	0.00E+00	1.05E-11

BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s).

ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

*Denotes values computed using Split 10 injection; this applies to the runs, not the blanks.

Minimum TEQ is based on DL = zero; EMPC = zero. Maximum TEQ is based on DL = DL; EMPC = EMPC.

PCB Concentration - Input

File Name:	4098AT\Envirosure - M1-4,23-PCB			
Client:	Envirosure@Independent Metals	Sample Volume:	2.389	dscm
Location:	Seattle, Washington	Airflow:	13046	dscf/min
Sample Dates:	12/1/10			
Sample Times:	0755 - 1016			

Hammermill Baghouse Exhaust

ANALYTE	Run 1 SAMPLE pg		METHOD BLANK (DL) pg		FIELD BLANK pg	
PCB-77	39100	ADL	(1.69)	BDL	(6.16)	BDL
PCB-81	2340	ADL	(1.59)	BDL	(5.79)	BDL
PCB-105	34100	ADL	4.61	ADL	19.1	ADL
PCB-114	2770	ADL	(1.23)	BDL	(4.19)	BDL
PCB-118	57600	ADL	10.4	ADL	46.1	ADL
PCB-123	1800	ADL	(1.23)	BDL	(4.11)	BDL
PCB-126	218	ADL	(0.946)	BDL	(3.7)	BDL
PCB-156/157	2590	ADL	(1.48)	BDL	(5.52)	BDL
PCB-167	859	ADL	(1.17)	BDL	(4.22)	BDL
PCB-169	(43.7)	BDL	(1.16)	BDL	(4.17)	BDL
PCB-189	123	ADL	(1.09)	BDL	(2.9)	BDL
Total Mono-CBs	2030000	ADL	119	ADL	169	ADL
*Total Di-CBs	9670190	ADL	1050	ADL	1400	ADL
Total Tri-CBs	14200000	ADL	669	ADL	1160	ADL
Total Tetra-CBs	5360000	ADL	231	ADL	618	ADL
Total Penta-CBs	709000	ADL	80.2	ADL	308	ADL
Total Hexa-CBs	133000	ADL	26.4	ADL	96.7	ADL
Total Hepta-CBs	56600	ADL	7.92	ADL	24.1	ADL
Total Octa-CBs	18200	ADL	(1.18)	BDL	(3.81)	BDL
Total Nona-CBs	3500	ADL	(3.82)	BDL	(14.6)	BDL
PCB-209	352	ADL	(1.63)	BDL	15.3	ADL
Minimum Toxic Equivalent	29.4				0.00195	
Maximum Toxic Equivalent	30.7				0.503	

PCB Concentration - Input

File Name:	4098AT\Envirosure - M1-4,23-PCB			
Client:	Envirosure@Independent Metals	Sample Volume:	2.445	dscm
Location:	Seattle, Washington	Airflow:	13824	dscf/min
Sample Dates:	12/1/10			
Sample Times:	1046 - 1249			

Hammermill Baghouse Exhaust

ANALYTE	Run 2 SAMPLE pg		METHOD BLANK (DL) pg		FIELD BLANK pg	
PCB-77	4430	ADL	(1.69)	BDL	(6.16)	BDL
PCB-81	312	ADL	(1.59)	BDL	(5.79)	BDL
PCB-105	9520	ADL	4.61	ADL	19.1	ADL
PCB-114	736	ADL	(1.23)	BDL	(4.19)	BDL
PCB-118	23000	ADL	10.4	ADL	46.1	ADL
PCB-123	545	ADL	(1.23)	BDL	(4.11)	BDL
PCB-126	(51)	BDL	(0.946)	BDL	(3.73)	BDL
PCB-156/157	1390	ADL	(1.48)	BDL	(5.52)	BDL
PCB-167	501	ADL	(1.17)	BDL	(4.22)	BDL
PCB-169	(35.8)	BDL	(1.16)	BDL	(4.17)	BDL
PCB-189	48.7	ADL	(1.09)	BDL	(2.9)	BDL
Total Mono-CBs	1270000	ADL	119	ADL	169	ADL
*Total Di-CBs	10636299	ADL	1050	ADL	1400	ADL
Total Tri-CBs	13400000	ADL	669	ADL	1160	ADL
Total Tetra-CBs	3070000	ADL	231	ADL	618	ADL
Total Penta-CBs	344000	ADL	80.2	ADL	308	ADL
Total Hexa-CBs	70900	ADL	26.4	ADL	96.7	ADL
Total Hepta-CBs	20100	ADL	7.92	ADL	24.1	ADL
Total Octa-CBs	16500	ADL	(1.18)	BDL	(3.81)	BDL
Total Nona-CBs	10700	ADL	(3.82)	BDL	(14.6)	BDL
PCB-209	1540	ADL	(1.63)	BDL	15.3	ADL
Minimum Toxic Equivalent	1.61				0.00195	
Maximum Toxic Equivalent	7.78				0.503	

PCB Concentration - Input

File Name:	4098AT\Envirosure - M1-4,23-PCB		
Client:	Envirosure@Independent Metals	Sample Volume:	2.317 dscm
Location:	Seattle, Washington	Airflow:	12925 dscf/min
Sample Dates:	12/1/10		
Sample Times:	1525 - 1607		

Hammermill Baghouse Exhaust

ANALYTE	Run 3 SAMPLE pg		METHOD BLANK (DL) pg		FIELD BLANK pg	
PCB-77	25100	ADL	(1.69)	BDL	(6.16)	BDL
PCB-81	1640	ADL	(1.59)	BDL	(5.79)	BDL
PCB-105	74700	ADL	4.61	ADL	19.1	ADL
PCB-114	5850	ADL	(1.23)	BDL	(4.19)	BDL
PCB-118	154000	ADL	10.4	ADL	46.1	ADL
PCB-123	3860	ADL	(1.23)	BDL	(4.11)	BDL
PCB-126	346	ADL	(0.946)	BDL	(3.7)	BDL
PCB-156/157	13400	ADL	(1.48)	BDL	(5.52)	BDL
PCB-167	4160	ADL	(1.17)	BDL	(4.22)	BDL
PCB-169	(35.5)	BDL	(1.16)	BDL	(4.17)	BDL
PCB-189	347	ADL	(1.09)	BDL	(2.9)	BDL
Total Mono-CBs	2280000	ADL	119	ADL	169	ADL
*Total Di-CBs	11065390	ADL	1050	ADL	1400	ADL
Total Tri-CBs	15000000	ADL	669	ADL	1160	ADL
Total Tetra-CBs	5340000	ADL	231	ADL	618	ADL
Total Penta-CBs	1310000	ADL	80.2	ADL	308	ADL
Total Hexa-CBs	407000	ADL	26.4	ADL	96.7	ADL
Total Hepta-CBs	83000	ADL	7.92	ADL	24.1	ADL
Total Octa-CBs	45800	ADL	(1.18)	BDL	(3.81)	BDL
Total Nona-CBs	24200	ADL	(3.82)	BDL	(14.6)	BDL
PCB-209	2820	ADL	(1.63)	BDL	15.3	ADL
Minimum Toxic Equivalent	45.3				0.00195	
Maximum Toxic Equivalent	46.3				0.503	

SUMMARY OF RESULTS - EPA METHODS 1, 2, 3, 4, AND 306A
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

Client: Envirosure@Independent Metals
Location: Seattle, Washington

	Hammermill Baghouse Exhaust			
	Run 1	Run 2	Run 3	Average
Date:	12/1/10	12/1/10	12/1/10	
Start Time:	0758	1046	1325	
Stop Time:	1000	1248	1606	
Sample Length (minutes):	120.1	120.1	119.6	
Volume Sampled (ft^3):	89.499	89.379	87.939	88.939
Volume Sampled (dscf):	90.239	88.209	86.833	88.427
Volume Sampled (dscm):	2.556	2.498	2.459	2.504
Stack Gas Moisture (%):	1.31	1.29	1.93	1.51
Barometric Pressure ("Hg):	30.0	30.0	30.0	30.0
Static Pressure ("H_2O):	-0.5	-0.5	-0.5	-0.5
Stack Pressure ("Hg):	29.96	29.96	29.96	29.96
Stack Temperature (°F):	57.7	62.0	62.9	60.9
Stack Temperature (°R):	517.7	522.0	522.9	520.9
Average Concentration O_2 (%):	20.95	20.95	20.95	20.95
Average Concentration CO_2 (%):	0.03	0.03	0.03	0.03
Molecular Weight (dry, g/g-mole):	28.84	28.84	28.84	28.84
Molecular Weight (wet, g/g-mole):	28.70	28.70	28.63	28.68
Average Velocity Head ("H_2O):	0.643	0.712	0.641	0.665
Pitot Tube C_p:	0.8218	0.8322	0.8218	
Stack Gas Velocity (ft/sec):	43.7	46.8	43.9	44.8
Stack Area (ft^2):	4.91	4.91	4.91	
Stack Gas Airflow (dscf/min):	12978	13768	12823	13189
Stack Gas Airflow (acf/min):	12874	13771	12931	13192

EPA METHODS 1, 2, 3, 4, AND 306A
HEXAVALENT CHROMIUM (Cr VI)
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-4,306A			
Client:	Envirosure@Independent Metals	**Start Time:**	0758	hours
Location:	Seattle, Washington	**Stop Time:**	1000	hours
Sample Site:	Hammermill Baghouse Exhaust	**Sample Length:**	120.1	minutes
Sample Date:	12/1/10			
Run #:	1 - Method 306A			
Operators:	MSC,PS			

Impinger Weights

Final grams	Initial grams	Net grams
349.7	88.8	260.9
0.0 (ml)	250.0 (ml)	-249.6 (g)
0.0	0.0	0.0
0.0	0.0	0.0
634.1	620.0	14.1
Total H_2O Gain:		25.4
Total Volume (scf):		1.20
Measured Moisture (%):		1.31
Measured Bws:		0.013
Psychrometric Moisture (%):		NA
Actual Moisture (%):		1.31
Actual Bws:		0.0131

Pitot Tube C_p:	0.8218	
Note: the Cp is from the corresponding M1-4, 23-PCB run.		
Stack Width:		inches
Stack Length:		inches
Stack Diameter:	30.0	inches
Stack Area:	4.91	ft^2
Meter Temperature:	52.0	°F
Barometric Pressure:	30.0	inches Hg
Static Pressure:	-0.5	inches H_2O
Stack Pressure:	29.96	inches Hg
Orifice Pressure:	1.750	inches H_2O
Meter Pressure:	30.13	inches Hg
Note: the meter temperature is from the corresponding M1-4, 23-PCB runs.		

Initial Meter Volume (ft^3):	540.402	Average Conc. O_2:	20.95	percent
Final Meter Volume (ft^3):	629.901	Average Conc. CO_2:	0.03	percent
Volume Sampled (ft^3):	89.499	Molecular Weight:	28.84	g/g-mole-dry
Standard Volume (dscf):	90.239	Molecular Weight:	28.70	g/g-mole-wet
Standard Volume (dscm):	2.556			
Y Factor:	0.97103	Y Factor Cal. Check:	0.985	
Delta H @:	1.76903	Percent Error:	1.5	%

Sample Point	Velocity (" of H_2O)	Temperature °F	Sample Point	Velocity (" of H_2O)	Temperature °F
1	0.80	54	1	0.45	53
2	0.82	56	2	0.46	55
3	0.71	56	3	0.46	57
4	0.66	58	4	0.47	55
5	0.64	58	5	0.48	58
6	0.60	58	6	0.51	57
7	0.55	59	7	0.71	60
8	0.61	60	8	0.81	59
9	0.65	60	9	0.86	59
10	0.67	60	10	0.92	61
11	0.59	55	11	0.80	60
12	0.60	55	12	0.78	61

Note: The velocity and stack temperature data is from the simultaneous M1-4, 23-PCB run 1.

Stack Gas Temperature:	57.7	°F	517.7	°R
Average Velocity Head:	0.643	" of H_2O		
Stack Gas Velocity:			43.7	ft/second
Stack Gas Airflow:	12874	acf/min	12978	dscf/min

EPA METHODS 1, 2, 3, 4, AND 306A
HEXAVALENT CHROMIUM (Cr VI)
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-4,306A			
Client:	Envirosure@Independent Metals	**Start Time:**	1046	hours
Location:	Seattle, Washington	**Stop Time:**	1248	hours
Sample Site:	Hammermill Baghouse Exhaust	**Sample Length:**	120.1	minutes
Sample Date:	12/1/10			
Run #:	2 - Method 306A			
Operators:	MSC,PS			

Impinger Weights

Final grams	Initial grams	Net grams
356.2	96.0	260.2
0.0 (ml)	250.0 (ml)	-249.6 (g)
0.0	0.0	0.0
0.0	0.0	0.0
634.1	620.2	13.9
Total H_2O Gain:		24.5

Total Volume (scf):	1.16
Measured Moisture (%):	1.29
Measured Bws:	0.013
Psychrometric Moisture (%):	NA
Actual Moisture (%):	1.29
Actual Bws:	0.0129

Pitot Tube C_p:	0.8322	
Note: the Cp is from the corresponding M1-4, 23-PCB run.		
Stack Width:		inches
Stack Length:		inches
Stack Diameter:	30.0	inches
Stack Area:	4.91	ft^2
Meter Temperature:	63.1	°F
Barometric Pressure:	30.0	inches Hg
Static Pressure:	-0.5	inches H_2O
Stack Pressure:	29.96	inches Hg
Orifice Pressure:	1.750	inches H_2O
Meter Pressure:	30.13	inches Hg
Note: the meter temperature is from the corresponding M1-4, 23-PCB runs.		

Initial Meter Volume (ft^3):	629.126	Average Conc. O_2:	20.95	percent
Final Meter Volume (ft^3):	718.505	Average Conc. CO_2:	0.03	percent
Volume Sampled (ft^3):	89.379	Molecular Weight:	28.84	g/g-mole-dry
Standard Volume (dscf):	88.209	Molecular Weight:	28.70	g/g-mole-wet
Standard Volume (dscm):	2.498			
Y Factor:	0.97103	Y Factor Cal. Check:	0.997	
Delta H @:	1.76903	Percent Error:	2.6	%

Sample Point	Velocity (" of H_2O)	Temperature °F	Sample Point	Velocity (" of H_2O)	Temperature °F
1	0.87	60	1	0.51	64
2	0.90	59	2	0.52	61
3	0.81	60	3	0.51	61
4	0.75	61	4	0.56	61
5	0.71	63	5	0.56	61
6	0.66	63	6	0.56	61
7	0.61	63	7	0.73	62
8	0.66	63	8	0.79	64
9	0.80	63	9	0.84	63
10	0.72	63	10	0.91	62
11	0.67	63	11	0.98	63
12	0.64	62	12	0.98	63

Note: Velocity and stack temperature data is from the simultaneous M1-4, 23-PCB run 2.

Stack Gas Temperature:	62.0	°F	522.0	°R
Average Velocity Head:	0.712	" of H_2O		
Stack Gas Velocity:			46.8	ft/second
Stack Gas Airflow:	13771	acf/min	13768	dscf/min

EPA METHODS 1, 2, 3, 4, AND 306A
HEXAVALENT CHROMIUM (Cr VI)
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-4,306A			
Client:	Envirosure@Independent Metals	**Start Time:**	1325	hours
Location:	Seattle, Washington	**Stop Time:**	1606	hours
Sample Site:	Hammermill Baghouse Exhaust	**Sample Length:**	119.6	minutes
Sample Date:	12/1/10			
Run #:	3 - Method 306A			
Operators:	MSC,PS			

Impinger Weights

Final grams	Initial grams	Net grams
359.6	91.4	268.2
0.0 (ml)	250.0 (ml)	-249.6 (g)
0.0	0.0	0.0
0.0	0.0	0.0
641.1	620.1	21.0
Total H_2O Gain:		39.6
Total Volume (scf):		1.87
Measured Moisture (%):		2.11
Measured Bws:		0.021
Psychrometric Moisture (%):		1.93
Actual Moisture (%):		1.93
Actual Bws:		0.0193

Pitot Tube C_p:	0.8218	
Note: the Cp is from the corresponding M1-4, 23-PCB run.		
Stack Width:		inches
Stack Length:		inches
Stack Diameter:	30.0	inches
Stack Area:	4.91	ft^2
Meter Temperature:	62.9	°F
Barometric Pressure:	30.00	inches Hg
Static Pressure:	-0.5	inches H_2O
Stack Pressure:	29.96	inches Hg
Orifice Pressure:	1.750	inches H_2O
Meter Pressure:	30.13	inches Hg
Note: the meter temperature is from the corresponding M1-4, 23-PCB runs.		

Initial Meter Volume (ft^3):	718.625	Average Conc. O_2:	20.95	percent
Final Meter Volume (ft^3):	806.564	Average Conc. CO_2:	0.03	percent
Volume Sampled (ft^3):	87.939	Molecular Weight:	28.84	g/g-mole-dry
Standard Volume (dscf):	86.833	Molecular Weight:	28.63	g/g-mole-wet
Standard Volume (dscm):	2.459			
Y Factor:	0.97103	Y Factor Cal. Check:	1.009	
Delta H @:	1.76903	Percent Error:	3.8	%

Sample Point	Velocity (" of H_2O)	Temperature °F	Sample Point	Velocity (" of H_2O)	Temperature °F
1	0.48	63	1	0.79	61
2	0.48	64	2	0.75	63
3	0.48	64	3	0.71	63
4	0.45	63	4	0.65	63
5	0.45	62	5	0.61	63
6	0.48	63	6	0.61	63
7	0.55	62	7	0.56	65
8	0.68	63	8	0.67	64
9	0.78	63	9	0.67	64
10	0.86	64	10	0.67	62
11	0.94	63	11	0.67	61
12	0.94	63	12	0.63	61

Note: Velocity and stack temperature data is from the simultaneous M1-4, 23-PCB runs.

Stack Gas Temperature:	62.9	°F	522.9	°R
Average Velocity Head:	0.641	" of H_2O		
Stack Gas Velocity:			43.9	ft/second
Stack Gas Airflow:	12931	acf/min	12823	dscf/min

EMISSION CONCENTRATION RESULTS
ORGANIC TAPs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure-TO15
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Sample Dates: 11/30/10
Sample Times: 1137 - 1237

Airflow: 12752 dscf/min
From Run 2 M1-5,29

ANALYTE	Hammermill Baghouse Exhaust Sample Run 1 µg/m^3		DL Run 1 µg/m^3
1,1-Dichloroethane	1.3	U	1.3
Benzene	4.6		1.3
Ethylbenzene	15		1.3

U = undetected at specified detection limit (DL).

EMISSION CONCENTRATION RESULTS
ORGANIC TAPs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure-TO15
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Sample Dates: 11/30/10
Sample Times: 1242 - 1358

Airflow: 12752 dscf/min
From Run 2 M1-5,29

ANALYTE	Hammermill Baghouse Exhaust Sample Run 2 µg/m^3		DL Run 2 µg/m^3
1,1-Dichloroethane	1.3	U	1.3
Benzene	11		1.3
Ethylbenzene	28		1.3

U = undetected at specified detection limit (DL).

EMISSION CONCENTRATION RESULTS
ORGANIC TAPs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure-TO15
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Sample Dates: 11/30/10
Sample Times: 1411 - 1511

Airflow: 13427 dscf/min
From Run 3 M1-5,29

ANALYTE	Hammermill Baghouse Exhaust Sample Run 3 µg/m^3		DL Run 3 µg/m^3
1,1-Dichloroethane	3.3	U	3.3
Benzene	29		3.3
Ethylbenzene	52		3.3

U = undetected at specified detection limit (DL).

EMISSION CONCENTRATION RESULTS
ORGANIC TAPs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure-TO15
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Sample Dates: 11/30/10
Sample Times: 1137 - 1237 **Airflow:** 12752 dscf/min

	Hammermill Baghouse Exhaust	
ANALYTE	Sample Run 1 mg/m^3	DL Run 1 mg/m^3
1,1-Dichloroethane	0.001 U	0.001
Benzene	0.005	0.001
Ethylbenzene	0.015	0.001

U = undetected at specified detection limit (DL).

EMISSION CONCENTRATION RESULTS
ORGANIC TAPs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure-TO15
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Sample Dates: 11/30/10
Sample Times: 1242 - 1358 **Airflow:** 12752 dscf/min

ANALYTE	Hammermill Baghouse Exhaust Sample Run 2 mg/m^3	Hammermill Baghouse Exhaust DL Run 2 mg/m^3
1,1-Dichloroethane	0.001 U	0.001
Benzene	0.011	0.001
Ethylbenzene	0.028	0.001

U = undetected at specified detection limit (DL).

EMISSION CONCENTRATION RESULTS
ORGANIC TAPs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure-TO15
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Sample Dates: 11/30/10
Sample Times: 1411 - 1511 **Airflow:** 13427 dscf/min

	Hammermill Baghouse Exhaust	
ANALYTE	Sample Run 3 mg/m^3	DL Run 3 mg/m^3
1,1-Dichloroethane	0.003 U	0.003
Benzene	0.029	0.003
Ethylbenzene	0.052	0.003

U = undetected at specified detection limit (DL).

EMISSION RATE RESULTS
ORGANIC TAPs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure-TO15			
Client:	Envirosure@Independent Metals			
Location:	Seattle, Washington			
Sample Dates:	11/30/10			
Sample Times:	1137 - 1237	**Airflow:**	12752	dscf/min

	Hammermill Baghouse Exhaust	
	Sample Run 1	DL Run 1
	lb/hr	lb/hr
ANALYTE		
1,1-Dichloroethane	6.21E-05 U	6.21E-05
Benzene	2.20E-04	6.21E-05
Ethylbenzene	7.17E-04	6.21E-05

U = undetected at specified detection limit (DL).

EMISSION RATE RESULTS
ORGANIC TAPs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure-TO15
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Sample Dates: 11/30/10
Sample Times: 1242 - 1358 **Airflow:** 12752 dscf/min

	Hammermill Baghouse Exhaust	
	Sample Run 2	DL Run 2
	lb/hr	lb/hr
ANALYTE		
1,1-Dichloroethane	6.21E-05 U	6.21E-05
Benzene	5.25E-04	6.21E-05
Ethylbenzene	1.34E-03	6.21E-05

U = undetected at specified detection limit (DL).

EMISSION RATE RESULTS
ORGANIC TAPs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure-TO15
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Sample Dates: 11/30/10
Sample Times: 1411 - 1511 **Airflow:** 13427 dscf/min

	Hammermill Baghouse Exhaust	
	Sample Run 3	DL Run 3
	lb/hr	lb/hr
ANALYTE		
1,1-Dichloroethane	1.66E-04 U	1.66E-04
Benzene	1.46E-03	1.66E-04
Ethylbenzene	2.62E-03	1.66E-04

U = undetected at specified detection limit (DL).

APPENDIX B

Process Data

HORIZON ENGINEERING LLC

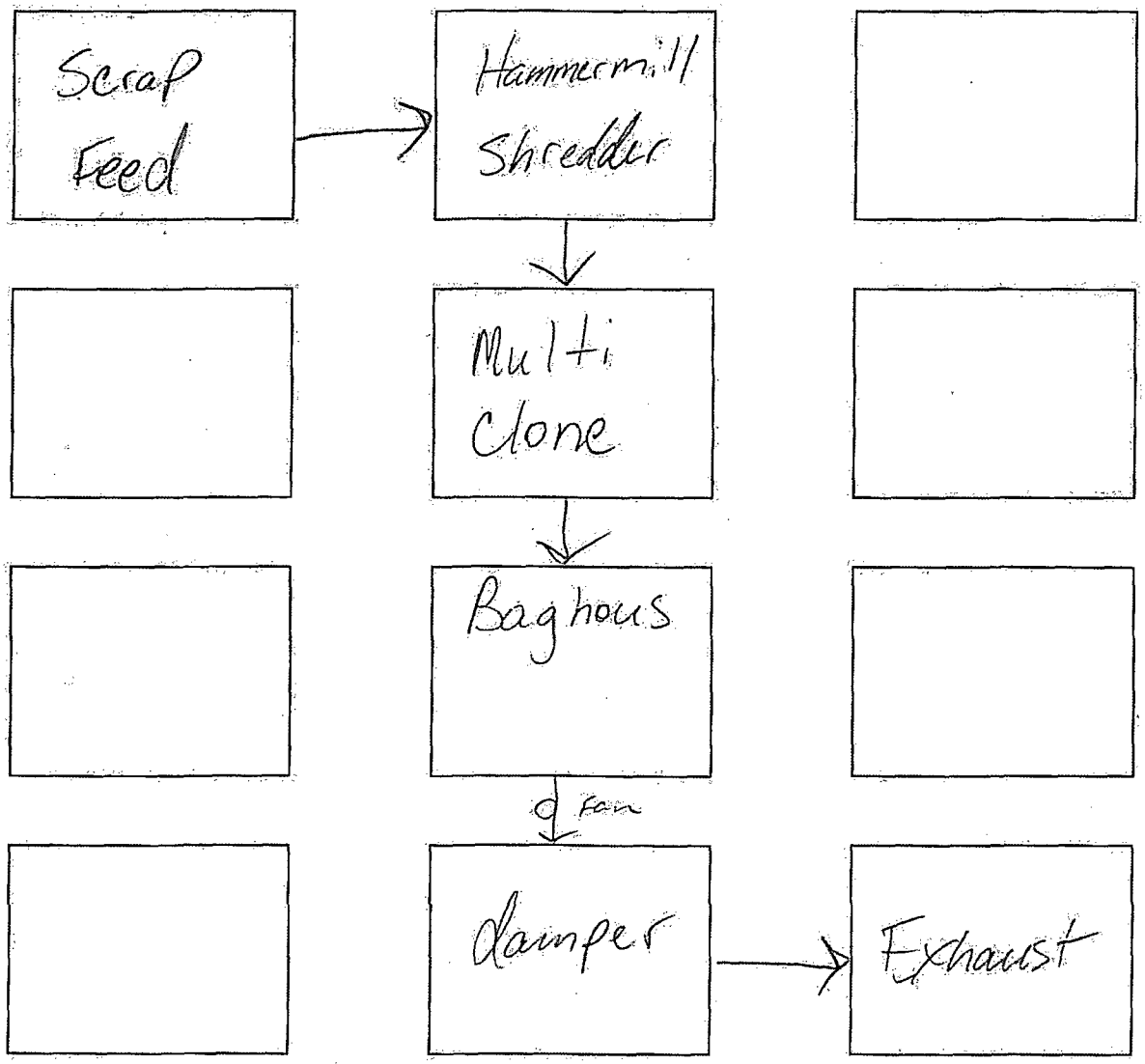
13585 NE Whitaker Way • Portland, OR 97230
Phone (503) 255-5050 • Fax (503) 255-0505
www.horizonengineering.com
info@horizonengineering.com

Process & Sampling Diagrams

Client: Independent Metals Source Name Hammer mill
Date 12/1/2010 Initials PS

Sketch and Label Process:

1. major equipment & process parts (including dampers, re-circulation paths & heat exchangers)
2. pollution control devices
3. exhaust



PRODUCTION DATA FOR INDEPENDENT METALS COMPANY

	Shredder Production Report	11/30/2010	12/1/2010	2-Day Average
1	Ferrous Metal Shred Product (Tons)	180	160	170
2	Non-Ferrous Shred Product "Zorba" (Tons)	8.5	6.8	7.7
3	Waste Produced (Tons)	28	22	25
4	Total Per Day (Tons)	216.5	188.8	202.7
5	Hours of Operation/Day	10	10	10
6	Production Rate Total In-Feed (Tons/Hour)	**21.65**	**18.88**	**20.3**

In-Feed Composition	11/30/2010	12/1/2010	2-Day Average
Car Bodies	40%	20%	30%
Sheet Metal	35%	65%	50%
White Goods (appliances)	25%	15%	20%
Total	**100%**	**100%**	**100%**

Shredder Operation Report

Safe Day? YES NO Safe Night? YES NO

Date: 11-30-10

OT	hrs.	Reason
Days	10	
Nights		

Start time 7:00 Am

End Time 5:30 PM

Zorba Boxes: 8

8.5 tons

Machine Issues

Date	Issue	Operator		
11-30	Pre-Start 7:00 Am - 7:12 am	Paul		

Special Projects

Start time	Stop time		Total Down	
7:00 Am	Move			
	Inspections Here Checking Air			
	Quality			

Materials Issues

Date	Issue	start		stop

	Maintenace Performed	Owner	Commit

Team Members

Name	Date		
Saul	11-30		
Hani			
Jorge			
Fahmed			
Chad			
Jordan			
Omar			

Can Bodies - 40%
Sheet metal - 35%
white Goods - 25%

Shred Produced 180 Tons 18 Tons Per Hr
waste Produced 28 Tons 2.8 Tons Per Hr

Shredder Operation Report

Safe Day? YES NO Safe Night? YES NO

Date: 12-1-10

OT	hrs.	Reason
Days	10	
Nights		

Start time 7:00 Am

End Time 5:30pm

Zorba Boxes: 7 6.8 tons

Machine Issues

Date	Issue	Operator		
12-1	Pre-Start at 7:00am - 7:15Am	Saul		
	No Time Down			

Special Projects

Start time	Stop time		Total Down	
12-1	None Had Inspectors Here Checking Mill Quality			

Materials Issues

Date	Issue	start		stop
12-1	None			

	Maintenace Performed	Owner	Commit

Team Members

Name	Date		
Saul	12-1		
Israel			
Jorge			
Chato			
Carlos			
Oman			
Hoban			

Can Bodies - 20%

Sheet metal - 65%

White goods - 15%

Shred. Produced - 160 Tons 16 Tons Per Hr

Waste Produced - 22 Tons 2.2 Tons Per Hr

Please provide the following on a per run basis for inclusion in the source test report:

Applicable Process/Operating Data Checklist

- Baghouse pressure drop
- Baghouse temperature
- Rate of scrap processed
- Composition of shredded materials
- All other normally recorded process information

Source: Hammermill – EPA 306A

Test Date:	Start Time	End Time
Run 1		
Run 2		
Run 3		

Source: Hammermill – EPA 5/29

Test Date:	Start Time	End Time
Run 1	0745	10:50
Run 2		
Run 3		

Baghouse $\Delta P = 0.5''$
Baghouse $\Delta P = 0.5''$

Source: Hammermill – EPA 23

Test Date:	Start Time	End Time
Run 1		
Run 2		
Run 3		

Source: Hammermill – EPA TO-15

Test Date:	Start Time	End Time
Run 1		
Run 2		
Run 3		

APPENDIX C

Laboratory Analysis Data

ANTECH
Analysis/Technology

Mr. David Bagwell
HORIZON ENGINEERING
13585 NE Whitaker
Portland OR 97230

December 15, 2010 Identification : Independent Metals (Horizon # 4098AT)
Job# 1033711-14 Received: 12/3/10
Method: EPA5/M29

Sample #	33711	33712	33713
Identification:	BHIn Run 1	BHIn Run 2	BHIn Run 3
Front Acetone:			
Volume (mls)	90	92	94
Residue (g)	0.0021	0.0011	0.0013
Filters:			
Number:	10-M29-39	10-M29-40	10-M29-38
Residue(g):	0.0020	0.0021	0.0019

Respectfully submitted:
ANTECH

Diana Tracy, president

501 N.E. THOMPSON MILL ROAD
CORBETT, OREGON 97019
503/695-2135
FAX: 503/695-2139
E-mail: antech@cascadeaccess.com

ANTECH
Analysis/Technology

Mr. David Bagwell
HORIZON ENGINEERING
13585 NE Whitaker
Portland OR 97230

December 15, 2010 Identification : Independent Metals (Horizon # 4098AT)
Job# 1033711-14 Received: 12/3/10
Method: EPA5/M29

Sample # 33714
Identification: Blanks

Acetone:
Volume (mls) 146
Residue (g) 0.0002

Filters:

Number:	10-M29-35	10-M29-36	10-M29-37
Residue(g):	0.0003	0.0004	0.0003

Respectfully submitted:
ANTECH
Diana Tracy, president

501 N.E. THOMPSON MILL ROAD
CORBETT, OREGON 97019
503/695-2135
FAX: 503/695-2139
E-mail: antech@cascadeaccess.com

m29

ANTECH
SAMPLE DATA: EPA RESIDUES

Analyst: [illegible] reviewer:
Job# 1033711-14 Identification: Independent Metals 4098AT

BLANKS:

ACETONE:			IMPINGER WATER:		DCM:	
Sample #	33714					
Sample ID	H Bl					
vol mark	None					
Date/time	12-6 10P					
Into dessicator						
Vol(mls)	146	date/time weighed		date/time weighed		date/time weighed
GWt1(g)	73.0239	12-7 8A				
GWt2(g)	73.0235	12-8 8A				
GWt3(g)						
GWt4(g)						
GWt5(g)						
GWt6(g)						
Average	73.0237					
Tare (g)	73.0235	12-6 10A				
Net (g)	0.0002					

FILTER:			FILTER:			
Sample #	33714					
Sample ID	H Bl					
Filter #	10-M29-35		10-M29-36		10-M29-37	
Date/time	12-3 10A					
Into dessicator						
Vol(mls)		date/time weighed		date/time weighed		date/time weighed
GWt1(g)	.3844	12-7 8A	.3784	12-7 8A	.3759	12-7 8A
GWt2(g)	.3844	12-8 8A	.3783	12-8 8A	.3763	12-8 8A
GWt3(g)						
GWt4(g)						
GWt5(g)						
GWt6(g)						
Average	.3844		.3784		.3761	
Tare (g)	.3841	10-20-10	.3780	10-20-10	.3758	10-20-10
Net (g)	0.0003		0.0004		0.0003	

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M29

faxed 12/8/10
9:30A

ANTECH
SAMPLE DATA: EPA RESIDUES
Analyst: reviewer:
Job# ID 33711-14 Identification: Independent Metals 4098AT

FRONT ACETONE:

Sample #	33711		33712		33713	
Sample ID	H R1		H R2		H R3	
vol mark	✓		✓		✓	
Date/time	12-6 10P		12-6 10P		12-6 10P	
Into dessicator						
Vol(mls)	90	date/time weighed	92	date/time weighed	94	date/time weighed
GWt1(g)	88.3495	12-7 8A	73.9519	12-7 8A	66.8738	12-7 8A
GWt2(g)	88.3499	12-8 8A	73.9520	12-8 8A	66.8737	12-8 8A
GWt3(g)						
GWt4(g)						
GWt5(g)						
GWt6(g)						
Average	88.3497		73.9520		66.8738	
Tare (g)	88.3476	12-6 10A	73.9509	12-6 10A	66.8725	12-6 10A
Net (g)	0.0021		0.0011		0.0013	

COPY

BACK ACETONE:

Sample #						
Sample ID						
vol mark						
Date/time						
Into dessicator						
Vol(mls)		date/time weighed		date/time weighed		date/time weighed
GWt1(g)						
GWt2(g)						
GWt3(g)						
GWt4(g)						
GWt5(g)						
GWt6(g)						
Average						
Tare (g)						
Net (g)						

M29

ANTECH
SAMPLE DATA: EPA RESIDUES (page 3)

FILTERS:

Sample #	33711		33712		33713	
Sample ID	H R1		H E2		H E3	
Filter #	10-M29-39		10-M29-40		10-M29-38	
Date/time In dessicator	12-3 10A		12-3 10A		12-3 10A	
GWt1(g)	.3844	Date/time 12-7 8A	.3768	Date/time 12-7 8A	.3763	Date/time 12-7 8A
GWt2(g)	.3845	12-8 8A	.3770	12-8 8A	.3764	12-8 8A
GWt3(g)						
GWt4(g)						
Average	.3845		.3769		.3765	
Tare (g)	.3825	10-20-10	.3748	10-20-10	.3746	10-20-10
Net (g)	0.0020		0.0021		0.0019	

FILTERS:

Sample #						
Sample ID						
Filter #						
Date/time In dessicator						
GWt1(g)		Date/time		Date/time		Date/time
GWt2(g)						
GWt3(g)						
GWt4(g)						
Average						
Tare (g)						
Net (g)						

QC DATA:

Date/time	12-6	12-7	12-8		
Balance calibrated (NTIS cert wts)	✓	✓	✓		
	✓	✓	✓		
Date/time	9A	8A	8A		
Temp/temp	68	70	68		
Relative humidity (%)	28	27	29		

COPY

M29

ANTECH
SAMPLE DATA: EPA RESIDUES
Analyst: [signature] reviewer:
Job# 10 33711-14 Identification: Independent Metals 4098AT

HOUSE BLANKS:

COPY

ACETONE:			IMPINGER WATER:		DCM:	
Sample #	337					
Sample ID	lab blank					
vol mark						
Date/time	12-6 10P					
Into dessicator						
Vol(mls)	(100)	date/time weighed		date/time weighed		date/time weighed
GWt1(g)	67.2082	12-7 8A				
GWt2(g)	67.2084	12-8 8A				
GWt3(g)						
GWt4(g)						
GWt5(g)						
GWt6(g)						
Average	67.2083					
Tare (g)	67.2082	12-6 10A				
Net (g)	0.0001					

FILTER:			FILTER:		EMPTY:	
Sample #					337	
Sample ID					lab blank	
Filter #						
Date/time					12-6 10P	
Into dessicator						
Vol(mls)		date/time weighed		date/time weighed	empty	date/time weighed
GWt1(g)					66.5718	12-7 8A
GWt2(g)					66.5720	12-8 8A
GWt3(g)						
GWt4(g)						
GWt5(g)						
GWt6(g)						
Average					66.5719	
Tare (g)					66.5721	12-6 10A
Net (g)					-0.0002	

ANALYTICAL BALANCE CALIBRATION FORM

Balance name _____ Number _____

Classification of standard weights _____

Date	0.500 g	1.0000 g	10.0000 g	50.0000 g	100.0000 g	Analyst
11-14-10	0.1000g	1.0001g			100.0000g	[illegible]
11-15-10	0.1000g	1.0001g			100.0000g	[illegible]
11-16-10	0.1000g	1.0001g			100.0000g	[illegible]
11-17-10	0.1000g	1.0000g			100.0000g	[illegible]
11-19-10	0.1000g	1.0001g			100.0000g	[illegible]
11-20-10	0.0999g	1.0001g			100.0001g	[illegible]
11-21-10	0.1000g	1.0000g			100.0000g	[illegible]
11-28-10	0.0999g	1.0001g			100.0001g	[illegible]
11-29-10	0.1000g	1.0000g			100.0000g	[illegible]
11-30-10	0.1000g	1.0000g			100.0001g	[illegible]
12-6-10	0.1000g	1.0000g			100.0001g	[illegible]
12-7-10	0.1000g	1.0001g			100.0001g	[illegible]
12-8-10	0.1000g	1.0000g			100.0000g	[illegible]

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Established 1974

QUALITY CONTROL SERVICES

LABORATORY EQUIPMENT • SALES • SERVICE • CALIBRATION • REPAIRS
2340 SE 11TH Ave. Portland, Oregon 97214 • Box 14831 Portland, Oregon 97293
(503) 236-2712 • FAX (503) 235-2535 • www.qc-services.com

ACCREDITED
Calibration Services
Certificate Number: 1550.01
Laboratory code: 115953

Antech Lab
501 N.E. Thompson Mill Rd.
Corbett, OR 97019

Report Number: ANTL015050574410031 9

COPY

A2LA ACCREDITED
CERTIFICATE OF CALIBRATION WITH DATA

INSTRUMENT INFORMATION

Item	Make	Model	Serial Number	Customer ID	Location
Balance	Sartorius	BP210S	50505744	N/A	Lab
Units	**Readability**	**SOP**	**Cal Date**	**Last Cal Date**	**Cal Due Date**
g	0.0001	QC012	3/19/10	4/3/09	3/2011

FUNCTIONAL CHECKS

ECCENTRICITY	LINEARITY	STANDARD DEVIATION	ENVIRONMENTAL CONDITIONS
Test Wt: 100 / Tol: 0.0003	Test Wt: 50x4 / Tol: 0.0002	Test Wt: 100 / Tol: 0.0001	☐ Good ☑ Fair ☐ Poor
As-Found: Pass: ☑ Fail: ☐	As-Found: Pass: ☑ Fail: ☐	1. 100.0000 5. 99.9999 9. 100.0000	Temperature: 21.3°C
As-Left: Pass: ☑ Fail: ☐	As-Left: Pass: ☑ Fail: ☐	2. 100.0001 6. 100.0000 10. 100.0001	
		3. 100.0000 7. 99.9999 Result	
		4. 99.9999 8. 99.9999 0.00007	

A2LA ACCREDITED SECTION OF REPORT

Standard	As-Found	As-Left	Expanded Uncertainty
200	199.9997	199.9997	0.00019
150	149.9999	149.9999	0.00019
100	100.0000	100.0000	0.00019
50	50.0000	50.0000	0.00019
20	20.0001	20.0001	0.00019
10	10.0000	10.0000	0.00019

CALIBRATION STANDARDS

Item	Make	Model	Serial Number	Cal Date	Cal Due Date	NIST ID
Weight Set	Rice Lake	20 kg to 1mg	2831W	9/30/09	9/2010	822/272027-5

Permanent Information Concerning this Equipment:
eep unit level for better linearity.

Comments/Info Concerning this Calibration:

eport prepared/reviewed by: _____ **Date:** 3/19/10 **Technician:** D. Thompson
Signature: _____

THIS CERTIFICATE SHALL NOT BE REPRODUCED WITHOUT THE APPROVAL OF QUALITY CONTROL SERVICES, INC.

uncertainty is calculated according to the ISO Guide to the Expression of Uncertainty in Measurement and includes the uncertainty of standards used combined with the served standard deviation and readability of the unit under test. The uncertainty is expanded with a k factor of 2 for an approximate 95% level of confidence. Instrument ted above were calibrated using standards traceable to the National Institute of Standards and Technology (NIST). Calibration data reflect results at the time and location o bration. *Calibration data should be reviewed to insure that the instrument is performing to its required accuracy.* Calibrations comply with ISO/IEC 17025 and SI/Z540-1-1994 quality standards.

1033711-14

Particulate Matter Chain of Custody

HORIZON ENGINEERING LLC
13585 NE Whitaker Way . Portland, OR 97230
Phone (503) 255-5050 . Fax (503) 255-0505
www.horizonengineering.com

Date Sent to Lab: 2010 12 02

Page: 1 of 1

Client: Independent Metals

Laboratory: Antech
501 N.E. Thompson Mill Road
Corbett, Oregon 97019

Horizon Job No. 4098AT

Antech Job No. _____

Field Personnel PS, MC

Office Personnel MH

Sample Type		Front Acetone Rinse	Back ____ Rinse	Impinger H2O	Filter - Front	Filter - Back		
* One Source Per Chain of Custody *								
Source: Hampton BH								
	Run 1	1			1			
	Run 2	1			1			
	Run 3	1			1			
	Run							
	Run							
	Run							
Blanks: Acetone		1			1			

Return Samples to Horizon ASAP for Further Analysis? X

RUSH X
Normal ____

Relinquished by: [signature] Date/Time 12/2/10 1150

Relinquished by: _____ Date/Time

Received by: _____ Date/Time

Received by: [signature] 1150 Date/Time 12/2

Air Pollution Emission Testing

Columbia Analytical Services™
1317 S. 13th Avenue, Kelso, WA 98626 360.577.7222 360.636.1068 (fax) www.caslab.com

January 4, 2011 Analytical Report for Service Request No: K1013649

Margery Heffernan
Horizon Engineering, LLC
13585 NE Whitaker Way
Portland, OR 97230

RE: Independent Metals/4098AT

Dear Margery:

Enclosed are the results of the samples submitted to our laboratory on December 09, 2010. For your reference, these analyses have been assigned our service request number K1013649.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3291. You may also contact me via Email at EWallace@caslab.com.

Respectfully submitted,

Columbia Analytical Services, Inc.

Ed Wallace

Ed Wallace
Project Chemist

EW/dlm

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

* The result is an outlier. See case narrative.

\# The control limit criteria is not applicable. See case narrative.

B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.

E The result is an estimate amount because the value exceeded the instrument calibration range.

J The result is an estimated value that was detected outside the quantitation range.

U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.1 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.

i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.

X See case narrative.

Q See case narrative. One or more quality control criteria was outside the limits.

Metals Data Qualifiers

\# The control limit criteria is not applicable. See case narrative.

J The result is an estimated value that was detected outside the quantitation range.

E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.

M The duplicate injection precision was not met.

N The Matrix Spike sample recovery is not within control limits. See case narrative.

S The reported value was determined by the Method of Standard Additions (MSA).

U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.1 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.

W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.

i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.

X See case narrative.

\+ The correlation coefficient for the MSA is less than 0.995.

Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

* The result is an outlier. See case narrative.

\# The control limit criteria is not applicable. See case narrative.

A A tentatively identified compound, a suspected aldol-condensation product.

B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.

C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.

D The reported result is from a dilution.

E The result is an estimate amount because the value exceeded the instrument calibration range.

J The result is an estimated value that was detected outside the quantitation range.

N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.

P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.

U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.1 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.

i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.

X See case narrative.

Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.

L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.

H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.

O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.

Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.

Z The chromatographic fingerprint does not resemble a petroleum product.

Columbia Analytical Services, Inc.
Kelso, WA
State Certifications, Accreditations, and Licenses

Program	Number
Alaska DEC UST	UST-040
Arizona DHS	AZ0339
Arkansas - DEQ	88-0637
California DHS	2286
Florida DOH	E87412
Hawaii DOH	-
Idaho DHW	-
Indiana DOH	C-WA-01
Louisiana DEQ	3016
Louisiana DHH	LA050010
Maine DHS	WA0035
Michigan DEQ	9949
Minnesota DOH	053-999-368
Montana DPHHS	CERT0047
Nevada DEP	WA35
New Jersey DEP	WA005
New Mexico ED	-
North Carolina DWQ	605
Oklahoma DEQ	9801
Oregon - DHS	WA200001
South Carolina DHEC	61002
Washington DOE	C1203
Wisconsin DNR	998386840
Wyoming (EPA Region 8)	-

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Horizon Engineering, LLC	**Service Request No.:**	K1013649
Project:	Independent Metals	**Date Received:**	12/9/10
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Laboratory Control Sample (LCS).

Sample Receipt

Twenty-eight water samples were received for analysis at Columbia Analytical Services on 12/9/10. Except for minor labeling difficulties recorded on the Cooler Receipt Form, the samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored at room temperature upon receipt at the laboratory.

Total Metals

Matrix Spike Recovery Exceptions:
The control criteria for matrix spike recovery of Selenium for sample Back Half Run - 2 (Analytical Fraction 2A) were not applicable. The analyte concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

Approved by E Mw Date 1/4/10

Columbia Analytical Services™

CHAIN OF CUSTODY

SR#: K1013649

PAGE 1 OF 3 COC #

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

PROJECT NAME: Independent Metals
PROJECT NUMBER: 4098AT
PROJECT MANAGER: Preston Skaggs
COMPANY/ADDRESS: 13585 NE Whitaker Way
CITY/STATE/ZIP: Portland, OR 97230
E-MAIL ADDRESS:
PHONE #: 503-255-5050 FAX #: 503-255-0505
SAMPLER'S SIGNATURE: [signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625 ☐ 8270 ☐ 8270LL ☐	Volatile Organics 624 ☐ 8260 ☐ 8021 ☐ BTEX ☐	Hydrocarbons (*see below) Gas ☐ Diesel ☐ Oil ☐	☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM ☐ 1664 SGT ☐	PCB's Aroclors ☐ Congeners ☐	Pesticides/Herbicides 608 ☐ 8081A ☐ 8141A ☐ 8151A ☐	Chlorophenolics - 8151M Tri ☐ Tetra ☐ PCP ☐	PAHS 8310 ☐ SIM ☐	Metals, Total or Dissolved (See list below)	Cyanide ☐ Hex-Chrom ☐	pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle)	NH3-N, COD, Total-P, TKN, TOC, DOC (circle) NO2+NO3	TOX 9020 ☐ AOX 1650 ☐ 506 ☐					REMARKS
Cont. #3 R1	11/30			Aq HT	1										X										
R2	↓			↓	1										X										
R3	↓			↓	1										X										
Cont. #4 R1	↓			↓	1										X										
R2	↓			↓	1										X										
R3	↓			↓	1										X										
Cont. #5A R1	↓			↓	1										X										
R2	↓			↓	1										X										
R3	↓			↓	1										X										

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
X II. Report Dup., MS, MSD as required
___ III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
___ V. EDD

INVOICE INFORMATION

P.O. # 4098AT
Bill To: Emily Bagwell

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard (10-15 working days)
___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: Add Phosphorus (P)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date/Time: 12/9/10 11:30	Signature: [signature] Date/Time: 12 9 10 11:30	Signature: [signature] Date/Time: 12-9-10 12:45	Signature: [signature] Date/Time: 12-9-10 1:20
Printed Name: Margie Hoffeman Firm: Horizon	Printed Name: [signature] Firm: CAS	Printed Name: [signature] Firm: CAS	Printed Name: [signature] Firm: CAS

RCOC #1 07/08

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Columbia Analytical Services

CHAIN OF CUSTODY

SR#: 14013649

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PAGE 2 OF 3 COC #

PROJECT NAME: Independent Metals
PROJECT NUMBER: 4098 AT
PROJECT MANAGER: Preston Skaggs
COMPANY/ADDRESS: 13585 NE Whitaker Way
CITY/STATE/ZIP: Portland, OR 97230
E-MAIL ADDRESS:
PHONE #: 503-255-5050 FAX #: 503-255-0505
SAMPLER'S SIGNATURE:

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625 ☐ 8270 ☐ 8270LL ☐	Volatile Organics 624 ☐ 8260 ☐ 8021 ☐ BTEX ☐	Hydrocarbons (*see below) Gas ☐ Diesel ☐ Oil ☐	☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM ☐ 1664 SGT ☐	PCB's Aroclors ☐ Congeners ☐	Pesticides/Herbicides 608 ☐ 8081A ☐ 8141A ☐ 8151A ☐	Chlorophenolics - 8151M Tri ☐ Tetra ☐ PCP ☐	PAHS 8310 ☐ SIM ☐	Metals, Total or Dissolved (See list below)	Cyanide ☐ Hex-Chrom ☐	pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle)	NH3-N, COD, Total-P, TKN, TOC, DOC (circle) NO2+NO3	TOX 9020 ☐ AOX 1650 ☐ 506 ☐					REMARKS
Cont. #5B R1	11/30			Ag H+	1											X									
R2					1											X									
R3					1											X									
Cont. #5C R1					1											X									
R2					1											X									
R3					1											X									
Cont. #8A				Ag H+	1											X									
Cont. #8B				Ag	1											X									
Cont. #9				Ag H+	1											X									
Cont. #10				Ag H+	1											X									

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
X II. Report Dup., MS, MSD as required
___ III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
___ V. EDD

INVOICE INFORMATION
P.O. # 4098 AT
Bill To: Emily Bagwell

TURNAROUND REQUIREMENTS
___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard (10-15 working days)
___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: Add Phosphorus (P)

RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
Signature	Date/Time 12/9/10 11:30	Signature	Date/Time 12/9/10 11:30	Signature	Date/Time 12/9/10 12:45	Signature	Date/Time 12/9/10 1:20
Printed Name Marge Heffernan	Firm Horizon	Printed Name	Firm	Printed Name	Firm	Printed Name	Firm

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Columbia Analytical Services

CHAIN OF CUSTODY

SR#: K1013649

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PAGE 3 OF 3 COC #

PROJECT NAME: Independent Metals
PROJECT NUMBER: 4098 AT
PROJECT MANAGER: Preston Skaggs
COMPANY/ADDRESS: 13585 NE Whitaker Way
CITY/STATE/ZIP: Portland, OR 97230
E-MAIL ADDRESS:
PHONE #: 503-255-5050 FAX #: 503-255-0505
SAMPLER'S SIGNATURE:

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625 ☐ 8270 ☐ 8270LL ☐	Volatile Organics 624 ☐ 8260 ☐ 8021 ☐ BTEX ☐	Hydrocarbons (*see below) Gas ☐ Diesel ☐ Oil ☐	☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM ☐ 1664 SGT ☐	PCB's Aroclors ☐ Congeners ☐	Pesticides/Herbicides 608 ☐ 8081A ☐ 8141A ☐ 8151A ☐	Chlorophenolics - 8151M Tri ☐ Tetra ☐ PCP ☐	PAHS 8310 ☐ SIM ☐	Metals, Total or Dissolved (See list below)	Cyanide ☐ Hex-Chrom ☐	pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle)	NH3-N, COD, Total-P, TKN, TOC, DOC (circle) NO2+NO3	TOX 9020 ☐ AOX 1650 ☐ 506 ☐					REMARKS
Cont. #10	11/30			Ag++	1										X									
Cont. #1 R1	↓			Solid	1										X									Filters
R2				Solid	1										X									"
R3				Solid	1										X									"
Cont. #2 R1				residue	1										X									*
R2				"	1										X									*
R3				"	1										X									*
Cont. #12	↓			~~solid~~ "	1										X									Filters
Cont. #7	↓			solid	1										X									*

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
X II. Report Dup., MS, MSD as required
___ III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
___ V. EDD

INVOICE INFORMATION
P.O. # 4098AT
Bill To: Emily Bagwell

TURNAROUND REQUIREMENTS
___ 24 hr. ___ 48 hr.
___ 5 Day
✓ Standard (10-15 working days)
___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: Add Phosphorus (P)

* redissolve per section 8.3.2.

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date/Time: 12/9/10 11:30	Signature: [signature] Date/Time: 12-9-10 11:30	Signature: [signature] Date/Time: 12-9-10 12:45	Signature: [signature] Date/Time: 12-9-10 1:20
Printed Name: Margaret Herman Firm: Horizon	Printed Name: [signature] Firm: OAS	Printed Name: [signature] Firm: OAS	Printed Name: [signature] Firm: OAS

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BCOC #1 07/08

Columbia Analytical Services, Inc.
Cooler Receipt and Preservation Form

PC ED

Client / Project: Horizon Eng. Service Request K10 13649

Received: 12-9-10 Opened: 12-9-10 By: DW

1. Samples were received via? *Mail* *Fed-Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Cooler Temp °C	Temp Blank °C	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
7.1		293			

7. Packing material used. *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Sleeves* *Other* NO ICE
8. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
9. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
10. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
11. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
12. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
13. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
14. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
15. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC (second cont. #10 on COC)	Identified by:
Cont #11	Cont #10	

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: PC verified second Cont #10 on COC & held the cont #11

Page 1 *of* _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Horizon Engineering, LLC
Project: Independent Metals/4098AT
Sample Matrix: Misc.

Service Request: K1013649
Date Collected: 11/30/10
Date Received: 12/09/10
Date Extracted: 12/20,21/10
Date Analyzed: 12/21,23/10

Total Mercury
EPA Method 29/7470A
Units: Micrograms (µg)
(Field Blank Corrected)

Sample Name	Lab Code	MRL	MDL	Result
Front Half - Run 1 (Analytical Fraction 1B)	K1013649-001,-002,-003	0.05	0.005	0.248
Back Half - Run 1 (Analytical Fraction 2B)	K1013649-004	0.2	0.02	ND
Back Half - Run 1 (Analytical Fraction 3A)	K1013649-005	0.02	0.002	0.011J
Back Half - Run 1 (Analytical Fraction 3B)	K1013649-006	0.1	0.01	18.0
Back Half - Run 1 (Analytical Fraction 3C)	K1013649-007	0.1	0.01	850
Total Back Half - Run 1	-	0.42	0.042	868
Total Back Half + Front Half - Run 1	-	0.47	0.047	868

Analytical Report

Client: Horizon Engineering, LLC
Project: Independent Metals/4098AT
Sample Matrix: Misc.

Service Request: K1013649
Date Collected: 11/30/10
Date Received: 12/09/10
Date Extracted: 12/20,21/10
Date Analyzed: 12/21,23/10

Total Mercury
EPA Method 29/7470A
Units: Micrograms (µg)
(Field Blank Corrected)

Sample Name	Lab Code	MRL	MDL	Result
Front Half - Run 2 (Analytical Fraction 1B)	K1013649-008,-009,-010	0.05	0.005	0.025J
Back Half - Run 2 (Analytical Fraction 2B)	K1013649-011	0.2	0.02	0.05J
Back Half - Run 2 (Analytical Fraction 3A)	K1013649-012	0.02	0.002	ND
Back Half - Run 2 (Analytical Fraction 3B)	K1013649-013	0.1	0.01	0.41
Back Half - Run 2 (Analytical Fraction 3C)	K1013649-014	0.1	0.01	60.0
Total Back Half - Run 2	-	0.42	0.042	60.5
Total Back Half + Front Half - Run 2	-	0.47	0.047	60.5

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Horizon Engineering, LLC
Project: Independent Metals/4098AT
Sample Matrix: Misc.

Service Request: K1013649
Date Collected: 11/30/10
Date Received: 12/09/10
Date Extracted: 12/20,21/10
Date Analyzed: 12/21,23/10

Total Mercury
EPA Method 29/7470A
Units: Micrograms (µg)
(Field Blank Corrected)

Sample Name	Lab Code	MRL	MDL	Result
Front Half - Run 3 (Analytical Fraction 1B)	K1013649-0-015,-016,-017	0.05	0.005	0.028J
Back Half - Run 3 (Analytical Fraction 2B)	K1013649-018	0.2	0.02	ND
Back Half - Run 3 (Analytical Fraction 3A)	K1013649-019	0.02	0.002	ND
Back Half - Run 3 (Analytical Fraction 3B)	K1013649-020	0.1	0.01	20.3
Back Half - Run 3 (Analytical Fraction 3C)	K1013649-021	0.1	0.01	30.5
Total Back Half - Run 3	-	0.42	0.042	50.8
Total Back Half + Front Half - Run 3	-	0.47	0.047	50.8

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Horizon Engineering, LLC
Project: Independent Metals/4098AT
Sample Matrix: Misc.

Service Request: K1013649
Date Collected: 11/30/10
Date Received: 12/09/10
Date Extracted: 12/20,21/10
Date Analyzed: 12/21,23/10

Total Mercury
EPA Method 29/7470A
Units: Micrograms (µg)

Sample Name	Lab Code	MRL	MDL	Result
Front Half Blank (Analytical Fraction 1B)	K1013649-022,-027,-028	0.05	0.005	ND
Back Half Blank (Analytical Fraction 2B)	K1013649-022,-024	0.2	0.02	ND
Back Half Blank (Analytical Fraction 3A)	K1013649-022	0.02	0.002	ND
Back Half Blank (Analytical Fraction 3B)	K1013649-023,-025	0.1	0.01	ND
Back Half Blank (Analytical Fraction 3C)	K1013649-026	0.1	0.01	0.02J

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Horizon Engineering, LLC
Project: Independent Metals/4098AT
Sample Matrix: Misc.

Service Request: K1013649
Date Collected: NA
Date Received: NA
Date Extracted: 12/20,21/10
Date Analyzed: 12/21,23/10

Total Mercury
EPA Method 29/7470A
Units: Micrograms (µg)

Sample Name	Lab Code	MRL	MDL	Result
Front Half - Method Blank (Analytical Fraction 1B)	K1013649-MBF	0.05	0.005	ND
Back Half - Method Blank (Analytical Fraction 2B)	K1013649-MBB1	0.2	0.02	ND
Back Half - Method Blank (Analytical Fraction 3A)	K1013649-MBB2	0.02	0.002	ND
Back Half - Method Blank (Analytical Fraction 3B)	K1013649-MBB3	0.1	0.01	ND
Back Half - Method Blank (Analytical Fraction 3C)	K1013649-MBB4	0.1	0.01	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Horizon Engineering, LLC
Project: Independent Metals/4098AT
Sample Matrix: Misc.

Service Request: K1013649
Date Collected: 11/30/10
Date Received: 12/09/10
Date Extracted: 12/20,21/10

Total Metals
Units: Micrograms (µg)
(Field Blank Corrected)

		Front Half Run - 1			Back Half Run - 1			Total Front Half + Back Half		
Sample Name:		(Analytical Fraction 1A)			(Analytical Fraction 2A)					
Lab Code:		K1013649-001,-002,-003			K1013649-004			-		
Date Analyzed:		12/28,29/10			12/28,29/10			-		
Analyte	**EPA Method**	**Front Half MRL**	**Front Half MDL**		**Back Half MRL**	**Back Half MDL**		**Total MRL**	**Total MDL**	
Antimony	29/200.8	0.2	0.1	0.6	0.02	0.01	0.04	0.22	0.11	0.64
Arsenic	29/200.8	2.0	0.4	1.5J	0.2	0.04	ND	2.2	0.44	1.5J
Barium	29/200.8	0.2	0.1	5.6	0.02	0.01	0.39	0.22	0.11	5.99
Beryllium	29/200.8	0.1	0.02	ND	0.01	0.002	ND	0.11	0.022	ND
Cadmium	29/200.8	0.2	0.02	1.17	0.02	0.002	0.074	0.22	0.022	1.24
Chromium	29/200.8	1.0	0.2	3.0	0.1	0.02	0.70	1.1	0.22	3.70
Cobalt	29/200.8	0.1	0.02	0.23	0.01	0.002	0.048	0.11	0.022	0.278
Copper	29/200.8	0.5	0.1	2.8	0.05	0.01	3.83	0.55	0.11	6.63
Lead	29/200.8	0.1	0.03	6.42	0.01	0.003	0.377	0.11	0.033	6.80
Manganese	29/200.8	0.2	0.03	4.74	0.02	0.003	1.05	0.22	0.033	5.79
Nickel	29/200.8	1.0	0.2	7.3	0.1	0.02	1.14	1.1	0.22	8.44
Phosphorus	29/6010B	50	5	13J	100	10	ND	150	15	ND
Selenium	29/200.8	5.0	1.5	ND	0.5	0.2	0.5J	5.5	1.7	ND
Silver	29/200.8	0.1	0.02	0.56	0.01	0.002	0.046	0.11	0.022	0.606
Thallium	29/200.8	0.1	0.03	ND	0.01	0.003	ND	0.11	0.033	ND
Zinc	29/200.8	2.0	1.0	164	0.2	0.1	20.4	2.2	1.1	184

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Horizon Engineering, LLC
Project: Independent Metals/4098AT
Sample Matrix: Misc.

Service Request: K1013649
Date Collected: 11/30/10
Date Received: 12/09/10
Date Extracted: 12/20,21/10

Total Metals
Units: Micrograms (µg)
(Field Blank Corrected)

		Front Half Run - 2			Back Half Run - 2			Total Front Half + Back Half		
Sample Name:		(Analytical Fraction 1A)			(Analytical Fraction 2A)					
Lab Code:		K1013649-008,-009,-010			K1013649-011			-		
Date Analyzed:		12/28,29/10			12/28,29/10			-		
Analyte	**EPA Method**	**Front Half MRL**	**Front Half MDL**		**Back Half MRL**	**Back Half MDL**		**Total MRL**	**Total MDL**	
Antimony	29/200.8	0.2	0.1	0.4	0.02	0.01	0.02	0.22	0.11	0.42
Arsenic	29/200.8	2.0	0.4	0.9J	0.2	0.04	0.81	2.2	0.44	1.71J
Barium	29/200.8	0.2	0.1	3.1	0.02	0.01	0.27	0.22	0.11	3.37
Beryllium	29/200.8	0.1	0.02	ND	0.01	0.002	ND	0.11	0.022	ND
Cadmium	29/200.8	0.2	0.02	0.72	0.02	0.002	0.179	0.22	0.022	0.899
Chromium	29/200.8	1.0	0.2	2.5	0.1	0.02	1.17	1.1	0.22	3.67
Cobalt	29/200.8	0.1	0.02	0.13	0.01	0.002	0.119	0.11	0.022	0.249
Copper	29/200.8	0.5	0.1	2.6	0.05	0.01	3.62	0.55	0.11	6.22
Lead	29/200.8	0.1	0.03	4.70	0.01	0.003	1.93	0.11	0.03	6.63
Manganese	29/200.8	0.2	0.03	3.33	0.02	0.003	1.22	0.22	0.033	4.55
Nickel	29/200.8	1.0	0.2	0.5J	0.1	0.02	1.70	1.1	0.22	2.20
Phosphorus	29/6010B	50	5	ND	100	10	ND	150	15	ND
Selenium	29/200.8	5.0	1.5	ND	0.5	0.2	48.1	5.5	1.7	48.1
Silver	29/200.8	0.1	0.02	0.79	0.01	0.002	0.075	0.11	0.022	0.865
Thallium	29/200.8	0.1	0.03	ND	0.01	0.003	0.003J	0.11	0.033	ND
Zinc	29/200.8	2.0	1.0	173	0.2	0.1	14.4	2.2	1.1	187

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Horizon Engineering, LLC
Project: Independent Metals/4098AT
Sample Matrix: Misc.

Service Request: K1013649
Date Collected: 11/30/10
Date Received: 12/09/10
Date Extracted: 12/20,21/10

Total Metals
Units: Micrograms (µg)
(Field Blank Corrected)

		Front Half Run - 3			Back Half Run - 3			Total Front Half + Back Half		
Sample Name:		(Analytical Fraction 1A)			(Analytical Fraction 2A)					
Lab Code:		K1013649-015,-016,-017			K1013649-018			-		
Date Analyzed:		12/28,29/10			12/28,29/10			-		
Analyte	**EPA Method**	**Front Half MRL**	**Front Half MDL**		**Back Half MRL**	**Back Half MDL**		**Total MRL**	**Total MDL**	
Antimony	29/200.8	0.2	0.1	0.4	0.02	0.01	0.02J	0.22	0.11	0.42
Arsenic	29/200.8	2.0	0.4	0.6J	0.2	0.04	0.10J	2.2	0.44	0.70J
Barium	29/200.8	0.2	0.1	2.9	0.02	0.01	2.16	0.22	0.11	5.06
Beryllium	29/200.8	0.1	0.02	ND	0.01	0.002	ND	0.11	0.022	ND
Cadmium	29/200.8	0.2	0.02	0.94	0.02	0.002	0.028	0.22	0.022	0.968
Chromium	29/200.8	1.0	0.2	2.8	0.1	0.02	0.52	1.1	0.22	3.32
Cobalt	29/200.8	0.1	0.02	0.18	0.01	0.002	0.034	0.11	0.022	0.214
Copper	29/200.8	0.5	0.1	2.6	0.05	0.01	2.81	0.55	0.11	5.41
Lead	29/200.8	0.1	0.03	8.61	0.01	0.003	0.281	0.11	0.03	8.89
Manganese	29/200.8	0.2	0.03	3.19	0.02	0.003	0.506	0.22	0.033	3.70
Nickel	29/200.8	1.0	0.2	1.9	0.1	0.02	3.85	1.1	0.22	5.75
Phosphorus	29/6010B	50	5	6J	100	10	ND	150	15	ND
Selenium	29/200.8	5.0	1.5	ND	0.5	0.2	3.0	5.5	1.7	3.0J
Silver	29/200.8	0.1	0.02	0.62	0.01	0.002	0.022	0.11	0.022	0.642
Thallium	29/200.8	0.1	0.03	ND	0.01	0.003	ND	0.11	0.033	ND
Zinc	29/200.8	2.0	1.0	149	0.2	0.1	9.6	2.2	1.1	159

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Horizon Engineering, LLC
Project: Independent Metals/4098AT
Sample Matrix: Misc.

Service Request: K1013649
Date Collected: 11/30/10
Date Received: 12/09/10
Date Extracted: 12/20,21/10

Total Metals
Units: Micrograms (µg)

		Front Half Blank			**Back Half Blank**		
Sample Name:		(Analytical Fraction 1A)			(Analytical Fraction 2A)		
Lab Code:		K1013649-022,-027,-028			K1013649-022,-024		
Date Analyzed:		12/28,29/10			12/28,29/10		
Analyte	**EPA Method**	**Front Half MRL**	**Front Half MDL**		**Back Half MRL**	**Back Half MDL**	
Antimony	29/200.8	0.2	0.1	ND	0.02	0.01	ND
Arsenic	29/200.8	2.0	0.4	ND	0.2	0.04	ND
Barium	29/200.8	0.2	0.1	2.2	0.02	0.01	0.07
Beryllium	29/200.8	0.1	0.02	ND	0.01	0.002	ND
Cadmium	29/200.8	0.2	0.02	ND	0.02	0.002	0.003J
Chromium	29/200.8	1.0	0.2	1.2	0.1	0.02	0.54
Cobalt	29/200.8	0.1	0.02	0.03J	0.01	0.002	0.006J
Copper	29/200.8	0.5	0.1	0.8	0.05	0.01	0.10
Lead	29/200.8	0.1	0.03	0.26	0.01	0.003	0.007J
Manganese	29/200.8	0.2	0.03	0.53	0.02	0.003	0.068
Nickel	29/200.8	1.0	0.2	1.5	0.1	0.02	0.32
Phosphorus	29/6010B	50	5	13J	100	10	32J
Selenium	29/200.8	5.0	1.5	ND	0.5	0.2	ND
Silver	29/200.8	0.1	0.02	ND	0.01	0.002	ND
Thallium	29/200.8	0.1	0.03	ND	0.01	0.003	ND
Zinc	29/200.8	2.0	1.0	2.7	0.2	0.1	0.7

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Horizon Engineering, LLC
Project: Independent Metals/4098AT
Sample Matrix: Misc.

Service Request: K1013649
Date Collected: NA
Date Received: NA
Date Extracted: 12/20,21/10

Total Metals
Units: Micrograms (µg)

Sample Name:				**Method Blank - Front Half**			**Method Blank - Back Half**
Lab Code:				K1013649-MBF			K1013649-MBB
Date Analyzed:				12/28,29/10			12/28,29/10
Analyte	**EPA Method**	**Front Half MRL**	**Front Half MDL**		**Back Half MRL**	**Back Half MDL**	
Antimony	29/200.8	0.2	0.1	ND	0.02	0.01	ND
Arsenic	29/200.8	2.0	0.4	ND	0.2	0.04	ND
Barium	29/200.8	0.2	0.1	ND	0.02	0.01	ND
Beryllium	29/200.8	0.1	0.02	ND	0.01	0.002	ND
Cadmium	29/200.8	0.2	0.02	ND	0.02	0.002	ND
Chromium	29/200.8	1.0	0.2	0.8J	0.1	0.02	0.05J
Cobalt	29/200.8	0.1	0.02	ND	0.01	0.002	ND
Copper	29/200.8	0.5	0.1	ND	0.05	0.01	0.01J
Lead	29/200.8	0.1	0.03	ND	0.01	0.003	ND
Manganese	29/200.8	0.2	0.03	ND	0.02	0.003	ND
Nickel	29/200.8	1.0	0.2	ND	0.1	0.02	ND
Phosphorus	29/6010B	50	5	ND	100	10	53J
Selenium	29/200.8	5.0	1.5	ND	0.5	0.2	ND
Silver	29/200.8	0.1	0.02	ND	0.01	0.002	ND
Thallium	29/200.8	0.1	0.03	ND	0.01	0.003	ND
Zinc	29/200.8	2.0	1.0	ND	0.2	0.1	ND

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Horizon Engineering, LLC
Project: Independent Metals/4098AT
Sample Matrix: Misc.

Service Request: K1013649
Date Collected: 11/30/10
Date Received: 12/09/10
Date Extracted: 12/21/10
Date Analyzed: 12/23-29/10

Duplicate Summary
Total Metals
Units: Micrograms (µg)
(Field Blank Corrected)

Sample Name: Back Half Run - 1 (Analytical Fraction 2A/2B)
Lab Code: K1013649-004D

Analyte	EPA Method	MRL	MDL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference
Antimony	29/200.8	0.02	0.01	0.04	0.02	0.03	33
Arsenic	29/200.8	0.2	0.04	ND	0.05J	NC	NC
Barium	29/200.8	0.02	0.01	0.39	0.40	0.40	3
Beryllium	29/200.8	0.01	0.002	ND	ND	ND	-
Cadmium	29/200.8	0.02	0.002	0.074	0.074	0.074	<1
Chromium	29/200.8	0.1	0.02	0.70	0.77	0.74	9
Cobalt	29/200.8	0.01	0.002	0.048	0.049	0.049	2
Copper	29/200.8	0.05	0.01	3.83	3.88	3.86	1
Lead	29/200.8	0.01	0.003	0.377	0.398	0.388	5
Manganese	29/200.8	0.02	0.003	1.05	1.09	1.07	4
Mercury	29/7470A	0.2	0.02	ND	0.02J	NC	NC
Nickel	29/200.8	0.1	0.02	1.14	1.29	1.22	12
Phosphorus	29/6010B	100	10	ND	ND	ND	-
Selenium	29/200.8	0.5	0.2	0.5J	0.6	0.6	17
Silver	29/200.8	0.01	0.0	0.046	0.044	0.045	4
Thallium	29/200.8	0.01	0.003	ND	ND	ND	-
Zinc	29/200.8	0.2	0.1	20.4	20.7	20.6	1

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Horizon Engineering, LLC
Project: Independent Metals/4098AT
Sample Matrix: Misc.

Service Request: K1013649
Date Collected: 11/30/10
Date Received: 12/09/10
Date Extracted: 12/21/10
Date Analyzed: 12/23/10

Matrix Spike Summary
Total Metals
Units: Micrograms (µg)
(Field Blank Corrected)

Sample Name: Back Half Run - 1 (Analytical Fraction 2B)
Lab Code: K1013649-004S

Analyte	MRL	MDL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Mercury	0.2	0.02	3.06	ND	3.12	102	70-130

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Horizon Engineering, LLC
Project: Independent Metals/4098AT
Sample Matrix: Misc.

Service Request: K1013649
Date Collected: 11/30/10
Date Received: 12/09/10
Date Extracted: 12/21/10
Date Analyzed: 12/28,29/10

Matrix Spike Summary
Total Metals
Units: Micrograms (µg)
(Field Blank Corrected)

Sample Name: Back Half Run - 2 (Analytical Fraction 2A)
Lab Code: K1013649-011S

Analyte	MRL	MDL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Antimony	0.02	0.01	6.24	0.02	5.97	95	70-130
Arsenic	0.2	0.04	6.24	0.81	6.57	92	70-130
Barium	0.02	0.01	6.24	0.27	7.00	108	70-130
Beryllium	0.01	0.002	6.24	ND	6.41	103	70-130
Cadmium	0.02	0.002	6.24	0.179	5.82	90	70-130
Chromium	0.1	0.02	6.24	1.17	7.61	103	70-130
Cobalt	0.01	0.002	6.24	0.119	6.65	105	70-130
Copper	0.05	0.01	6.24	3.62	10.5	110	70-130
Lead	0.01	0.003	6.24	1.93	8.34	103	70-130
Manganese	0.02	0.003	6.24	1.22	7.46	100	70-130
Nickel	0.1	0.02	6.24	1.70	8.27	105	70-130
Phosphorus	100	10	3120	ND	2840	91	70-130
Selenium	0.5	0.2	6.24	48.1	51.1	NA	70-130
Silver	0.01	0.002	6.24	0.075	6.39	101	70-130
Thallium	0.01	0.003	6.24	0.003J	6.47	104	70-130
Zinc	0.2	0.1	6.24	14.4	20.2	93	70-130

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Horizon Engineering, LLC	**Service Request:**	K1013649
Project:	Independent Metals/4098AT	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	12/21-29/10

Laboratory Control Sample Summary (Front Half)
Total Metals
Units: µg/L (ppb)

Source: CAS Spike Solution

Analyte	EPA Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Antimony	29/200.8	500	504	101	85-115
Arsenic	29/200.8	500	521	104	85-115
Barium	29/200.8	1000	1070	107	85-115
Beryllium	29/200.8	25	27.3	109	85-115
Cadmium	29/200.8	250	248	99	85-115
Chromium	29/200.8	100	103	103	85-115
Cobalt	29/200.8	250	254	102	85-115
Copper	29/200.8	125	131	105	85-115
Lead	29/200.8	500	497	99	85-115
Manganese	29/200.8	250	243	97	85-115
Mercury	29/7470A	10	11.0	110	83-117
Nickel	29/200.8	250	256	102	85-115
Phosphorus	29/6010B	1000	1110	111	85-115
Selenium	29/200.8	500	495	99	85-115
Silver	29/200.8	125	124	99	85-115
Thallium	29/200.8	500	497	99	85-115
Zinc	29/200.8	250	247	99	85-115

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Horizon Engineering, LLC
Project: Independent Metals/4098AT
LCS Matrix: Water

Service Request: K1013649
Date Collected: NA
Date Received: NA
Date Analyzed: 12/21-29/10

Laboratory Control Sample Summary (Back Half)
Total Metals
Units: µg/L (ppb)

Source: CAS Spike Solution

Analyte	EPA Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Antimony	29/200.8	20	21.0	105	85-115
Arsenic	29/200.8	20	21.6	108	85-115
Barium	29/200.8	20	21.4	107	85-115
Beryllium	29/200.8	20	21.9	110	85-115
Cadmium	29/200.8	20	20.5	103	85-115
Chromium	29/200.8	20	20.8	104	85-115
Cobalt	29/200.8	20	20.7	104	85-115
Copper	29/200.8	20	21.4	107	85-115
Lead	29/200.8	20	21.2	106	85-115
Manganese	29/200.8	20	19.9	100	85-115
Mercury	29/7470A	5.0	5.40	108	83-117
Nickel	29/200.8	20	21.2	106	85-115
Phosphorus	29/6010B	10000	9780	98	85-115
Selenium	29/200.8	20	21.0	105	85-115
Silver	29/200.8	20	20.4	102	85-115
Thallium	29/200.8	20	20.7	104	85-115
Zinc	29/200.8	20	21.0	105	85-115

ANALYTICAL PERSPECTIVES

12 January 2011

Marge Heffernan
Horizon Engineering
13585 NE Whitaker Way
Portland, OR 97230

Ph.: 503.255.5050
Email: mheffernan@horizonengineering.com

Subject: Certificate of Results

Dear Marge;

Attached to this narrative are the analytical results you requested on samples submitted for the determination of polychlorinated dibenzo-*p*-dioxins and dibenzofurans. The insert below summarizes the relevant information pertaining to your project. In particular, QC annotations bring to your attention specific analytical observations and assessments made during the sample handling and data interpretation phases. A brief description of the report's components is provided. Results reported relate only to the items tested.

Project Information Summary	When applicable, see QC Annotations for details
Client Project No.	Independent Metals
AP Project No.	**A2847**
Analytical Protocol	Method 23
No. Samples Submitted	4
No. Samples Analyzed	4
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
No. Outstanding Samples	0
Date Received	3-Dec-2010
Condition Received	good
Temperature upon Receipt (C)	2 (XAD/Filter); 20 (Solvents)
Extraction within Holding Time	yes
Analysis within Holding Time	yes
Data meet QA/QC Requirements	yes
Exceptions	see below
Analytical Difficulties	see below

2714 EXCHANGE DRIVE
WILMINGTON, NC 28405
PH.: 910-794-1613

ANALYTICAL PERSPECTIVES

QC Annotations:

1. Please see the attached appendices for a list of data qualifiers and lab identifiers that may be contained in the report.

2. Due to the saturation of PCB-8 during the first mass spectral injection and analysis, samples 001, 002, and 003, your samples labeled Run #1, Run #2, and Run #3, respectively, were re-injected. As a result of the saturation, calculated totals were obtained using the original PCB data for all congeners except PCB-8. Concentrations for PCB-8 were obtained from the re-injection (a Split 10). The use of the Split 10 data for calculations within the Sample Summary and the accompanying topsheets in denoted using red font.

Analytical Perspectives remains committed to serving you in the most effective manner. Should you have any questions or need additional information and technical support, please, do not hesitate to contact us. Thank you for choosing Analytical Perspectives as part of your analytical support team.

Sincerely,

Kimberly Mace, Ph.D.
Project Manager

2714 EXCHANGE DRIVE
WILMINGTON, NC 28405
PH.: 910-794-1613

ANALYTICAL PERSPECTIVES

APPENDIX A: DATA QUALIFIERS / DATA ATTRIBUTES	
*	The reported concentration exceeds the calibration range (upper point of the calibration curve).[1]
>	Indicates high recoveries. Shown with the numeric value at the top of the range.[1]
B	The analyte is found in the method blank, at a level that is <=10x the sample concentration.
C	Two or more congeners co-elute. In EDDs C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve).
EMPC	Represents an Estimated Maximum Possible Concentration. EMPC's arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), where there is a co-eluting interference, or where a single ion is utilized for quantitation due to PFK interference.
ETH	Indicates the presence of a diphenyl ether that appears to interfere with the quantitation of a furan. The reported concentration is the maximum.
H/h	If the standard recovery is below the method or SOP specified value "H" is assigned. If the obtained value is less than half the specified value "h" is assigned.[1]
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve).
ND	Indicates a non-detect.
NR	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
Ra	The new ratio – [Ra] -- for 2,3,7,8-TCDD following the $^{37}Cl_4$-2,3,7,8-TCDD correction is shown between squared brackets in the DL column.[1]
SI	Denotes "Single Ion Mode" and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.[1]
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.
X	Indicates results reported from reinjection, refractionation, or repeat analyses.
APPENDIX B: LAB ID IDENTIFIERS	
AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

[1]Denotes data qualifiers/attributes whose use will be phased out over time

2714 EXCHANGE DRIVE
WILMINGTON, NC 28405
PH.: 910-794-1613

Sample Summary

ANALYTICAL PERSPECTIVES

1668B

Analyte	0_8355_MB001	Run # 1	Run # 2	Run # 3	Blank
	Conc. pg	Conc. pg	Conc. pg	Conc. pg	Conc. pg
PCB-77	(1.69)	39100	4430	25100	(6.16)
PCB-81	(1.59)	2340	312	1640	(5.79)
PCB-105	4.61	34100	9520	74700	19.1
PCB-114	(1.23)	2770	736	5850	(4.19)
PCB-118	10.4	57600	23000	154000	46.1
PCB-123	(1.23)	1800	545	3860	(4.11)
PCB-126	(0.946)	218	(51)	346	(3.73)
PCB-156/157	(1.48)	2590	1390	13400	(5.52)
PCB-167	(1.17)	859	501	4160	(4.22)
PCB-169	(1.16)	(43.7)	(35.8)	(35.5)	(4.17)
PCB-189	(1.09)	123	[48.7]	347	(2.9)
Total Mono-CBs	119	2030000	1270000	2280000	169
Total Di-CBs	1050	*9670190	*10636299	*11065390	1400
Total Tri-CBs	669	14200000	13400000	15000000	1160
Total Tetra-CBs	231	5360000	3070000	5340000	618
Total Penta-CBs	80.2	709000	344000	1310000	308
Total Hexa-CBs	26.4	133000	70900	407000	96.7
Total Hepta-CBs	7.92	56600	20100	83000	24.1
Total Octa-CBs	(1.18)	18200	16500	45800	(3.81)
Total Nona-CBs	(3.82)	3500	10700	24200	(14.6)
PCB-209	(1.63)	352	1540	2820	15.3
TEQs (WHO 2005 M/H)					
ND = 0; EMPC = 0	0.000449	29.4	1.61	45.3	0.00195
ND = 0; EMPC = EMPC	0.000449	29.4	1.61	45.3	0.00195
ND = DL/2; EMPC = 0	0.0655	30	4.69	45.8	0.252
ND = DL/2; EMPC = EMPC	0.0655	30	4.7	45.8	0.252
ND = DL; EMPC = 0	0.131	30.7	7.78	46.3	0.503
ND = DL; EMPC = EMPC	0.131	30.7	7.78	46.3	0.503

*Denotes values computed using Split 10 injection.

Checkcode	649-495-JDG	979-398-QCJ	765-748-QQV	806-830-RLW	267-273-VRX
Lab ID	MB1_8355_PCB_SDS	A2847_8355_PCB_001	A2847_8355_PCB_002	A2847_8355_PCB_003	A2847_8355_PCB_004
Wt/Vol	1	1	1	1	1

() = DL
[] = EMPC

A2847
Project ID: Independent Metals

PCB Recoveries

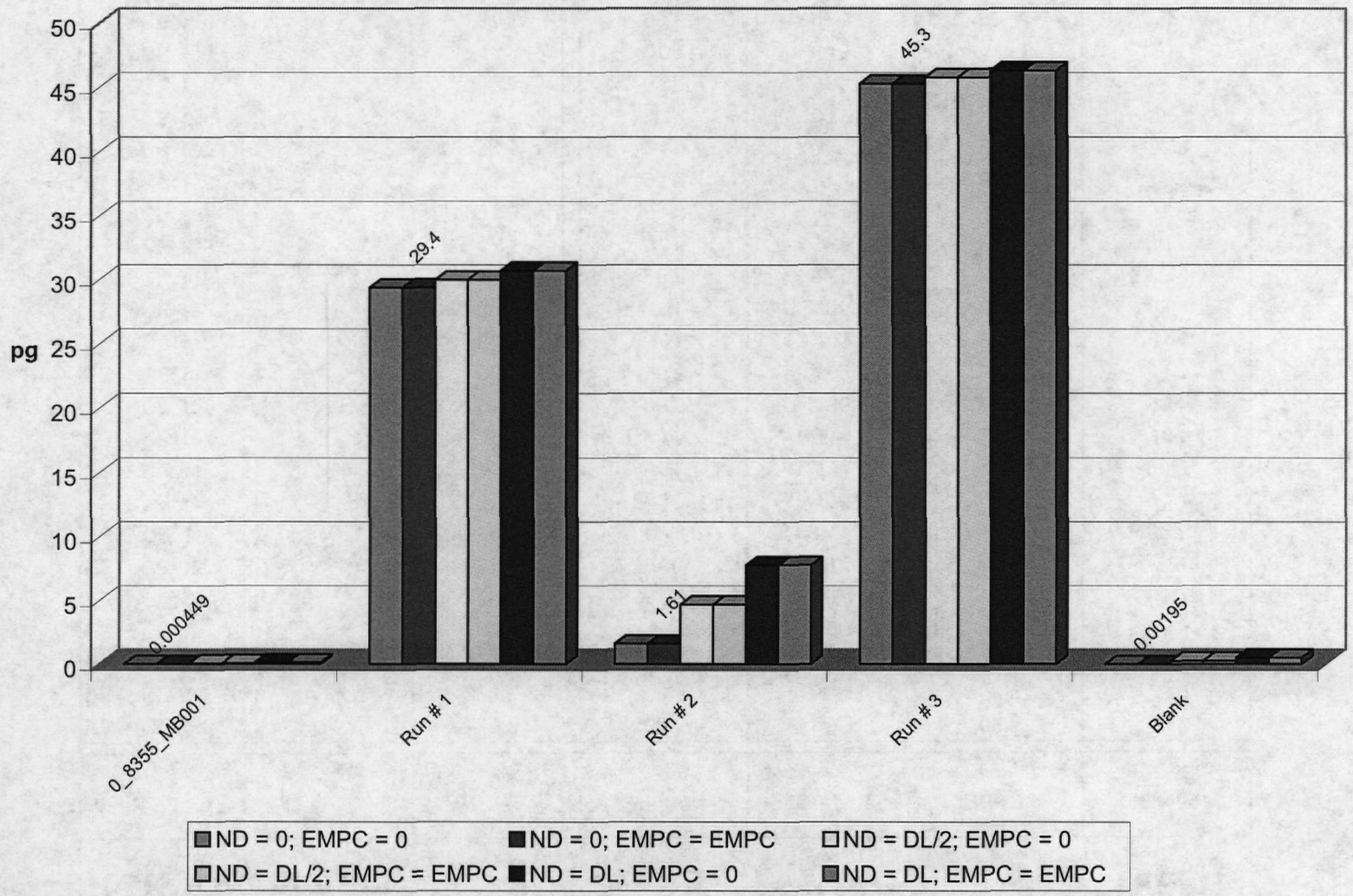
ANALYTICAL PERSPECTIVES

1668B

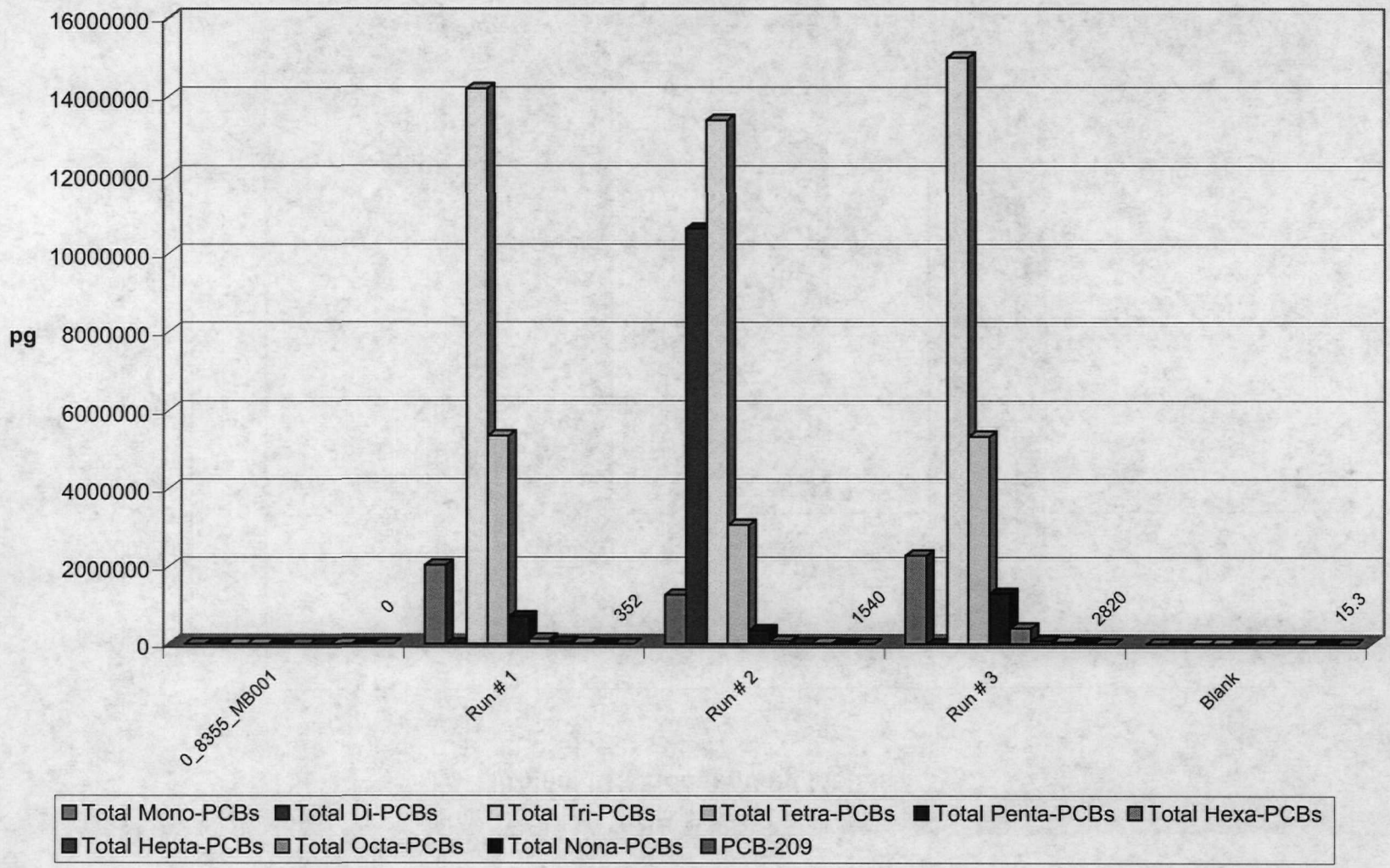
Standard	0_8355_MB001	Run # 1	Run # 2	Run # 3	Blank
ES PCB-1	59.3	68.4	56.3	56.5	68.7
ES PCB-3	70.6	73.5	65.4	58.8	76.9
ES PCB-4	71.7	78.2	74.4	17.5	83
ES PCB-15	92.1	109	106	102	95.3
ES PCB-19	78.1	87.8	85.4	82	86.7
ES PCB-37	99.1	109	99.1	103	96
ES PCB-54	90.7	82.7	74.6	68	92.8
ES PCB-77	91.5	112	106	110	91.4
ES PCB-81	91.7	111	104	105	90.7
ES PCB-104	99.6	93.5	90.4	82.1	107
ES PCB-105	91.2	96.5	106	99.2	91.1
ES PCB-114	85.9	96.8	102	95.4	88.1
ES PCB-118	87.4	101	103	99.9	93.4
ES PCB-123	90.9	101	106	101	93.3
ES PCB-126	89.9	90.5	95.2	104	90.9
ES PCB-153	87.1	97.5	92.8	94.2	90.6
ES PCB-155	91.8	94.2	81.4	89	95.6
ES PCB-156/157	73.3	94.7	91	88.3	77.3
ES PCB-167	72.5	94.3	91	95.4	77.8
ES PCB-169	73.7	90.7	80.9	86	80
ES PCB-170	101	107	108	100	98.5
ES PCB-180	101	109	116	111	105
ES PCB-188	87.2	99.6	86.7	89.4	92
ES PCB-189	98.5	108	107	101	99.5
ES PCB-202	81.7	95.8	92	85.8	85.1
ES PCB-205	96.4	101	97.6	94.8	99.2
ES PCB-206	96.2	101	95.5	96	98.4
ES PCB-208	98.7	106	112	99.2	99.9
ES PCB-209	99.6	104	94.6	94.5	102
Checkcode	649-495-JDG	979-398-QCJ	765-748-QQV	806-830-RLW	267-273-VRX

() = DL
[] = EMPC

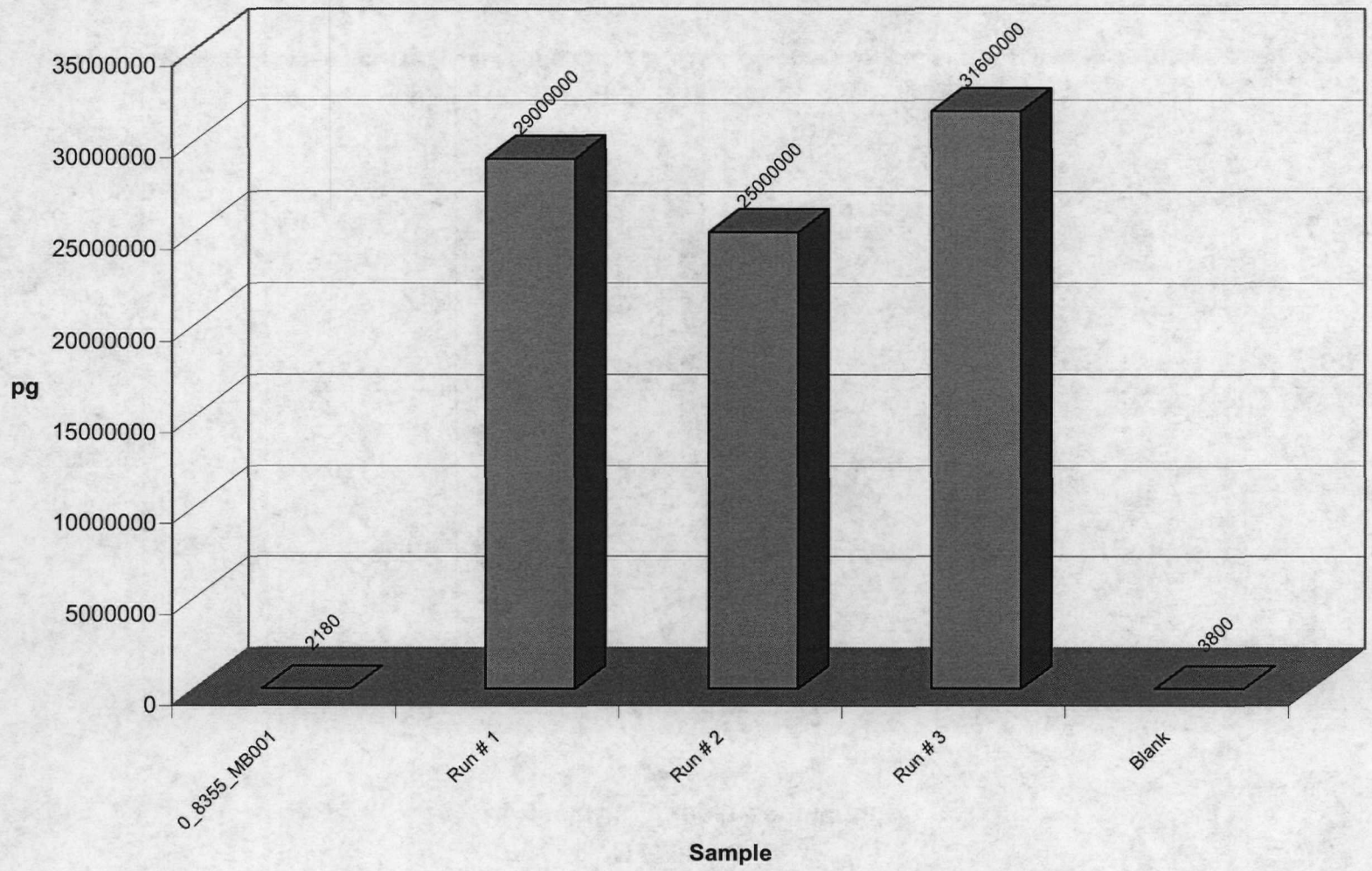
PCB TEQ
Project ID: Independent Metals
A2847

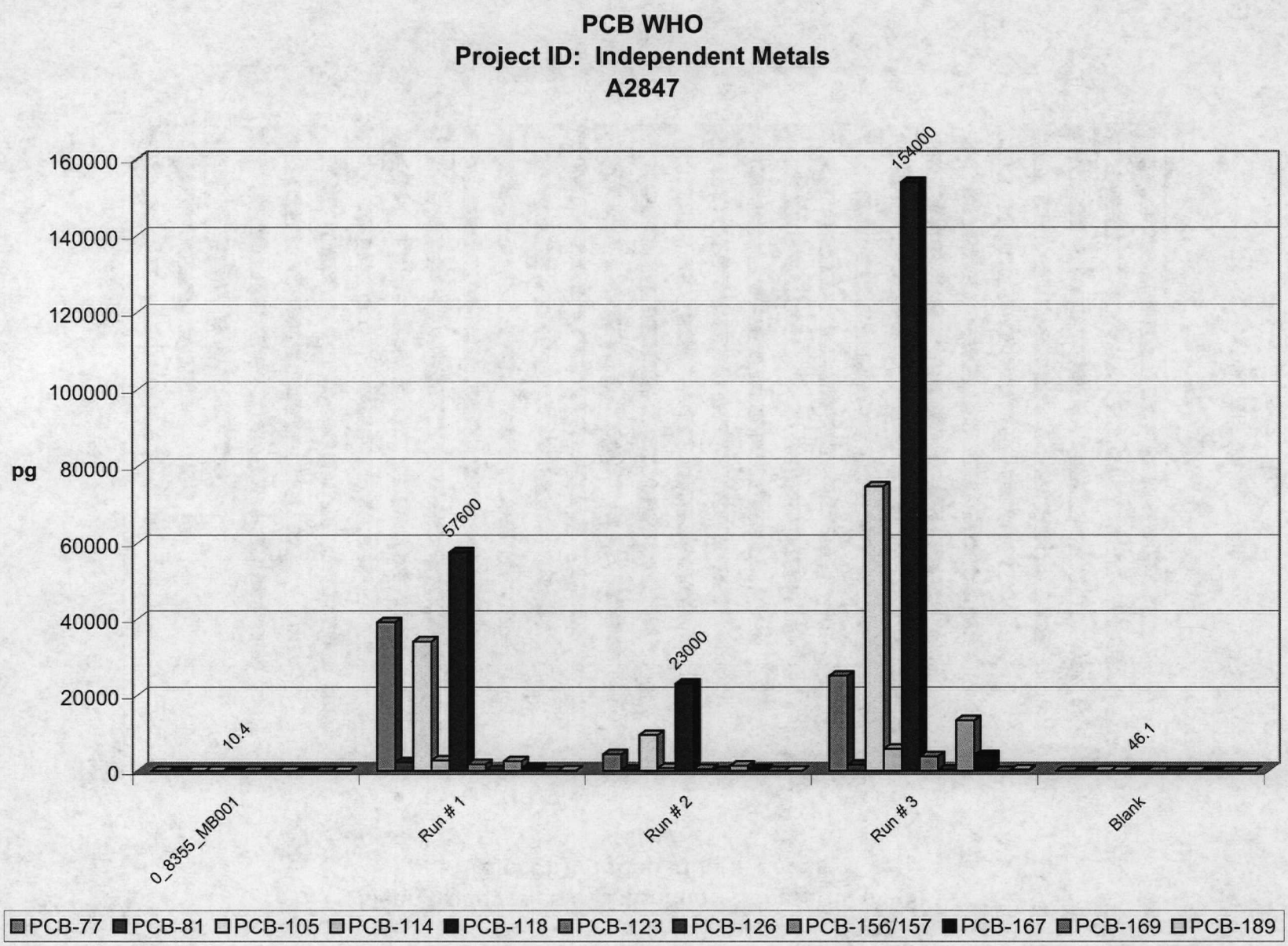


PCB Homologues
Project ID: Independent Metals
A2847

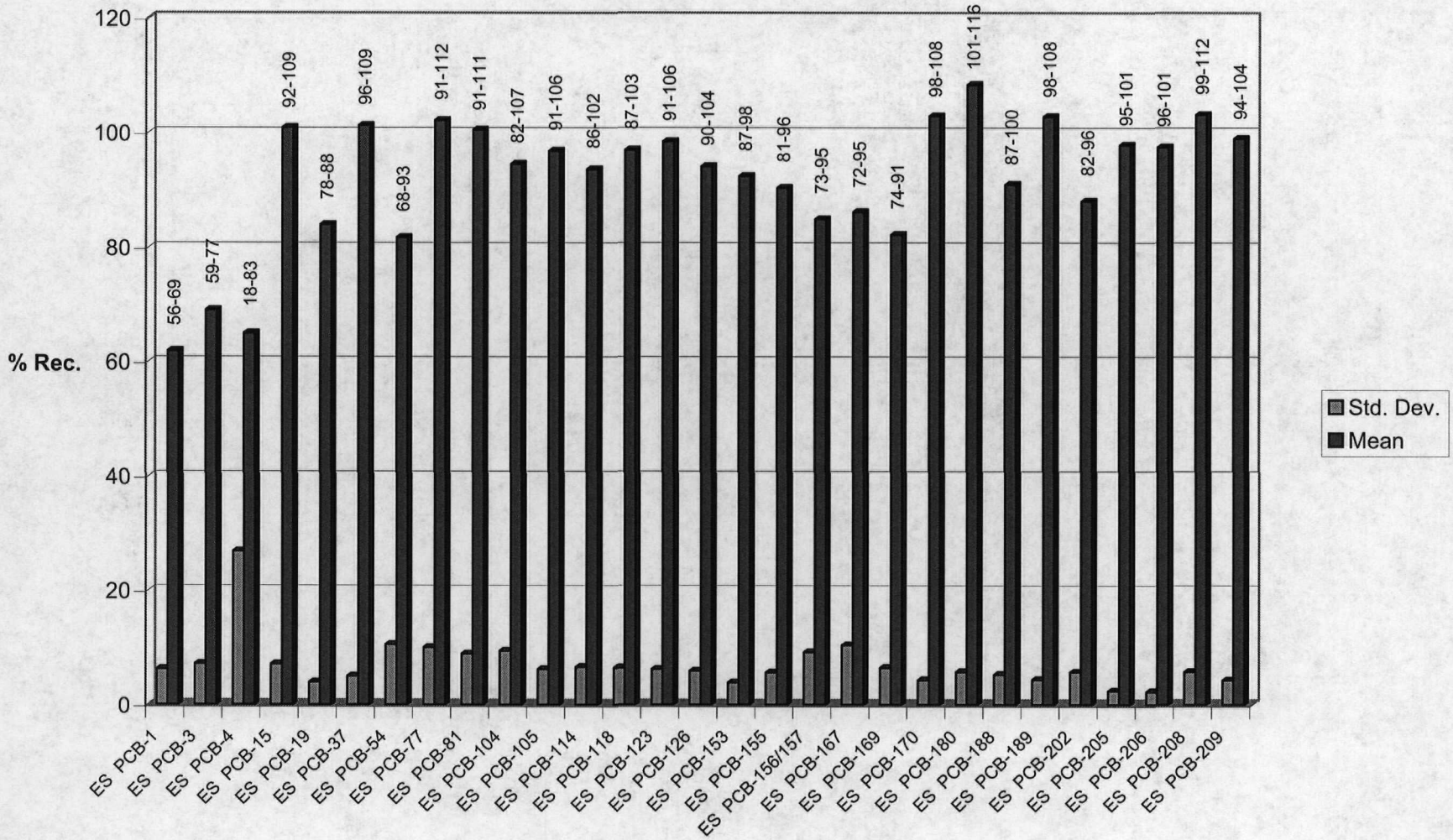


PCB Totals
Project ID: Independent Metals
A2847




PCB WHO
Project ID: Independent Metals
A2847
pg
160000
140000
120000
100000
80000
60000
40000
20000
0
10.4
57600
23000
154000
46.1
0_8355_MB001
Run # 1
Run # 2
Run # 3
Blank
PCB-77
PCB-81
PCB-105
PCB-114
PCB-118
PCB-123
PCB-126
PCB-156/157
PCB-167
PCB-169
PCB-189

Mean Recoveries of Extraction Standards (N=5)
Project ID: Independent Metals
A2847



Sample ID: 0_8355_MB001 — Method 1668B

Client Data		Sample Data		Laboratory Data			
Name:	Horizon Engineering	Matrix:	Air	Project No.:	A2847	Date Received:	n/a
Project ID:	Independent Metals	Weight/Volume:	1	Sample ID:	MB1_8355_PCB_SDS	Date Extracted:	11-Dec-2010
Date Collected:	n/a			QC Batch No.:	8355	Date Analyzed:	27-Dec-2010

Analyte	Conc.	DL	EMPC	Qualifier
	pg	pg	pg	
PCB-77 33'44'-TeCB	ND	1.69		
PCB-81 344'5-TeCB	ND	1.59		
PCB-105 233'44'-PeCB	4.61			J
PCB-114 2344'5-PeCB	ND	1.23		
PCB-118 23'44'5-PeCB	10.4			J
PCB-123 23'44'5'-PeCB	ND	1.23		
PCB-126 33'44'5-PeCB	ND	0.946		
PCB-156/157 233'44'5/233'44'5'-HxCB	ND	1.48		C
PCB-167 23'44'55'-HxCB	ND	1.17		
PCB-169 33'44'55'-HxCB	ND	1.16		
PCB-189 233'44'55'-HpCB	ND	1.09		
TEQs (WHO M/H)				
ND = 0	0.000449		0.000449	
ND = 0.5 x DL	0.0655		0.0655	
Totals				
Mono-CBs	119			
Di-CBs	1,050		1,090	
Tri-CBs	669			
Tetra-CBs	231		255	
Penta-CBs	80.2		94	
Hexa-CBs	26.4		30.3	
Hepta-CBs	7.92			
Octa-CBs	ND	1.18		
Nona-CBs	ND	3.82		
Deca-CB	ND	1.63		
Mono-Deca	2,180		2,260	

Standard	Recovery
	%
ES PCB-1	59.3
ES PCB-3	70.6
ES PCB-4	71.7
ES PCB-15	92.1
ES PCB-19	78.1
ES PCB-37	99.1
ES PCB-54	90.7
ES PCB-77	91.5
ES PCB-81	91.7
ES PCB-104	99.6
ES PCB-105	91.2
ES PCB-114	85.9
ES PCB-118	87.4
ES PCB-123	90.9
ES PCB-126	89.9
ES PCB-153	87.1
ES PCB-155	91.8
ES PCB-156/157	73.3
ES PCB-167	72.5
ES PCB-169	73.7
ES PCB-170	101
ES PCB-180	101
ES PCB-188	87.2
ES PCB-189	98.5
ES PCB-202	81.7
ES PCB-205	96.4
ES PCB-206	96.2
ES PCB-208	98.7
ES PCB-209	99.6
CS/SS PCB-28	84
CS/SS PCB-111	101
CS/SS PCB-178	102

Checkcode: 649-495-JDG AP PCB 2010 Rev. B Report Created: 11-Jan-2011 11:46 Analyst: CM

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Sample ID: Run # 1 — Method 1668B

Client Data		Sample Data		Laboratory Data			
Name:	Horizon Engineering	Matrix:	Air	Project No.:	A2847	Date Received:	03-Dec-2010
Project ID:	Independent Metals	Weight/Volume:	1	Sample ID:	A2847_8355_PCB_001	Date Extracted:	11-Dec-2010
Date Collected:	01-Dec-2010			QC Batch No.:	8355	Date Analyzed:	27-Dec-2010

Analyte	Conc.	DL	EMPC	Qualifier
	pg	pg	pg	
PCB-77 33'44'-TeCB	39,100			
PCB-81 344'5-TeCB	2,340			
PCB-105 233'44'-PeCB	34,100			
PCB-114 2344'5-PeCB	2,770			
PCB-118 23'44'5-PeCB	57,600			
PCB-123 23'44'5'-PeCB	1,800			
PCB-126 33'44'5-PeCB	218			
PCB-156/157 233'44'5/233'44'5'-HxCB	2,590			C
PCB-167 23'44'55'-HxCB	859			
PCB-169 33'44'55'-HxCB	ND	43.7		
PCB-189 233'44'55'-HpCB	123			
TEQs (WHO M/H)				
ND = 0	29.4		29.4	
ND = 0.5 x DL	30		30	
Totals				
Mono-CBs	2,030,000			
Di-CBs	9,670,190			
Tri-CBs	14,200,000		14,200,000	
Tetra-CBs	5,360,000			
Penta-CBs	709,000			
Hexa-CBs	133,000		133,000	
Hepta-CBs	56,600			
Octa-CBs	18,200		18,400	
Nona-CBs	3,500			
Deca-CB	352			
Mono-Deca	3.22E+07		3.22E+07	

Standard	Recovery
	%
ES PCB-1	68.4
ES PCB-3	73.5
ES PCB-4	78.2
ES PCB-15	109 V
ES PCB-19	87.8
ES PCB-37	109
ES PCB-54	82.7
ES PCB-77	112 V
ES PCB-81	111
ES PCB-104	93.5
ES PCB-105	96.5
ES PCB-114	96.8
ES PCB-118	101
ES PCB-123	101
ES PCB-126	90.5
ES PCB-153	97.5
ES PCB-155	94.2
ES PCB-156/157	94.7
ES PCB-167	94.3
ES PCB-169	90.7
ES PCB-170	107
ES PCB-180	109
ES PCB-188	99.6
ES PCB-189	108
ES PCB-202	95.8
ES PCB-205	101
ES PCB-206	101
ES PCB-208	106
ES PCB-209	104
CS/SS PCB-28	103
CS/SS PCB-111	100
CS/SS PCB-178	98.6

Checkcode: 979-398-QCJ AP PCB 2010 Rev. B Report Created: 11-Jan-2011 11:46 Analyst: CM

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Sample ID: Run # 2 — Method 1668B

Client Data		Sample Data		Laboratory Data			
Name:	Horizon Engineering	Matrix:	Air	Project No.:	A2847	Date Received:	03-Dec-2010
Project ID:	Independent Metals	Weight/Volume:	1	Sample ID:	A2847_8355_PCB_002	Date Extracted:	11-Dec-2010
Date Collected:	01-Dec-2010			QC Batch No.:	8355	Date Analyzed:	27-Dec-2010

Analyte	Conc.	DL	EMPC	Qualifier
	pg	pg	pg	
PCB-77 33'44'-TeCB	4,430			
PCB-81 344'5-TeCB	312			
PCB-105 233'44'-PeCB	9,520			
PCB-114 2344'5-PeCB	736			
PCB-118 23'44'5-PeCB	23,000			
PCB-123 23'44'5'-PeCB	545			
PCB-126 33'44'5-PeCB	ND	51		
PCB-156/157 233'44'5/233'44'5'-HxCB	1,390			C
PCB-167 23'44'55'-HxCB	501			
PCB-169 33'44'55'-HxCB	ND	35.8		
PCB-189 233'44'55'-HpCB	EMPC		48.7	
TEQs (WHO M/H)				
ND = 0	1.61		1.61	
ND = 0.5 x DL	4.69		4.7	
Totals				
Mono-CBs	1,270,000			
Di-CBs	10,636,299			
Tri-CBs	13,400,000			
Tetra-CBs	3,070,000			
Penta-CBs	344,000		344,000	
Hexa-CBs	70,900		71,000	
Hepta-CBs	20,100		20,200	
Octa-CBs	16,500			
Nona-CBs	10,700			
Deca-CB	1,540			
Mono-Deca	2.88E+07		2.88E+07	

Standard	Recovery
	%
ES PCB-1	56.3
ES PCB-3	65.4
ES PCB-4	74.4
ES PCB-15	106
ES PCB-19	85.4
ES PCB-37	99.1
ES PCB-54	74.6
ES PCB-77	106
ES PCB-81	104
ES PCB-104	90.4
ES PCB-105	106
ES PCB-114	102
ES PCB-118	103
ES PCB-123	106
ES PCB-126	95.2
ES PCB-153	92.8
ES PCB-155	81.4
ES PCB-156/157	91
ES PCB-167	91
ES PCB-169	80.9
ES PCB-170	108
ES PCB-180	116
ES PCB-188	86.7
ES PCB-189	107
ES PCB-202	92
ES PCB-205	97.6
ES PCB-206	95.5
ES PCB-208	112
ES PCB-209	94.6
CS/SS PCB-28	106
CS/SS PCB-111	93.3
CS/SS PCB-178	104

Checkcode: 765-748-QQV AP PCB 2010 Rev. B Report Created: 11-Jan-2011 11:47 Analyst: CM

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Sample ID: Run # 3

Method 1668B

Client Data		Sample Data		Laboratory Data			
Name:	Horizon Engineering	Matrix:	Air	Project No.:	A2847	Date Received:	03-Dec-2010
Project ID:	Independent Metals	Weight/Volume:	1	Sample ID:	A2847_8355_PCB_003	Date Extracted:	11-Dec-2010
Date Collected:	01-Dec-2010			QC Batch No.:	8355	Date Analyzed:	27-Dec-2010

Analyte	Conc.	DL	EMPC	Qualifier
	pg	pg	pg	
PCB-77 33'44'-TeCB	25,100			
PCB-81 344'5-TeCB	1,640			
PCB-105 233'44'-PeCB	74,700			
PCB-114 2344'5-PeCB	5,850			
PCB-118 23'44'5-PeCB	154,000			E
PCB-123 23'44'5'-PeCB	3,860			
PCB-126 33'44'5-PeCB	346			
PCB-156/157 233'44'5/233'44'5'-HxCB	13,400			C
PCB-167 23'44'55'-HxCB	4,160			
PCB-169 33'44'55'-HxCB	ND	35.5		
PCB-189 233'44'55'-HpCB	347			
TEQs (WHO M/H)				
ND = 0	45.3		45.3	
ND = 0.5 x DL	45.8		45.8	
Totals				
Mono-CBs	2,280,000			
Di-CBs	11,065,390			
Tri-CBs	15,000,000			
Tetra-CBs	5,340,000			
Penta-CBs	1,310,000		1,310,000	
Hexa-CBs	407,000		407,000	
Hepta-CBs	83,000			
Octa-CBs	45,800			
Nona-CBs	24,200			
Deca-CB	2,820			
Mono-Deca	3.56E+07		3.56E+07	

Standard	Recovery
	%
ES PCB-1	56.5
ES PCB-3	58.8
ES PCB-4	17.5
ES PCB-15	102
ES PCB-19	82
ES PCB-37	103
ES PCB-54	68
ES PCB-77	110 V
ES PCB-81	105
ES PCB-104	82.1
ES PCB-105	99.2
ES PCB-114	95.4
ES PCB-118	99.9
ES PCB-123	101
ES PCB-126	104
ES PCB-153	94.2
ES PCB-155	89
ES PCB-156/157	88.3
ES PCB-167	95.4
ES PCB-169	86
ES PCB-170	100
ES PCB-180	111
ES PCB-188	89.4
ES PCB-189	101
ES PCB-202	85.8
ES PCB-205	94.8
ES PCB-206	96
ES PCB-208	99.2
ES PCB-209	94.5
CS/SS PCB-28	101
CS/SS PCB-111	98.1
CS/SS PCB-178	97.8

Checkcode: 806-830-RLW AP PCB 2010 Rev. B Report Created: 11-Jan-2011 11:47 Analyst: CM

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Sample ID: Blank

Method 1668B

Client Data		Sample Data		Laboratory Data			
Name:	Horizon Engineering	Matrix:	Air	Project No.:	A2847	Date Received:	03-Dec-2010
Project ID:	Independent Metals	Weight/Volume:	1	Sample ID:	A2847_8355_PCB_004	Date Extracted:	11-Dec-2010
Date Collected:	01-Dec-2010			QC Batch No.:	8355	Date Analyzed:	27-Dec-2010

Analyte	Conc.	DL	EMPC	Qualifier	Standard	Recovery
	pg	pg	pg			%
PCB-77 33'44'-TeCB	ND	6.16			ES PCB-1	68.7
PCB-81 344'5-TeCB	ND	5.79			ES PCB-3	76.9
PCB-105 233'44'-PeCB	19.1			J B	ES PCB-4	83
PCB-114 2344'5-PeCB	ND	4.19			ES PCB-15	95.3
PCB-118 23'44'5-PeCB	46.1			B	ES PCB-19	86.7
PCB-123 23'44'5'-PeCB	ND	4.11			ES PCB-37	96
PCB-126 33'44'5-PeCB	ND	3.73			ES PCB-54	92.8
PCB-156/157 233'44'5/233'44'5'-HxCB	ND	5.52		C	ES PCB-77	91.4
PCB-167 23'44'55'-HxCB	ND	4.22			ES PCB-81	90.7
PCB-169 33'44'55'-HxCB	ND	4.17			ES PCB-104	107
PCB-189 233'44'55'-HpCB	ND	2.9			ES PCB-105	91.1
					ES PCB-114	88.1
TEQs (WHO M/H)					ES PCB-118	93.4
					ES PCB-123	93.3
ND = 0	0.00195		0.00195		ES PCB-126	90.9
ND = 0.5 x DL	0.252		0.252		ES PCB-153	90.6
					ES PCB-155	95.6
Totals					ES PCB-156/157	77.3
					ES PCB-167	77.8
Mono-CBs	169				ES PCB-169	80
Di-CBs	1,400		1,460		ES PCB-170	98.5
Tri-CBs	1,160				ES PCB-180	105
Tetra-CBs	618		644		ES PCB-188	92
Penta-CBs	308		354		ES PCB-189	99.5
Hexa-CBs	96.7		151		ES PCB-202	85.1
Hepta-CBs	24.1		48.1		ES PCB-205	99.2
Octa-CBs	ND	3.81			ES PCB-206	98.4
Nona-CBs	ND	14.6			ES PCB-208	99.9
Deca-CB	15.3			J	ES PCB-209	102
					CS/SS PCB-28	91.4
Mono-Deca	3,800		4,000		CS/SS PCB-111	107
					CS/SS PCB-178	105

Checkcode: 267-273-VRX AP PCB 2010 Rev. B Report Created: 11-Jan-2011 11:47 Analyst: CM

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December 16, 2010

Horizon Engineering LLC
13585 NE Whitaker Way
Portland, OR 97230

Attn: Marge Heffernan

Exova Job No: 127094
Purchase Order: 4098AT
Project Name: Independent Metals
Samples Received: Four (4) Samples
Date Received: 12/03/2010

KC

Analysis	Page
Hexavalent Chromium by EPA 306A	2

Michael Shelton
Technical Director

Patricia Metzger
Senior Chemist

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Horizon Engineering LLC
Job No: 127094

Exova

Hexavalent Chromium by EPA 306
Ion Chromatography with Post-Column Derivatization-Visible Absorption

Sample ID	Result (µg/L)	Volume (L)	Total µg
Source: Hammer Mill w/ Bag House Blank NaOH	0.12	0.200	0.024
Source: Hammer Mill w/ Bag House RUN 1	1.77	0.400	0.708
Source: Hammer Mill w/ Bag House RUN 2	1.17	0.415	0.486
Source: Hammer Mill w/ Bag House RUN 3	2.35	0.385	0.905
Detection Limit:	0.02		

Date Analyzed: 12-06-10

Calibration Summary

Sample ID: Laboratory Control Standard (1.00 ppb Second Source Standard)

Date Analyzed	Result	% Rec	% Rec Limits
12-06-10	1.00	100	90 - 100

Standard Curve

Levels:	4
Number of Points:	8
Range:	0 - 5 ppb
Low Standard:	0.5 ppb
r^2:	0.999

Standard curve run before and after samples

Calibration Blank: 0.1N Sodium Hydroxide

Sodium hydroxide contains a significant peak of Cr^{+6}. The Exova sodium hydroxide blank area was included in the calibration. The supplied client blank sodium hydroxide had a slightly higher concentration of Cr^{+6} than the Exova blank.

Quality Control Summary

Sample ID: Source: Hammer Mill w/ Bag House RUN 1

Analyte	Sample Result	Duplicate Result	Average Result	Sample RPD	Spike Conc	Spike Result	Spike % Rec
Hexavalent Chromium	1.77	1.84	1.81	4	2.04	3.43	79
QC Guidelines				10			75 - 125

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Mail Report to the following:

Company: Horizon Engineering
Contact: Marge Heffernan
Address: 13585 NE Whitaker Way
Address:
City/St/Zip: Portland OR 97230
Email: mheffernan@horizonengineering.com
Phone: 503 255 5050 Fax: 503 255 0505

Project Information:

Project Manager: Preston Skaggs
Project Name: Independent Metals
Project Location: Seattle, WA
Project No.: 4098AT
Purchase Order No.: 4098AT
Purchasing contact: Emily Bagwell
Purchasing Phone No.: 503 255 5050

Chain-of-Custody

Exova

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Santa Fe Springs, CA 90670
562.948.2225 fax 562.948.5850
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Hazards and Comments

please achieve lowest detection limit as possible

Turnaround Time

Date Due:

☒ Normal (7-10 work days)
☐ Rush 5 day
☐ Rush 3 day
☐ Rush 1 day
} Rush Fees Will Apply

Sampler's Name(s): Patrick Todd, Matt Caron, Preston Skaggs

If there are multiple choices for an item please circle one.

Sample Identification	Sampling Date	Sampling Time	Preservation	# of Containers	Water: Drinking	Ground	Waste	Soil	Waste	Other Baghouse exhaust	CCR Metals: TTLC STLC -	RCRA Metals: Totals TCLP	Hexavalent Chromium: 218.6 7199	Volatile Organics by GCMS	Semivolatile Organics by GCMS	Organochlorine Pest./PCB	Hexane Ext. by 1664: HEM SGT/HEM	Conductivity	pH	Total Suspended Solids	Hex chrome: EPA 3060A					Remarks
* Source: Hammermill w/ Baghouse																										
Run 1 ~	12/1	—	ice packs	1						✓											✓					
Run 2 ~	"	—	"	1						✓											✓					
Run 3 ~	"	—	"	1						✓											✓					
Blank NaOH ~	"	—	"	1						✓											✓					

* 12-03-10 ML: All samples also labeled w/ Job No: 4098AT

Relinquished by:	Company:	Date	Time	Received by:	Company:
	Horizon Eng.	12/2/10	5PM		Fedex
Relinquished by:	Company: Fedex	Date 12-03-10	Time 09:18	Received by: Vanessa M Ry	Company: Exova
Relinquished by:	Company:	Date	Time	Received by:	Company:

NOTES: Samples will be discarded 30 days after invoicing unless notified in writing or high hazard.
All services provided will adhere to the Exova Terms & Conditions.

White Copy - Exova • Yellow - Report • Pink - Client

Exova Job No. 127094

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LABORATORY REPORT

December 17, 2010

Margery Heffernan
Horizon Engineering, LLC
13585 NE Whitaker Way
Portland, OR 97230

RE: Independent Metals / 4098AT

Dear Margery:

Enclosed are the results of the samples submitted to our laboratory on December 3, 2010. For your reference, these analyses have been assigned our service request number P1004562.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP), Certificate No. L10-3; Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-09-TX; Minnesota Department of Health, Certificate No. 11495AA; Washington State Department of Ecology, ELAP Lab ID: C946. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.

Kelly M Horiuchi

Digitally signed by Kelly Horiuchi
Date: 2010.12.17 14:54:09 -08'00'

Kelly Horiuchi
Laboratory Director

Columbia Analytical Services 2655 Park Center Drive, Suite A, Simi Valley, CA 93065 | 805.526.7161 | www.caslab.com

Client: Horizon Engineering, LLC
Project: Independent Metals / 4098AT

CAS Project No: P1004562

CASE NARRATIVE

The samples were received intact under chain of custody on December 3, 2010 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The samples were analyzed for selected volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator.

The reporting limit is elevated for analytes in samples "Hammermill Baghouse Run 1", "Hammermill Baghouse Run 2", "Hammermill Baghouse Run 3". The chromatogram indicated the presence of non-target background components. The samples were diluted in order to prevent damage to the instrument, to achieve optimal resolution of the target analytes and the results are flagged to accordingly.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

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DETAIL SUMMARY REPORT

Client: Horizon Engineering, LLC
Project ID: Independent Metals / 4098AT

Service Request: P1004562

Date Received: 12/3/2010
Time Received: 09:40

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	TO-15 - VOC Cans
Hammermill Baghouse Run 1	P1004562-001	Air	11/30/2010	00:00	SC00786	-0.2	3.5	X
Hammermill Baghouse Run 2	P1004562-002	Air	11/30/2010	14:05	SC00677	-0.6	3.5	X
Hammermill Baghouse Run 3	P1004562-003	Air	11/30/2010	15:20	SC00891	-0.7	3.5	X

Air - Chain of Custody Record & Analytical Service Request

Columbia Analytical Services INC
An Employee - Owned Company
2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard

CAS Project No. P1004562

CAS Contact: Kelly Horiuchi

Company Name & Address (Reporting Information): Horizon Engineering, 13585 NE Whitaker Way, Portland OR 97230

Project Name: Independant Metals

Project Number: 4098 AT

Project Manager: Preston Skaggs

P.O. # / Billing Information: 4098AT

Phone: 503 255 8080 Fax: 503 255 0505

Email Address for Result Reporting: mheffernan@horizonengineering.com

Sampler (Print & Sign)

Analysis Method and/or Analytes: TO-15: ethylbenzene, benzene, 1,1 dichloroethane

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Sample Type (Air/Tube/Solid)	Canister ID (Bar Code # - AC, SC, etc.)	Flow Controller (Bar Code - FC #)	Sample Volume	TO-15: ethylbenzene, benzene, 1,1 dichloroethane				Comments e.g. Actual Preservative or specific instructions
Source: Hammermill w/ Baghouse												
Run 1	1-0.0			air	SC00786	0A00126	<6L	✓				
Run 2	2-0.8			"	SC00677	0A00675	<6L	✓				
Run 3	3-0.4			"	SC00891	0A00668	<6L	✓				
	-26.5											

Report Tier Levels - please select
Tier I - (Results/Default if not specified) ____
Tier II - (Results + QC) ✓
Tier III - (Data Validation Package) 10% Surcharge ____
Tier V - (client specified) ____
EDD required Yes / No
Type: _____ EDD Units: _____

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	8/10/2012	1700		8/13/10	0940
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Cooler / Blank
Temperature _____ °C

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Sample Acceptance Check Form

Client: Horizon Engineering, LLC Work order: P1004562

Project: Independent Metals / 4098AT

Sample(s) received on: 12/03/10 Date opened: 12/03/10 by: MZAMORA

Note: This form is used forall samples received by CAS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by CAS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Was a **chain-of-custody** provided?	☒	☐	☐
5	Was the **chain-of-custody** properly completed?	☒	☐	☐
6	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
7	Was **sample volume** received adequate for analysis?	☒	☐	☐
8	Are samples within specified holding times?	☒	☐	☐
9	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
	Cooler Temperature _____ °C Blank Temperature _____ °C			
10	Was a **trip blank** received?	☐	☒	☐
	Trip blank supplied by CAS: _____			
11	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
12	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
13	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
14	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1004562-001.01	6.0 L Source Can					
P1004562-002.01	6.0 L Source Can					
P1004562-003.01	6.0 L Source Can					

Explain any discrepancies: (include lab sample ID numbers): _____

*Required pH: Phenols/COD/NH3/TOC/TOX/NO3+NO2/TKN/T.PHOS, H2SO4 (pH<2); Metals, HNO3 (pH<2); CN (NaOH or NaOH/Asc Acid) (pH>12); Diss. Sulfide, NaOH (pH>12); T. Sulfide, NaOH/ZnAc (pH>12) RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

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RESULTS OF ANALYSIS

Client: **Horizon Engineering, LLC**
Client Sample ID: **Hammermill Baghouse Run 1** CAS Project ID: P1004562
Client Project ID: **Independent Metals / 4098AT** CAS Sample ID: P1004562-001

Test Code: EPA TO-15 Date Collected: 11/30/10
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 12/3/10
Analyst: Chris Cornett Date Analyzed: 12/8/10
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.50 Liter(s)
Test Notes:
Container ID: SC00786

Initial Pressure (psig): -0.2 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.26

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-34-3	1,1-Dichloroethane	ND	1.3	ND	0.31	
71-43-2	Benzene	**4.6**	1.3	**1.4**	0.39	
100-41-4	Ethylbenzene	**15**	1.3	**3.5**	0.29	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **Horizon Engineering, LLC**
Client Sample ID: **Hammermill Baghouse Run 2** CAS Project ID: P1004562
Client Project ID: **Independent Metals / 4098AT** CAS Sample ID: P1004562-002

Test Code: EPA TO-15 Date Collected: 11/30/10
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 12/3/10
Analyst: Chris Cornett Date Analyzed: 12/9/10
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.50 Liter(s)
Test Notes:
Container ID: SC00677

Initial Pressure (psig): -0.6 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.29

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-34-3	1,1-Dichloroethane	ND	1.3	ND	0.32	
71-43-2	Benzene	**11**	1.3	**3.5**	0.40	
100-41-4	Ethylbenzene	**28**	1.3	**6.5**	0.30	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **Horizon Engineering, LLC**
Client Sample ID: **Hammermill Baghouse Run 3** CAS Project ID: P1004562
Client Project ID: **Independent Metals / 4098AT** CAS Sample ID: P1004562-003

Test Code: EPA TO-15 Date Collected: 11/30/10
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date Received: 12/3/10
Analyst: Chris Cornett Date Analyzed: 12/8/10
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 0.20 Liter(s)
Test Notes:
Container ID: SC00891

Initial Pressure (psig): -0.7 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.30

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-34-3	1,1-Dichloroethane	ND	3.3	ND	0.80	
71-43-2	Benzene	**29**	3.3	**9.2**	1.0	
100-41-4	Ethylbenzene	**52**	3.3	**12**	0.75	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **Horizon Engineering, LLC**
Client Sample ID: **Method Blank**
Client Project ID: **Independent Metals / 4098AT**

CAS Project ID: P1004562
CAS Sample ID: P101208-MB

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13
Analyst: Chris Cornett
Sampling Media: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 12/8/10
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
71-43-2	Benzene	ND	0.50	ND	0.16	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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SURROGATE SPIKE RECOVERY RESULTS

Client: **Horizon Engineering, LLC**
Client Project ID: **Independent Metals / 4098AT** CAS Project ID: P1004562

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13 Date(s) Collected: 11/30/10
Analyst: Chris Cornett Date(s) Received: 12/3/10
Sampling Media: 6.0 L Summa Canister(s) Date(s) Analyzed: 12/8 - 12/9/10
Test Notes:

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P101208-MB	**96**	**100**	**98**	70-130	
Hammermill Baghouse Run 1	P1004562-001	**96**	**97**	**99**	70-130	
Hammermill Baghouse Run 2	P1004562-002	**96**	**98**	**100**	70-130	
Hammermill Baghouse Run 3	P1004562-003	**97**	**99**	**101**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

APPENDIX D

Example Calculations & Field Data Sheets

EXAMPLE CALCULATION SHEET (1)
EPA METHODS 1, 2, 3, 4, 5, AND 29
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-5,29
Client:	Envirosure@Independent Metals
Location:	Seattle, Washington
Site:	Hammermill Baghouse Exhaust
Date:	11/30/10
Lab #:	3649-(001-007)
Run #:	1 - Method 5/29

Dry Gas Meter Standard Volume - Equation 5-1

Vm_{std} = 17.647(°R/"Hg $_{(constant)}$) * volume sampled * Y_{factor} * (P_{bar} + ΔH / 13.6) / (460 + T_M)

= 17.647 * 79.979 ft^3 * 1.020 *(30.0 + 1.531 / 13.6) / (460 + 54.2 °F)

= **84.282** **dscf** / 35.31 ft^3/m^3 = **2.387** **dscm**

Moisture - Equation 5-2 and 5-3

286.0	(g) -	286.0 (g)	=	0.0 (g)	(Total water collected in the impingers.)
20.0	(g) -	20.0 (g)	=	0.0 (g)	(Total water collected in the impingers.)
222.0	(g) -	200.0 (mL)* 1.5090g/mL	=	10.2 (g)	(The imp. was charged with 200mL of sol., 1.5090g/mL is the density.)
20.0	(g) -	20.0 (g)	=	0.0 (g)	(Total water collected in the impingers.)
224.0	(g) -	200.0 (mL)* 1.1515g/mL	=	-6.3 (g)	(The imp. was charged with 200mL of sol., 1.1515g/mL is the density.)
20.0	(g) -	20.0 (g)	=	0.0 (g)	(Total water collected in the impingers.)
632.0	(g) -	620.0 (g)	=	12.0 (g)	(Total water collected in the impingers.)
			=	**15.9 (g)**	(Total g of water collected.)

Vw_{std} = 0.04715 ft^3/gm * 15.9 grams of H_2O collected in impingers = 0.75 scf H_2O

B_{WS} = (0.75) scf /(0.75 scf + 84.282 dscf) = 0.0088 B_{WS} * 100% = 0.88 **% H_2O**

Measured Moisture = 0.88 % **Psychrometric Moisture =** NA %

Actual Moisture = **0.88** % **Actual B_{WS} = 0.0088**

Actual moisture is determined by the lower of the measured moisture vs. the psychrometric moisture; since it is theoretically impossible for the % moisture to be higher than the psychrometric moisture. If the psychrometric moisture is higher than the measured moisture it is reported as NA.

Molecular Weight - Equation 3-2

M_d = 0.440 * (0.03 %CO_2) + 0.320 * (20.95 % O_2)+0.280*(100%- 0.03 %CO_2- 20.95 %O_2(%CO+%N_2))

= **28.84** **g/g-mole (dry)**

M_s = Md*(1-B_{WS})+18.0 *B_{WS} = 28.84 g/g-mole *(1- 0.0088)+18.0g/g-mole* 0.0088

= **28.75** **g/g-mole (wet)**

Fo = (20.9 - % O_2)/ %CO_2 = -1.67

Meter Box Calibration Error

$$Yqa = \frac{\theta}{Vm} * \sqrt{\frac{0.0319 * T_m * \Delta H_{avg} * 29}{\Delta H@ * (Pm) * Md}} = \frac{120}{79.979} \sqrt{\frac{.0319 * 514.229 * 1.531 * 29}{1.810 * 30.11 * 28.84}}$$

= 1.021 [Pm = (Pbar + ΔH / 13.6) = 30.00 + 1.531 / 13.6 = 30.11]

% Error = (Y_{qa} - Y) / Y_{qa} * 100 % Y = 1.020 = (1.021 - 1.020) / 1.021 * 100% =

= **0.2** % Percent error must be less than 5% or a post test dry gas meter calibration is required.

The above calculations are from the 40 CFR 60 and assume English units.

EXAMPLE CALCULATION SHEET (H_2O)
PSYCHROMETRIC MOISTURE
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-5,29
Client:	Envirosure@Independent Metals
Location:	Hammermill Baghouse Exhaust
Site:	11/30/10
Date:	1 - Method 5/29
Run #:	PS,MC

The calculations below are only applicable to stack temperatures below 212°F. The wet bulb temperature is assumed to equal the dry bulb temperature for these calculations used to determine if the psychrometric moisture is lower than the measured moisture. It is theorectically impossible for the measured moisture to be higher than the psychrometric moisture, as discussed in EPA Method 4.1.2. The formula for calculating the Saturated Vapor Pressure (SVP) corrects for stack pressure, unlike most psychrometric charts. If the psychrometric moisture is greater than 100% it is labeled as >100 or NA.

Psychrometric Moisture

Wet Bulb Temperature (T_w) =	**58.6 °F**	
Dry Bulb Temperature (T_d) =	**58.6 °F**	
Barometric Pressure (P_{bar}) =	**30.00 " Hg**	
Static Pressure (P_{static}) =	**0.5 " H_2O**	
Stack Pressure (P_s) =	**30.04 " Hg**	$P_s = P_{bar} + (P_{static}/13.6)$ (P_s is also refered to as Absolute Pressure P_A)

SVP = Saturated Vapor Pressure (" Hg)

VP = Vapor Pressure (" Hg)

$$SVP = [\,0.0000000000000177506 * (T_w)^6 + 0.0000000000321411 * (T_w)^5 + 0.0000000034906 * (T_w)^4 + 0.000000508299 * (T_w)^3 + 0.0000477395 * (T_w)^2 + 0.00222231 * (T_w) + 0.0361287\,]$$

$$= \underline{0.50} \text{ " Hg}$$

$$VP = SVP - ((P_S - SVP) * (T_d - T_w) / (2800 - (1.3 * T_w))$$

$$= \underline{0.496} - ((\underline{30.04} - \underline{0.5}) * (\underline{58.6} - \underline{58.6}) / (\underline{2800} - (\underline{1.3} * \underline{58.6}))$$

$$= \underline{0.50} \text{ " Hg}$$

B_{ws} = VP / PS = 0.5 / 30.04

B_{ws} = **0.0165** * 100 % = % Psychrometric Moisture

% H_2O = 1.65 % Psychrometric Moisture

EXAMPLE CALCULATION SHEET (2)
EPA METHODS 1, 2, 3, 4, 5, AND 29
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure - M1-5,29
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Site: Hammermill Baghouse Exhat
Date: 11/30/10
Lab #: 1050
Run #: PS,MC

Stack gas velocity and volumetric flow rate - Equations 2-9 and 2-10

$Vs = 85.49 * C_p \sqrt{(\Delta P * Ts\ °R / (M_s\ g/gmole * P_s\ "Hg)}$ [Ps = Pbar + Pstatic / 13.6]

$= 85.49 * 0.8322 \sqrt{0.629 * 518.6 /(28.75 * 30.04)}$ [30.04 = 30.00 + 0.50 / 13.6]

= **43.7** **ft/sec**

$Q_{std} = 60 * (1 - B_{ws}) * V_s * A_s * T_{std}/T_s * P_s/P_{std}$ [$As = \pi (S_{dia})^2 / 4 / 144\ (ft^2)$] or [$As = L * W / 144\ (ft^2)$]

$= 60 *(1 - 0.0088)* 43.7 * 4.91 * 528 / 518.6 * 30.04 / 29.92$

= **13052** **dscf/min (dry standard cubic feet per minute)**

acfm = 43.7 ft/sec * 4.91 ft^2 * 60 sec/min

= **12883** **acfm (actual cubic feet per minute)**

Isokinetic Variation - Equation 5-8

$$\% \text{ Isokinetics} = \frac{0.0945 * Vm_{(std)}\ dscf * Ts\ °R}{[P_s"\ Hg * V_s\ ft/sec * \theta\ minutes * A_n\ ft^2 * (1 - B_{ws})]}$$

[$A_n = \pi (N_{dia})^2 / 4 / 144\ (ft^2)$]

$$= \frac{0.0945 * 84.282 * 518.6}{[30.04 * 43.7 * 120 * 0.0003 * (1 - 0.0088)]}$$

= **100** **% Isokinetics**

The above calculations are from the 40 CFR 60 and assume English units.

EXAMPLE CALCULATION SHEET (3)
EPA METHODS 1, 2, 3, 4, AND 5
FRONT-HALF PARTICULATE
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-5,29
Client:	Envirosure@Independent Metals
Location:	Seattle, Washington
Site:	Hammermill Baghouse Exhaust
Date:	11/30/2010
Lab #:	3649-(001-007)
Run #:	1 - Method 5/29

Particulate Matter Emission Concentration

Substitution of Equation 5-4 into 5-5

mg blank / mL blank = mg/mL blank

0.2 / 146 = 0.0014 mg/mL

W_a = mg/mL blank * mL sample = mg sample due to acetone blank

= 0.0014 mg/mL * 90.0 mL = **0.1 mg**

(If the blank is greater than 0.0079 mg/mL then 0.0079 mg/mL is used to calculate the blank.)

Front-Half Emission Concentration

M_n = (net weight filter catch) + (net weight "B" section) - W_a

= 2.0 mg + 2.1 mg - 0.1 mg = **4.0 mg** / 1000 mg/g = **0.0040 g**

(If "B" section <= 0, then the acetone blank: net wt = 0)

C_s = (0.001 gram/mg) * (15.43 grains/gram) * M_n / Vm_{std}

= 0.001 * 15.43 * 4.0 / 84.282

= **0.0007 gr/dscf (Equation 5-6)**

= mg PM / dscm = mg/dscm

= 4.0 mg / 2.387 dscm =

= **1.67 mg/dscm**

Front-Half Emission Rate

lb/hr = gr/dscf * Airflow (dscf/min) * 60 min/hr * 1 lb/7000 grains

= 0.0007 * 13052 * 60 / 7000 =

= **0.081 lb/hr**

EXAMPLE CALCULATION SHEET (3)
EPA METHODS 1, 2, 3, 4, 5, AND 29
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-5,29
Client:	Envirosure@Independent Metals
Location:	Seattle, Washington
Site:	Hammermill Baghouse Exhaust
Date:	11/30/10
Lab #:	3649-(001-007
Run #:	1 - Method 5/29

Example Compound: **Arsenic**

Volume sampled ($V_{m\ STD}$):	2.387	dscm	(From example calc 1)
Stack Airflow:	13052	dscf/min	(From example calc 2)

Fraction 1A/B

	Sample	=	0.4	µg	U
	Blank	=	0.0	µg	
	Detection Limit	=	0.4	µg	
Analyte in Sample:	**Fraction 1A/B**	=	0.4	µg	U

Fraction 2A/B

	Sample	=	0.0	µg	U
	Blank	=	0.0	µg	
	Detection Limit	=	0.0	µg	
Analyte in Sample:	**Fraction 2A/B**	=	0.0	µg	U

Total Blank Corrected Analyte = 0.4 µg BDL

Analyte Emission Results

µg/dscm = **Analyte (µg) / Vm_{STD} dscm**
= 0.4 / 2.387
= **0.184** **µg/dscm** **BDL Arsenic**

mg/dscm = µg/dscm / 1000 µg/mg
= 0.184 / 1000
= **0.0002** **mg/dscm** **BDL Arsenic**

lb/hr = mg/dscm / 453600 mg/lb /35.31 dscf/dscm * airflow (dscf/min) / 60 min/hr
= 0.0002 / 453600 / 35.31 * 13052 * 60
= **9.01E-06** **lb/hr** **BDL Arsenic**

EXAMPLE CALCULATION SHEET (4)
EPA METHODS 1, 2, 3, 4, 5, AND 29
AMTEST AIR QUALITY - AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-5,29
Client:	Envirosure@Independent Metals
Location:	Seattle, Washington
Site:	Hammermill Baghouse Exhaust
Date:	11/30/10
Lab #:	3649-(001-007
Run #:	1 - Method 5/29

Example Compound: Mercury (Hg)

Volume sampled ($V_{m\ STD}$):	2.387	dscm	(From example calc 1)
Stack Airflow:	13052	dscf/min	(From example calc 2)

Fraction 1A/B

	Sample	=	0.248	µg	
	Blank	=	0.0	µg	
	Detection Limit	=	0.0	µg	
Analyte in Sample:	Fraction A/B	=	0.248	µg	

Fraction 2A/B

	Sample	=	0.02	µg	U
	Blank	=	0.0	µg	
	Detection Limit	=	0.02	µg	
Analyte in Sample:	Fraction 2A/B	=	0.02	µg	U

Fraction 3A

	Sample	=	0.002	µg	U
	Blank	=	0.0	µg	
	Detection Limit	=	0.002	µg	
Analyte in Sample:	Fraction 3A	=	0.002	µg	U

Fraction 3B

	Sample	=	18.0	µg
	Blank	=	0.00	µg
	Detection Limit	=	0.00	µg
Analyte in Sample:	Fraction 3B	=	18.0	µg

Fraction 3C

	Sample	=	850	µg
	Blank	=	0.0	µg
	Detection Limit	=	0.0	µg
Analyte in Sample:	Fraction 3C	=	850	µg

Total Blank Corrected Analyte = 868.3 µg DLL

Analyte Emission Results

µg/dscm = Analyte (µg) / Vm_{STD} dscm
= 868.3 / 2.387
= 363.8 µg/dscm DLL Mercury (Hg)

mg/dscm = µg/dscm / 1000 µg/mg
= 363.8 / 1000
= 0.364 mg/dscm DLL Mercury (Hg)

lb/hr = mg/dscm / 453600 mg/lb /35.31 dscf/dscm * airflow (dscf/min) / 60 min/hr
= 0.364 / 453600 / 35.31 * 13052 * 60
= 1.78E-02 lb/hr DLL Mercury (Hg)

EXAMPLE CALCULATION SHEET (1)
EPA METHODS 1, 2, 3A, AND 4
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure - M1-4,23-PCB
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Site: Hammermill Baghouse Exhaust
Date: 12/1/10
Run #: 1 - Method 23-PCB

Dry Gas Meter Standard Volume - Equation 5-1

Vm_{std} = 17.647(°R/"Hg $_{(constant)}$) * volume sampled * Y_{factor} * (P_{bar} + ΔH / 13.6) / (460 + T_M)

= 17.647 * 79.695 ft^3 * 1.020 *(30.0 + 1.520 / 13.6) / (460 + 52.0 °F)

= **84.339 dscf** / 35.31 ft^3/m^3 = **2.389 dscm**

Moisture - Equation 5-2 and 5-3

452.7	(g) -	257.7 (g)	=	195.0 (g)	(Total water collected in the impingers.)
0.0	(mL) -	200.0 (mL)* 0.99823g/mL	=	-199.6 (g)	(The initial impingers were charged with 200mL of solution,
0.0	(g) -	0.0 (g)	=	0.0 (g)	0.99823g/mL is the conversion factor (density) to g.)
536.8	(g) -	520.0 (g)	=	16.8 (g)	
			=	**12.2 (g)**	(Total g of water collected.)

Vw_{std} = 0.04715 ft^3/gm * 12.2 grams of H_2O collected in impingers = 0.57 scf H_2O

B_{WS} = (0.57) scf /(0.57 scf + 84.339 dscf) = 0.0067 B_{WS} * 100% = 0.67 % H_2O

Measured Moisture = 0.67 % **Psychrometric Moisture =** NA %

Actual Moisture = **0.67** % **Actual B_{WS} =** **0.0067**

Actual moisture is determined by the lower of the measured moisture vs. the psychrometric moisture; since it is theoretically impossible for the % moisture to be higher than the psychrometric moisture. If the psychrometric moisture is higher than the measured moisture it is reported as NA.

Molecular Weight - Equation 3-2

M_d = 0.440 * (0.03 %CO_2) + 0.320 * (20.95 % O_2)+0.280*(100%- 0.03 %CO_2- 20.95 %O_2(%CO+%N_2))

= **28.84 g/g-mole (dry)**

M_s = Md*(1-B_{WS})+18.0 *B_{WS} = 28.84 g/g-mole *(1- 0.0067)+18.0g/g-mole* 0.0067

= **28.77 g/g-mole (wet)**

Fo = (20.9 - % O_2)/ %CO_2 = -1.67

Meter Box Calibration Error

$$Yqa = \frac{\theta}{Vm} * \sqrt{\frac{0.0319 * T_m * \Delta H_{avg} * 29}{\Delta H@ * (Pm) * Md}} = \frac{120}{79.695} \sqrt{\frac{.0319 * 512.04 * 1.520 * 29}{1.810 * 30.11 * 28.84}}$$

= 1.019 [Pm = (Pbar + ΔH / 13.6) = 30.00 + 1.520 / 13.6 = 30.11]

% Error = (Y_{qa} - Y) / Y_{qa} * 100 % Y = 1.020 = (1.019 - 1.020) / 1.019 * 100% =

= **-0.1** % Percent error must be less than 5% or a post test dry gas meter calibration is required.

The above calculations are from the 40 CFR 60 and assume English units.

EXAMPLE CALCULATION SHEET (2)
EPA METHODS 1, 2, 3A, AND 4
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure - M1-4,23-PCB
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Site: Hammermill Baghouse Exhaust
Date: 12/1/10
Run #: 1 - Method 23-PCB

Stack gas velocity and volumetric flow rate - Equations 2-9 and 2-10

$$V_s = 85.49 * C_p \sqrt{(\Delta P * T_s\ ^oR / (M_s\ g/gmole * P_s\ "Hg)}$$ [Ps = Pbar + Pstatic / 13.6]

$$= 85.49 * 0.822 \sqrt{0.643 * 517.7 / (28.77 * 29.96)}$$ [29.96 = 30.00 + -0.50 / 13.6]

$$= \mathbf{43.7}\ \text{ft/sec}$$

$$Q_{std} = 60 * (1 - B_{ws}) * V_s * A_s * T_{std}/T_s * P_s/P_{std}$$ [$As = \pi (S_{dia})^2 / 4 / 144\ (ft^2)$] or [$As = L * W / 144\ (ft^2)$]

$$= 60 * (1 - 0.0067) * 43.7 * 4.91 * 528 / 517.7 * 29.96 / 29.92$$

$$= \mathbf{13046}\ \text{dscf/min (dry standard cubic feet per minute)}$$

$$acfm = 43.7\ \text{ft/sec} * 4.91\ ft^2 * 60\ \text{sec/min}$$

$$= \mathbf{12859}\ \text{acfm (actual cubic feet per minute)}$$

Isokinetic Variation - Equation 5-8

$$\%\ Isokinetics = \frac{0.0945 * Vm_{(std)}\ dscf * T_s\ ^oR}{[P_s"\ Hg * V_s\ ft/sec * \theta\ minutes * A_n\ ft^2 * (1 - B_{ws})]}$$ [$A_n = \pi (N_{dia})^2 / 4 / 144\ (ft^2)$]

$$= \frac{0.0945 * 84.339 * 517.7}{[29.96 * 43.7 * 120 * 0.0003 * (1 - 0.0067)]}$$

$$= \mathbf{101}\ \%\ Isokinetics$$

The above calculations are from the 40 CFR 60 and assume English units.

EXAMPLE CALCULATION SHEET (3)
EPA METHODS 1, 2, 3A, 4 AND 23-PCB
PCBs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-4,23-PCB
Client:	Envirosure@Independent Metals
Location:	Seattle, Washington
Site:	Hammermill Baghouse Exhaust
Date:	12/1/10
Run #:	1

Example Compound: **PCB-123**

Volume sampled ($V_{m\ STD}$):	**2.389**	**dscm**	(From example calc 1)
Stack Airflow:	**13046**	**dscf/min**	(From example calc 2)
Analyte in Sample (pg):	**1800**	**pg**	
Analyte in Sample (ng):	**1.8**	**ng**	(ng = pg / 1000 pg/ng)

ng/dscm = Analyte (ng) / Vm_{STD} dscm

= 1.8 / 2.389

= **0.754** **ng/dscm** **PCB-123**

mg/dscm = ng/dscm / 1000 ng/µg / 1000 µg/mg

= 0.754 / 1000 / 1000

= **7.54E-07** **mg/dscm** **PCB-123**

lb/hr = (ng/dscm) / 1000 ng/µg / 1000 µg/mg / 35.31 ft^3/m^3 * dscf/min / 453600 mg/lb * 60 min/hr

= 0.75 / 1000 ng/µg / 1000 µg/mg / 35.31 ft^3/m^3 * 13046 / 453600 mg/lb * 60 min/hr

= **3.68E-08** **lb/hr** **PCB-123**

EXAMPLE CALCULATION SHEET (1)

EPA METHODS 1, 2, 3, 4, AND 306A

AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-4,306A
Client:	Envirosure@Independent Metals
Location:	Seattle, Washington
Site:	Hammermill Baghouse Exhaust
Date:	12/1/10
Run #:	1 - Method 306A

Dry Gas Meter Standard Volume - Equation 5-1

Vm_{std} = 17.647(°R/"Hg $_{(constant)}$) * volume sampled * Y_{factor} * (P_{bar} + ΔH / 13.6) / (460 + T_M)

= 17.647 * 89.499 ft^3 * 0.971 *(30.0 + 1.750 / 13.6) / (460 + 52.0 °F)

= **90.239** **dscf** / 35.31 ft^3/m^3 = **2.556** **dscm**

Moisture - Equation 5-2 and 5-3

349.7	(g) -	88.8 (g)	=	260.9 (g)	(Total water collected in the impingers.)
0.0	(mL) -	250.0 (mL)* 0.99823g/mL	=	-249.6 (g)	(The initial impingers were charged with 250mL of solution, 0.99823g/mL is the conversion factor (density) to g.)
0.0	(g) -	0.0 (g)	=	0.0 (g)	
634.1	(g) -	620.0 (g)	=	14.1 (g)	
			=	**25.4 (g)**	(Total g of water collected.)

Vw_{std} = 0.04715 ft^3/gm * 25.4 grams of H_2O collected in impingers = 1.20 scf H_2O

B_{WS} = (1.20) scf /(1.20 scf + 90.239 dscf) = 0.0131 B_{WS} * 100% = 1.31 % H_2O

Measured Moisture = 1.31 % **Psychrometric Moisture =** NA %

Actual Moisture = **1.31 %** **Actual B_{WS} =** **0.0131**

Actual moisture is determined by the lower of the measured moisture vs. the psychrometric moisture; since it is theoretically impossible for the % moisture to be higher than the psychrometric moisture. If the psychrometric moisture is higher then the measured moisture it is reported as NA.

Molecular Weight - Equation 3-2

M_d = 0.440 * (0.03 %CO_2) + 0.320 * (20.95 %O_2) +0.280 * (100%- 0.03 %CO_2- 20.95 %O_2(%CO+%N_2))

= **28.84** ***g/g-mole (dry)***

M_s = Md * (1-B_{WS}) +18.0 * B_{WS} = 28.84 g/g-mole *(1- 0.0131) + 18.0g/g-mole * 0.0131

= **28.70** **g/g-mole (wet)**

F_o = (20.9 - % O_2)/ %CO_2 = -1.667

Meter Box Calibration Error

$$Yqa = \frac{\theta}{Vm} * \sqrt{\frac{0.0319 * T_m * \Delta H_{avg} * 29}{\Delta H@ * (Pm) * Md}} = \frac{120}{89.499} \sqrt{\frac{0.0319 * 512.04 * 1.750 * 29}{1.769 * 30.13 * 28.84}}$$

= 0.985 [Pm = (Pbar + ΔH / 13.6) = 30.00 + 1.750 / 13.6 = 30.07]

% Error = (Y_{qa} - Y) / Y_{qa} * 100 % Y = 0.971 = (0.985 - 0.971) / 0.985 * 100% =

= **1.5** % Percent error must be less than 5% or a post test dry gas meter calibration is required.

The above calculations are from the 40 CFR 60 and assume English units.

EXAMPLE CALCULATION SHEET (2)

EPA METHODS 1, 2, 3, 4, AND 306A

AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name: 4098AT\Envirosure - M1-4,306A
Client: Envirosure@Independent Metals
Location: Seattle, Washington
Site: Hammermill Baghouse Exhaust
Date: 12/1/10
Run #: 1 - Method 306A

Stack gas velocity and volumetric flow rate - Equations 2-9 and 2-10

$Vs = 85.49 * C_p \sqrt{(\Delta P * Ts\ ^oR / (M_s\ g/gmole * P_S\ "Hg)}$ [Ps = Pbar + Pstatic / 13.6]

$= \underline{85.49} * \underline{0.82} \sqrt{\underline{0.6431} * \underline{517.7} / (\underline{28.70} * \underline{29.96})}$ [29.96 = 30.00 + -0.50 / 13.6]

= **43.7** **ft/sec**

$Q_{std} = 60 * (1 - B_{ws}) * V_s * A_s * T_{std}/T_s * P_s/P_{std}$ [$As = \pi (Sdia)2 / 4 / 144\ (ft^2)$] or [$A_s = W * L / 144\ (ft^2)$]

$= \underline{60} * (\underline{1} - \underline{0.0131}) * \underline{43.7} * \underline{4.91} * \underline{528} / \underline{517.7} * \underline{29.96} / \underline{29.92}$

= **12978** **dscf/min (dry standard cubic feet per minute)**

acfm = 43.7 ft/sec * 4.91 ft^2 * 60 sec/min

= **12874** **acfm (actual cubic feet per minute)**

The above calculations are from the 40 CFR 60 and assume English units.

EXAMPLE CALCULATION SHEET
PSYCHROMETRIC MOISTURE
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-4,306A
Client:	Envirosure@Independent Metals
Location:	Seattle, Washington
Site:	Hammermill Baghouse Exhaust
Date:	12/1/10
Run #:	1 - Method 306A

The calculations below are only applicable to stack temperatures below 212°F. The wet bulb temperature is assumed to equal the dry bulb temperature for these calculations used to determine if the psychrometric moisture is lower than the measured moisture. It is theorectically impossible for the measured moisture to be higher than the psychrometric moisture, as discussed in EPA Method 4.1.2. The formula for calculating the Saturated Vapor Pressure (SVP) corrects for stack pressure, unlike most psychrometric charts. If the psychrometric moisture is greater than 100% it is labeled as >100 or NA.

Psychrometric Moisture

Wet Bulb Temperature (T_w) =	**57.7 °F**	
Dry Bulb Temperature (T_d) =	**57.7 °F**	
Barometric Pressure (P_{bar}) =	**30.00 " Hg**	
Static Pressure (P_{static}) =	**-0.500 " H_2O**	
Stack Pressure (P_s) =	**29.96 " Hg**	$P_s = P_{bar} + (P_{static}/13.6)$

(P_s is also refered to as Absolute Pressure P_A)

SVP = Saturated Vapor Pressure (" Hg)

VP = Vapor Pressure (" Hg)

$$SVP = [\,0.0000000000000177506 * (T_w)^6 + 0.0000000000321411 * (T_w)^5 + 0.0000000034906 * (T_w)^4 + 0.000000508299 * (T_w)^3 + 0.0000477395 * (T_w)^2 + 0.00222231 * (T_w) + 0.0361287\,]$$

$$= \underline{0.4803} \text{ " Hg}$$

$$VP = SVP - ((P_S - SVP) * (T_d - T_w) / (2800 - (1.3 * T_w))$$

$$= \underline{0.4803} - ((\underline{29.96} - \underline{0.4803}) * (\underline{57.7} - \underline{57.7}) / (\underline{2800} - (\underline{1.3} * \underline{57.7}))$$

$$= \underline{0.4803} \text{ " Hg}$$

B_{ws} = VP / PS = 0.480 / 29.96

B_{ws} = **0.0160** * 100 % = % Psychrometric Moisture

% H_2O = 1.60 % Psychrometric Moisture

EXAMPLE CALCULATION SHEET (Cr VI)
EPA METHODS 1, 2, 3, 4, AND 306A
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure - M1-4,306A
Client:	Envirosure@Independent Metals
Location:	Seattle, Washington
Site:	Hammermill Baghouse Exhaust
Date:	12/1/10
Run #:	1 - Method 306A

Volume Sampled ($V_{m\ STD}$):	**2.556**	**dscm**
Stack Airflow:	**12978**	**dscf/min**
Chromium (VI) in Sample:	**0.708**	**µg**
Cr VI Molecular Weight:	**52.00**	**mg/mmole**
Gas Constant:	**24.055**	**mL/m-mole at 20°C (293.15°K) (68°F)**

Chromium (VI) Emission Results

mg/dscm = Cr VI (µg) / Vm_{STD} = µg/dscm

= 0.708 / 2.556

= **0.277** **µg/dscm** **Chromium (VI)**

= **0.000277** **mg/dscm** **Chromium (VI)** **(1000 µ / mg)**

ppm = (mg/dscm) * 24.055mL/m-mole / MW mg/mmole * m^3 / 10^6mL * 10^6ppm

= 0.000277 * 24.055 / 52.00 * * $10^6/10^6$

= **0.00013** **ppm Chromium (VI)**

lb/hr = (mg/dscm) * $1m^3/35.31ft^3$ * dscf/min * 1lb/453600mg * 60min/hr

= 0.000277 / 35.31 * 12978 / 453600 * 60

= **0.000013** **lb/hr Chromium (VI)**

EXAMPLE CALCULATION SHEET (1)
EMISSION CONCENTRATION RESULTS
ORGANIC TAPs
AMTEST AIR QUALITY, AN AFFILIATE OF HORIZON ENGINEERING

File Name:	4098AT\Envirosure-TO15
Client:	Envirosure@Independent Metals
Location:	Seattle, Washington
Site:	Hammermill Baghouse Exhaust
Date:	11/30/10
Run #:	1

Example Compound: **Benzene**

Stack Airflow: **12752** **dscf/min**

Analyte in Sample: **4.6** **µg/m^3**

mg/dscm = µg/dscm / 1000 µg/mg

= 4.6 / 1000

= **0.005** **mg/dscm** **Benzene**

lb/hr = (µg/dscm) / 1000 µg/mg / 35.31 ft^3/m^3 * dscf/min / 453600 mg/lb * 60 min/hr

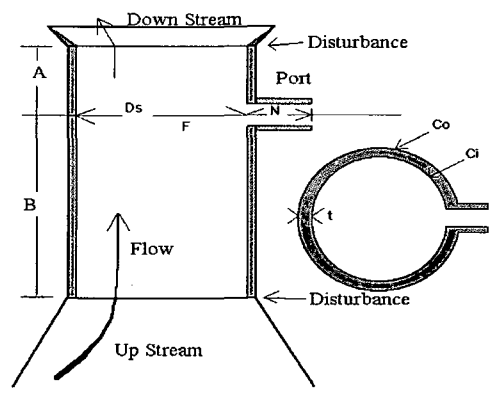
= 4.60 / 1000 µg/mg / 35.31 ft^3/m^3 * 12752 / 453600 mg/lb * 60 min/hr

= **2.20E-04** **lb/hr** **Benzene**

Traverse Point Locations

Independent Metals — 30-Nov-10
Baghouse Exhaust — PS
Seattle, WA
EPA 1 — AH

Outer Circumference	Co	in	
Wall thickness	t	in	
INSIDE of FAR WALL to OUTSIDE of Nipple	F	in	33.50
INSIDE of NEAR WALL to OUTSIDE of Nipple	N	in	3.5
STACK WALL to to OUTSIDE of Nipple	N-t	in	
DOWNstream Disturb	A	in	480.0
UPstream Disturb	B	in	79.5
Inner Diameter	Ds	in	30
Area	As	sqin	706.9
DOWNstream Ratio	A/Ds		16.00
UPstream Ratio	B/Ds		2.65
Minimum #Pts (Particulate)			24
Minimum #Pts/Diameter			12
Minimum #Pts (NON-Particulate)			16
Minimum #Pts/Diameter			8
Actual Points per Diameter			12
Actual Points Used			24



Trav Pt #No	Fract Stk ID (f)	Stack ID (Ds)	Actual Points (Dsxf)	Nearest 8ths (TP)	Adjusted Points (TP)	Traverse Points (TP + N)	Traverse Points (TP + N)
1	2.13%	30.0	0.6	0.625	1	4.5	4 1 / 2
2	6.70%	30.0	2.0	2	2	5.5	5 1 / 2
3	11.81%	30.0	3.5	3.5	3.5	7	7
4	17.73%	30.0	5.3	5.375	5.375	8.875	8 7 / 8
5	25.00%	30.0	7.5	7.5	7.5	11	11
6	35.57%	30.0	10.7	10.625	10.625	14.125	14 1 / 8
7	64.43%	30.0	19.3	19.375	19.375	22.875	22 7 / 8
8	75.00%	30.0	22.5	22.5	22.5	26	26
9	82.27%	30.0	24.7	24.625	24.625	28.125	28 1 / 8
10	88.19%	30.0	26.5	26.5	26.5	30	30
11	93.30%	30.0	28.0	28	28	31.5	31 1 / 2
12	97.87%	30.0	29.4	29.375	29	32.5	32 1 / 2

Field Data Sheet

HORIZON ENGINEERING
13585 NE Whitaker Way
Portland, OR 97230
Phone (503) 255-5050
Fax (503) 255-0505

Nozzle
.2195
.2205
.2200

Client: Independent Metals
Plant: Seattle, WA
Location: Shredder B.H
Sample Location: Exhaust

Date 11/30/2010
Test Method 5/29
Concurrent Testing Yes 306
Run # 1

Stack Diagram
ALT-011

Probe 35-3 (g/s) Cp 0.8322 Heat Set 250 °F
Post-Test Pitot Inspection NC (NC=no change, D=damaged)
Pitot Lk Rate in H2O@in H2O Pre: Hi 0 @4 Lo 0 @4 Post 0 @ 5 0 @ 5

Operator MSL Support PS
Temperature, Ambient (Ta)
Moisture 1.6 Tdb Twb
Press., Static (Pstat) 0.5 Press., Bar (Pb) 30.0
Cyclonic Flow Expected ? N If yes, avg. null angle ____ degrees

Std TC (ID/°F) 200702/40
Stack TC (ID/°F) 383/40
Continuity Check 0 or ↓

Nozzle 0.2200 Oven 20 Imp. Outlet I-12
Filter 10-M29-39 Heat Set 150 °F
Meter Box 1 dH@ 1.80952 Y 1.01976
Meter Leak Check Pretest: 0.002 cfm 14 inHg Post: 0.003 cfm 14 inHg

Traverse Point Number	Sampling Time min (dt)	Clock Time (24 hr)	Dry Gas Meter Reading cuft (Vm)	Velocity Head in H2) (dPs)	Orifice Pressure in H2O DESIRED	Orifice Pressure H2O ACTUAL (dH)	STACK °F (Ts) Amb:	PROBE °F (Tp) Amb:	OVEN Filter °F (To) Amb:	IMPINGER Outlet °F (Ti) Amb:	METER Inlet/Avg. °F (Tm-in) Amb:	METER Outlet °F (Tm-out) Amb:	Pump Vacuum inHg (Pv)
		0745	301.707										
1	5	—	—	0.80	1.96	1.96	54	224	251	40	39	40	1
2	10		309.321	0.65	1.59	1.6	55	239	247	40	39	40	1
3	15	*Paused	312.618	0.60	1.47	1.5	55	242	246	40	39	40	1
4	20	705	315.744	0.60	1.47	1.5	52	247	249	40	46	47	1
5	25		319.022	0.70	1.71	1.7	53	241	250	40	50	47	1
6	30		322.444	0.62	1.52	1.5	55	242	251	41	51	47	1
7	35		325.768	0.58	1.42	1.42	59	245	251	42	53	48	1
8	40		328.941	0.63	1.49	1.50	58	246	252	43	55	49	1
9	45		332.243	0.66	1.57	1.6	59	239	248	43	57	49	1
10	50		335.561	0.74	1.75	1.75	61	242	240	43	59	49	1
11	55		339.315	0.71	1.68	1.70	61	245	246	44	61	51	1
12	60	946 950	342.810	0.48	1.14	1.1	59	241	238	45	58	52	1
1	65		345.770	0.44	1.04	1.04	59	240	239	43	60	53	1
2	70		348.561	0.46	1.09	1.10	60	246	245	44	60	54	1
3	75		351.342	0.49	1.16	1.20	61	247	248	43	62	53	1
4	80		354.424	0.45	1.07	1.1	60	246	249	40	62	55	1
5	85		357.440	0.43	1.02	1.0	60	246	250	41	63	54	1
6	90		360.198	0.47	1.1	1.1	59	247	251	41	64	56	1
7	95		363.224	0.61	1.45	1.45	59	247	252	40	64	57	1
8	100		366.413	0.74	1.75	1.75	62	248	252	41	66	57	1
9	105		370.004	0.81	1.92	1.9	62	247	251	40	67	58	1
10	110		373.752	0.87	2.06	2.10	62	249	251	40	66	57	1
11	115		377.708	0.88	2.09	2.1	62	247	251	40	68	57	1
12	120	1050	381.686	0.88	2.09	2.1	59	247	251	41	68	58	1

Notes:

Field Data Sheet

HORIZON ENGINEERING
13585 NE Whitaker Way
Portland, OR 97230
Phone (503) 255-5050
Fax (503) 255-0505

Nozzle
.2190
.2190
.2195

Client: Independent Metals
Plant: Seattle, WA
Location: shredder B.H.
Sample Location: Exhaust

Date 11/30/2010
Test Method M5/29
Concurrent Testing Yes TO-15
Run # 2
Stack Diagram

Probe 4-4 (g/s) Cp 0.8218 Heat Set 250 °F
Post-Test Pitot Inspection N/C (NC=no change, D=damaged)
Pitot Lk Rate Pre: Hi 0 @ 4 Post 0 @ 4
in H2O@in H2O Lo 0 @ 4 0 @ 4

Operator MSL Support PS
Temperature, Ambient 47 (Ta)
Moisture 16 Tdb Twb
Press., Static (Pstat) 0.5 Press., Bar (Pb) 30
Cyclonic Flow Expected? N If yes, avg. null angle____degrees

ALT-011
Std TC (ID/°F) 200702/40
Stack TC (ID/°F) 44/40
Continuity Check (↑) or ↓

Nozzle 0.2192 Oven 329 Imp. Outlet I-8
Filter 10-M29-40 Heat Set 252 °F
Meter Box 1 dH@ 1.89952 Y 1.01976
Meter Pretest: 0.011 cfm 14 inHg
Leak Check Post: 0.018 cfm 17 inHg

Traverse Point Number	Sampling Time min (dt)	Clock Time (24 hr)	Dry Gas Meter Reading cuft (Vm)	Velocity Head in H2) (dPs)	Orifice Pressure in H2O DESIRED	Orifice Pressure H2O ACTUAL (dH)	STACK °F (Ts) Amb:	PROBE °F (Tp) Amb:	OVEN Filter °F (To) Amb:	IMPINGER Outlet °F (Ti) Amb:	METER Inlet/Avg. °F (Tm-in) Amb:	METER Outlet °F (Tm-out) Amb:	Pump Vacuum inHg (Pv)
		1136	383.560										
1	5		386.342	0.42	0.98	0.98	61	254	247	49	57	56	
2	10		———	0.42	0.98	0.98	60	241	249	47	57	56	
3	15		391.920	0.43	1.00	1.00	61	246	252	46	58	59	
4	20		394.724	0.43	1.0	1.0	62	248	251	46	55	59	
5	25		397.578	0.50	1.16	1.2	62	250	238	49	59	54	
6	30		400.476	0.47	1.09	1.1	61	251	242	45	60	55	
7	35		403.406	0.63	1.46	1.5	60	251	239	45	60	54	
8	40		407.161	0.74	1.72	1.7	61	251	242	45	62	56	
9	45		410.934	0.84	1.95	1.95	63	249	246	45	63	57	
10	50		414.664	0.86	2.00	2.00	61	253	248	45	63	56	
11	55		418.181	0.73	1.7	1.7	62	255	246	45	63	56	
12	60	1236 / 1238	421.730	0.78	1.81	1.8	60	251	246	46	63	57	
1	65		426.278	0.80	1.81	1.9	61	244	246	47	61	56	
2	70		429.927	0.75	1.74	1.7	62	254	247	46	62	56	
3	75		433.353	0.68	1.58	1.68	62	254	249	45	63	57	
4	80		436.691	0.64	1.49	1.5	62	252	245	44	63	57	
5	85		439.863	0.58	1.35	1.35	61	250	244	44	64	57	
6	90	1306 / 1320	442.920	0.54	1.25	1.2	61	250	252	45	64	57	
7	95		446.030	0.55	1.28	1.3	59	251	244	44	58	59	
8	100		449.178	0.62	1.44	1.4	59	252	247	44	57	60	
9	105		452.450	0.65	1.51	1.5	61	252	246	44	62	57	
10	110		455.974	0.67	1.56	1.6	58	253	247	45	63	57	
11	115		459.186	0.66	1.53	1.5	61	255	247	44	63	58	
12	120	1357	462.570	0.67	1.56	1.6	62	250	246	46	63	58	

Notes: Paused at 1306 for process shut down (86.25) / Restarted @ 1320

Field Data Sheet

HORIZON ENGINEERING
13585 NE Whitaker Way
Portland, OR 97230
Phone (503) 255-5050
Fax (503) 255-0505

Client: Independent Metals
Plant: Seattle WA
Location: Shredder B.H.
Sample Location: Exhaust

Date 11/30/2010
Test Method 5/29
Concurrent Testing Vol - TO15
Run # 3

Probe 35-3 (g/s) Cp 0.8322 Heat Set 250 °F
Post-Test Pitot Inspection NL (NC=no change, D=damaged)
Pitot Lk Rate in H2O@in H2O Pre: Hi 0 @4 Lo 0 @4 Post 0 @5 0 @5

Stack Diagram
ALT-011

Operator MSL Support BS
Temperature, Ambient 48 (Ta)
Moisture 1.6% Tdb Twb
Press., Static (Pstat) 0.5 Press., Bar (Pb) 30.0
Cyclonic Flow Expected ? N If yes, avg. null angle ____ degrees

Std TC (ID/°F) ____
Stack TC (ID/°F) ____
Continuity Check ↑ or ↓

Nozzle 0.2200 Oven 20 Imp. Outlet I-12
Filter 10.M29.38 Heat Set 248 °F
Meter Box 1 dH@ 1.80952 Y 1.0197e
Meter Leak Check Pretest: 0.002 cfm 17 inHg Post: 0.004 cfm 21 inHg

Traverse Point Number	Sampling Time min (dt)	Clock Time (24 hr)	Dry Gas Meter Reading cuft (Vm)	Velocity Head in H2O (dPs)	Orifice Pressure in H2O DESIRED	Orifice Pressure H2O ACTUAL (dH)	STACK °F (Ts) Amb:	PROBE °F (Tp) Amb:	OVEN Filter °F (To) Amb:	IMPINGER Outlet °F (Ti) Amb:	METER Inlet/Avg. °F (Tm-in) Amb:	METER Outlet °F (Tm-out) Amb:	Pump Vacuum inHg (Pv)
		1417	462.980										
1	5		467.251	0.87	2.12	2.1	59	244	251	49	58	58	5
2	10		470.322	0.81	1.97	2.0	59	246	242	35	60	57	5
3	15		474.944	0.83	2.02	2.0	60	248	245	39	61	57	5
4	20		478.561	0.72	1.75	1.8	59	249	247	38	62	58	5
5	25		481.954	0.66	1.61	1.6	61	251	240	38	65	58	5
6	30		485.322	0.60	1.46	1.5	63	252	247	39	64	58	5
7	35		488.811	0.69	1.68	1.7	59	251	248	40	66	59	4
8	40		492.428	0.74	1.80	1.8	61	252	247	42	67	58	4
9	45		496.081	0.74	1.80	1.8	60	253	247	41	66	60	5
10	50		499.682	0.65	1.58	1.6	61	252	248	42	67	60	5
11	55		503.001	0.60	1.46	1.5	60	252	247	42	67	60	4
12	60	1517 1617	506.235	0.60	1.46	1.5	62	252	249	42	67	61	4
1	65		509.321	0.48	1.17	1.2	63	248	251	43	60	62	3
2	70		512.349	0.49	1.19	1.2	62	244	240	44	60	62	3
3	75		515.282	0.45	1.1	1.1	61	243	244	42	60	62	3
4	80		518.—	0.48	1.17	1.2	63	247	249	42	59	64	3
5	85		521.284	0.48	1.17	1.2	62	250	247	44	60	65	3
6	90		524.518	0.53	1.29	1.3	62	250	245	44	60	65	4
7	95		527.912	0.71	1.73	1.7	62	251	247	45	60	66	5
8	100		531.702	0.80	1.95	2.0	64	247	251	45	60	67	5
9	105		535.520	0.83	2.02	2.0	65	252	248	46	60	67	5
10	110		539.682	0.92	2.24	2.2	65	252	250	46	61	68	5
11	115	~~1630~~	543.724	0.87	2.12	2.1	65	252	247	48	62	68	6
12	120	1630	547.445	0.87	2.12	2.1	65	251	249	47	62	67	6

Notes:

HORIZON ENGINEERING LLC
13585 NE Whitaker Way • Portland, OR 97230
Phone (503) 255-5050 • Fax (503) 255-0505
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Sample Recovery Worksheet – EPA Method 29 Multi-Metals

Client: Independent Metals Source: Baghouse Exhaust

Run No.: 1 Test Date: 20101130

Container No.	Tare	Imp. Cont.	#1 Rinse	#2 Rinse	Start	End
			grams			
#1 Filter 10-M29-039						
#2 Imp. Acetone	286		360			
#3 Probe Rinse, HNO_3	20		118			
#4 HNO_3 or HNO_3/H_2O_2	76	298	393			
#5A, 0.1 N HNO_3	20	20	116			
# 5B $KMNO_4/H_2SO_4/H_2O$	486	710	821	917		
#5C 8N HCl / H_2O	20		243			
#6 Silica Gel	620	632				

Run No.: 2 Test Date: 20101130

Container No.	Tare	Imp. Cont.	#1 Rinse	#2 Rinse	Start	End
			grams			
#1 Filter 10-M29-40						
#2 Imp. Acetone	303		378			
#3 Probe Rinse, HNO_3	20		120			
#4 HNO_3 or HNO_3/H_2O_2	75	299	392			
#5A, 0.1 N HNO_3	20	20	117			
# 5B $KMNO_4/H_2SO_4/H_2O$	485	708	820	918		
#5C 8N HCl / H_2O	20		246			
#6 Silica Gel	620	633				

Run No.: 3 Test Date: 20101130

Container No.	Tare	Imp. Cont.	#1 Rinse	#2 Rinse	Start	End
			grams			
#1 Filter 10-M29-38						
#2 Imp. Acetone	303		380			
#3 Probe Rinse, HNO_3	20		118			
#4 HNO_3 or HNO_3/H_2O_2	76	306	402			
#5A, 0.1 N HNO_3	20	20	119			
# 5B $KMNO_4/H_2SO_4/H_2O$	485	710	818	919		
#5C 8N HCl / H_2O	20		245			
#6 Silica Gel	620	634				

Sample Recovery / Moisture Catch

Client	Independent Metals		30-Nov-10 Date
Source	Baghouse Exhaust		PS Operator
Location	Seattle, WA		4098AT
			AH Analyst

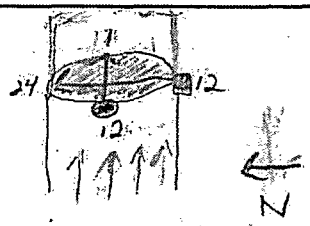
Definitions		Symbol	Units	Run 1						Run 2						Run 3					
Impinger Contents				2	3	4	5A	5B	5C	2	3	4	5A	5B	5C	2	3	4	5A	5B	5C
		Rinse #2	g					917	243					918	246					919	245
		Impinger, Contents,Condensate & Rinse#1	g	360	118	393	116	821	20	378	120	392	117	820	20	380	118	402	119	818	20
spg		Impinger, Contents & Condensate	g	286	20	298	20	710	20	303	20	299	20	708	20	303	20	306	20	710	20
g/ml		Impinger	g	286	20	76	20	486	20	303	20	75	20	485	20	303	20	76	20	485	20
	1.05900	10% H2O2 / 5% HNO3	ml			200	0	0	0			200	0	0	0			200	0	0	0
	1.15155	4% KMnO4 / 10% H2SO4	ml			0	0	200	0			0	0	200	0			0	0	200	0
	1.00163	0.1 N HNO3	ml			0	0	0	0			0	0	0	0			0	0	0	0
	0.99823	H2O	ml			0	0	0	0			0	0	0	0			0	0	0	0
	1.08784	8N HCL / H2O	ml			0	0	0	0			0	0	0	0			0	0	0	0
		Condensate	g			10.2	0.0	-6.3	0.0			12	0	-7	0			18	0	-5	0
		Rinse	g		98	100	96	207	223		100	100	97	210	226		98	100	99	209	225
		Acetone	gm	74.0						75.0						77.0					
			ml	93.4						94.6						97.2					
		0.1 N HNO3	gm		98.0	95.0	96.0				100.0	93.0	97.0				98.0	96.0	99.0		
			ml		97.8	94.8	95.8				99.8	92.8	96.8				97.8	95.8	98.8		
Rinse + Initial		10% KMnO4	gm					407.0						410.0						409.0	
			ml					353.4						356.0						355.2	
		10% H2O2 / 5% HNO3	gm																		
			ml			200						200						200.0			
		8N HCL / H2O	gm						223						226						224.5
			ml						205.0						207.8						206.4
Silica Gel Impinger		Final weight	g			632						633						634.00			
		Initial weight	g			620						620						620.00			
		Gain	g			12						13						14.00			
Total Moisture Gain		Condensate + Silica Gel gain	g			15.9						17.9						26.9			
Vlc		Net Moisture Gain	ml			15.9						17.9						26.9			

Run 1			Run 2			Run 3		
286.0 (g)	286.0 (g)	0.0 (g)	303.0 (g)	303.0 (g)	0.0 (g)	303.0 (g)	303.0 (g)	0.0 (g)
20.0 (g)	20.0 (g)	0.0 (g)	20.0 (g)	20.0 (g)	0.0 (g)	20.0 (g)	20.0 (g)	0.0 (g)
222.0 (g)	200.0 (ml)	10.2 (g)	224.0 (g)	200.0 (ml)	12.2 (g)	230.0 (g)	200.0 (ml)	18.2 (g)
20.0 (g)	20.0 (g)	0.0 (g)	20.0 (g)	20.0 (g)	0.0 (g)	20.0 (g)	20.0 (g)	0.0 (g)
224.0 (g)	200.0 (ml)	-6.3 (g)	223.0 (g)	200.0 (ml)	-7.3 (g)	225.0 (g)	200.0 (ml)	-5.3 (g)
20.0 (g)	20.0 (g)	0.0 (g)	20.0 (g)	20.0 (g)	0.0 (g)	20.0 (g)	20.0 (g)	0.0 (g)
632.0 (g)	620.0 (g)	12.0 (g)	633.0 (g)	620.0 (g)	13.0 (g)	634.0 (g)	620.0 (g)	14.0 (g)
Total H_2O Gain:		15.9 (g)	Total H_2O Gain:		17.9 (g)	Total H_2O Gain:		26.9 (g)

Nozzle
.2190
.2190
.2195

EPA M-23 Field Data Sheet

HORIZON ENGINEERING INC
13585 NE Whitaker Way
Portland, OR 97230
Phone (503) 255-5050
Fax (503) 255-0505



Stack Diagram

Client: Independent metals
Plant: Seattle, WA
Location: Baghouse
Sample Location: Exhaust

Date 20/01/01
Test Method EPA 23 PCBs
Concurrent Testing 306A
Run # 1

Probe 4-4 Cp .8218 Heat Set 250 °F
Post-Test Pitot Inspection (NC=no change, D=damaged)
Pitot Lk Rate in H2O@in H2O Pre: Hi D@ 5 Post D@ 4 Lo D@ 4 D@ 4

Operator RS Support MC
Temperature, Amb (Ta) 42
Moisture 3% Tdb Twb
Press., Static (Pstat) -0.5 Press., Bar (Pb) 30.0
Cyclonic Flow Expected ?____ If yes, avg. null angle____ degrees

ALT-011
Std TC (ID/°F) 200702/41°
Stack TC (ID/°F) 4-4/400°
Continuity Check (1) or ↓

Nozzle .2192 Oven 230 Imp. Outlet ?
Filter — Heat Set 250 °F
Meter Box 1 dH@ 1.8852 Y 1.0197
Meter Leak Check Pretest: 0.015 cfm 15 inHg Post: 0.016 cfm 12 inHg

Traverse Point Number	Sampling Time min (dt)	Clock Time (24 hr)	Dry Gas Meter Reading cuft (Vm)	Velocity Head in H2O (dPs)	Orifice Pressure in H2O DESIRED	Orifice Pressure H2O ACTUAL (dH)	STACK °F (Ts) Amb:	PROBE °F (Tp) Amb:	OVEN Filter °F (To) Amb:	TRAP °F (Tt) Amb:	IMPINGER Outlet °F (Ti) Amb:	METER Inlet/Avg °F (Tm-in) Amb:	METER Outlet °F (Tm-out) Amb:	Pump Vacuum inHg (Pv)
		7:55	547.950											
1	5		551.52	0.80	1.90	1.9	54	241	250	40	40	39	39	9
2	10		555.22	0.82	1.95	2.0	56	245	246	34	38	40	38	9
3	15		558.75	0.71	1.67	1.7	56	252	248	32	40	43	38	9
4	20		562.11	0.66	1.55	1.6	58	253	249	33	40	47	40	7
5	25		565.41	.64	1.50	1.5	58	254	250	32	40	49	40	7
6	30		568.67	.60	1.41	1.4	58	256	246	32	40	51	41	7
7	35		571.87	.55	1.29	1.3	59	254	246	32	41	52	43	6
8	40		574.95	.61	1.43	1.4	60	254	249	33	43	56	43	7
9	45		578 —	.65	1.54	1.5	60	257	244	33	42	56	45	7
10	50	8:46/8:50	581.67	.67	1.59	1.6	60	257	246	34	42	58	47	7
11	55		584.93	.59	1.40	1.4	55	248	246	33	42	59	50	7
12	60	0900/0904	586.20	.60	1.43	1.4	55	249	244	33	43	59	50	7
13	65		591.17	.45	1.08	1.1	53	259	243	32	42	52	50	5
14	70		593.97	.46	1.11	1.1	55	251	246	34	40	57	51	5
15	75		596.87	.46	1.11	1.1	57	250	246	37	40	59	53	5
16	80		599.62	.47	1.13	1.1	55	252	251	39	41	60	52	5
17	85		—	.48	1.16	1.2	58	253	249	40	41	62	53	5
18	90		605.57	.51	1.23	1.2	57	253	251	42	42	62	54	5
19	95	9:43/9:47	609.04	.71	1.60	1.6	60	258	248	42	42	62	55	5
20	100		612.66	.81	1.83	1.8	59	250	243	43	43	60	55	5
21	105		616.33	.86	1.94	1.9	59	246	246	43	43	60	55	8
22	110		620.27	.92	2.07	2.1	61	256	245	45	45	63	56	10
23	115		623.95	.80	1.80	1.8	60	248	246	46	45	65	57	10
24	120	10:16	627.645	.78	1.76	1.8	61	255	246	46	45	65	57	10
25														

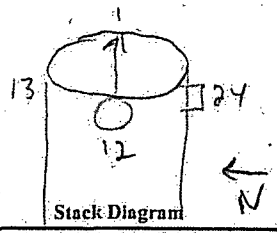
Notes:

EPA M-23 Field Data Sheet

HORIZON ENGINEERING
13585 NE Whitaker Way
Portland, OR 97230
Phone (503) 255-5050
Fax (503) 255-0505

Client: Independent metals
Plant: Seattle, WA
Location: Baghouse
Sample Location: Exhaust

Date 20101201
Test Method EPA 23 PCBs
Concurrent Testing 306A
Run # 2



Stack Diagram

Probe 35-3 Cp .8322 Heat Set 250 °F
Post-Test Pitot Inspection (NC=no change, D=damaged)
Pitot Lk Rate in H2O@in H2O Pre: Hi 0 @ 5 Post 0 @ 5 Lo 0 @ 5 0 @ 4

Operator PS Support MC
Temperature, Amb (Ta) 43
Moisture 3% Tdb Twb
Press., Static (Pstat) -0.5 Press., Bar (Pb) 30.10
Cyclonic Flow Expected ?____ If yes, avg. null angle____ degrees

ALT-011
Std TC (ID/°F)
Stack TC (ID/°F)
Continuity Check ↑ or ↓

Nozzle .2192 Oven 229 Imp. Outlet 7
Filter — Heat Set 250 °F
Meter Box 1 dH@ 1.8052 Y 1.0197
Meter Pretest: 0.005 cfm 12 inHg
Leak Check Post: 0.005 cfm 12 inHg

Traverse Point Number	Sampling Time min (θ)	Clock Time (24 hr)	Dry Gas Meter Reading cuft (Vm)	Velocity Head in H2O (dPs)	Orifice Pressure in H2O DESIRED	Orifice Pressure H2O ACTUAL (dH)	STACK °F (Ts) Amb:	PROBE °F (Tp) Amb:	OVEN Filter °F (To) Amb:	TRAP °F (Tt) Amb:	IMPINGER Outlet °F (Ti) Amb:	METER Inlet/Avg °F (Tm-in) Amb:	METER Outlet °F (Tm-out) Amb:	Pump Vacuum inHg (Pv)
		10:46	628.700											
1	5		632.44	.87	2.01	2.0	60	248	241	37	48	56	56	5
2	10		636.—	.90	2.08	2.1	59	248	241	37	48	61	56	5
3	15		639.96	.81	1.87	1.9	60	248	245	33	48	63	56	7
4	20		643.57	.75	1.73	1.7	61	251	245	34	49	65	57	5
5	25		647.—	.71	1.64	1.6	63	254	241	35	48	66	57	5
6	30		650.—	.66	1.54	1.5	63	248	248	34	48	66	58	5
7	35		653.55	.61	1.42	1.4	63	251	248	34	47	66	58	5
8	40		656.82	.66	1.54	1.5	63	254	243	36	49	66	59	5
9	45		660.56	.80	1.87	1.9	63	250	242	35	48	67	59	5
10	50		664.—	.72	1.67	1.7	63	251	243	36	49	69	60	5
11	55		667.64	.67	1.56	1.6	63	258	245	36	49	69	60	5
12	60	11:46 / 11:49	670.98	.64	1.49	1.5	62	246	245	38	49	70	60	5
13	65		673.80	.51	1.12	1.1	64	250	240	37	48	66	61	4
14	70		676.83	.52	1.21	1.2	61	251	240	38	48	67	61	4
15	75		679.70	.51	1.12	1.1	61	250	239	38	48	67	61	4
16	80		682.65	.56	1.31	1.3	61	250	241	41	48	67	62	4
17	85		685.73	.56	1.31	1.3	61	253	244	42	48	67	61	5
18	90		688.80	.56	1.31	1.3	61	254	247	46	48	67	61	5
19	95		692.36	.73	1.70	1.7	62	253	247	48	48	68	61	6
20	100		696.06	.79	1.84	1.8	64	253	248	52	50	68	61	6
21	105		699.82	.84	1.96	2.0	63	253	248	49	51	69	61	8
22	110		703.77	.91	2.12	2.1	62	254	247	49	51	69	61	8
23	115		708.—	.98	2.29	2.3	63	253	247	53	57	70	62	9
24	120	12:49	712.000	.98	2.29	2.3	63	253	248	55	51	70	62	9
25														

Notes:

EPA M-23 Field Data Sheet

HORIZON ENGINEERING INC
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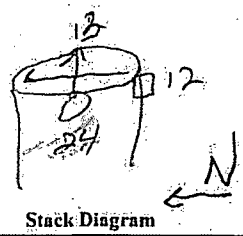

Stack Diagram

Client: Independent metals
Plant: Seattle, WA
Location: Baghouse
Sample Location: Exhaust

Date 20101201
Test Method EPA 23 PCBs
Concurrent Testing 306A
Run # 3

Probe 4-4 Cp .8218 Heat Set 250 °F
Post-Test Pitot Inspection (NC=no change, D=damaged)
Pitot Lk Rate in H2O@in H2O Pre: Hi 0 @5 Post 0 @5 Lo 0 @4 0 @6

Operator PS Support MC
Temperature, Amb (Ta) 49
Moisture 3% Tdb Twb
Press., Static (Pstat) -0.5 Press., Bar (Pb) 30.0
Cyclonic Flow Expected ? ____ If yes, avg. null angle ____ degrees

ALT-011
Std TC (ID/°F) ____
Stack TC (ID/°F) ____
Continuity Check ↑ or ↓

Nozzle .2192 Oven 230 Imp. Outlet ?
Filter — Heat Set 250 °F
Meter Box 1 dH@ 1.80952Y 1.01976
Meter Leak Check Pretest: 0.010 cfm 15 inHg Post: 0.005 cfm 10 inHg

Traverse Point Number	Sampling Time min (dt)	Clock Time (24 hr)	Dry Gas Meter Reading cuft (Vm)	Velocity Head in H2 (dPs)	Orifice Pressure in H2O DESIRED	Orifice Pressure H2O ACTUAL (dH)	STACK °F (Ts)	PROBE °F (Tp)	OVEN Filter °F (To)	TRAP °F (Tt)	IMPINGER Outlet °F (Ti)	METER Inlet/Avg. °F (Tm-in)	METER Outlet °F (Tm-out)	Pump Vacuum inHg (Pv)
		1325	713.400				Amb:	Amb:	Amb:	Amb:	Amb:	Amb:	Amb:	
1	5		716.—	.48	1.09	1.1	63	248	244	34	44	59	59	3
2	10		719.00	.48	1.09	1.1	64	246	242	35	43	62	60	3
3	15		722.00	.48	1.09	1.1	64	252	243	36	44	65	60	3
4	20		724.70	.45	1.01	1.0	63	251	248	33	47	65	59	3
5	25		727.63	.45	1.01	1.0	62	251	247	33	45	67	59	4
6	30		730.46	.48	1.09	1.1	63	253	248	34	45	66	60	4
7	35		733.64	.55	1.25	1.3	62	254	246	34	45	68	60	4
8	40		737.01	.68	1.55	1.6	63	254	246	34	46	69	61	5
9	45		740.71	.78	1.78	1.8	63	254	249	34	46	69	62	5
10	50		744.31	.86	1.96	2.0	64	254	246	35	46	69	61	7
11	55		748.30	.94	2.14	2.1	63	252	245	35	46	69	61	8
12	60	1425 / 1507	752.23	.94	2.14	2.1	63	257	247	35	46	70	61	8
13	65		755.96	.79	1.80	1.8	61	243	233	34	46	66	61	6
14	70		759.43	.75	1.71	1.7	63	246	246	35	42	61	58	7
15	75		762.93	.71	1.62	1.6	63	249	247	36	42	64	58	7
16	80		766.28	.65	1.48	1.5	63	252	249	35	44	66	59	7
17	85		769.50	.61	1.39	1.4	63	253	249	36	45	67	58	6
18	90		772.81	.61	1.39	1.4	63	254	247	36	45	67	58	6
19	95		775.92	.56	1.27	1.3	65	255	243	37	46	68	58	6
20	100		779.—	.67	1.52	1.5	64	254	242	36	46	68	58	6
21	105		782.48	.67	1.52	1.5	64	253	247	36	46	68	58	6
22	110		785.80	.67	1.52	1.5	62	257	247	38	47	67	58	6
23	115		789.05	.67	1.52	1.5	61	256	248	38	47	67	58	6
24	120	1607	792.345	.63	1.43	1.4	61	253	245	38	47	67	58	6
25														

Notes:

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M23 / PCB

Sample Recovery Worksheet

Client & Source: Independent Metals Baghouse Exhaust Test Date: 12/1

Sample Location: Seattle, WA Hammermill Initials: MSC

Balance Calibration (1000, 500, 200 g)
Need one per each 3-run test / /

IMPINGER CONTENTS	RUN 1	RUN 2	RUN 3
Container, condensate & rinse, grams	609.4	681.6	639.0
Container & condensate, grams	452.7	454.8	456.9
Empty container, grams	257.7	257.5	257.3
Initial volume, ml	200	200	200
Initial contents	H_2O	H_2O	H_2O
Initial concentration	—	—	—
Net water gain, ml			
Condensate appearance	Clear	Clear	Clear
Level marked on container			
pH of condensate			
Rinsed with			
Solvent Name and Lot No.			
Solvent Name and Lot No.			

SILICA GEL (w/impinger, top off)			
Final weight, grams	536.8	637.2	537.1
Initial weight, grams	520	~~520~~ 620	520
Net gain, grams			

TOTAL MOISTURE GAIN			
Impingers and silica gel, grams			

FILTERS			
Front filter number			
Front filter appearance			
~~Back~~ filter number Trap #1	T0851-001	T0851-003	T0851-006

R-1 LEAK ✓ PRE 0.000 @ 22" for 1 min
Post 0.001 @ 12" " "
Pauses @ 47:50 in Runs about 4 min

Plant Independent Metals
Date 12/1/10 Time 7:58
Location Baghouse
Operator(s) PO
Begining stack temperature, °F 54°
Ending stack temperature, °F
Average stack temperature, °F

MB 13
γ = 0.97103
dH @ 1.76903

Schematic of Points

Circle one:

Before Run 1 — Worthport — Before Run 2 — 3-4 SR-5 — Before Run 3 — After Run No.

IDT	DGM	Traverse Point Number	Cyclonic Flow Angle (Degrees)	Δp	√Δp	√Δp / √Δp Avg x 5 min = Numerical Minutes	Decimal Part of Minute x 60 = Seconds	Whole Minutes + Seconds = Sample Time	Stack Time	Clock
				1.75	√Ac					
44	540.402	1	N/A		7			4:06		7:58
47		2						4:30	8:36	
41		3						4:18	12 54	
42		4						4:42	17 36	
43		5						4:42	22 18	
44		6						4:48	27 06	
43		7						4:54	32 —	
43		8						5:00	37 —	
43		9						5 24	42 24	
43		10						5 12	47 36	
43		11						5 18	52 54	
42		12						5 42	58 36	8:58

West Port 4-4 MB1

42		1	N/A	1.75	.80			5 48	63 18	9:00
41		2			.82			5 54	69 12	
42		3			.71			5 24	74 36	
46		4			.66			5 12	79 48	
43		5			.64			5 06	84 54	
43		6			.60			5 —	89 54	
43		7			.55			4 48	94 42	
43		8			.61			5 [illegible]	99 42	
44		9			+.65			5 12	104 54	
44		10			.67			5 18	110 12	
44		11			.59			4 54	115 06	
45		12			.60			5 —	120 06	10:00
	627.901									
			Total		Total					
			Avg		Avg					

Figure 306A-2. Velocity Traverse and Point Sample Time Calculation Sheet.

R-2

LEAK ✓
PRE 0.000 @ 20" for 1 min
Post 0.000 @ 12" " "

Plant Independent metals
Date 12/1/10 Time 10:46
Location BAGHOUSE
Operator(s) PR
Begining stack temperature, °F 60
Ending stack temperature, °F
Average stack temperature, °F

MB13
ΔH@1.76903
γ = 0.97103

Schematic of Points

Circle one:

Before Run 1 | Before Run 2 | Before Run 3 | After Run No.

DGM	Imp T	Traverse Point Number	Cyclonic Flow Angle (Degrees)	Δp SR-5 3-4	√Δp	√Δp / √Δp Avg x 5 min = Numerical Minutes	Decimal Part of Minute x 60 = Seconds	Whole Minutes + Seconds = Sample Time	Clock Time
29.126	48	1	N/A	.80	1.75		5 26		10:46
	48	2		.82			5 36	11 12	
	47	3		.71			5 18	16 30	
	46	4		.66			5 06	21 36	
	45	5		.64			5 —	26 36	
	45	6		.60			4 48	31 24	
	45	7		.55			4 36	36 —	
	45	8		.61			4 54	40 54	
	45	9		.65			5 —	45 54	
	44	10		.67			5 06	51 —	
	45	11		.59			4 48	55 48	
4.089	45	12		.60			4 48	60 36	11:46
	47	13		.45			4 12	64 48	11:48
	44	14		.46			4 12	69 —	
	44	15		.46			4 12	73 12	
	45	16		.47			4 18	77 30	
	45	17		.48			4 18	81 48	
	45	18		.51			4 30	86 18	
	45	19		.71			5 18	91 36	
	45	20		.81			5 36	97 12	
	45	21		.86			5 48	103 —	
	46	22		.92			6 —	109 —	
	46	23		.80			5 36	114 36	
	46	24		.78			5 30	120 06	12:48
8.505									
			Total		Total				
			Avg		Avg				

Figure 306A-2. Velocity Traverse and Point Sample Time Calculation Sheet.

LEAK ✓
PRE 0.000 @ 20" [illegible]
Post 0.001 @ 15" " "

Plant Independent metals
Date 12/1/10 Time 13:25
Location BAG HOUSE
Operator(s) PS
Begining stack temperature, °F 63
Ending stack temperature, °F
Average stack temperature, °F

MB13
ΔH@1.76903
γ = 0.97103

Schematic of Points

Pause @ 61.41 Restart @ 1507

Circle one:

Before Run 1 | Before Run 2 | Before Run 3 | After Run No.

DCM	Imp Temp	Traverse Point Number	Cyclonic Flow Angle (Degrees)	Δp SR-5 3-2	√Δp 1.75	√Δp / √Δp Avg × 5 min = Numerical Minutes	Decimal Part of Minute x 60 = Seconds	Whole Minutes + Seconds = Sample Time	
718.625	42	1		0.87			5:30	5:30	13:25
	41	2		0.90			5:36	11:06	12:5
	42	3		0.81			5:18	16:24	
	42	4		0.75			5:06	21:30	
	43	5		0.71			5:00	26:30	
	43	6		0.66			4:48	31:18	
	43	7		0.61			4:36	35:54	
	43	8		0.66			4:48	40:42	
	43	9		0.80			5:18	46:00	
	43	10		0.72			5:00	51:00	
	43	11		0.67			4:54	55:54	
7	43	12		0.64			4:42	60:36	14:25
63.280	45	13		0.51			4:12	64:48	14:27
	42	14		0.52			4:18	69:06	15:07
	42	15		0.51			4:12	73:18	
	43	16		0.56			4:24	77:42	
	44	17		0.56			4:24	82:06	
	44	18		0.73			5:06	87:12	
	44	19		0.79			5:18	92:30	
	43	20		0.80			5:18	97:48	
	43	21		0.84			5:24	103:12	
	44	22		0.89			5:36	108:48	
	44	23		0.85			5:30	114:18	
6.564	44	24		0.80			5:18	119:36	16:06
			Total		Total				
			Avg		Avg				

Figure 306A-2. Velocity Traverse and Point Sample Time Calculation Sheet.

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Sample Recovery Worksheet

M306

Client & Source: Independent Metals Baghouse Exhaust Test Date: 12/1

Sample Location: Seattle, WA Hammerill Initials: MSC

Balance Calibration (1000, 500, 200 g)

Need one per each 3-run test / /

IMPINGER CONTENTS	**RUN 1**	**RUN 2**	**RUN 3**
Container, condensate & rinse, grams	469.0	484.0	455.7
Container & condensate, grams	349.7	356.2	359.6
Empty container, grams	88.8	96.0	91.4
Initial volume, ml	250	250	250
Initial contents			
Initial concentration			
Net water gain, ml			
Condensate appearance			
Level marked on container			
pH of condensate	13	13	13
Rinsed with			
Solvent Name and Lot No.			
Solvent Name and Lot No.			

SILICA GEL (w/impinger, top off)			
Final weight, grams	634.1	634.1	641.1
Initial weight, grams	~~520~~ 620	~~520~~ 620.2	~~520~~ 620.1
Net gain, grams			

TOTAL MOISTURE GAIN			
Impingers and silica gel, grams			

FILTERS			
Front filter number			
Front filter appearance			
Back filter number			

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TO-15 DATA FORM

Date 2010 11 30 Method TO-15

Client Name Industrial Metal City Seattle State WA

Source Hammermill Baghouse Sampling Location Exhaust

Run 1 Data

Parameter	Start	End
Time	11:37	12:37
Temperature	47°F	48°F
Vacuum	29" Hg	4"
Summa Can ID	SC00786	
Orifice ID	OA00126	
Vacuum Gauge ID	AEG01009	
Barometric Pres.	30.0	30.0

Run 2 Data

Parameter	Start	End
Time	12:42	13:58
Temperature	48°F	48°F
Vacuum	29.5" Hg	4.5"
Summa Can ID	SC00677	
Orifice ID	OA00675	
Vacuum Gauge ID	AVG00363	
Barometric Pres.	30.0	30.0

Run 3 Data

Parameter	Start	End
Time	14:11	15:11
Temperature	48°F	48°F
Vacuum	28" Hg	4.5"
Summa Can ID	SC00891	
Orifice ID	OA00608	
Vacuum Gauge ID	AVG01119	
Barometric Pres.	30.0	30.0

Comments:

APPENDIX E

Supporting Information

Submitted by Envirosure 8/27/10

envirosure SOLUTIONS, LLC

August 27, 2010

Mr. Gerry Pade:
Permits Engineer
Puget Sound Clean Air Agency
1904 3rd Avenue, Suite 105
Seattle, WA 98101-3317

Re: Source Testing: Independent Metals Company

Dear Mr. Pade:

Please find enclosed the Compliance Test Notification and the Test Plan for the Independent Metals Company.

The tests are scheduled for October 6-7, 2010.

If you have comments, questions or require further information, please contact me at your convenience.

Sincerely,

Stephen Olson
Environmental Scientist

Cc Independent Metals
Tadas Kisielius, Esq.

1979 East Broadway Road, Tempe, Arizona 85282
ph: 480-784-4621 fax: 480-784-2207
www.envirosuresolutions.com

emailed 8/27/10
by consultant

AMTEST
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AN AFFILIATE OF
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www.amtestairquality.com

Oregon
13585 NE Whitaker Way
Portland, OR 97230
503-255-5050 phone
503-255-0505 fax

www.horizonengineering.com

August 27, 2010 Project No. 4098AT

Gerry Pade
Puget Sound Clean Air Agency
1904 3rd Ave, Suite 105
Seattle, WA98101-3317

Re: Source Testing: Independent Metals Company
7814 S 8th Avenue
Seattle, Washington98108

This correspondence is notice that AmTest Air Quality is to do source testing for the above-referenced facility, scheduled for October 6-7, 2010. This will serve as the Source Test Plan unless changes are requested prior to the start of testing.

1. **Source to be Tested:** Magnatech Engineering Pulse-Jet Baghouse

2. **Purpose of the Testing:** Information collection for NOC application

3. **Source Description:** Independent Metals Company operates a scrap metal recycling and processing facility in Seattle, Washington. Independent Metals, accepts a variety of metals and appliances for recycling. The recycled metals are supplied to contractors and manufacturing facilities throughout the United States, China, Korea, India, Singapore and Japan.

The equipment subject to regulation by PSCAA is a Magnatech Engineering Model 60x60 Hammermill rated at 15 ton/hr controlled by a Magnatech Engineering Model 156x120 pulse-jet baghouse rated at 15000 cfm. The baghouse will be tested by AmTest Air Quality for this testing program.

4. **Pollutants to be Tested:** PM_{10}, metals, organic TAPs, and PCBs.

5. **Test Methods to be Used:** Testing will be conducted in accordance with EPA Methods in Title 40 Code of Federal Regulations Part 60 (40 CFR 60), Appendix A, July 1, 2007and Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition, January, 1999.

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Flow Rate:	EPA Methods 1 and 2 (S- or p-type pitot flow traverses)
CO_2 and O_2:	Assume ambient molecular weight of 28.96)
Moisture:	EPA Method 4 (incorporated with EPA Method 201A)
PM_{10}:	EPA Method 5 (incorporated with EPA Method 29)
Metals:	EPA Method 29 (isokinetic impinger technique withanalysis by ICP-OES/ICP- MS)
Organic TAPs:	EPA Method TO-15 (Summa canisters with analysis by GC/MS)
PCBs:	EPA Method 23 (analysis by EPA Method 1668~~A~~B)

6. **Quality Assurance /Quality Control (QA/QC):** Documentation of the procedures and results will be presented in the source test report for review. This documentation will include at least the following:

   Manual equipment QC procedures:Operators will perform pre- and post-test leak checks on the sampling system and pitot lines. Thermocouples attached to the pitots and probes are calibrated in the field using EPA Alternate Method 11. A single-point calibration on each thermocouple system using a reference thermometer is performed. Thermocouples must agree within ±2°F with the reference thermometer. Also, prior to use, thermocouple systems are checked for ambient temperature before heaters are started. Nozzles are inspected for nicks or dents and pitots are examined before and after each use to confirm that they are still aligned. Pre- and post-test calibrations on the meter boxes will be included with the report, along with semi-annual calibrations of critical orifices, pitots, nozzles and thermocouples (sample box impinger outlet and oven, meter box inlet and outlet, and thermocouple indicators). Blank reagents are submitted to the laboratory with the samples. Liquid levels are marked on sample jars in the field and are verified by the laboratory.

7. **Number of Sampling Replicates and their Duration:**Three (3) test runs of at least 120 minutes each for EPA Methods 5/29 and 23. Three (3) test runs of at least 60 minutes each for EPA Method TO-15.

8. **Reporting Units for Results:** Results will be expressed as concentrations (ppmv or gr/dscf), as rates (lb/hr), and on a production basis if that information is requested.

9. **AmTest Air Quality Contacts:** Kristina Bearden or
   Jason Bouwman
   (503) 255-5050
   Fax (503) 255-0505
   E-mail kbearden@horizonengineering.com
   jbouwman@horizonengineering.com

10. **Consultants:** Stephen Olson
    Leon Vennais
    (480) 784-4621
    Fax (480) 784-2207
    E-mail solson@envirosure.com
    lvannais@envirosure.com

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11. **Source Site Personnel:** Larry Brewer
(206) 786-9746
Fax: (206) 768-5158
Larryb@independentmetals.com

12. **Regulatory Contact:** Gerry Pade
(206) 689-4065
E-mail GerryP@pscleanair.org
facilitysubmittal@pscleanair.org

13. **Applicable Process/Production/Control Information:** Operating data that characterize the source are considered to be:

- Baghouse pressure drop
- Baghouse temperature
- Rate of scrap processed
- Composition of shredded materials
- All normally recorded process information

Process/Production/Control information is to be gathered by the Source Site Personnel and provided to AmTest for inclusion in the report.

It is recommended that the source operate at a normal maximum rate during testing.

14. **Other Considerations:** It is assumed that all filterable PM is PM_{10} and there is negligible condensable PM.

15. **Administrative:** Unless notified prior to the start of testing, this test plan is considered to be approved for compliance testing of this source. A letter acknowledging receipt of this plan and agreement on the content (or changes as necessary) would be appreciated.

The Agency will be notified of any changes in source test plans prior to testing. It is recognized that significant changes not acknowledged, which could affect accuracy and reliability of the results, could result in test report rejection.

Source test reports will be prepared by AmTest Air Quality and will include all results and example calculations, field sampling and data reduction procedures, laboratory analysis reports, and QA/QC documentation. Source test reports will be submitted to you within 60 days of the completion of the field work, unless another deadline is agreed upon. Envirosure Solutions, Inc. should send one (1) hardcopy and one (1) electronic copy of the completed source test report to you at the address above.

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AN AFFILIATE OF
HORIZON ENGINEERING

Any questions or comments relating to this test plan should be directed to me.

Sincerely,

Kristina Bearden
Project Coordinator
AmTest Air Quality
an affiliate of Horizon Engineering, LLC.

cc: Stephen Olson, Envirosure Solutions, LLC

pscleanair.org
Puget Sound Clean Air Agency

PUGET SOUND CLEAN AIR AGENCY

1904 3rd Ave Ste 105
Seattle WA 98101-3317
Telephone: (206)689-4052; Fax: (206)343-7522
<www.pscleanair.org>
facilitysubmittal@pscleanair.org

COMPLIANCE TEST NOTIFICATION

This Notification of intended action does not constitute approval by the Agency nor does it satisfy a requirement for a test plan, if one exists.

Agency Use Only: Reg No: ***Date Received:*** ***Date Logged:***

Facility Name: Independent Metals Company

Facility Address (include city/state/zip):
7814 S 8th Avenue
Seattle, Washington 98108

Facility Contact Information for Test
Name: Larry Brewer
Phone: (206) 786-9746
E-Mail: Larryb@independentmetals.com

Test Contractor: AmTest Air Quality

Test Contractor Mailing Address:
PO Box 525
30545 SE 84th St. #5
Preston, Washington 98050

Test Contractor Contact Information
Name: David Bagwell
Phone: 503-255-5050
Fax: 503-2558-0505
E-Mail: dbagwell@horizonengineering.com

Testing Dates:

Emission Unit	Pollutant Tested	Test Method(s) (list all to be used)	Purpose for the Test (see Note below)
Magnatech Engineering Model 60x60 Hammermill	PM_{10}	EPA 1, 2, 4, 5	Information collection for NOC application
Magnatech Engineering Model 60x60 Hammermill	Metals	EPA 1, 2, 4, 29	Information collection for NOC application
Magnatech Engineering Model 60x60 Hammermill	Organic TAPs	EPA 1, 2, 4, TO-15	Information collection for NOC application
Magnatech Engineering Model 60x60 Hammermill	PCBs	EPA 1, 2, 4, 23	Information collection for NOC application

Any Test Method Deviations?
☐ Yes *(attach explanation)* x No

Written Test Plan Required?
x Yes ☐ No ☐ Unknown

Attachments to this Notification? x Yes *(list below)* ☐ No
Test plan

Person Submitting Notification:
Margery P. Heffernan

Affiliation:
Horizon Engineering

NOTE: For example, NSPS/NESHAP Subpart, citation, NOC Order of Approval #, PSD, Puget Sound Clean Air Agency Regulations (I, II, or III), RATA, or Other. Please include the specific requirement if you have it.

Marge Heffernan

From: Stephen Olson [solson@envirosure.com]
Sent: Friday, August 27, 2010 2:57 PM
To: GerryP@pscleanair.org.; facilitysubmittal@pscleanair.org
Cc: Marge Heffernan; Leon Vannais; Mark Guatney
Subject: FW: Source test plan and PSCAA notification
Follow Up Flag: Follow up
Flag Status: Completed
Attachments: PSCAA Notification 4098.pdf; Envirosure Test Plan 4098.pdf; PDF - Test Plan Cover letter 2.pdf

Good afternoon, Gerry:

Please find attached the Test Plan, Notification and a cover letter for Independent Metal's upcoming stack tests, as promised.

If you need anything else, please let us know.

Thanks,

Stephen Olson
Environmental Scientist

envirosure SOLUTIONS, LLC
1979 E. Broadway Road
Tempe, AZ 85282

ph: 480-784-4621
fax: 480-784-2207

Marge Heffernan

From: George Hester [ghester@envirosure.com]
Sent: Friday, November 19, 2010 12:49 PM
To: mheffernan@horizonengineering.com
Cc: Mark Guatney
Subject: FW: Source test plan and PSCAA notification #4

Hi Marge - I understand that you need this (below) e-mail. If you need anything else, please let me know. Thanks.

George

George Hester
Vice President
envirosure SOLUTIONS, LLC
1979 E Broadway Rd, Tempe, AZ 85282
(o) 480.784.4621 (f) 480.784.2207 / (c) 623.236.4294
ghester@envirosure.com
www.envirosure.com

Please consider the environment before printing this email

From: Gerry Pade [mailto:GerryP@pscleanair.org]
Sent: Friday, September 03, 2010 8:37 AM
To: Stephen Olson; George Hester
Cc: Jennifer Dold; Tadas Kisielius (tkisielius@GordonDerr.com); Steve Van Slyke
Subject: RE: Source test plan and PSCAA notification

Stephen Olson and George Hester
Envirosure Solutions

Dear Sirs,

I reviewed the test plan you submitted last Friday and provide the following remarks. The test plan needs to demonstrate that, at the method detection limits, the downwind impacts would meet the Acceptable Source Impact Levels for the toxic air contaminants expected to be emitted. This could require longer sampling times than proposed. Table 29-1 specifies the in-stack method detection limits for metals based on a sample volume of 1.25 cubic meters. Depending upon the analytical technique used (ICP or GFAAS) and the dispersion model results, a larger sample volume may be necessary for cadmium. A different method entirely (e.g., EPA Method 306 or CARB Method 425) will be necessary for hexavalent chromium, since the total chromium emissions at the Method 29 detection limit will not meet the ASIL for hexavalent chromium.

The test plan should include CVAAS analysis for mercury, which is part of EPA Method 29. It should also include PLM analysis for asbestos, since there are no available emission factors.

If you have any questions, please feel free to contact me.

Gerry Pade, Engineer
Puget Sound Clean Air Agency
1904 3rd Ave Ste 105
Seattle WA 98101-3317
(206) 689-4065
gerryp@pscleanair.org

"Working together for clean air"

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(*)\(*)
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From: Stephen Olson [mailto:solson@envirosure.com]
Sent: Friday, August 27, 2010 3:01 PM
To: Gerry Pade
Subject: FW: Source test plan and PSCAA notification

Good afternoon, Gerry:

Please find attached the Test Plan, Notification and a cover letter for Independent Metal's upcoming stack tests, as promised.

If you need anything else, please let us know.

Thanks,

Stephen Olson
Environmental Scientist

envirosure SOLUTIONS, LLC
1979 E. Broadway Road
Tempe, AZ 85282

ph: 480-784-4621
fax: 480-784-2207

Marge Heffernan

From: Mark Guatney [mguatney@envirosure.com]
Sent: Wednesday, September 29, 2010 2:42 PM
To: gerryp@pscleanair.org
Cc: mheffernan@horizonengineering.com; Chris Buboltz; Hal Rosen; George Hester
Subject: Stack Test for Independent Metals
Follow Up Flag: Follow up
Flag Status: Completed

Dear Mr. Pade:

After talking with you by telephone yesterday, reviewing the spreadsheet you sent me, and talking with our stack testing firm Horizon Engineering, it is apparent that we will need additional information before proceeding with the stack test.

For these reasons, we would like to postpone the stack test scheduled to begin on October 6, 2010, until our stack tester's next availability beginning on Tuesday **November 9, 2010**. We anticipate 3 days of testing will be required for 4-hour sample durations.

In the interim, we hope to better understand your expectations for the stack test protocols, laboratory reporting and detection limits for each method employed, and relevant comparison to the ASILs and/or SQERs within the stack and offsite point of compliance.

Please call or email if you have any questions, or if you find additional information that may be helpful.

Thank you,

Mark J. Guatney, PE, CHMM
Director of Environmental Services
envirosure SOLUTIONS, LLC
1979 E Broadway Rd, Tempe, AZ 85282
(o) 480.784.4621 x18 / (f) 480.784.2207 / (c) 480.203.6635
www.envirosure.com

Please consider the environment before printing this email

Marge Heffernan

From: Mark Guatney [mguatney@envirosure.com]
Sent: Monday, November 01, 2010 4:33 PM
To: gerryp@pscleanair.org
Cc: George Hester; Chris Buboltz; Marge Heffernan
Subject: Independent Metals Stack Test Postponement Until 11/30/2010
Follow Up Flag: Follow up
Flag Status: Red

Dear Mr. Pade,

We have almost completed our work plan revisions and TSCREEN modeling, as you requested. As I indicated in our telephone conversation last week, some stack modifications are required to improve the stack model outcome and also improve access for the stack test. These modification will not be completed until 11/14, and therefore, we will need to postpone the stack test until the next available date for Horizon/AmTest, which is beginning on 11/30/2010 (set up beginning on 11/29). The testing is expected to take 2 to 3 days, and will be completed on or before 12/2.

Thanks for your patience, and please call if you have any questions.

Mark J. Guatney, PE, CHMM
Director of Environmental Services
envirosure SOLUTIONS, LLC
1979 E Broadway Rd, Tempe, AZ 85282
(o) 480.784.4621 x18 / (f) 480.784.2207 / (c) 480.203.6635
mguatney@envirosure.com
www.envirosure.com

Please consider the environment before printing this email

Submitted by Envirosure
11/5/10

envirosure
SOLUTIONS, LLC.

November 5, 2010

Mr. Gerry Pade:
Permits Engineer
Puget Sound Clean Air Agency
1904 3rd Avenue, Suite 105
Seattle, WA 98101-3317

RE: **Revised Stack Layout, Work Plan, and Modeling for Stack Testing**
Independent Metals Recycling, Inc.
7814 S. 8th Avenue
Seattle, Washington 98108

Dear Mr. Pade:

Envirosure Solutions, LLC. (Envirosure) is proud to provide this revision to our stack testing plan for Independent Metals Recycling (IMR). This letter incorporates our responses to recent telephone discussions and emails regarding the stack configuration and testing methods. As you requested, please find attachments including: Stack Revision drawing, revised Compliance Test Notification and Work Plan by Amtest Air Quality (Amtest), and TSCREEN and Screen 3 model outputs and Excel Spreadsheet by Envirosure.

Stack Modifications and Testing Location

As discussed by telephone, IMR intends to modify its existing baghouse exhaust stack to eliminate the existing horizontal discharge orientation, and permanently extend additional vertical ductwork to increase stack discharge height and improve air dispersion modeling characteristics. Only straight sections of stack duct will be added, and the resultant increase in friction head loss within the duct will be minimal.

Amtest Work Plan

Attached please find a Compliance Test Notification and Work Plan prepared by Amtest Air Quality for stack testing of the Independent Metals facility. This Work Plan was prepared prior to our recent postponement of the stack test, and incorrectly refers to the test date as November 9-11, 2010. The new stack testing dates are November 30-December 2, 2010. Three test runs of two-hour each are proposed for each test method (excluding TO-15 which is one-hour each). The estimated laboratory detection limits for Cadmium, Lead, Hexavalent Chromium and Benzene are provided in the table to follow.

1979 East Broadway Road, Tempe, Arizona 85282
ph: 480-784-4621 fax: 480-784-2207
www.envirosuresolutions.com

Cadmium and lead		
Sampling rate is:	30	cubic feet/hr
Sampling time is:	2	hours
Sample volume in cubic meters:	1.698995	
Laboratory instrumentation detection limit	0.05	ug/L
Approximate liquid volume of sample recovered:	600	ml
Total ug reported at non-detect (ND) level:	0.03	ug
Emissions at ND:	0.017658	ug/cubic meter

Hex Chrome		
Sampling rate is:	30	cubic feet/hr
Sampling time is:	2	hours
Sample volume in cubic meters:	1.698995	
Laboratory instrumentation detection limit	0.04	ug/L
Approximate liquid volume of sample recovered:	600	ml
Total ug reported at non-detect (ND) level:	0.024	ug
Emissions at ND:	0.014126	ug/cubic meter

Benzene		
Laboratory instrumentation detection limit	0.5	ug/cubic meter
Emissions at ND:	0.5	ug/cubic meter

Another contaminant of concern involved PCBs by EPA Method 23. According to analyst Jerry Hart of Analytical Perspectives in Wilmington, North Carolina, the estimated Limit of Quantitation (LOQ) for each PCB arochlor would be in the range of 14 to 44 picograms per sample train, which is equivalent to 8.2×10^{-6} to 2.6×10^{-5} ug/m^3 for a 1.7 cubic meter sample.

TSCREEN and Screen3 Modeling

Attached please find output pages for TSCREEN and Screen3 model runs using best estimates of existing conditions at the Independent Metals facility. The output from the Screen3 model (1368 ug/m^3 per g/s) was utilized in an Excel spreadsheet, which has been modified from the example you provided in an email dated 9/27/2010.

Excel Spreadsheet of Impacts to ASILs

Inputting the Screen3 Model output, and adjusting the "Improvement needed over historical data" column to reduce each "Impact/ASIL" value to 100% or less, yielded the "@ASIL In-Stack" values in the spreadsheet to the numbers repeated in the table below:

Contaminant of Concern		@ASIL in-stack
	g/ft3	ug/m3
cadmium	0.00000002	0.61
PCB	0.00000013	4.52
lead	0.00000087	30.57
chromium	0.00000000	0.02
benzene	0.00000252	89.03

As indicated in the preceding tables, using stack parameters which approximate the existing conditions at the facility, our test method detection limits are sufficiently low to compare to Acceptable Source Input Levels (ASIL) established by WAC 173-460-150.

Conclusions

We hope the preceding demonstration is sufficient to confirm that our proposed sampling methods and durations will achieve results which are comparable to the ASILs at the point of compliance.

Upon your approval, we are prepared to conduct the stack testing on November 30 through December 2, 2010. Stack modifications will be completed by November 22, 2010, and set up for the stack test will begin on Monday November 29, 2010.

If you have comments, questions or require further information, please contact me at your earliest convenience.

Sincerely,

Mark J. Guatney, CHMM
Director of Environmental Services

Attachments:
- Proposed Stack Revisions drawing, 1 page
- Compliance Test Notification and Work Plan by Amtest, dated 10/27/2010, 6 pages.
- TSCREEN & Screen3 Model Output Using Site Specific Variables, 4 pages
- Excel Spreadsheet with In-Stack Detection Limits to Achieve ASILs at Point of Compliance, 1 page

1979 East Broadway Road, Tempe, Arizona 85282
ph: 480-784-4621 fax: 480-784-2207
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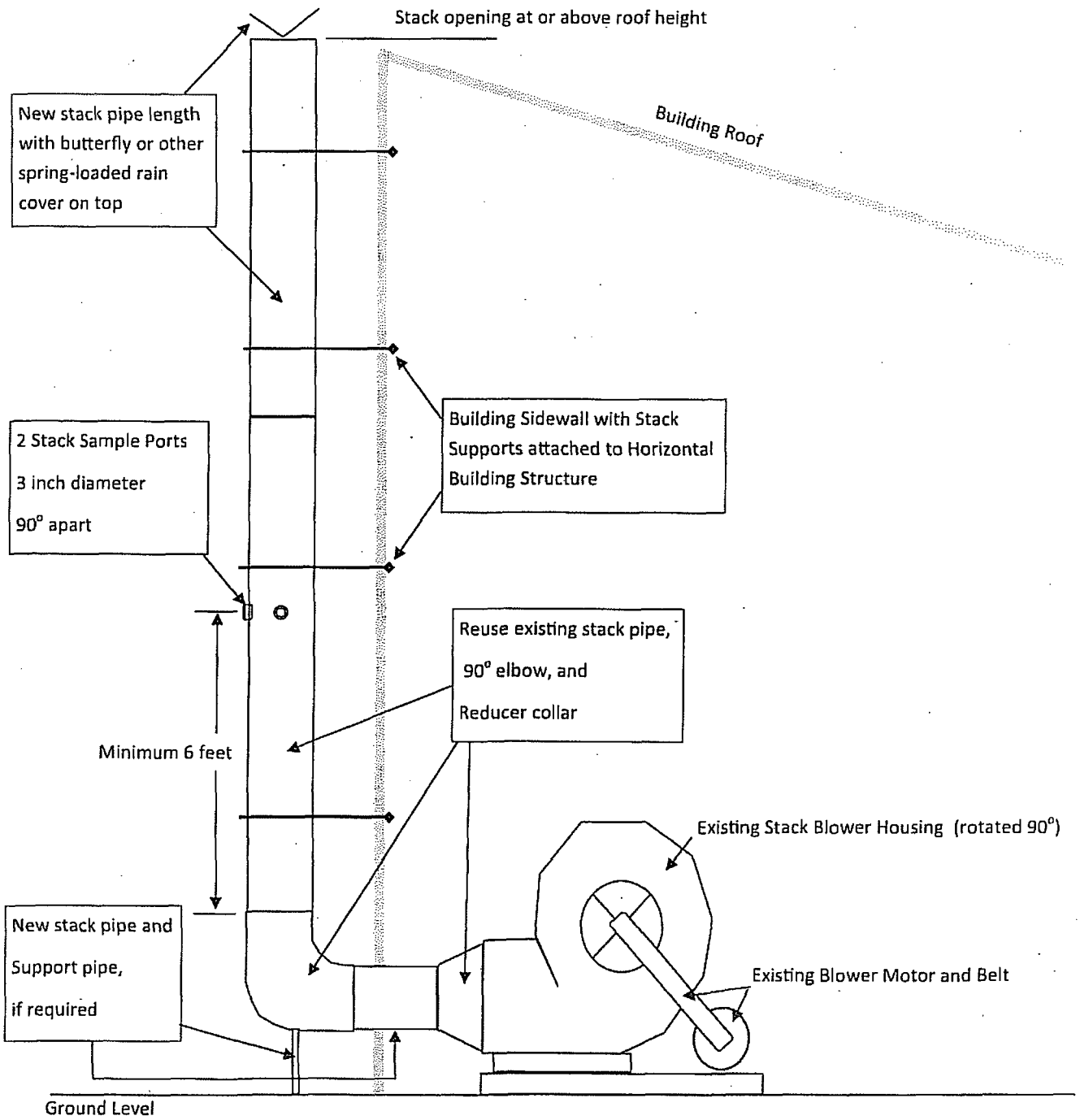

Proposed Stack Revisions

Not to Scale

envirosure SOLUTIONS, LLC.

Project: **Stack Testing for Air Permit**
Site: Independent Metals Recycling
747 South Monroe Street
Seattle, WA 98108

pscleanair.org
Puget Sound Clean Air Agency

PUGET SOUND CLEAN AIR AGENCY

1904 3rd Ave Ste 105
Seattle WA 98101-3317
Telephone: (206)689-4052; Fax: (206)343-7522
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facilitysubmittal@pscleanair.org

COMPLIANCE TEST NOTIFICATION

This Notification of intended action does not constitute approval by the Agency nor does it satisfy a requirement for a test plan, if one exists.

Agency Use Only: Reg No: ***Date Received:*** ***Date Logged:***

Facility Name: Independent Metals Company

Facility Address (include city/state/zip):
7814 S 8th Avenue
Seattle, Washington 98108

Facility Contact Information for Test
Name: Larry Brewer
Phone: (206) 786-9746
E-Mail: Larryb@independentmetals.com

Test Contractor: AmTest Air Quality

Test Contractor Mailing Address:
PO Box 525
30545 SE 84th St. #5
Preston, Washington 98050

Test Contractor Contact Information
Name: David Bagwell
Phone: 503-255-5050
Fax: 503-255-0505
E-Mail: dbagwell@horizonengineering.com

Testing Dates:

Emission Unit	Pollutant Tested	Test Method(s) (list all to be used)	Purpose for the Test (see Note below)
Magnatech Engineering Model 60x60 Hammermill	PM_{10}	EPA 1, 2, 4, 5	Information collection for NOC application
Magnatech Engineering Model 60x60 Hammermill	PCBs	EPA 1, 2, 4, 23	Information collection for NOC application
Magnatech Engineering Model 60x60 Hammermill	Metals	EPA 1, 2, 4, 29	Information collection for NOC application
Magnatech Engineering Model 60x60 Hammermill	Hexavalent chromium	EPA 1, 2, 4, 306A	Information collection for NOC application
Magnatech Engineering Model 60x60 Hammermill	Organic TAPs	EPA 1, 2, 4, TO-15	Information collection for NOC application

Any Test Method Deviations?
☐ Yes *(attach explanation)* x No

Written Test Plan Required?
x Yes ☐ No ☐ Unknown

Attachments to this Notification? x Yes *(list below)* ☐ No
Test plan

Person Submitting Notification:	Affiliation:
Margery P. Heffernan	Horizon Engineering

NOTE: For example, NSPS/NESHAP Subpart, citation, NOC Order of Approval #, PSD, Puget Sound Clean Air Agency Regulations (I, II, or III), RATA, or Other. Please include the specific requirement if you have it.

AMTEST
AIR QUALITY
AN AFFILIATE OF
HORIZON ENGINEERING

Washington
P.O. Box 525
30545 SE 84th Street #5
Preston, WA 98050
425-222-7746 phone
425-222-7848 fax

www.amtestairquality.com

Oregon
13585 NE Whitaker Way
Portland OR 97230
503-255-5050 phone
503-255-0505 fax

www.horizonengineering.com

October 27, 2010 Project No. 4098AT

Gerry Pade
Puget Sound Clean Air Agency
1904 3rd Ave, Suite 105
Seattle, Washington 98101-3317

Re: Source Testing: Independent Metals Company
7814 S 8th Avenue
Seattle, Washington 98108

This correspondence is notice that AmTest Air Quality is to do source testing for the above-referenced facility, scheduled for November 9-11, 2010. This will serve as the Source Test Plan unless changes are requested prior to the start of testing.

1. **Source to be Tested:** Scrap metal recycling process controlled with a Magnatech Engineering Pulse-Jet baghouse

2. **Purpose of the Testing:** Information collection for NOC application

3. **Source Description:** Independent Metals Company operates a scrap metal recycling and processing facility in Seattle, Washington. Independent Metals accepts a variety of metals and appliances for recycling. The recycled metals are supplied to contractors and manufacturing facilities throughout the United States, China, Korea, India, Singapore and Japan.

   The equipment subject to regulation by PSCAA is a Magnatech Engineering Model 60x60 Hammermill rated at 15 ton/hr controlled by a Magnatech Engineering Model 156x120 pulse-jet baghouse rated at 15,000 cfm.

4. **Pollutants to be Tested:** PM_{10}, PCBs, metals, hexavalent chromium, and organic TAPs.

5. **Test Methods to be Used:** Testing will be conducted in accordance with EPA Methods in Title 40 Code of Federal Regulations Part 60 (40 CFR 60), Appendix A, July 1, 2007and Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition, January, 1999.

HORIZON ENGINEERING LLC

AMTEST AIR QUALITY

Flow Rate:	EPA Methods 1 and 2 (S- or p-type pitot flow traverses)
CO_2 and O_2:	Assume ambient molecular weight of 28.96
Moisture:	EPA Method 4 (incorporated with EPA Methods 5/29, 23 and/or 306A)
PM_{10}:	EPA Method 5 (incorporated with EPA Method 29)
PCBs:	EPA Method 23 (isokinetic impinger technique with analysis by EPA Method 1668B)
Metals:	EPA Method 29 (isokinetic impinger technique with analysis by ICP- MS for non-Hg metals and by CVAAS for Hg)
Cr^{+6}:	EPA Method 306A (non isokinetic impinger technique with analysis by IC with Post-Column Derivatization-Visible Absorption)
Organic TAPs:	EPA Method TO-15 (Summa canisters with analysis by GC/MS)

6. **Quality Assurance /Quality Control (QA/QC):** Documentation of the procedures and results will be presented in the source test report for review. This documentation will include at least the following:

   Manual equipment QC procedures: Operators will perform pre- and post-test leak checks on the sampling system and pitot lines. Thermocouples attached to the pitots and probes are calibrated in the field using EPA Alternate Method 11. A single-point calibration on each thermocouple system using a reference thermometer is performed. Thermocouples must agree within ±2°F with the reference thermometer. Also, prior to use, thermocouple systems are checked for ambient temperature before heaters are started. Nozzles are inspected for nicks or dents and pitots are examined before and after each use to confirm that they are still aligned. Pre- and post-test calibrations on the meter boxes will be included with the report, along with semi-annual calibrations of critical orifices, pitots, nozzles and thermocouples (sample box impinger outlet and oven, meter box inlet and outlet, and thermocouple indicators). Blank reagents are submitted to the laboratory with the samples. Liquid levels are marked on sample jars in the field and are verified by the laboratory.

7. **Number of Sampling Replicates and their Duration:** Three (3) test runs of at least 120 minutes each for EPA Methods 5/29, 23 and 306A. Three (3) test runs of at least 60 minutes each for EPA Method TO-15.

8. **Reporting Units for Results:** Results will be expressed as concentrations (ppmv or gr/dscf), as rates (lb/hr), and on a production basis if that information is requested.

9. **AmTest Air Quality Contacts:** Margery P. Heffernan or
   Jason Bouwman
   (503) 255-5050
   Fax (503) 255-0505
   E-mail mheffernan@horizonengineering.com
   jbouwman@horizonengineering.com

10. **Consultant:** Mark Guatney
    (480) 784-4621 x 18
    Fax (480) 784-2207
    E-mail mguatney@envirosure.com

AMTEST AIR QUALITY

11. **Source Site Personnel:** Larry Brewer
(206) 786-9746
Fax: (206) 768-5158
Larryb@independentmetals.com

12. **Regulatory Contact:** Gerry Pade
(206) 689-4065
E-mail GerryP@pscleanair.org
facilitysubmittal@pscleanair.org

13. **Applicable Process/Production/Control Information:** Operating data that characterize the source are considered to be:

- Baghouse pressure drop
- Baghouse temperature
- Rate of scrap processed
- Composition of shredded materials
- All normally recorded process information

Process/Production/Control information is to be gathered by the Source Site Personnel and provided to AmTest for inclusion in the report.

It is recommended that the source operate at a normal maximum rate during testing.

14. **Other Considerations:** It is assumed that all filterable PM is PM_{10} and there is negligible condensable PM.

15. **Administrative:** Unless notified prior to the start of testing, this test plan is considered to be approved for compliance testing of this source. A letter acknowledging receipt of this plan and agreement on the content (or changes as necessary) would be appreciated.

The Agency will be notified of any changes in source test plans prior to testing. It is recognized that significant changes not acknowledged, which could affect accuracy and reliability of the results, could result in test report rejection.

Source test reports will be prepared by AmTest Air Quality and will include all results and example calculations, field sampling and data reduction procedures, laboratory analysis reports, and QA/QC documentation. Source test reports will be submitted to you within 60 days of the completion of the field work, unless another deadline is agreed upon. Envirosure Solutions, Inc. should send one (1) hardcopy and one (1) electronic copy of the completed source test report to you at the address above.

AMTEST
AIR QUALITY

Any questions or comments relating to this test plan should be directed to me.

Sincerely,

Margery P. Heffernan
Project Coordinator
AmTest Air Quality
an affiliate of Horizon Engineering, LLC.

cc: Mark Guatney, Envirosure Solutions, LLC

TSCREENFinal

11/05/10
14:02:34

```
 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 95250 ***

Independent Metals FINAL TScreen

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE              =        POINT
   EMISSION RATE (G/S)      =      1.00000
   STACK HEIGHT (M)         =       7.6200
   STK INSIDE DIAM (M)      =        .6100
   STK EXIT VELOCITY (M/S)=        12.3000
   STK GAS EXIT TEMP (K)    =     338.0000
   AMBIENT AIR TEMP (K)     =     308.0000
   RECEPTOR HEIGHT (M)      =        .0000
   URBAN/RURAL OPTION       =        URBAN
   BUILDING HEIGHT (M)      =      13.7200
   MIN HORIZ BLDG DIM (M) =        21.5400
   MAX HORIZ BLDG DIM (M) =        85.4100

      ****************************************
      *** SUMMARY OF SCREEN MODEL RESULTS ***
      ****************************************

 CALCULATION        MAX CONC    DIST TO  TERRAIN
  PROCEDURE        (UG/M**3)    MAX (M)   HT (M)
--------------    -----------   -------  -------
SIMPLE TERRAIN     2409.           42.       0.

BLDG. CAVITY-1     499.0           59.      --  (DIST = CAVITY LENGTH)
BLDG. CAVITY-2     1294.           27.      --  (DIST = CAVITY LENGTH)

*****************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
*****************************************************


BUOY. FLUX =      .996 M**4/S**3;  MOM. FLUX =   12.825 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***
```

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
11.	.0000	0	.0	.0	.0	.00	.00	.00	NA
100.	781.9	6	2.0	2.0	10000.0	11.44	10.79	11.56	SS
200.	399.0	6	1.5	1.5	10000.0	15.16	21.17	16.29	SS
300.	306.8	6	1.0	1.0	10000.0	20.18	31.18	19.93	SS
400.	224.1	6	1.0	1.0	10000.0	20.18	40.85	25.30	SS
500.	167.8	6	1.0	1.0	10000.0	20.18	50.21	30.24	SS
600.	130.4	6	1.0	1.0	10000.0	20.18	59.27	34.82	SS
700.	104.7	6	1.0	1.0	10000.0	20.18	68.06	39.11	SS
800.	86.34	6	1.0	1.0	10000.0	20.18	76.59	43.15	SS

TSCREENFinal

900.	72.80	6	1.0	1.0	10000.0	20.18	84.89	46.97	SS
1000.	62.50	6	1.0	1.0	10000.0	20.18	92.97	50.60	SS
1100.	54.47	6	1.0	1.0	10000.0	20.18	100.83	54.06	SS
1200.	48.07	6	1.0	1.0	10000.0	20.18	108.50	57.37	SS
1300.	42.87	6	1.0	1.0	10000.0	20.18	115.99	60.55	SS
1400.	38.59	6	1.0	1.0	10000.0	20.18	123.30	63.61	SS
1500.	35.01	6	1.0	1.0	10000.0	20.18	130.44	66.56	SS
1600.	31.98	6	1.0	1.0	10000.0	20.18	137.43	69.42	SS
1700.	29.39	6	1.0	1.0	10000.0	20.18	144.27	72.18	SS
1800.	27.16	6	1.0	1.0	10000.0	20.18	150.97	74.86	SS
1900.	25.21	6	1.0	1.0	10000.0	20.18	157.54	77.47	SS
2000.	23.50	6	1.0	1.0	10000.0	20.18	163.98	80.00	SS
2100.	22.00	6	1.0	1.0	10000.0	20.18	170.30	82.47	SS
2200.	20.66	6	1.0	1.0	10000.0	20.18	176.50	84.87	SS
2300.	19.46	6	1.0	1.0	10000.0	20.18	182.59	87.22	SS
2400.	18.38	6	1.0	1.0	10000.0	20.18	188.57	89.52	SS
2500.	17.41	6	1.0	1.0	10000.0	20.18	194.45	91.77	SS
2600.	16.53	6	1.0	1.0	10000.0	20.18	200.24	93.96	SS
2700.	15.73	6	1.0	1.0	10000.0	20.18	205.93	96.12	SS
2800.	15.00	6	1.0	1.0	10000.0	20.18	211.54	98.23	SS
2900.	14.33	6	1.0	1.0	10000.0	20.18	217.05	100.30	SS
3000.	13.71	6	1.0	1.0	10000.0	20.18	222.49	102.34	SS
3500.	11.25	6	1.0	1.0	10000.0	20.18	248.52	112.00	SS
4000.	9.511	6	1.0	1.0	10000.0	20.18	272.88	120.95	SS
4500.	8.220	6	1.0	1.0	10000.0	20.18	295.82	129.32	SS
5000.	7.228	6	1.0	1.0	10000.0	20.18	317.54	137.20	SS
5500.	6.443	6	1.0	1.0	10000.0	20.18	338.21	144.67	SS
6000.	5.807	6	1.0	1.0	10000.0	20.18	357.94	151.79	SS
6500.	5.283	6	1.0	1.0	10000.0	20.18	376.84	158.60	SS
7000.	4.844	6	1.0	1.0	10000.0	20.18	395.00	165.13	SS
7500.	4.470	6	1.0	1.0	10000.0	20.18	412.50	171.43	SS
8000.	4.149	6	1.0	1.0	10000.0	20.18	429.40	177.50	SS
8500.	3.871	6	1.0	1.0	10000.0	20.18	445.74	183.38	SS
9000.	3.626	6	1.0	1.0	10000.0	20.18	461.59	189.08	SS
9500.	3.411	6	1.0	1.0	10000.0	20.18	476.98	194.62	SS
10000.	3.219	6	1.0	1.0	10000.0	20.18	491.93	200.00	SS
15000.	2.055	6	1.0	1.0	10000.0	20.18	623.64	247.54	SS
20000.	1.507	6	1.0	1.0	10000.0	20.18	733.33	287.37	SS
25000.	1.189	6	1.0	1.0	10000.0	20.18	829.16	322.33	SS
30000.	.9812	6	1.0	1.0	10000.0	20.18	915.26	353.86	SS
40000.	.8032	4	1.0	1.0	320.0	17.54	1552.23	1553.16	SS
50000.	.7141	4	1.0	1.0	320.0	17.54	1745.74	1750.00	SS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 11. M:

42.	2409.	6	2.0	2.0	10000.0	8.72	4.69	8.30	SS

DIST = DISTANCE FROM THE SOURCE
CONC = MAXIMUM GROUND LEVEL CONCENTRATION
STAB = ATMOSPHERIC STABILITY CLASS (1=A, 2=B, 3=C, 4=D, 5=E, 6=F)
U10M = WIND SPEED AT THE 10-M LEVEL
USTK = WIND SPEED AT STACK HEIGHT
MIX HT = MIXING HEIGHT
PLUME HT= PLUME CENTERLINE HEIGHT
SIGMA Y = LATERAL DISPERSION PARAMETER
SIGMA Z = VERTICAL DISPERSION PARAMETER
DWASH = BUILDING DOWNWASH:
DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****

TSCREENFinal

*** SCREEN DISCRETE DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
11.	.0000	0	.0	.0	.0	.00	.00	.00	NA
15.	.0000	0	.0	.0	.0	.00	.00	.00	NA
20.	.0000	0	.0	.0	.0	.00	.00	.00	NA
25.	.0000	0	.0	.0	.0	.00	.00	.00	NA
30.	.0000	0	.0	.0	.0	.00	.00	.00	NA
35.	.0000	0	.0	.0	.0	.00	.00	.00	NA
40.	.0000	0	.0	.0	.0	.00	.00	.00	NA
45.	2255.	6	2.0	2.0	10000.0	8.72	4.91	8.42	SS
50.	2034.	6	2.0	2.0	10000.0	8.72	5.45	8.70	SS
55.	1806.	6	2.0	2.0	10000.0	8.93	5.98	8.99	SS
60.	1615.	6	2.0	2.0	10000.0	9.16	6.52	9.27	SS
65.	1453.	6	2.0	2.0	10000.0	9.41	7.06	9.56	SS
70.	1315.	6	2.0	2.0	10000.0	9.67	7.59	9.85	SS
75.	1195.	6	2.0	2.0	10000.0	9.94	8.13	10.13	SS
90.	917.5	6	2.0	2.0	10000.0	10.81	9.73	10.99	SS
100.	781.9	6	2.0	2.0	10000.0	11.44	10.79	11.56	SS
110.	673.5	6	2.0	2.0	10000.0	12.10	11.84	12.13	SS
120.	588.5	6	1.5	1.5	10000.0	15.16	12.89	11.22	SS
150.	518.8	6	1.5	1.5	10000.0	15.16	16.03	13.22	SS
175.	455.8	6	1.5	1.5	10000.0	15.16	18.61	14.77	SS
200.	399.0	6	1.5	1.5	10000.0	15.16	21.17	16.29	SS
250.	353.5	6	1.0	1.0	10000.0	20.18	26.22	17.06	SS
300.	306.8	6	1.0	1.0	10000.0	20.18	31.18	19.93	SS
350.	262.0	6	1.0	1.0	10000.0	20.18	36.06	22.67	SS
400.	224.1	6	1.0	1.0	10000.0	20.18	40.85	25.30	SS
450.	193.0	6	1.0	1.0	10000.0	20.18	45.57	27.82	SS
500.	167.8	6	1.0	1.0	10000.0	20.18	50.21	30.24	SS
550.	147.3	6	1.0	1.0	10000.0	20.18	54.77	32.57	SS
600.	130.4	6	1.0	1.0	10000.0	20.18	59.27	34.82	SS
700.	104.7	6	1.0	1.0	10000.0	20.18	68.06	39.11	SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

*** CAVITY CALCULATION - 1 ***

CONC (UG/M**3)	=	499.0
CRIT WS @10M (M/S)	=	2.28
CRIT WS @ HS (M/S)	=	2.28
DILUTION WS (M/S)	=	1.14
CAVITY HT (M)	=	16.57
CAVITY LENGTH (M)	=	59.47
ALONGWIND DIM (M)	=	21.54

*** CAVITY CALCULATION - 2 ***

CONC (UG/M**3)	=	1294.
CRIT WS @10M (M/S)	=	3.49
CRIT WS @ HS (M/S)	=	3.49
DILUTION WS (M/S)	=	1.74
CAVITY HT (M)	=	13.72
CAVITY LENGTH (M)	=	27.07
ALONGWIND DIM (M)	=	85.41

****
*** END OF SCREEN MODEL OUTPUT ***
****

```
                                        Screen3Final
 ******  SCREEN3 MODEL  ******
 **** VERSION DATED 96043 ****

ENTER TITLE FOR THIS RUN (UP TO 79 CHARACTERS):
INdependent Metals Screen3 FINAL

ENTER SOURCE TYPE: P    FOR POINT
                   F    FOR FLARE
                   A    FOR AREA
                   V    FOR VOLUME
   ALSO ENTER ANY OF THE FOLLOWING OPTIONS ON THE SAME LINE:

     N    - TO USE THE NON-REGULATORY BUT CONSERVATIVE BRODE 2
            MIXING HEIGHT OPTION,
     nn.n - TO USE AN ANEMOMETER HEIGHT OTHER THAN THE REGULATORY
            (DEFAULT) 10 METER HEIGHT.
     SS   - TO USE A NON-REGULATORY CAVITY CALCULATION ALTERNATIVE
  Example - PN 7.0 SS (entry for a point source)

 ENTER SOURCE TYPE AND ANY OF THE ABOVE OPTIONS:
p
ENTER EMISSION RATE (G/S):
1
ENTER STACK HEIGHT (M):
7.62
ENTER STACK INSIDE DIAMETER (M):
.61
ENTER STACK GAS EXIT VELOCITY OR FLOW RATE:
OPTION 1 : EXIT VELOCITY (M/S):
 DEFAULT - ENTER NUMBER ONLY
OPTION 2 : VOLUME FLOW RATE (M**3/S):
           EXAMPLE "VM=20.00"
OPTION 3 : VOLUME FLOW RATE (ACFM):
           EXAMPLE "VF=1000.00"
12.13
ENTER STACK GAS EXIT TEMPERATURE (K):
338
ENTER AMBIENT AIR TEMPERATURE (USE 293 FOR DEFAULT) (K):
308
ENTER RECEPTOR HEIGHT ABOVE GROUND (FOR FLAGPOLE RECEPTOR) (M):
0
ENTER URBAN/RURAL OPTION (U=URBAN, R=RURAL):
u
CONSIDER BUILDING DOWNWASH IN CALCS?  ENTER Y OR N:
y
ENTER BUILDING HEIGHT (M):
13.72
ENTER MINIMUM HORIZ BLDG DIMENSION (M):
21.54
ENTER MAXIMUM HORIZ BLDG DIMENSION (M):
85.41
USE COMPLEX TERRAIN SCREEN FOR TERRAIN ABOVE STACK HEIGHT?
ENTER Y OR N:
n
USE SIMPLE TERRAIN SCREEN WITH TERRAIN ABOVE STACK BASE?
ENTER Y OR N:
n
ENTER CHOICE OF METEOROLOGY;
1 - FULL METEOROLOGY (ALL STABILITIES & WIND SPEEDS)
2 - INPUT SINGLE STABILITY CLASS
3 - INPUT SINGLE STABILITY CLASS AND WIND SPEED
2
ENTER STABILITY CLASS, 1(=A) TO 6(=F):
```

Screen3Final

```
3
USE AUTOMATED DISTANCE ARRAY? ENTER Y OR N:
y
ENTER MIN AND MAX DISTANCES TO USE (M):
11, 1000

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB   (M/S)  (M/S)   (M)    HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----   -----  -----  ------  ------  ------  ------  -----
    11.   .0000        0      .0     .0      .0     .00     .00     .00    NA
   100.   576.1        3     1.0    1.0   320.0   14.07   21.57   20.00    SS
   200.   176.7        3     1.0    1.0   320.0   14.07   42.34   40.00    SS
   300.   82.76        3     1.0    1.0   320.0   14.07   62.36   60.00    SS
   400.   47.95        3     1.0    1.0   320.0   14.07   81.71   80.00    SS
   500.   31.39        3     1.0    1.0   320.0   14.07  100.42  100.00    SS
   600.   22.22        3     1.0    1.0   320.0   14.07  118.54  120.00    SS
   700.   16.62        3     1.0    1.0   320.0   14.07  136.12  140.00    SS
   800.   12.95        3     1.0    1.0   320.0   14.07  153.19  160.00    SS
   900.   10.42        3     1.0    1.0   320.0   14.07  169.78  180.00    SS
  1000.   8.643        3     1.0    1.0   320.0   14.07  185.93  200.00    SS
ITERATING TO FIND MAXIMUM CONCENTRATION . . .

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND    11. M:
    42.   1368.        3     1.5    1.5   480.0    9.95    9.38    8.60    SS

USE DISCRETE DISTANCES?  ENTER Y OR N:
n

 *** CAVITY CALCULATION - 1 ***        *** CAVITY CALCULATION - 2 ***
  CONC (UG/M**3)      =    499.0         CONC (UG/M**3)      =    1294.
  CRIT WS @10M (M/S) =      2.28         CRIT WS @10M (M/S) =      3.49
  CRIT WS @ HS (M/S) =      2.28         CRIT WS @ HS (M/S) =      3.49
  DILUTION WS (M/S)  =      1.14         DILUTION WS (M/S)  =      1.74
  CAVITY HT (M)      =     16.57         CAVITY HT (M)      =     13.72
  CAVITY LENGTH (M)  =     59.47         CAVITY LENGTH (M)  =     27.07
  ALONGWIND DIM (M)  =     21.54         ALONGWIND DIM (M)  =     85.41

     ****************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ****************************************

 CALCULATION         MAX CONC    DIST TO   TERRAIN
  PROCEDURE         (UG/M**3)    MAX (M)    HT (M)
--------------     -----------   -------   -------
SIMPLE TERRAIN       1368.          42.       0.

BLDG. CAVITY-1       499.0          59.       --   (DIST = CAVITY LENGTH)

BLDG. CAVITY-2       1294.          27.       --   (DIST = CAVITY LENGTH)


****************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****************************************************

DO YOU WANT TO PRINT A HARDCOPY OF THE RESULTS?  ENTER Y OR N:
```

Independent Metals Recycling - Theoretical Passing Stack Test **Developed 11/5/2010**

grain loading	Capitol City	Versar data for hood over hammermill discharge (water spray inside mill)
0.006 gr/dscf	0.0056 gr/dscf	0.00257 lb/ton
0.39 lb PM/hr	3251 dscfm	
9.3 lb PM/day	0.16 lb PM/hr	
3379 lb PM/yr	67.9 ton/hr processed	
0.049 g PM/s	0.0023 lb PM/ton	

Results of "Screen3" Using Site Specific Data for Independent Metals			Independent stack parameters*	
15 ton/hr			7500 cfm	*Independent Metals
0.019 lb PM/ton	TSCREEN		7.62 m high	Site-specific variables
0.28 lb PM/hr	1368 (ug/m3)/(g/s)		0.61 m diam	used in TSCREEN Modeling
6.7 lb PM/day	48.23 ug PM/m3	1-hr	0.29 m2 area	
2451 lb PM/yr	19.29 ug PM/m3	24-hr	3.54 m3/s	
0.035 g PM/s	3.86 ug PM/m3	annual	12.13 m/s	

PM capture efficiency 7.26 = ratio of Versar average result for cyclone+venturi scrubber to Versar hammermill discharge test

Versar data for hood over hammermill discharge

COC	Historical Data lb/ton	Improvement needed over historical data	Theoretical Passing lb/ton	lb/hr	g/s	Persistence Factor	ug/m3	ASIL	Impact/ASIL	Impact lb per		SQER
cadmium	0.00000116	631%	0.00000016	0.0000173	0.0000022	0.08	0.0002381	0.000238	100%	0.15	year	0.0457
PCB	0.00008730	7388%	0.00000117	0.0001269	0.0000160	0.08	0.0017503	0.00175	100%	1.11	year	0.336
lead	0.00000789	0%	0.00000789	0.0008590	0.0001082	0.08	0.0118452	0.0833	14%	7.52	year	16
chromium	0.00000128	28723%	0.00000000	0.0000005	0.0000001	0.08	0.0000067	6.67E-06	100%	0.00	year	0.00128
methylene chloride	0.00006000	0%	0.00006000	0.0009000	0.0001134	0.08	0.0124103	1	1%	7.88	year	192
1,1-dichloroethane	0.00001330	0%	0.00001330	0.0001995	0.0000251	0.08	0.0027509	0.625	0%	1.75	year	120
MEK	0.00000533	0%	0.00000533	0.0000800	0.0000101	0.40	0.0055122	5000	0%	0.00	24-hr	657
1,1,1-trichloroethane	0.00020000	0%	0.00020000	0.0030000	0.0003780	0.40	0.2068381	1000	0%	0.07	24-hr	131
benzene	0.00040000	140%	0.00016676	0.0025015	0.0003152	0.08	0.0344931	0.0345	100%	21.91	year	6.62
tetrachloroethylene	0.00000267	0%	0.00000267	0.0000401	0.0000050	0.08	0.0005523	0.169	0%	0.35	year	32.4
trichlorethene	0.00006670	0%	0.00006670	0.0010005	0.0001261	0.08	0.0137961	0.5	3%	8.76	year	95.9
toluene	0.00033300	0%	0.00033300	0.0049950	0.0006294	0.40	0.3443855	5000	0%	0.12	24-hr	657
ethylbenzene	0.00006670	0%	0.00006670	0.0010005	0.0001261	0.08	0.0137961	0.4	3%	8.76	year	76.8
styrene	0.00001330	0%	0.00001330	0.0001995	0.0000251	0.40	0.0137547	900	0%	0.00	24-hr	118
xylene	0.00019970	0%	0.00019970	0.0029955	0.0003774	0.40	0.2065279	221	0%	0.07	24-hr	29

Stack Blower Flow Rate	
cfm	7500
cfs	125

Contaminant of Concern	g/ft3	@ASIL in-stack ug/m3	Table 29-1 MDL ug/m3	ASIL downwind ug/m3	dilution x persistence factor
cadmium	0.00000002	0.61	1.0/0.2	0.00024	2580
PCB	0.00000013	4.52		0.00175	
lead	0.00000087	30.57	10.1/0.2	0.08542	358
chromium	0.00000000	0.02	1.7/0.2	0.00001	2580
benzene	0.00000252	89.03		0.03452	

0.03 ppm benzene in stack = ASIL
28 ppb benzene

NOMENCLATURE

Constants	Value	Units	Definition	Ref
Pstd(1)	29.92126	inHg	Standard Pressure	CRC
Pstd(2)	2116.22	lbf / ft²		CRC
Tstd	527.67	°R	Standard Temperature	CRC
R	1545.33	ft lbf / lbmol °R	Ideal Gas Constant	CRC
MWatm	28.965	lbm / lbmole	Atmospheric (20.946 %O2, 0.033% CO2, Balance N2+Ar)	
MWc	12.011	lbm / lbmole	Carbon	CRC
MWco	28.01	lbm / lbmole	Carbon Monoxide	CRC
MWco2	44.01	lbm / lbmole	Carbon Dioxide	CRC
MWh2o	18.015	lbm / lbmole	Water	CRC
MWno2	46.006	lbm / lbmole	Nitrogen Dioxide	CRC
MWo2	31.999	lbm / lbmole	Oxygen	CRC
MWso2	64.063	lbm / lbmole	Sulfur Dioxide	CRC
MWn2+ar	28.154	lbm / lbmole (Balance with 98.82% N2 & 1.18% Ar)	Emission balance	
C1	385.3211	ft³ / lbmol	Ideal Gas Constant @ Standard Conditions	
C2	816.5455	inHg in²/ °R ft²	Isokentics units correction constant	
Kp	5129.4	ft / min [(inHg lbm/mole) / (°R inH2O)] ^½	Pitot tube constant	Ref 2.5.1

Symbol	Units	Definition	Calculating Equation or Source of Data	EPA
As	in²	Area, Stack		
An	in²	Area, Nozzle		
Bws	%	Moisture, % Stack gas	[100 Vw(std) / [Vw(std)+Vm(std)]]	Eq. 5-3
C	ppmv-C	Carbon (General Reporting Basis for Organics)		
C1	ft3/lbmol	Gas Constant @ Standard Conditions	[R Tstd / Pstd(2)]	
C2	inHg in²/ °R ft²		[14,400 Pstd / Tstd]	
Cd	lbm-GAS / MMdscf	Mass of gas per unit volume	[Cgas MWgas / C1]	
cg	gr/dscf	Grain Loading, Actual	[15.432 mn / Vm(std) 1,000]	Eq. 5-6
cg @ X%CO2	gr/dscf	Grain Loading Corrected to X% Carbon Dioxide	[X% / CO2%]	
cg @ X%O2	gr/dscf	Grain Loading Corrected to X% Oxygen	[(20.946-X) / (20.946-O2)]	
Cgas	ppmv, %	Gas Concentration, (Corrected)		
Cgas @ X%CO2	ppmv	Gas Concentration Correction to X% Carbon Dioxide	[X% / CO2%]	
Cgas @ X%O2	ppmv	Gas Concentration Correction to X% Oxygen	[(20.946-X%) / (20.946-O2%)]	
CO	ppmv	Carbon Monoxide		
Co	ft	Outer Circumference of Circular Stack		
Ci	ft	Inner Circumference of Circular Stack		
CO2	%	Carbon Dioxide		
Cp		Pitot tube coefficient		
Ct	lb/hr	Particulate Mass Emissions	[60 cg Qsd/ 7,000]	
dH	in H2O	Pressure differential across orifice		
Dn	in	Diameter, Nozzle		
dp^½		Average square root of velocity pressure		
Ds	in	Diameter, Stack		
E	lb / MMBtu	Pollutant Emission Rate	Cgas Fd MWgas (20.946 / (20.946-O2)) / (1,000,000 C1)	
Fd	dscf / MMBtu	F Factor for Various Fuels		Table 19-1
I	%	Percent Isokinetic	[C2 Ts(abs) Vm(std) / (vs Ps mfg An Ø)]	Eq. 5-8*
Md	lbm / lbmole	Molecular weight, Dry Stack Gas	[(1-%O2-%CO2)(MWn2+ar)+(%O2 MWo2)+(%CO2 MWco2)]	Eq. 3-1*
mfg		Mole fraction of dry stack gas	[1-Bws/100]	
Mgas	lbm/hr	Gaseous Mass Emisisons	[60 Cgas(ppmv) MW Pstd(2) Qsd / 1,000,000 R Tstd]	
mn	mg	Particulate lab sample weight		
Ms	lbm / lbmole	Molecular weight, Wet Stack	[Md mfg +MWh2o (1-mfg)]	Eq. 2-5
MW	lbm / lbmole	Molecular Weight		
NO2	ppmv-NO2	Nitrogen Dioxide (General Reporting Basis for NOx)		
NOx	ppmv-NO2	Nitrogen Oxides (Reported as NO2)		
O2	%	Oxygen		
OPC	%	Opacity		
Pbar	in Hg	Pressure, Barometric		
Pg	in H2O	Pressure, Static Stack		
Po	in Hg	Pressure, Absolute across Orifice	[Pbar + dH / 13.5951]	
Ps	in Hg	Pressure, Absolute Stack	[Pbar + Pg / 13.5951]	Eq. 2-6*
Qa	acf/min	Volumetric Flowrate, Actual	[As vs / 144]	
Qsd	dscf/min	Volumetric Flowrate, Dry Standard	[Qa Tstd mfg Ps] / [Pstd(1) Ts(abs)]	Eq 2-10*
Rf	MMBtu/hr		1,000,000 Mgas (20.946-O2)] / [Cd Fd 20.946]	
SO2	ppmv-SO2	Sulfur Dioxide		
t	in	Wall thickness of a stack or duct		
TGOC	ppmv-C	Total Gaseous Organic Concentration (Reported as C)		
Tm	°F	Temperature, Dry gas meter		
Tm(abs)	°R	Temperature, Absolute Dry Meter	[Tm + 459.67]	
Ts	°F	Temperature, Stack gas		
Ts(abs)	°R	Temperature, Absolute Stack gas	[Ts + 459.67]	
Vlc	ml	Volume of condensed water		
Vm	dcf	Volume, Gas sample		
Vm(std)	dscf	Volume, Dry standard gas sample	[Y Vm Tstd Po]/ [Pstd(1) Tm(abs)]	Eq. 5-1
vs	fpm	Velocity, Stack gas	Kp Cp dp^½ [Ts(abs) / (Ps Ms)]^ ½	Eq. 2-9*
Vw(std)	scf	Volume, Water Vapor	0.04707 Vlc	Eq. 5-2
Y		Dry gas meter calibration factor		Fig. 5.6
Ø	min	Time, Total sample		

ACRONYMS & ABBREVIATIONS USED IN REPORT

AAC	Atmospheric Analysis & Consulting, Inc.
ADL	Above Detection Limit
BAAQMD	Bay Area Air Quality Management District
BACT	Best Achievable Control Technology
BDL	Below Detection Limit
BHP	Boiler Horsepower
BIF	Boiler and Industrial Furnace
BLS	Black Liquor Solids
C	Carbon
C_3H_8	Propane
CAS	Columbia Analytical Laboratory
CEM	Continuous Emissions Monitor
CEMS	Continuous Emissions Monitoring System
CERMS	Continuous Emissions Rate Monitoring System
CET	Calibration Error Test
CFR	Code of Federal Regulations
CGA	Cylinder Gas Audit
CH_2O	Formaldehyde
CH_4	Methane
Cl_2	Chlorine
ClO_2	Chlorine Dioxide
CNCG	Concentrated Non-Condensable Gas
CO	Catalytic Oxidizer
CO_2	Carbon Dioxide
COC	Chain of Custody
CTM	Conditional Test Method
CTO	Catalytic Thermal Oxidizer
Dioxins	Polychlorinated Dibenzo-p-dioxins (PCDD's)
DLL	Detection Level Limited
DNCG	Dilute Non-Condensable Gas
dscf	Dry Standard Cubic Feet
EIT	Engineer in Training
EPA	Environmental Protection Agency
ESP	Electrostatic Precipitator
EU	Emission Unit
FID	Flame Ionization Detector
Furans	Polychlorinated Dibenzofurans (PCDF's)
GC	Gas Chromatography
gr/dscf	Grains Per Dry Standard Cubic Feet
H_2S	Hydrogen Sulfide
HAP	Hazardous Air Pollutant
HCl	Hydrogen Chloride
HRSG	Heat Recovery Steam Generator
IDEQ	Idaho Department of Environmental Quality
lb/hr	Pounds Per Hour
LRAPA	Lane Regional Air Protection Agency
MACT	Maximum Achievable Control Technology
MDI	Methylene Diphyenyl Diisocyanate
MDL	Method Detection Limit
MEK	Methyl Ethyl Ketone
MeOH	Methanol
MMBtu	Million British Thermal Units
MRL	Method Reporting Limit
MS	Mass Spectrometry
MSF	Thousand Square Feet
NCASI	National Council for Air and Steam Improvement

ACRONYMS & ABBREVIATIONS USED IN REPORT

NCG	Non-condensable Gases
NCUAQMD	North Coast Unified Air Quality Management District
NDIR	Non-dispersive Infrared
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Standards and Technology
NMVOC	Non-Methane Volatile Organic Compounds
NO_x	Nitrogen Oxides
NPD	Nitrogen Phosphorus Detector
O_2	Oxygen
ODEQ	Oregon Department of Environmental Quality
ORCAA	Olympic Region Clean Air Agency
PAHs	Polycyclic Aromatic Hydrocarbons
PCWP	Plywood and Composite Wood Products
PE	Professional Engineer
PM	Particulate Matter
ppbv	Parts Per Billion by Volume
ppmv	Parts Per Million by Volume
PS	Performance Specification
PSCAA	Puget Sound Clean Air Agency
PSEL	Plant Site Emission Limits
psi	pounds per square inch
PTE	Permanent Total Enclosure
PTM	Performance Test Method
QA/QC	Quality Assurance and Quality Control
QSTI	Qualified Source Testing Individual
RA	Relative Accuracy
RAA	Relative Accuracy Audit
RACT	Reasonably Available Control Technology
RATA	Relative Accuracy Test Audit
RM	Reference Method
RTO	Regenerative Thermal Oxidizer
SCD	Sulfur Chemiluminescent Detector
SCR	Selective Catalytic Reduction System
SO_2	Sulfur Dioxide
SOG	Stripper Off-Gas
SWCAA	Southwest Clean Air Agency
TAP	Toxic Air Pollutant
TCA	Thermal Conductivity Analyzer
TCD	Thermal Conductivity Detector
TGNMOC	Total Gaseous Non-Methane Organic Compounds
TGOC	Total Gaseous Organic Compounds
THC	Total Hydrocarbon
TIC	Tentatively Identified Compound
TO	Thermal Oxidizer
TO	Toxic Organic (as in EPA Method TO-15)
TPH	Tons Per Hour
TRS	Total Reduced Sulfur
TTE	Temporary Total Enclosure
VE	Visible Emissions
VOC	Volatile Organic Compounds
WC	Inches Water Column
WDOE	Washington Department of Ecology
WWTP	Waste Water Treatment Plant

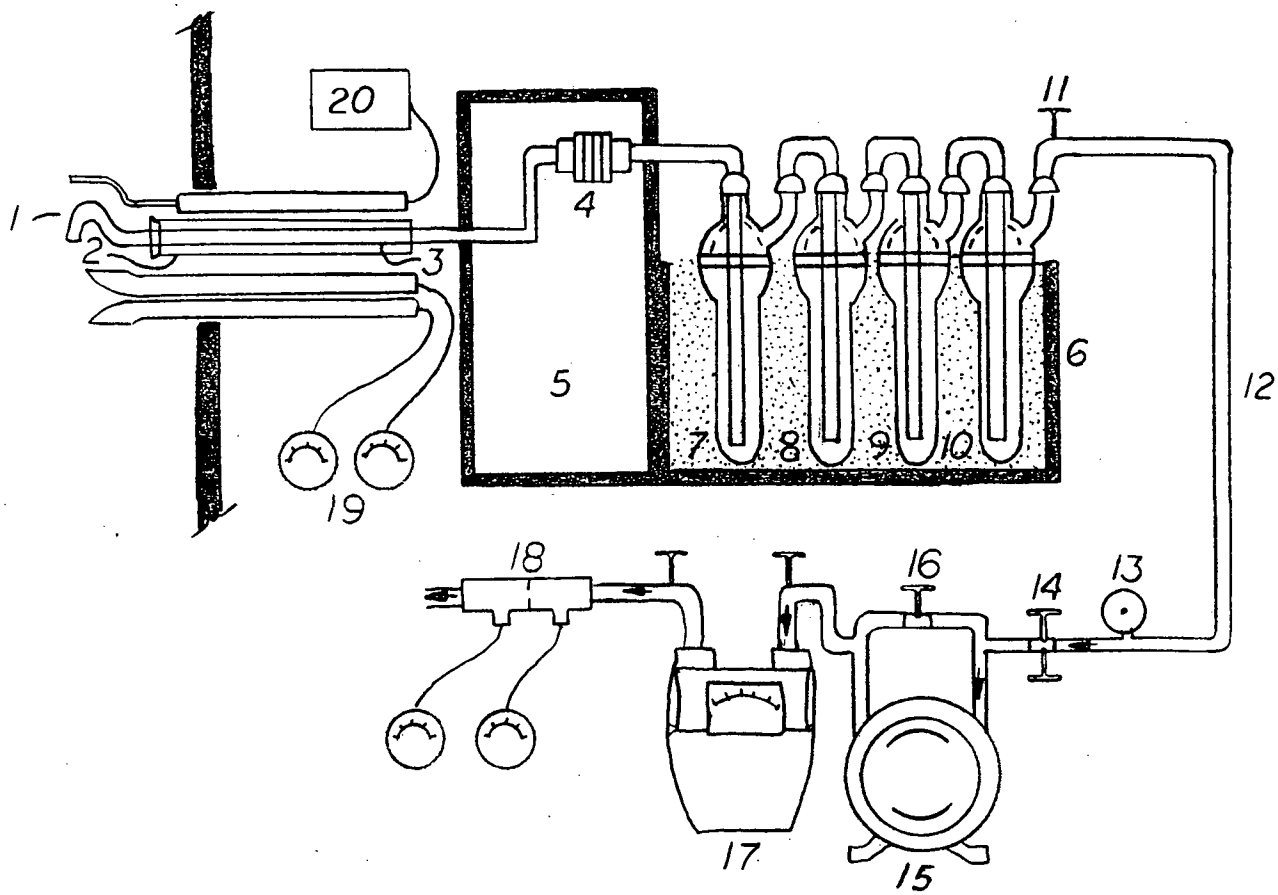
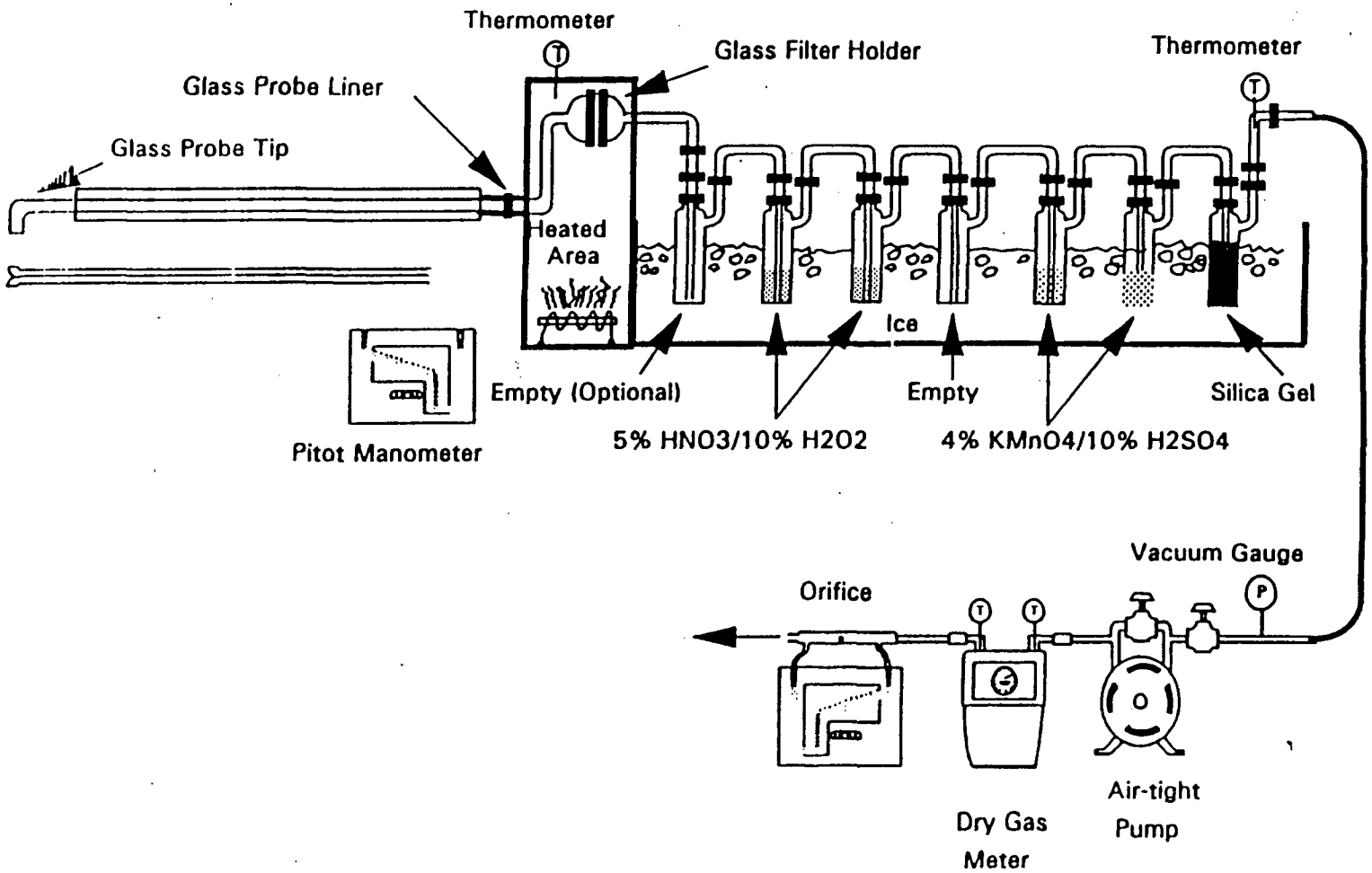


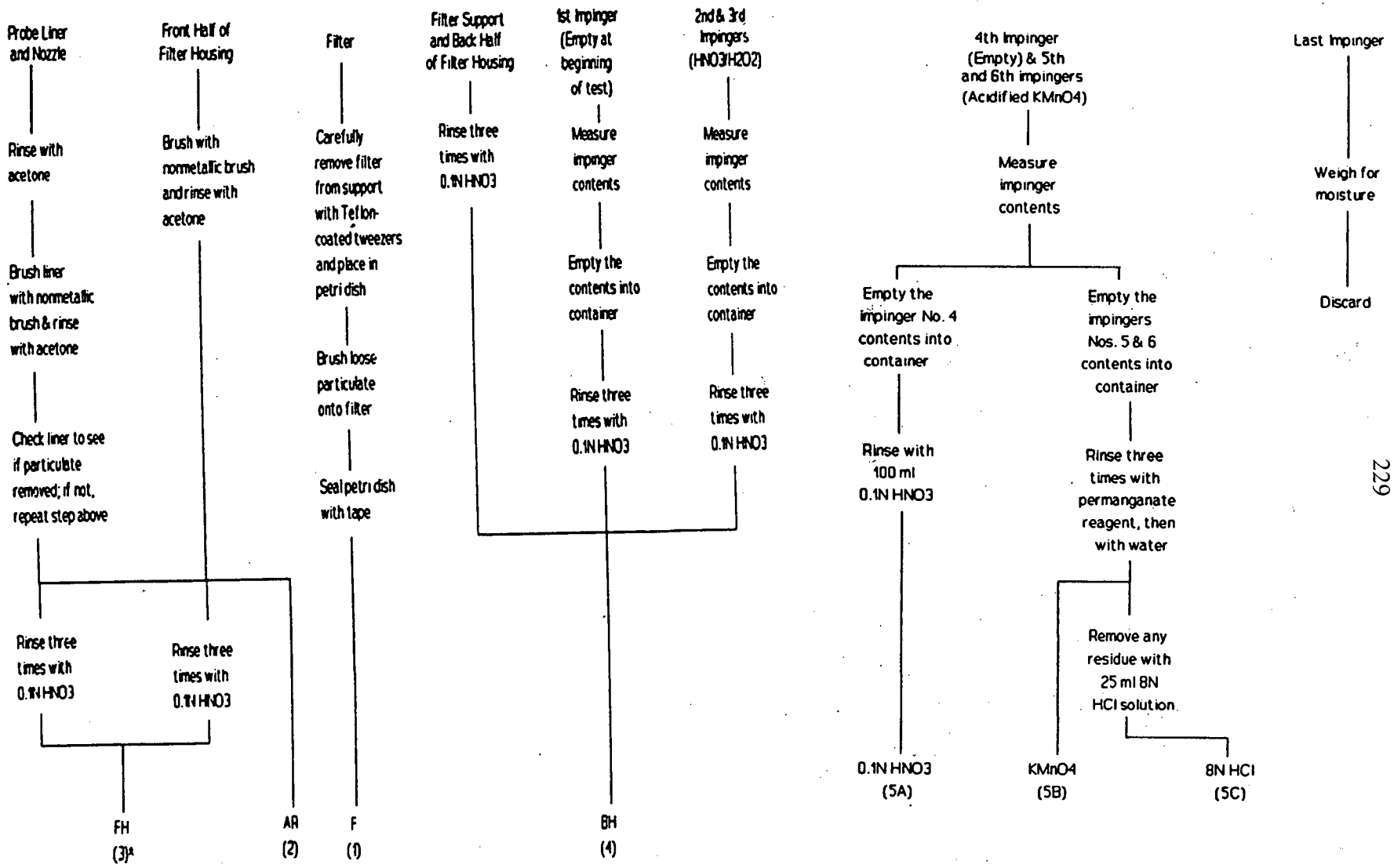
Figure 1. Method 5 Sample Train.

1. Sampling nozzle
2. Sampling probe sheath
3. Heated sample probe liner
4. Out of stack filter assembly
5. Heated filter compartment maintained at 248°F ± 25°F (or temperature specified in 40 CFR subpart)
6. Impinger case - contains ice during sampling
7. First impinger containing 100 ml H_2O
8. Modified Greenburg-Smith impinger containing 100 ml H_2O
9. Third impinger - empty
10. Fourth impinger containing indicating silica gel desiccant
11. Impinger exit gas temperature sensor
12. Umbilical cord - vacuum line
13. Vacuum gauge
14. Fine and coarse adjustment valves
15. Leak free pump
16. By-pass valve
17. Dry gas meter with inlet and outlet temperature sensors
18. Orifice meter with magnehelic gauges
19. S-type pitot tube with magnehelic gauges
20. Fluke multi-channel digital thermocouple indicator



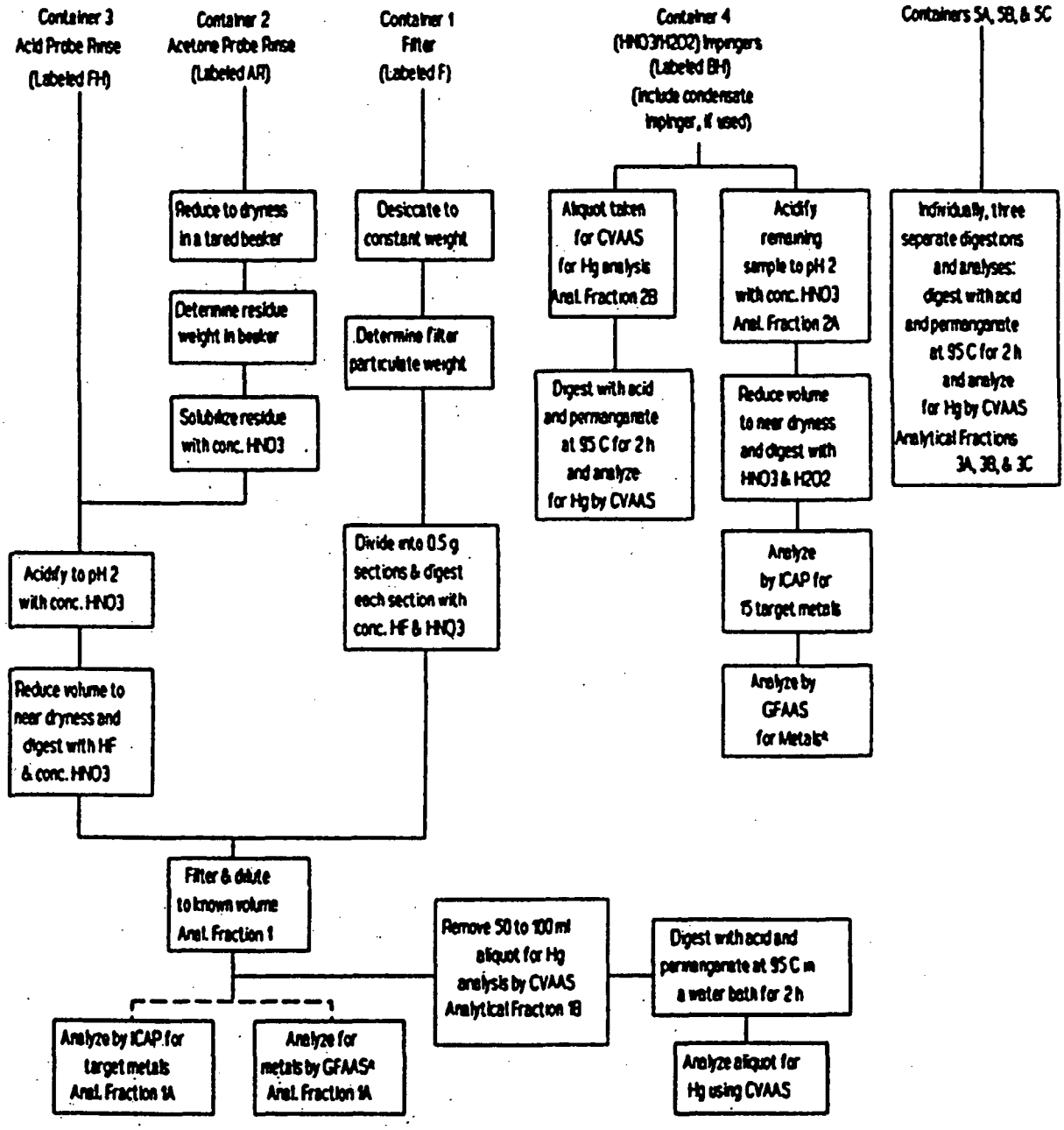
Method 29

Figure 2 . Sampling train.



[a] Number in parentheses indicates container number

Method 29 Sample Recovery Scheme



[a]Analysis by AAS for metals found at less than 2 ug/ml in digestate solution, if desired. Or analyze for each metal by AAS, if desired.

Method 29 Sample Preparation and Analysis Scheme

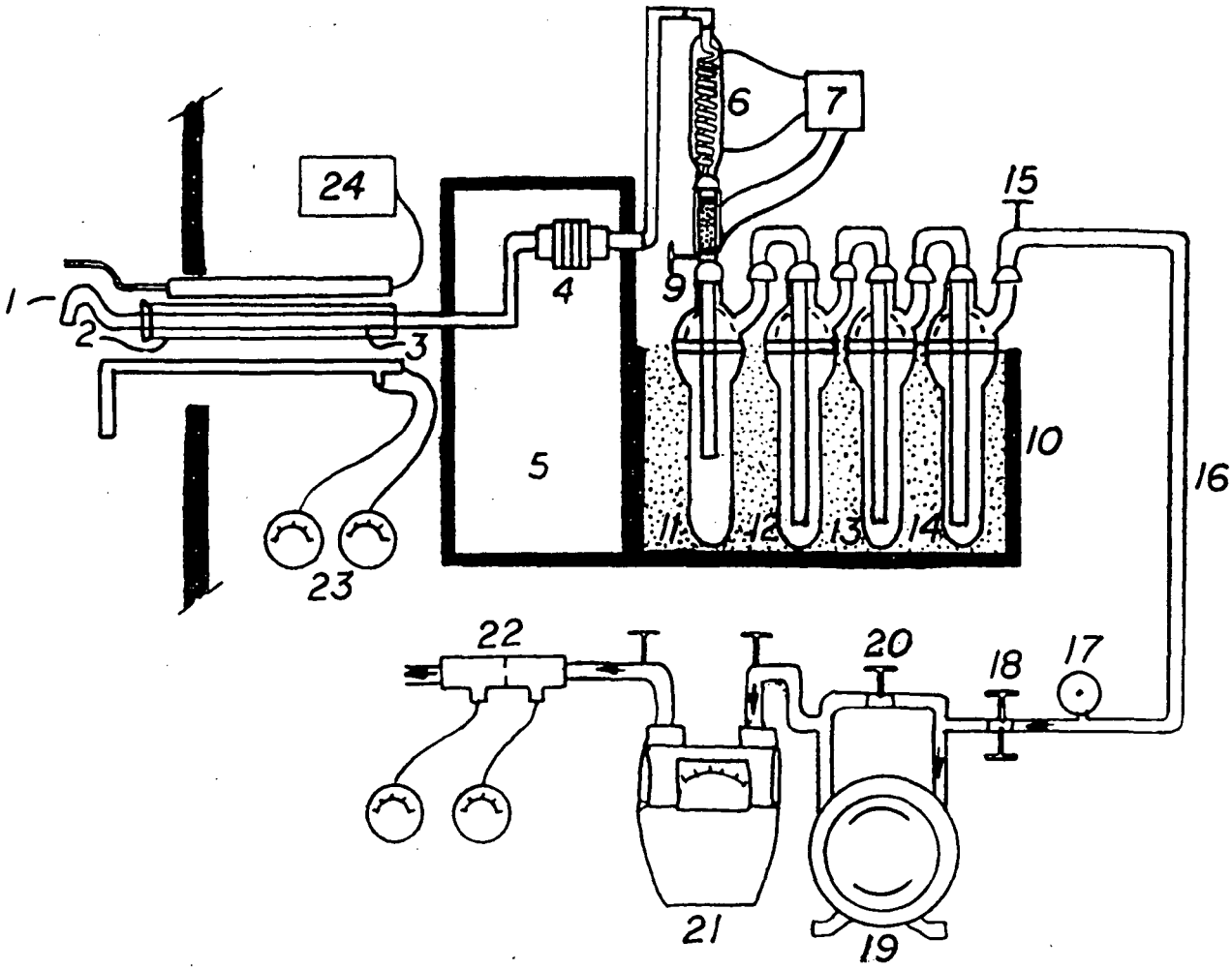


Figure 3 . Semi-Volatile Organic Sample Train.

1. Sampling nozzle
2. Sampling probe sheath
3. Heated sample probe liner
4. Out of stack filter assembly
5. Heated filter compartment maintained at 248°F ± 25°F (or temperature specified in 40 CFR subpart)
6. Ice water cooled coil condenser
7. Recirculating pump
8. Water cooled sorbent module containing XAD-2 resin
9. Sorbent module exit gas temperature sensor
10. Impinger case - contains ice during sampling
11. First impinger w/ short stem - empty (knock-out)
12. Modified Greenburg-Smith impinger containing 100 ml H_2O
13. Third impinger - empty
14. Fourth impinger containing indicating silica gel desiccant
15. Impinger exit gas temperature sensor
16. Umbilical cord - vacuum line
17. Vacuum gauge
18. Fine and coarse adjustment valves
19. Leak free pump
20. By-pass valve
21. Dry gas meter with inlet and outlet temperature sensors
22. Orifice meter with magnehelic gauges
23. P or S-type pitot tube with magnehelic gauges
24. Fluke multi-channel digital thermocouple indicator

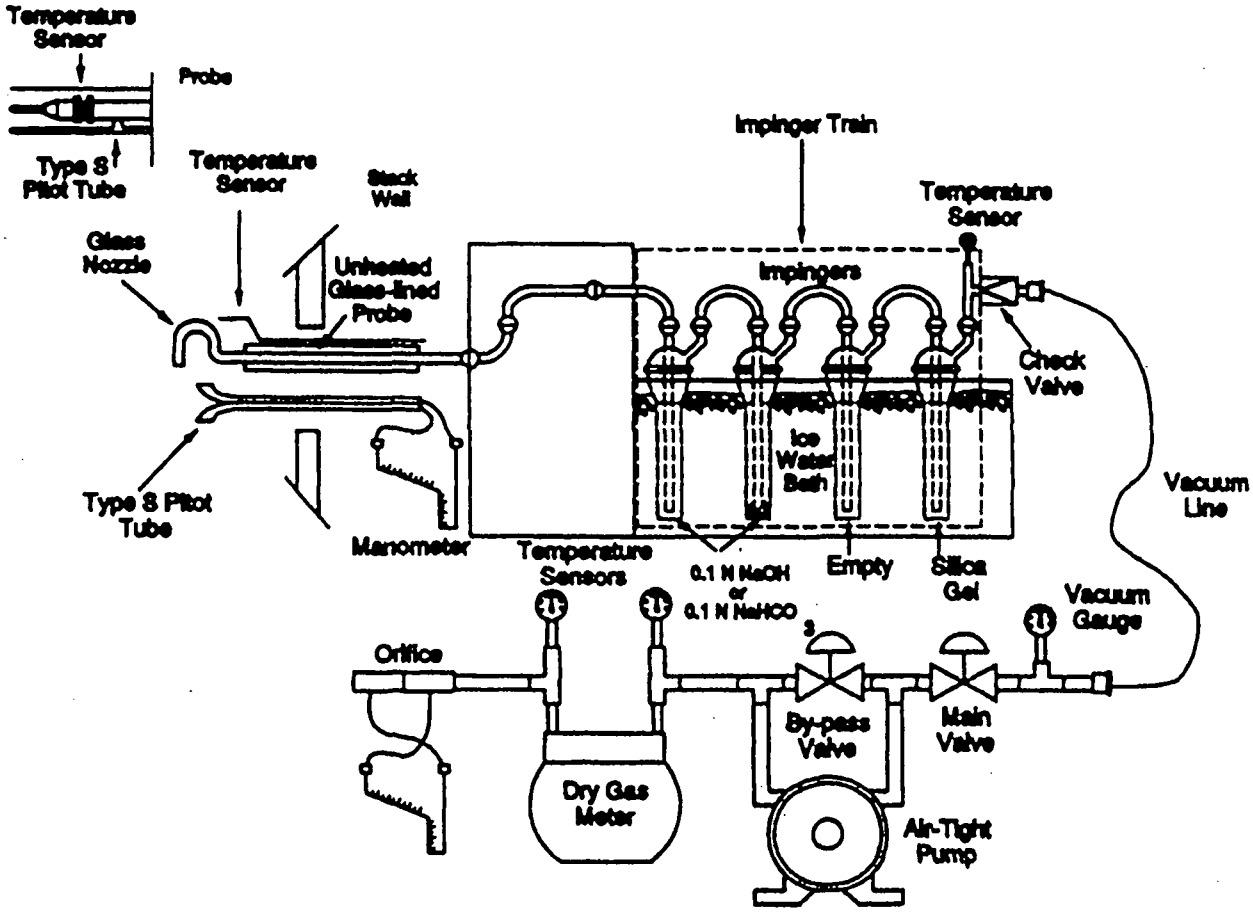


Figure 4 . EPA Method 306 Sample Train Schematic

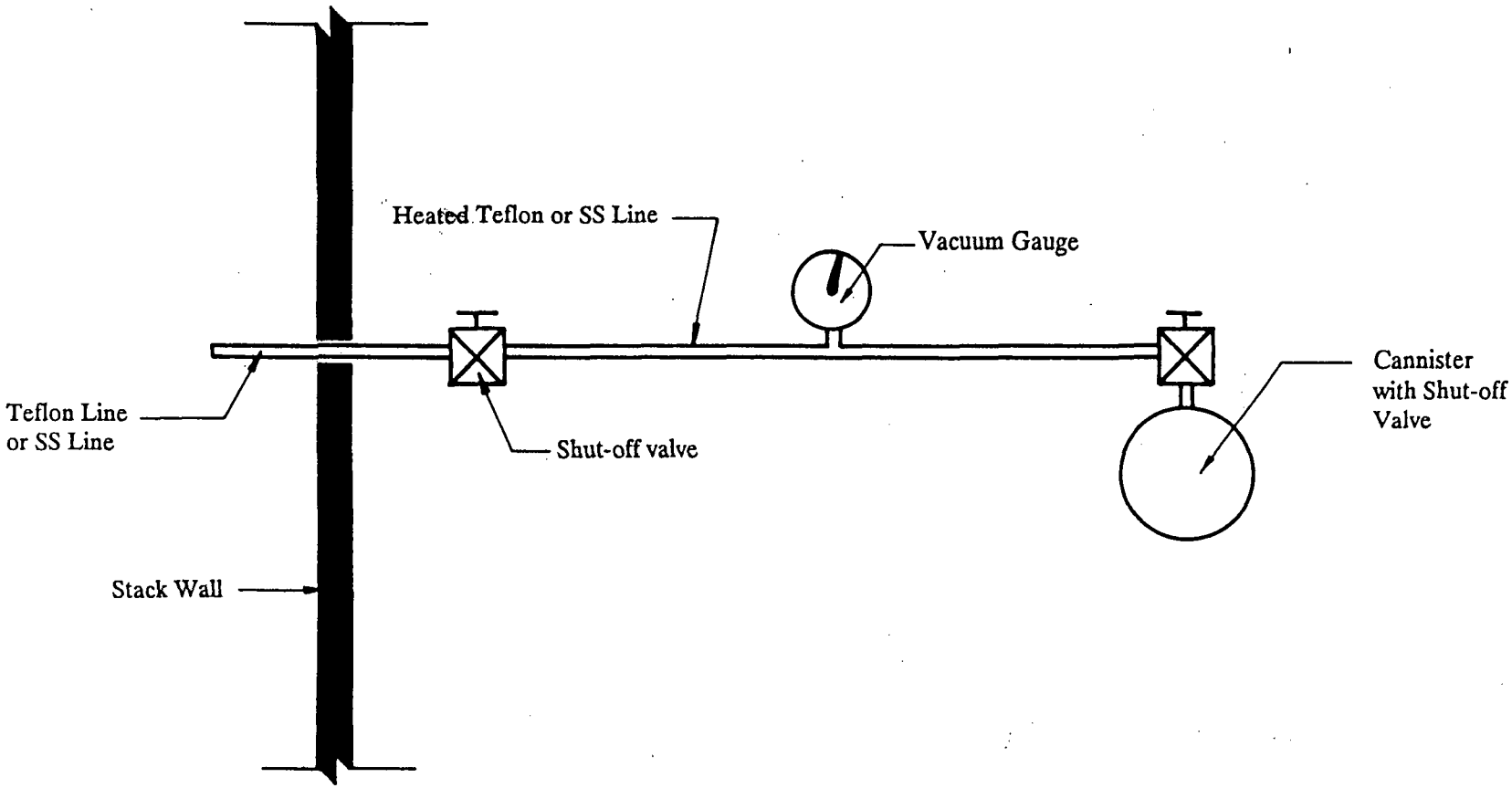


Figure 5 . TO-15 Sample System Schematic.

Biannual Meterbox Calibration

Method	EPA M-5 #7.2			
Location	Horizon Shop	Date	21-Jul-2010	
Meter Box ID	1	Pb=	30.00	(in Hg)
Meter ID	3624182	Ta=	72	(oF)
calibrated by	PT	Tamb	532	(oR)

Leak checks

Negative	0.0	in/min @	27.00	inches Hg
Positive	0.0	in/min @	4.10	inches H20

0.97<Y<1.03	Old 06/08/2010	New 07/21/2010	Change (+/-)	
Y=	1.01667	1.01976	0.3%	pass
dH@=	1.83999	1.80952	-1.7%	

	VAC (In Hg)	Critical Orifice ID	K	dH (inH2O)	Meter (ft3)	Net (ft3)	Field Tdi (oF)	Meter Tdo (oF)	To (oR)	Tm (oR)	Time t (min)	Y	dH@	Y 0.020	dH@ 0.20	Allow. Tolerance
Initial	21.0	55.0	0.46085	1.10	878.5690	5.8820	70.0	69.0	529.5	530.0	10.00	1.01786	1.80669	0.002	0.00	
Final					884.4510		71.0	70.0						pass	pass	
Initial	17.0	73.0	0.79279	3.30	884.4510	8.0490	73.0	72.0	531.0	532.5	8.00	1.02299	1.84724	0.003	0.04	
Final					892.5000		75.0	70.0						pass	pass	
Initial	19.0	63.0	0.59227	1.80	892.5000	6.0650	73.0	71.0	531.0	532.8	8.00	1.01844	1.77461	0.001	0.03	
Final					898.5650		76.0	71.0						pass	pass	
												1.01976	1.80952	0.00215	0.02515	

Biannual Meterbox Calibration

Method EPA M-5 #7.2
Location Horizon Shop
Meter Box ID 13
Meter ID 5275919
calibrated by PTH

Date 19-Jul-2010
Pb= 30.00 (in Hg)
Ta= 74 (oF)
Tamb 534 (oR)

Leak checks
Negative 0/1 ln/min 26.00 Inches Hg
Positive 0/1 ln/min @ Inches H20

0.97<Y<1.03	Old 6/10/10	New 19-Jul-2010	Change (+/-)	
Y=	0.98205	0.97103	-1.1%	pass
dH@=	1.68948	1.76903	4.5%	

	VAC (in Hg)	Critical Orifice ID	K	dH (inH2O)	Meter (ft3)	Net (ft3)	Field Tdi (oF)	Meter Tdo (oF)	To (oR)	Tm (oR)	Time t (min)	Y	dH@	Y 0.020	dH@ 0.20	Allow. Tolerance
Initial	19.0	63.0	0.59227	2.00	635.1210	7.9790	73.0	73.0	533.0	533.0	10.00	0.96584	1.78679	0.0052	0.0178	
Final					643.1000		73.0	73.0						pass	pass	
Initial	17.0	73.0	0.81718	3.80	643.1000	8.8000	74.0	75.0	539.0	536.8	8.00	0.96917	1.76635	0.0019	0.0027	
Final					651.9000		75.0	83.0						pass	pass	
Initial	21.0	55.0	0.46085	1.20	651.9000	7.4370	75.0	79.0	540.0	537.8	12.00	0.97809	1.75397	0.0071	0.0151	
Final					659.3370		76.0	81.0						pass	pass	
												0.97103	1.76903	0.0047	0.0118	

Post Test Meterbox Calibration

Method EPA M-5 #7.2
Location Envirosure
Meter Box 1
calibrated by PS

Date 12/03/2010
Pb= 30.30 (in Hg)
Ta= 62 (oF)
Tamb 522 (oR)

	Biannual 07/21/2010	Post-Test 12/03/2010	Change (+/-)	
Y=	1.01976	1.03679	1.6%	pass
dH@=	1.80952	1.91419	5.5%	

	VAC (in Hg)	Critical Orifice ID	K	dH (inH2O)	Meter (ft3)	Net (ft3)	Field Tdi (oF)	Meter Tdo (oF)	To (oR)	Tm (oR)	Time t (min)	Y	dH@	Y 0.020	dH@ 0.20	Allow. Tolerance
Initial	19.0	56.0	0.47761	1.20	804.3000	5.8700	54.0	54.0	514.5	515.3	10.00	1.03719	1.94144	0.000	0.03	
Final					810.1700		58.0	55.0						pass	pass	
Initial	19.0	56.0	0.47761	1.20	810.1700	6.4500	58.0	55.0	516.0	518.0	11.00	1.04385	1.94000	0.007	0.03	
Final					816.6200		62.0	57.0						pass	pass	
Initial	19.0	56.0	0.47761	1.20	816.6200	5.9750	62.0	57.0	518.0	520.5	10.00	1.02934	1.86114	0.007	0.05	
Final					822.5950		64.0	59.0						pass	pass	
												1.03679	1.91419	0.00298	0.02122	

Post Test Meterbox Calibration

Method EPA M-5 #7.2
Location Envirosure
Meter Box 13
calibrated by PS

Date 12/03/2010
Pb= 30.30 (in Hg)
Ta= 61 (oF)
Tamb 521 (oR)

	Biannual 07/19/2010	Post-Test 12/03/2010	Change (+/-)	
Y=	0.97103	0.98173	1.1%	pass
dH@=	1.76903	1.76726	-0.1%	

	VAC (in Hg)	Critical Orifice ID	K	dH (inH2O)	Meter (ft3)	Net (ft3)	Field Tdi (oF)	Meter Tdo (oF)	To (oR)	Tm (oR)	Time t (min)	Y	dH@	Y 0.020	dH@ 0.20	Allow. Tolerance
Initial	19.0	65.0	0.62384	2.20	822.1050	6.9850	59.0	61.0	523.0	521.0	8.50	0.97709	1.77977	0.005	0.01	
Final					829.0900		59.0	65.0						pass	pass	
Initial	19.0	65.0	0.62384	2.20	829.0900	8.6250	59.0	65.0	527.0	523.5	10.50	0.98218	1.76771	0.000	0.00	
Final					837.7150		61.0	69.0						pass	pass	
Initial	19.0	65.0	0.62384	2.20	837.7150	7.4000	61.0	69.0	530.0	526.0	9.00	0.98592	1.75431	0.004	0.01	
Final					845.1150		63.0	71.0						pass	pass	
												0.98173	1.76726	0.00186	0.00518	

HORIZON ENGINEERING LLC
13585 N.E. Whitaker Way • Portland, OR 97230
Phone (503)255-5050 • Fax (503)255-0505
www.horizonengineering.com

Standard Meter Calibration
ID # 2299046
Northwest Natural, Gas Meter Division
6/23/10

	NEW METER NUMBER	SIZE	PERF #	NEW ERT#	INDEX READING
SET ☐					
CHANGE ☐ REMOVAL ☐	OLD METER NUMBER	SIZE	OLD PERF #	OLD ERT#	OLD INDEX READING

SERVICE ADDRESS SPACE OR APT NO. CITY

Horizon Engineering

METER LEFT		EQUIP LEFT		CURB LEFT		CUST VALVE		LOC.	INS.	BS.	BW.	PDL
ON	OFF	ON	OFF	ON	OFF	ON	OFF					

GREEN TAG		YELLOW TAG		TIED	NOT TIED	MTR PRESSURE	6.5 INWC @ 130 CFH	2LB	OVER 2LB
YES	NO	YES	NO						

REMARKS Meter tested at 3 flow rates only.
(meter temp 70.3)

Completed By: Date:

METER SAMPLE 1	WRONG SIZE 2	INDEX IMPAIRED 3	DR 4	METER IMPAIRED 6
ERT DAMAGE 7	LEAK 8	SET WRONG 14	LIQUIDS 15	DEMAND TEST 18
OTHER 19	CORROSION 20	NO USE 21	PCC 24	Unauthorized Gas/Vandalism 27	FIRE 28

FOR METER CHANGES/ REMOVALS ONLY

F-8735 METER RECORD (Rev 0807) PART 1

FOR METER SHOP ONLY

COMMENTS/TEST CODES	INCOMING TESTS	
80% = 99.6	OPEN	
60% = 99.7	CHECK	
30% = 99.9	INDEX READ	ERT READ
TEST DATE 6/23/10	INITIALS JM	METER S-275

Critical Orifice Calibrations

Set	Shop #1											Horizon Engineering
Job #	in house											13585 NE Whitaker Way
Date:	06/24/10											Portland, OR 97230
DGM (Y) =	0.99733											Phone (503) 255-5050
DGM ID #	standard											Fax (503) 255-0505
Calibrated by:	PT		*** Minimum 5 minute Runs ***									QA/QC MEW
Dry Gas Meter			Orifice ID # 73		Orifice ID # 63		Orifice ID # 55		Orifice ID # 48		Orifice ID # 40	
K' Critical Orifice Coefficient			0.81718		0.59227		0.46085		0.34838		0.23875	
	Symbol	Units	Run 1	Run 2	Run 1	Run 2	Run 1	Run 2	Run 1	Run 2	Run 1	Run 2
Initial volume	Vi	ft³	651.800	663.690	674.600	680.897	686.100	691.599	697.150	703.144	708.250	712.028
Final Volume	Vf	ft³	663.690	674.523	680.897	686.021	691.599	697.101	703.144	708.211	712.020	713.612
Difference	Vm	ft³	11.890	10.833	6.297	5.124	5.499	5.502	5.994	5.067	3.770	1.584
Temperatures												
Ambient		°F	72.0	72.0	74.0	74.0	74.0	76.0	76.0	78.0	78.0	78.0
Absolute ambient	Ta	°R	531.7	531.7	533.7	533.7	533.7	535.7	535.7	537.7	537.7	537.7
Initial Inlet	Ti	°F	83.0	88.0	87.0	87.0	85.0	84.0	83.0	83.0	82.0	81.0
Outlet	Tf	°F	75.0	76.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0
Final Inlet	Ti	°F	94.0	95.0	90.0	97.0	86.0	87.0	84.0	84.0	83.0	83.0
Outlet	Tf	°F	76.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0
Avg. Temp	Tm	°R	541.7	543.7	542.4	544.2	540.9	540.9	539.9	539.9	539.4	539.2
Time		min	11	10	8	6	9	9	13	11	12	5
		sec	0	0	0	30	0	0	0	0	0	0
			11.00	10.00	8.00	6.50	9.00	9.00	13.00	11.00	12.00	5.00
Orifice man. rdg	dH@	in H2O	4.300	4.300	2.200	2.200	1.200	1.200	0.700	0.700	0.300	0.300
Barometric Pressure	Pbar	inHg	30.10	30.10	30.10	30.10	30.10	30.10	30.10	30.10	30.10	30.10
Pump vacuum		inHg	14.0	14.0	16.0	16.0	17.0	17.0	18.0	18.0	19.0	19.0
K' factor			0.81778	0.81657	0.59278	0.59176	0.46030	0.46141	0.34822	0.34854	0.23770	0.23981
K' factor Average				0.81718		0.59227		0.46085		0.34838		0.23875
% Error (+/- 0.5)		%		0.07%		0.09%		0.12%		0.05%		0.44%
Vcr(std)			11.7429	10.6596	6.1790	5.0118	5.3977	5.4007	5.8873	4.9768	3.7027	1.5565
Vm(std)			11.7743	10.6881	6.1955	5.0252	5.4122	5.4151	5.9031	4.9901	3.7126	1.5606
Y			0.9973	0.9973	0.9973	0.9973	0.9973	0.9973	0.9973	0.9973	0.9973	0.9973

Critical Orifice Calibrations

Set	Shop #2											Horizon Engineering
Job #	in house											13585 NE Whitaker Way
Date:	06/25/10											Portland, OR 97230
DGM (Y) =	0.99733											Phone (503) 255-5050
DGM ID #	standard											Fax (503) 255-0505
Calibrated by:	PT		*** Minimum 5 minute Runs ***									QA/QC MEW
Dry Gas Meter			Orifice ID # 40		Orifice ID # 48		Orifice ID # 55		Orifice ID # 63		Orifice ID # 73	
K' Critical Orifice Coefficient			0.23592		0.34398		0.45483		0.57817		0.79279	
	Symbol	Units	Run 1	Run 2	Run 1	Run 2	Run 1	Run 2	Run 1	Run 2	Run 1	Run 2
Initial volume	Vi	ft^3	714.770	717.551	720.400	724.491	727.770	730.761	733.800	739.134	743.050	750.325
Final Volume	Vf	ft^3	717.551	720.354	724.491	727.655	730.761	733.753	739.134	742.920	750.325	756.565
Difference	Vm	ft^3	2.781	2.803	4.091	3.164	2.991	2.992	5.334	3.786	7.275	6.240
Temperatures												
Ambient		°F	72.0	72.0	72.0	72.0	74.0	76.0	78.0	80.0	81.0	82.0
Absolute ambient	Ta	°R	531.7	531.7	531.7	531.7	533.7	535.7	537.7	539.7	540.7	541.7
Initial Inlet	Ti	°F	75.0	76.0	76.0	78.0	78.0	80.0	80.0	85.0	83.0	89.0
Outlet	Tf	°F	72.0	72.0	72.0	73.0	73.0	73.0	74.0	74.0	74.0	75.0
Final Inlet	Ti	°F	76.0	77.0	80.0	80.0	82.0	83.0	86.1	87.0	92.0	92.0
Outlet	Tf	°F	72.0	72.0	73.0	73.0	73.0	73.0	74.0	74.0	75.0	76.0
Avg. Temp	Tm	°R	533.4	533.9	534.9	535.7	536.2	536.9	538.2	539.7	540.7	542.7
Time		min	9	9	9	7	5	5	7	5	7	6
		sec	0	0	0	0	0	0	0	0	0	0
			9.00	9.00	9.00	7.00	5.00	5.00	7.00	5.00	7.00	6.00
Orifice man. rdg	dH@	in H2O	0.300	0.300	0.680	0.680	1.200	1.200	2.000	2.000	3.900	3.900
Barometric. Pressure	Pbar	inHg	30.10	30.10	30.10	30.10	30.10	30.10	30.10	30.10	30.10	30.10
Pump vacuum		inHg	19.0	19.0	18.0	18.0	17.0	17.0	16.0	16.0	14.0	14.0
K' factor			0.23510	0.23674	0.34519	0.34277	0.45465	0.45501	0.58025	0.57608	0.79361	0.79196
K' factor Average				0.23592		0.34398		0.45483		0.57817		0.79279
% Error (+/- 0.5)		%		0.35%		0.35%		0.04%		0.36%		0.10%
Vcr(std)			2.7621	2.7813	4.0556	3.1322	2.9619	2.9588	5.2725	3.7321	7.1913	6.1455
Vm(std)			2.7695	2.7888	4.0664	3.1406	2.9698	2.9667	5.2866	3.7421	7.2105	6.1619
Y			0.9973	0.9973	0.9973	0.9973	0.9973	0.9973	0.9973	0.9973	0.9973	0.9973

PITOT TUBE CALIBRATIONS

Method: #2 sec 4 WT Location: Whitaker Shop

Pitot	Date Tested	Cp	S	Pitot	Date Tested	Cp	S	Pitot	Date Tested	Cp	S	Pitot	Date Tested	Cp	S
3-1	9/15/2010	0.8152	0.009	3-8	9/15/2010	0.8117	0.007	4-1				4-7			
3-2	9/25/2010	0.8232	0.005	3-9	9/15/2010	0.8351	0.006	4-2	11/8/2010	0.8291	0.003	4-8			
3-3	9/25/2010	0.8290	0.001	3-10	9/25/2010	0.8281	0.002	4-3				4-9	9/25/2010	0.8393	0.006
3-4	9/15/2010	0.8129	0.003	3-11	9/25/2010	0.8053	0.005	4-4	9/24/2010	0.8218	0.001	4-10			
3-5				3-12	9/15/2010	0.8106	0.005	4-5				4-11			
3-6				3-13	9/15/2010	0.8031	0.004	4-6	11/8/2010	0.8120	0.006	4-12	9/25/2010	0.8149	0.004
3-7	9/15/2010	0.8273	0.001	3-14	9/15/2010	0.8074	0.004					4-13	9/24/2010	0.8153	0.001

		DpP (P-Type)	DpS (S-Type)	Cp	dS	Ave Cp	S <0.01
MEW	3-1	0.300	0.440	0.8175	0.002	0.8152	0.009
Status	Pass	0.600	0.860	0.8269	0.012		
Date	9/15/2010	0.950	1.450	0.8013	0.014		
Tester	pt						
MEW	3-2	0.340	0.500	0.8164	0.007	0.8232	0.005
Status	Pass	0.590	0.850	0.8248	0.002		
Date	9/25/2010	1.050	1.500	0.8283	0.005		
Tester	ph						
MEW	3-3	0.310	0.440	0.8310	0.002	0.8290	0.001
Status	Pass	0.580	0.830	0.8276	0.001		
Date	9/25/2010	1.050	1.500	0.8283	0.001		
Tester	ph						
MEW	3-4	0.340	0.500	0.8164	0.004	0.8129	0.003
Status	Pass	0.560	0.840	0.8083	0.005		
Date	9/15/2010	0.980	1.450	0.8139	0.001		
Tester	pt						
	3-5						
Status							
Date							
Tester							
	3-6						
Status							
Date							
Tester							
MEW	3-7	0.300	0.430	0.8269	0.000	0.8273	0.001
Status	Pass	0.530	0.760	0.8267	0.001		
Date	9/15/2010	0.980	1.400	0.8283	0.001		
Tester	pt						
MEW	3-8	0.310	0.450	0.8217	0.010	0.8117	0.007
Status	Pass	0.530	0.790	0.8109	0.001		
Date	9/15/2010	0.920	1.400	0.8025	0.009		
Tester	pt						
MEW	3-9	0.320	0.440	0.8443	0.009	0.8351	0.006
Status	Pass	0.580	0.820	0.8326	0.002		
Date	9/15/2010	0.980	1.400	0.8283	0.007		
Tester	pt						
MEW	3-10	0.320	0.460	0.8257	0.002	0.8281	0.002
Status	Pass	0.640	0.910	0.8302	0.002		
Date	9/25/2010	1.050	1.500	0.8283	0.000		
Tester	ph						
MEW	3-11	0.300	0.460	0.7995	0.006	0.8053	0.005
Status	Pass	0.580	0.880	0.8037	0.002		
Date	9/25/2010	0.910	1.350	0.8128	0.007		
Tester	ph						
MEW	3-12	0.320	0.470	0.8169	0.006	0.8106	0.005
Status	Pass	0.560	0.850	0.8036	0.007		
Date	9/15/2010	0.940	1.400	0.8112	0.001		
Tester	pt						
MEW	3-13	0.300	0.450	0.8083	0.005	0.8031	0.004
Status	Pass	0.580	0.880	0.8037	0.001		
Date	9/15/2010	0.940	1.450	0.7971	0.006		
Tester	pt						
MEW	3-14	0.290	0.440	0.8037	0.004	0.8074	0.004
Status	Pass	0.580	0.860	0.8130	0.006		
Date	9/15/2010	0.960	1.450	0.8055	0.002		
Tester	pt						

		DpP (P-Type)	DpS (S-Type)	Cp	dS	Ave Cp	S <0.01
	4-1						
Status							
Date							
Tester							
	4-2	0.280	0.400	0.8283	0.001	0.8291	0.003
Status	Pass	0.550	0.790	0.8260	0.003		
Date	11/8/2010	0.920	1.300	0.8328	0.004		
Tester	PT						
	4-3						
Status							
Date							
Tester							
MEW	4-4	0.310	0.450	0.8217	0.000	0.8218	0.001
Status	Pass	0.670	0.970	0.8228	0.001		
Date	9/24/2010	1.100	1.600	0.8209	0.001		
Tester	ph						
	4-5						
Status							
Date							
Tester							
	4-6	0.330	0.480	0.8209	0.009	0.8120	0.006
Status	Pass	0.620	0.920	0.8127	0.001		
Date	11/8/2010	0.920	1.400	0.8025	0.010		
Tester	PT						
	4-7						
Status							
Date							
Tester							
	4-8						
Status							
Date							
Tester							
MEW	4-9	0.270	0.380	0.8345	0.005	0.8393	0.006
Status	Pass	0.520	0.730	0.8356	0.004		
Date	9/25/2010	1.100	1.500	0.8478	0.009		
Tester	ph						
	4-10						
Status							
Date							
Tester							
	4-11						
Status							
Date							
Tester							
MEW	4-12	0.280	0.420	0.8083	0.007	0.8149	0.004
Status	Pass	0.570	0.840	0.8155	0.001		
Date	9/25/2010	1.100	1.600	0.8209	0.006		
Tester	ph						
MEW	4-13	0.320	0.470	0.8169	0.002	0.8153	0.001
Status	Pass	0.650	0.960	0.8146	0.001		
Date	9/24/2010	1.150	1.700	0.8143	0.001		
Tester	ph						

PITOT TUBE CALIBRATIONS

Method: #2 sec 4 WT Location: Whitaker Shop

Pitot	Date Tested	Cp	S	Pitot	Date Tested	Cp	S	Pitot	Date Tested	Cp	S	Pitot	Date Tested	Cp	S
3s-1	9/25/2010	0.8387	0.005	5s-4	9/15/2010	0.8378	0.009	7s-1	9/25/2010	0.8289	0.000	SR-36	9/25/2010	0.8200	0.006
3s-2	9/25/2010	0.8324	0.003	6s-1	9/15/2010	0.8257	0.008	8s-2	9/25/2010	0.8382	0.005	SR-48	9/25/2010	0.8128	0.006
3s-3	9/15/2010	0.8322	0.010	6s-2	9/25/2010	0.8297	0.004	10s-1	9/25/2010	0.8280	0.004	SR-48A	9/25/2010	0.8366	0.007
3s-4	9/25/2010	0.8240	0.005	6s-3	9/15/2010	0.8314	0.006	11s-1	9/15/2010	0.8329	0.010				
4s-1	9/15/2010	0.8355	0.008	6s-4	9/15/2010	0.8376	0.003	14s-1	9/15/2010	0.8070	0.002				
5s-1	9/15/2010	0.8205	0.009	6s-5	9/25/2010	0.8280	0.002	14s-2	9/25/2010	0.8032	0.003				
5s-2	9/25/2010	0.8117	0.006	6s-6	9/25/2010	0.8286	0.002	HT-4	11/8/2010	0.8159	0.007				
5s-3	9/15/2010	0.8348	0.002					SR-18	9/25/2010	0.8243	0.006				

		DpP (P-Type)	DpS (S-Type)	Cp	dS	Ave Cp	S <0.01
MEW	3s-1	0.260	0.360	0.8413	0.003	0.8387	0.005
Status	Pass	0.560	0.770	0.8443	0.006		
Date	9/25/2010	0.950	1.350	0.8305	0.008		
Tester	ph						
MEW	3s-2	0.340	0.480	0.833	0.001	0.8324	0.003
Status	Pass	0.670	0.940	0.836	0.003		
Date	9/25/2010	1.050	1.500	0.828	0.004		
Tester	ph						
MEW	3s-3	0.300	0.410	0.847	0.015	0.8322	0.010
Status	Pass	0.580	0.820	0.833	0.000		
Date	9/15/2010	0.920	1.350	0.817	0.015		
Tester	pt						
MEW	3s-4	0.320	0.470	0.817	0.007	0.8240	0.005
Status	Pass	0.600	0.860	0.827	0.003		
Date	9/25/2010	1.050	1.500	0.828	0.004		
Tester	ph						
MEW	4s-1	0.300	0.410	0.8468	0.011	0.8355	0.008
Status	Pass	0.570	0.800	0.8357	0.000		
Date	9/15/2010	0.970	1.400	0.8241	0.011		
Tester	pt						
MEW	5s-1	0.360	0.530	0.8159	0.005	0.8205	0.009
Status	Pass	0.540	0.760	0.8345	0.014		
Date	9/15/2010	0.940	1.400	0.8112	0.009		
Tester	pt						
MEW	5s-2	0.290	0.440	0.8037	0.008	0.8117	0.006
Status	Pass	0.630	0.940	0.8105	0.001		
Date	9/25/2010	1.100	1.600	0.8209	0.009		
Tester	ph						
MEW	5s-3	0.290	0.410	0.8326	0.002	0.8348	0.002
Status	Pass	0.540	0.760	0.8345	0.000		
Date	9/15/2010	0.930	1.300	0.8373	0.003		
Tester	pt						
MEW	5s-4	0.310	0.440	0.8310	0.007	0.8378	0.009
Status	Pass	0.600	0.850	0.8318	0.006		
Date	9/15/2010	0.960	1.300	0.8507	0.013		
Tester	pt						
MEW	6s-1	0.310	0.440	0.8310	0.005	0.8257	0.008
Status	Pass	0.560	0.830	0.8132	0.012		
Date	9/15/2010	0.920	1.300	0.8328	0.007		
Tester	pt						
MEW	6s-2	0.320	0.460	0.8257	0.004	0.8297	0.004
Status	Pass	0.690	0.970	0.8350	0.005		
Date	9/25/2010	1.050	1.500	0.8283	0.001		
Tester	ph						
MEW	6s-3	0.310	0.450	0.8217	0.010	0.8314	0.006
Status	Pass	0.580	0.810	0.8377	0.006		
Date	9/15/2010	0.960	1.350	0.8348	0.003		
Tester	pt						
MEW	6s-4	0.340	0.480	0.8332	0.004	0.8376	0.003
Status	Pass	0.550	0.760	0.8422	0.005		
Date	9/15/2010	0.930	1.300	0.8373	0.000		
Tester	pt						
MEW	6s-5	0.340	0.490	0.8247	0.003	0.8280	0.002
Status	Pass	0.620	0.880	0.8310	0.003		
Date	9/25/2010	1.050	1.500	0.8283	0.000		
Tester	ph						
MEW	6s-6	0.320	0.460	0.8257	0.003	0.8286	0.002
Status	Pass	0.600	0.850	0.8318	0.003		
Date	9/25/2010	1.050	1.500	0.8283	0.000		
Tester	ph						

		DpP (P-Type)	DpS (S-Type)	Cp	dS	Ave Cp	S <0.01
MEW	7s-1	0.330	0.470	0.8296	0.001	0.8289	0.000
Status	Pass	0.610	0.870	0.8290	0.000		
Date	9/25/2010	1.050	1.500	0.8283	0.001		
Tester	ph						
MEW	8s-2	0.350	0.480	0.8454	0.007	0.8382	0.005
Status	Pass	0.500	0.700	0.8367	0.001		
Date	9/25/2010	0.990	1.400	0.8325	0.006		
Tester	ph						
MEW	10s-1	0.300	0.430	0.827	0.001	0.8280	0.004
Status	Pass	0.560	0.810	0.823	0.005		
Date	9/25/2010	1.100	1.550	0.834	0.006		
Tester	ph						
MEW	11s-1	0.340	0.470	0.842	0.009	0.8329	0.010
Status	Pass	0.610	0.850	0.839	0.006		
Date	9/15/2010	0.990	1.450	0.818	0.015		
Tester	pt						
MEW	14s-1	0.300	0.450	0.808	0.001	0.8070	0.002
Status	Pass	0.560	0.840	0.808	0.001		
Date	9/15/2010	0.990	1.500	0.804	0.003		
Tester	pt						
MEW	14s-2	0.320	0.480	0.808	0.005	0.8032	0.003
Status	Pass	0.640	0.980	0.800	0.003		
Date	9/25/2010	0.950	1.450	0.801	0.002		
Tester	ph						
	HT-4	0.265	0.400	0.806	0.010	0.8159	0.007
Status	Pass	0.550	0.810	0.816	0.000		
Date	11/8/2010	0.940	1.350	0.826	0.010		
Tester	pt						
MEW	SR-18	0.320	0.460	0.826	0.001	0.8243	0.006
Status	Pass	0.600	0.850	0.832	0.007		
Date	9/25/2010	0.950	1.400	0.816	0.009		
Tester	ph						
MEW	SR-36	0.330	0.490	0.812	0.008	0.8200	0.006
Status	Pass	0.630	0.920	0.819	0.001		
Date	9/25/2010	1.050	1.500	0.828	0.008		
Tester	ph						
MEW	SR-48	0.310	0.470	0.804	0.009	0.8128	0.006
Status	Pass	0.610	0.890	0.820	0.007		
Date	9/25/2010	1.050	1.550	0.815	0.002		
Tester	ph						
MEW	SR-48A	0.280	0.400	0.828	0.008	0.8366	0.007
Status	Pass	0.610	0.860	0.834	0.003		
Date	9/25/2010	1.100	1.500	0.848	0.011		
Tester	ph						

MANOMETER CALIBRATIONS

Tester(s): PT Location Horizon Shop

Pt. 60, App. A, Method 2, 6.2 (Diiferential Pressure Gauges)

Magnehelic ID	15 sec. High	leak check Low	Scale Inches	Shortridge in H2O	Manometer in H2O	Difference in H2O	Difference %
SR#1	0	0	electronic	0.4313	0.43	0.00	0.3%
Date	11/8/2010			0.9345	0.93	0.00	0.5%
Personnel	PT			1.7200	1.70	-0.02	1.2%
Status	PASS			4.1250	4.10	-0.03	0.6%
SR#2	0	0	electronic	0.0995	0.10	0.00	0.5%
Date	11/2/2010			0.6228	0.62	0.00	0.5%
Personnel	PT			1.7890	1.80	0.01	0.6%
Status	PASS			4.6950	4.70	0.00	0.1%
SR#3	0	0	electronic	0.4216	0.42	0.00	0.4%
Date	11/2/2010			0.8492	0.85	0.00	0.1%
Personnel	PT			1.3960	1.40	0.00	0.3%
Status	PASS			3.2730	3.30	0.03	0.8%
SR #5 HE #324	0	0	electronic	3.9280	3.90	-0.03	0.7%
Date	11/26/2010			1.6260	1.60	-0.03	1.6%
Personnel	PT			0.9607	0.96	0.00	0.1%
Status	PASS			0.4996	0.50	0.00	0.1%
SR #5 HE #414	0	0	electronic	3.8380	3.80	-0.04	1.0%
Date	11/26/2010			2.8220	2.80	-0.02	0.8%
Personnel	PT			1.2960	1.30	0.00	0.3%
Status	PASS			0.6215	0.62	0.00	0.2%
SR #6 HE #320	0	0	electronic	3.5910	3.60	0.01	0.2%
Date	11/26/2010			1.8120	1.80	-0.01	0.7%
Personnel	PT			1.0080	1.00	-0.01	0.8%
Status	PASS			0.5909	0.59	0.00	0.2%

THERMOCOUPLE CALIBRATIONS FOR METER BOXES

Testers: PT, PTH, NY, JMH, PW Location: Horizon Shop

Meterbox		Ambient Standard, F	Ambient Measured, F	Ambient Difference %	Heated Standard, F	Heated Measured, F	Heated Difference %	Amb.	Heated
1	In	64.0	64.0	0.00%	160.0	161.0	0.16%	pass	pass
6/8/10	Out	64.0	64.0	0.00%	159.0	158.0	-0.16%	pass	pass
2	In	69.0	69.0	0.00%	193.0	192.0	-0.15%	pass	pass
6/8/10	Out	71.0	71.0	0.00%	175.0	176.0	0.16%	pass	pass
3	In	*77.0*	*76.0*	-0.19%	187.0	186.0	-0.15%	pass	pass
6/8/10		71.0	72.0	0.19%	*189.0*	*188.0*	-0.15%	pass	pass
4	In	65.0	65.0	0.00%	219.0	221.0	0.29%	pass	pass
6/10/10	Out	65.0	66.0	0.19%	214.0	217.0	0.45%	pass	pass
5	In			0.00%			0.00%	pass	pass
	Out			0.00%			0.00%	pass	pass
6 mew	In	76.0	79.0	0.56%	199.0	203.0	0.61%	pass	pass
7/29/10 pt	Out	76.0	75.0	-0.19%	215.0	212.0	-0.44%	pass	pass
7 mew	In	78.0	80.0	0.37%	210.0	213.0	0.45%	pass	pass
7/26/10 pt	Out	78.0	79.0	0.19%	198.0	202.0	0.61%	pass	pass
8	In	67.0	68.0	0.19%	192.0	193.0	0.15%	pass	pass
6/10/10	Out	71.0	71.0	0.00%	215.0	216.0	0.15%	pass	pass
9	In	67.0	67.0	0.00%	218.0	220.0	0.30%	pass	pass
6/10/10	Out	67.0	67.0	0.00%	203.0	202.0	-0.15%	pass	pass
10 mew	In	74.0	76.0	0.37%	217.0	213.0	-0.59%	pass	pass
7/30/10 pt	Out	74.0	73.0	-0.19%	202.0	204.0	0.30%	pass	pass
11 mew	In	74.0	77.0	0.56%	211.0	209.0	-0.30%	pass	pass
7/30/10 pt	Out	74.0	75.0	0.19%	193.0	196.0	0.46%	pass	pass
13	In	64.0	64.0	0.00%	208.0	216.0	1.20%	pass	pass
6/10/10	Out	65.0	64.0	-0.19%	209.0	216.0	1.05%	pass	pass
14	In	67.0	67.0	0.00%	210.0	209.0	-0.15%	pass	pass
6/10/10	Out	67.0	67.0	0.00%	189.0	188.0	-0.15%	pass	pass
19	In	69.0	70.0	0.19%	193.0	194.0	0.15%	pass	pass
6/10/10	Out	69.0	70.0	0.19%	193.0	195.0	0.31%	pass	pass
20 mew	In								
7/29/10 pt	Out	76.0	77.0	0.19%	196.0	199.0	0.46%	pass	pass
21	In	NA	NA		NA	NA			
6/10/10	Out	69.0	68.0	-0.19%	193.0	192.0	-0.15%	pass	pass
Liter Meter		**Ambient Standard, F**	**Ambient Measured, F**	**Ambient Difference %**	**Heated Standard, F**	**Heated Measured, F**	**Heated Difference %**	**Amb.**	**Heated**
15 mew	In	73.0	75.0	0.38%	215.0	217.0	0.30%	pass	pass
7/28/10 pt	Out	73.0	72.0	-0.19%	191.0	185.0	-0.92%	pass	pass
16 mew	In	70.0	69.0	-0.19%	198.0	201.0	0.46%	pass	pass
7/28/10 pt	Out	70.0	72.0	0.38%	235.0	233.0	-0.29%	pass	pass
17 mew	In	70.0	72.0	0.38%	268.0	270.0	0.27%	pass	pass
7/28/10 pt	Out	70.0	71.0	0.19%	193.0	191.0	-0.31%	pass	pass

THERMOCOUPLE CALIBRATIONS FOR SAMPLE BOXES

		Personnel: JL			Location: Horizon Shop								
		Ambient			Heated			Ice					
	Date	Standard, F	Measured, F	Difference %	Standard, F	Measured, F	Difference %	Standard, F	Measured, F	Difference %	Amb.	Heated	Ice
Sample Box - impinger out													
I-01	9/18/2010	71.1	71.6	-0.09%	x	x		39.6	41.2	-0.32%	pass		pass
I-02	9/18/2010	71.3	71.8	-0.09%	x	x		43.4	44.6	-0.24%	pass		pass
I-03	9/18/2010	71.3	70.7	0.11%	x	x		36.5	37.4	-0.18%	pass		pass
I-04	9/18/2010	70.1	70.5	-0.08%	x	x		35.6	34.9	0.14%	pass		pass
I-05	9/18/2010	69.9	68.5	0.26%	x	x		45.3	45.3	0.00%	pass		pass
I-06	11/12/2010	60.0	59.0	0.19%	x	x		35.0	33.0	0.40%	pass		pass
I-07	9/18/2010	74.8	73.9	0.17%	x	x		48.6	49.3	-0.14%	pass		pass
I-08	11/12/2010	58.0	59.0	-0.19%	x	x		35.0	35.0	0.00%	pass		pass
I-09	9/18/2010	71.0	70.5	0.09%	x	x		38.3	36.9	0.28%	pass		pass
I-10	9/18/2010	70.9	71.4	-0.09%	x	x		44.9	43.7	0.24%	pass		pass
I-11	9/18/2010	71.0	71.1	-0.02%	x	x		39.8	37.5	0.46%	pass		pass
I-12	9/18/2010	69.8	69.6	0.04%	x	x		48.2	46.7	0.30%	pass		pass
I-13	9/18/2010	70.3	70.5	-0.04%	x	x		39.6	37.9	0.34%	pass		pass
I-14	11/12/2010	57.0	58.0	-0.19%	x	x		34.0	34.0	0.00%	pass		pass
I-15	9/18/2010	71.2	71.9	-0.13%	x	x		41.1	39.6	0.30%	pass		pass
I-16	11/12/2010	57.0	58.0	-0.19%	x	x		34.0	34.0	0.00%	pass		pass
I-17	9/18/2010	71.1	70.9	0.04%	x	x		43.5	45.1	-0.32%	pass		pass
Sample Box - oven													
017	9/18/2010	70.9	70.1	0.15%	262.3	259.7	0.36%	x	x		pass	pass	
018	9/18/2010	71.0	70.4	0.11%	253.7	250.4	0.46%	x	x		pass	pass	
019	9/18/2010	71.3	70.7	0.11%	238.9	240.4	-0.21%	x	x		pass	pass	
020	9/18/2010	69.8	69.3	0.09%	219.8	221.3	-0.22%	x	x		pass	pass	
156	9/18/2010	70.4	69.7	0.13%	223.6	219.8	0.56%	x	x		pass	pass	
172	9/18/2010	75.1	76.1	-0.19%	214.9	214.3	0.09%	x	x		pass	pass	
173	11/12/2010	60.0	59.0	0.19%	245.0	244.0	0.14%	x	x		pass	pass	
184	9/18/2010	71.2	70.1	0.21%	203.8	202.5	0.20%	x	x		pass	pass	
185	11/12/2010	60.0	59.0	0.19%	205.0	205.0	0.00%	x	x		pass	pass	
186	9/18/2010	70.9	70.2	0.13%	215.2	213.9	0.19%	x	x		pass	pass	
187	9/18/2010	71.1	70.5	0.11%	208.6	209.9	-0.19%	x	x		pass	pass	
188	9/18/2010	70.9	70.1	0.15%	263.7	261.4	0.32%	x	x		pass	pass	
189	9/18/2010	70.7	71.3	-0.11%	214.1	215.3	-0.18%	x	x		pass	pass	
190	9/18/2010	70.3	69.5	0.15%	257.6	252.5	0.71%	x	x		pass	pass	
229				0.00%			0.00%	x	x		pass	pass	
230	11/12/2010	60.0	59.0	0.19%	241.0	250.0	-1.28%	x	x		pass	pass	
327	9/18/2010	71.1	70.3	0.15%	205.9	207.3	-0.21%	x	x		pass	pass	
328	11/12/2010	60.0	60.0	0.00%	246.0	243.0	0.43%	x	x		pass	pass	
329	9/18/2010	69.9	69.1	0.15%	233.5	236.1	-0.38%	x	x		pass	pass	
331	9/18/2010	71.3	70.2	0.21%	253.4	256.9	-0.49%	x	x		pass	pass	

THERMOCOUPLE CALIBRATIONS FOR METER BOX THERMOCOUPLE INDICATORS

Month:	Jun-10	Testers: PT, PTH, NY, PW, JMH					Location: Horizon Shop			
Thermocouple		Ambient			220 +/-			400 +/-		
Indicator	Channel	Standard, F	Measured, F	Difference %	Standard, F	Measured, F	Difference %	Standard, F	Measured, F	Difference %
Meter Box 1	STACK	75	72	-0.56%	225	223	-0.29%	425	422	-0.34%
6/8/2010	PROBE	75	72	-0.56%	225	223	-0.29%	425	421	-0.45%
	FILTER	75	69	-1.12%	225	187	-5.55%	425	334	-10.29%
	IMPINGER	75	73	-0.37%	225	223	-0.29%	425	422	-0.34%
	AUX	75	73	-0.37%	225	223	-0.29%	425	422	-0.34%
	METER IN	75	73	-0.37%	225	224	-0.15%	425	423	-0.23%
	METER OUT	75	73	-0.37%	225	224	-0.15%	425	423	-0.23%
Meter Box 2	STACK	75	73	-0.37%	225	224	-0.15%	425	422	-0.34%
6/8/2010	PROBE	75	73	-0.37%	225	224	-0.15%	425	422	-0.34%
	FILTER	75	73	-0.37%	225	224	-0.15%	425	423	-0.23%
	IMPINGER	75	73	-0.37%	225	224	-0.15%	425	425	0.00%
	AUX	75	73	-0.37%	225	224	-0.15%	425	422	-0.34%
	METER IN	75	74	-0.19%	225	225	0.00%	425	425	0.00%
	METER OUT	75	72	-0.56%	225	224	-0.15%	425	423	-0.23%
Meter Box 3	STACK	75	74	-0.19%	225	224	-0.15%	425	424	-0.11%
6/8/2010	PROBE	75	72	-0.56%	225	222	-0.44%	425	421	-0.45%
	FILTER	75	74	-0.19%	225	224	-0.15%	425	422	-0.34%
	IMPINGER	75	74	-0.19%	225	224	-0.15%	425	425	0.00%
	AUX	75	74	-0.19%	225	231	0.88%	425	428	0.34%
	METER IN	75	75	0.00%	225	225	0.00%	425	425	0.00%
	METER OUT	75	75	0.00%	225	226	0.15%	425	426	0.11%
Meter Box 4	STACK	75	75	0.00%	225	224	-0.15%	425	424	-0.11%
6/10/2010	PROBE	75	75	0.00%	225	226	0.15%	425	425	0.00%
	FILTER	75	76	0.19%	225	225	0.00%	425	424	-0.11%
	IMPINGER	75	74	-0.19%	225	224	-0.15%	425	424	-0.11%
	METER IN	75	77	0.37%	225	227	0.29%	425	427	0.23%
	METER OUT	75	77	0.37%	225	227	0.29%	425	427	0.23%
Meter Box 5	STACK	75	75	0.00%	225	224	-0.15%	425	424	-0.11%
	PROBE	75	75	0.00%	225	226	0.15%	425	425	0.00%
	FILTER	75	76	0.19%	225	225	0.00%	425	424	-0.11%
	IMPINGER	75	74	-0.19%	225	224	-0.15%	425	424	-0.11%
	AUX	75	77	0.37%	225	227	0.29%	425	427	0.23%
	METER IN	75	77	0.37%	225	227	0.29%	425	427	0.23%
	METER OUT	75	77	0.37%	225	227	0.29%	425	427	0.23%
Meter Box 6	STACK	100	99	-0.18%	200	199	-0.15%	400	399	-0.12%
7/29/2010	PROBE	100	99	-0.18%	200	200	0.00%	400	401	0.12%
PT	FILTER	100	99	-0.18%	200	199	-0.15%	400	399	-0.12%
OA/OC 8/3/10	IMPINGER	100	99	-0.18%	200	199	-0.15%	400	399	-0.12%
MEW	METER IN	100	101	0.18%	200	200	0.00%	400	400	0.00%
	METER OUT	100	100	0.00%	200	200	0.00%	400	400	0.00%
Meter Box 7	STACK	100	99	-0.18%	200	198	-0.30%	400	399	-0.12%
7/26/2010	PROBE	100	99	-0.18%	200	199	-0.15%	400	399	-0.12%
PT	FILTER	100	100	0.00%	200	200	0.00%	400	400	0.00%
OA/OC 7/28/10	IMPINGER	100	99	-0.18%	200	199	-0.15%	400	399	-0.12%
MEW	AUX	100	99	-0.18%	200	199	-0.15%	400	399	-0.12%
	METER IN	100	100	0.00%	200	200	0.00%	400	401	0.12%
	METER OUT	100	100	0.00%	200	200	0.00%	400	400	0.00%
Meter Box 8	STACK	75	74	-0.19%	225	224	-0.15%	425	424	-0.11%
6/10/2010	PROBE	75	76	0.19%	225	226	0.15%	425	425	0.00%
	FILTER	75	76	0.19%	225	226	0.15%	425	426	0.11%
	IMPINGER	75	74	-0.19%	225	224	-0.15%	425	424	-0.11%
	AUX	75	75	0.00%	225	224	-0.15%	425	424	-0.11%
	METER IN	75	76	0.19%	225	226	0.15%	425	426	0.11%
	METER OUT	75	77	0.37%	225	227	0.29%	425	427	0.23%
Meter Box 9	STACK	75	73	-0.37%	225	224	-0.15%	425	422	-0.34%
6/10/2010	PROBE	75	73	-0.37%	225	224	-0.15%	425	422	-0.34%
	FILTER	75	73	-0.37%	225	224	-0.15%	425	422	-0.34%
	IMPINGER	75	73	-0.37%	225	224	-0.15%	425	422	-0.34%
	AUX	75	73	-0.37%	225	224	-0.15%	425	422	-0.34%
	METER IN	75	74	-0.19%	225	226	0.15%	425	423	-0.23%
	METER OUT	75	74	-0.19%	225	226	0.15%	425	424	-0.11%
Meter Box 10	STACK	100	98	-0.36%	200	199	-0.15%	400	397	-0.35%
7/30/2010	PROBE	100	98	-0.36%	200	199	-0.15%	400	397	-0.35%
PT	FILTER	100	99	-0.18%	200	200	0.00%	400	397	-0.35%
OA/OC 8/3/10	IMPINGER	100	97	-0.54%	200	199	-0.15%	400	397	-0.35%
MEW	AUX	100	99	-0.18%	200	199	-0.15%	400	397	-0.35%
	METER IN	100	98	-0.36%	200	198	-0.30%	400	397	-0.35%
	METER OUT	100	96	-0.71%	200	196	-0.61%	400	397	-0.35%
Meter Box 11	STACK	100	96	-0.71%	200	198	-0.30%	400	396	-0.47%
7/30/2010	PROBE	100	96	-0.71%	200	198	-0.30%	400	396	-0.47%
PT	FILTER	100	97	-0.54%	200	199	-0.15%	400	397	-0.35%
OA/OC 8/3/10	IMPINGER	100	96	-0.71%	200	198	-0.30%	400	397	-0.35%
MEW	AUX	100	96	-0.71%	200	198	-0.30%	400	398	-0.23%
	METER IN	100	96	-0.71%	200	197	-0.45%	400	396	-0.47%
	METER OUT	100	95	-0.89%	200	197	-0.45%	400	395	-0.58%
Meter Box 13	STACK	75	77	0.37%	225	226	0.15%	400	400	0.00%
6/10/2010	PROBE	75	77	0.37%	225	225	0.00%	400	400	0.00%
	FILTER	75	77	0.37%	225	225	0.00%	400	399	-0.12%
	IMPINGER	75	77	0.37%	225	227	0.29%	400	401	0.12%
	AUX	75	77	0.37%	225	226	0.15%	400	401	0.12%
	METER IN	75	77	0.37%	225	225	0.00%	400	401	0.12%
	METER OUT	75	77	0.37%	225	225	0.00%	400	401	0.12%
Meter Box 14	STACK	75	74	-0.19%	225	224	-0.15%	425	422	-0.34%
6/10/2010	PROBE	75	74	-0.19%	225	226	0.15%	425	425	0.00%
	FILTER	75	72	-0.56%	225	223	-0.29%	425	422	-0.34%
	IMPINGER	75	73	-0.37%	225	224	-0.15%	425	423	-0.23%
	AUX	75	74	-0.19%	225	224	-0.15%	425	423	-0.23%
	METER IN	75	74	-0.19%	225	225	0.00%	425	424	-0.11%
	METER OUT	75	74	-0.19%	225	224	-0.15%	425	424	-0.11%
Later Meter 15	Probe	100	100	0.00%	200	201	0.15%	400	400	0.00%
7/28/2010	Filter	100	100	0.00%	200	201	0.15%	400	401	0.12%
PT	Aux-1	100	103	0.54%	200	204	0.61%	400	403	0.35%
OA/OC 7/28/10	Aux-2	100	102	0.36%	200	202	0.30%	400	402	0.23%
MEW	METER IN	100		-17.87%	200		-30.32%	400		-46.53%
	METER OUT	100		-17.87%	200		-30.32%	400		-46.53%
Later Meter 16	Probe	100	102	0.36%	200	201	0.15%	400	400	0.00%
7/28/2010	Filter	100	98	-0.36%	200	199	-0.15%	400	400	0.00%
PT	Aux-1	100	103	0.54%	200	204	0.61%	400	403	0.35%
OA/OC 7/28/10	Aux-2	100	103	0.54%	200	204	0.61%	400	403	0.35%
MEW	METER IN	100	103	0.54%	200	204	0.61%	400	404	0.47%
	METER OUT	100	103	0.54%	200	204	0.61%	400	403	0.35%
Later Meter 17	Probe	100	98	-0.36%	200	199	-0.15%	400	398	-0.23%
7/28/2010	Filter	100	100	0.00%	200	201	0.15%	400	401	0.12%
PT	Aux-1	100	101	0.18%	200	202	0.30%	400	401	0.12%
OA/OC 7/28/10	Aux-2	100	101	0.18%	200	202	0.30%	400	401	0.12%
MEW	METER IN	100	101	0.18%	200	202	0.30%	400	401	0.12%
	METER OUT	100	101	0.18%	200	202	0.30%	400	401	0.12%
Meter Box 19	STACK	75	77	0.37%	225	228	0.44%	425	428	0.34%
6/10/2010	PROBE	75	76	0.19%	225	227	0.29%	425	426	0.11%
	FILTER	75	76	0.19%	225	227	0.29%	425	426	0.11%
	IMPINGER	75	76	0.19%	225	228	0.44%	425	427	0.23%
	AUX	75	76	0.19%	225	227	0.29%	425	426	0.11%
	METER IN	75	76	0.19%	225	227	0.29%	425	426	0.11%
	METER OUT	75	76	0.19%	225	227	0.29%	425	426	0.11%
Meter Box 20	STACK	100	96	-0.71%	200	197	-0.45%	400	396	-0.47%
7/29/2010	PROBE	100	97	-0.54%	200	198	-0.30%	400	397	-0.35%
PT	OVEN	100	96	-0.71%	200	197	-0.45%	400	396	-0.47%
OA/OC 8/3/10	BH FILTER									
MEW	IMPINGER	100	96	-0.71%	200	197	-0.45%	400	396	-0.47%
	AUX	100	96	-0.71%	200	197	-0.45%	400	396	-0.47%
	METER OUT	100	97	-0.54%	200	199	-0.15%	400	398	-0.23%
Meter Box 21	STACK	75	72	-0.56%	225	224	-0.15%	425	422	-0.34%
6/10/2010	PROBE	75	72	-0.56%	225	224	-0.15%	425	422	-0.34%
	OVEN	75	72	-0.56%	225	224	-0.15%	425	422	-0.34%
	BH FILTER			0.00%			0.00%			0.00%
	IMPINGER	75	72	-0.56%	225	224	-0.15%	425	422	-0.34%
	AUX	75	72	-0.56%	225	224	-0.15%	425	422	-0.34%
	METER OUT	75	73	-0.37%	225	225	0.00%	425	423	-0.23%
Fluke 074	1			0.00%			0.00%			0.00%
	2			0.00%			0.00%			0.00%
Fluke 197	1			0.00%			0.00%			0.00%
	2			0.00%			0.00%			0.00%
Fluke 198	1			0.00%			0.00%			0.00%
	2			0.00%			0.00%			0.00%
Fluke 227	1			0.00%			0.00%			0.00%
	2			0.00%			0.00%			0.00%
Fluke 228	1			0.00%			0.00%			0.00%
	2			0.00%			0.00%			0.00%

Grant Edgel Company 247 MFG. RED COMET OVENS
TELEPHONE 254-6524 (AREA CODE 503)
4233 N.E. 147TH AVENUE P.O. BOX 20116 PORTLAND, OREGON 97220

LABORATORY PRIMARY STANDARDS

CERTIFICATE

FOR

Type K Thermocouple

1/4" x 36" w/plug

Serial# 200701, 200901, 201001

GRANT EDGEL PRIMARY STANDARDS LABORATORY
ID NO.
DATE
NEXT DUE
BY

Submitted By

Horizon Engineering

13585 NE Whittaker Way

Portland, OR 97230

T/C #	32°F	212°F
200701	+.8	-1.4
200901	+.4	-1.1
201001	+.8	-1.3

Certified By: Gordon Model 5050 Serial# 10270
Resubmission Date: 103010

The accuracy stated on this certificate is traceable to the NATIONAL BUREAU OF STANDARDS through certification documents on file in the Metrology Laboratory of the Grant Edgel Company.

Test Conditions

AMBIENT TEMP.: 75°F

REL. HUMIDITY: 59%

DATE: 6-23-10

REPORT NO.: 10F-1

SERVICE ORDER: 20748

P.O. NUMBER:

Authorized Signatures

PERFORMED BY: RG

APPROVED BY: Bob Edgel

RESUBMISSION DATE: 6-23-11

A Satisfied Customer is Our First Consideration

Grant Edgel Company 248 MFG. RED COMET OVENS
TELEPHONE 254-6524 (AREA CODE 503)
4233 N.E. 147TH AVENUE P.O. BOX 20116 PORTLAND, OREGON 97220

LABORATORY PRIMARY STANDARDS

CERTIFICATE

FOR

Altek Calibrator

Series 22

Serial# 10400304

Submitted By

Horizon Engineering

13585 NE Whittaker Way

Portland, OR 97230

Test	Error	Test	Error
0°F	-1.0	300°F	-1.0
50°F	-1.0	350°F	-1.0
100°F	-1.0	400°F	-1.0
150°F	-.9	450°F	-1.1
200°F	-.9	500°F	-1.5

Certified By:
Gordon Model
5050 Serial#
10270 Resubmission
Date 10-30-10

The accuracy stated on this certificate is traceable to the NATIONAL INSTITUTE OF STANDARDS through certification documents on file in the Metrology Laboratory of the Grant Edgel Company.

Test Conditions

AMBIENT TEMP.: 68°

REL. HUMIDITY: 56%

DATE: 7-1-10

REPORT NO.: 10G-3

SERVICE ORDER: 20756

P.O. NUMBER:

Authorized Signatures

PERFORMED BY: RG

APPROVED BY: Bob Edgel

RESUBMISSION DATE: 7-1-11

A Satisfied Customer is Our First Consideration

Grant Edgel Company
249
MFG. RED COMET OVENS
TELEPHONE 254-6524 (AREA CODE 503)
4233 N.E. 147TH AVENUE ▫ P.O. BOX 20116 ▫ PORTLAND, OREGON 97220

LABORATORY PRIMARY STANDARDS

CERTIFICATE

FOR

Altek Calibrator

Series 22

Serial# 10663701

GRANT EDGEL PRIMARY STANDARDS LABORATORY

Submitted By

Horizon Engineering

13585 NE Whittaker Way

Portland, OR 97230

Test	Error	Test	Error
0°F	+.4	300°F	+.6
50°F	+.4	350°F	+.6
100°F	+.4	400°F	+.7
150°F	+.5	450°F	+.6
250°F	+.7	500°F	+.1

Certified By:
Gordon Model
5050 Serial#
10270 Resubmssion
Date: 10-30-10

The accuracy stated on this certificate is traceable to the NATIONAL INSTITUTE OF STANDARDS through certification documents on file in the Metrology Laboratory of the Grant Edgel Company.

Test Conditions

AMBIENT TEMP.: 68°

REL. HUMIDITY: 56%

DATE: 7-1-10

REPORT NO.: 10G-2

SERVICE ORDER: 20756

P.O. NUMBER:

Authorized Signatures

PERFORMED BY: RG

APPROVED BY: Bob Edgel

RESUBMISSION DATE: 7-1-11

A Satisfied Customer is Our First Consideration

HORIZON ENGINEERING LLC

13585 NE Whitaker Way • Portland, OR 97230
Phone (503) 255-5050 • Fax (503) 255-0505
www.horizonengineering.com

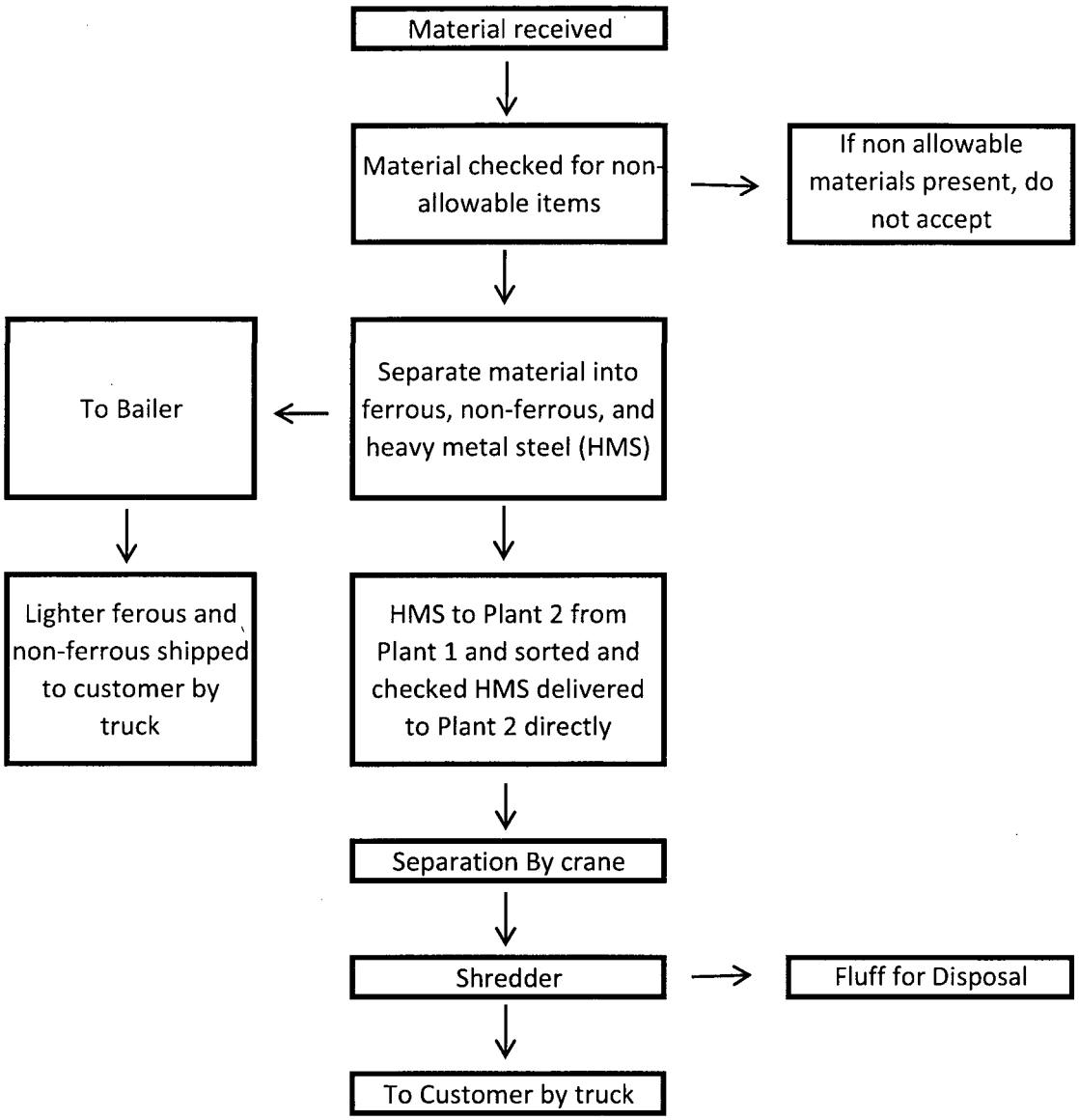
January 12, 2010
Horizon Engineering Shop
Barometer Calibration

National Weather Service (PDX Int'l Airport)	29.82"Hg
TV 1	30.0"Hg
TV 2	29.8"Hg
TV 3	29.8"Hg
TV 4	30.0"Hg
Shop	30.1"Hg
Shortridge #1	30.1"Hg
Shortridge #2	30.0"Hg
Shortridge #3	29.8"Hg
Paul Heffernan's personnel wrist barometer	29.8"Hg

All pressures are absolute, read at the Horizon Engineering shop.
Margery P. Heffernan

2d Flow Chart

Process Flow



2g Maintenance
Fluids List

Petroleum/Gases/Grease vendors

onsite desiel - plant (1)	seaport petroleum
onsite propane	ferrell
grease	seaport petroleum
oxygen (torches)	praxair
C-25 gas (welder)	praxair
Offsite desiel	CFN/Pride
motor oil (flatbeds)	seaport petroleum/Napa

Both Plant

1 + (2)

2i Stormwater, Data, NOC, SPCC

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

October 21, 2009

Mick O'Farrell
INDEPENDENT METALS
816 South Kenyon Street
Seattle, WA 98108

Permit Number:	WAR009725
Site Name:	Independent Metals
Site Address:	816 South Kenyon St.
Site City:	Seattle
Site County:	King

Re: Industrial Stormwater General Permit Coverage

Dear Industrial Stormwater General Permittee:

Ecology issued the final Industrial Stormwater General Permit on October 21, 2009. The new permit becomes effective January 1, 2010. Until January 1, 2010, the old permit remains in effect. **Please retain this permit coverage letter with your permit (enclosed), and stormwater pollution prevention plan (SWPPP). *It is the official record of permit coverage for your site.***

New Discharge Monitoring Report
A new discharge monitoring report (DMR) is enclosed. Please make copies of this new DMR form to begin reporting stormwater sampling results collected after January 1, 2010.

Permit Overview
The new Industrial Stormwater General Permit has a number of major changes. Please take the time to read the enclosed attachment describing these changes as well as the permit itself. We are planning to provide training on the new permit in the upcoming months. Please check our website to find more information at: http://www.ecy.wa.gov/programs/wq/stormwater/industrial/index.html.

If you would like to receive email informational messages from Ecology regarding the Industrial Stormwater General Permit, please sign up for our listserv at: http://listserv.wa.gov/archives/stormwater-ind-gen-permit.html.

Permit Number
In order to be compatible with federal Environmental Protection Agency (EPA) database requirements, your permit number prefix is being changed from "SO3" to "WAR". This has no effect on your permit requirements however; your permit invoices will retain the "SO3" prefix until July 2010 when they will switch to the "WAR" prefix. All other Ecology correspondence will have the "WAR" prefix.

Appeal Options

The terms and conditions of this general permit, being issued October 21, 2009, may be appealed only by filing an appeal to the Pollution Control Hearings Board and by serving it upon the Department of Ecology at the addresses below. Appeals of the general permit must be made within 30 days of issuance or receipt, whichever is later (see chapter 43.21B RCW). ("RCW" is the Revised Code of Washington). The procedures and requirements for the appeal process are contained in RCW 43.21B.310. An appeal must be filed with:

Pollution Control Hearings Board P.O. Box 40903 Olympia, WA 98504-0903	AND	Department of Ecology Appeals Coordinator P. O. Box 47608 Olympia, WA 98504-7608

The terms and conditions of a general permit, as they apply to an individual discharger, are also appealable within 30 days of the effective date of coverage of that discharger, in accordance with chapter 43.21B RCW. This appeal is limited to the general permit's applicability or non-applicability to a specific discharger.

Additional Information

Ecology is committed to providing assistance to you. Please review our web page at http://www.ecy.wa.gov/programs/wq/stormwater/industrial/index.html. For questions about this letter or the new permit, please contact Clay Keown at 360-407-6048 or ckeo461@ecy.wa.gov.

Sincerely,

Bill Moore, P.E.
Program Development Services, Section Manager
Water Quality Program

Enclosures

cc: Permittee File, Ecology HQ
Fee Unit, Ecology HQ

Issuance Date:	October 21, 2009
Effective Date:	January 1, 2010
Expiration Date:	January 1, 2015

INDUSTRIAL STORMWATER GENERAL PERMIT

A National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit for Stormwater Discharges Associated With Industrial Activities

State of Washington
Department of Ecology
Olympia, Washington 98504-7600

In compliance with the provisions of
The State of Washington Water Pollution Control Law
Chapter 90.48 Revised Code of Washington
and
The Federal Water Pollution Control Act
(The Clean Water Act)
Title 33 United States Code, Section 1251 et seq.

Until this permit expires, is modified or revoked, Permittees that have properly obtained coverage under this general permit are authorized to discharge in accordance with the special and general conditions which follow.

Kelly Susewind, P.E., P.G.
Water Quality Program Manager
Washington State Department of Ecology

Industrial Stormwater General Permit National Pollutant Discharge Elimination System (NPDES)
Discharge Monitoring Report (DMR)

Site Name: Independent Metals		WAR009725	
Site Address: 816 South Kenyon St.		Permit Number	Sampling Point
City: Seattle	**County:** King		

Submit **one** DMR per sampling point.

Reporting Period			
Quarter (circle one) Year:			
1st	2nd	3rd	4th
Jan/Feb/Mar	Apr/May/Jun	Jul/Aug/Sept	Oct/Nov/Dec

Parameter	Units	Benchmark Value	Analytical Method	Laboratory Quantitation Level	Sample Results			
					SINGLE SAMPLE RESULT	SINGLE SAMPLE DATE (MM/DD)	AVERAGE (If more than one sample collected, complete additional sampling log on next page.)	CONSISTENT ATTAINMENT? (Condition S4.B.6) (✓ for yes)
Turbidity	NTU	25	EPA 180.1, Meter	0.5				☐
pH	s.u.	5 - 9	Meter	±0.5			N/A	☐
Zinc, Total	µg/L	117	EPA 200.8	2.5				☐
Oil Sheen	Yes/No	No visible oil sheen	N/A	N/A	Sheen Present? Yes / No (circle)		N/A	N/A
Copper, Total	µg/L	Western WA: 14 Eastern WA: 32	EPA 200.8	2.0				☐
Lead, Total	µg/L	81.6	EPA 200.8	0.5				☐
Total Petroleum Hydrocarbons (TPH)	mg/L	10	NWTPH-Dx	0.1				☐

☐ No sample collected – No stormwater was discharged during normal working hours.

☐ No sample collected – Stormwater was discharged during normal working hours, but a sample wasn't collected (explain in comments section).

ADDITIONAL COMMENTS:

Mail your DMR to: Department of Ecology, Water Quality Program – Industrial Stormwater, P.O. Box 47696, Olympia, WA 98504-7696

Industrial Stormwater General Permit National Pollutant Discharge Elimination System (NPDES)
Discharge Monitoring Report (DMR)

Certification Statement I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.		
_____ / _____ Name / Title (printed)	_____ Signature (not valid unless signed). See Permit Condition G2 for signature requirements.	_____ Date Signed

Mail your DMR to: Department of Ecology, Water Quality Program – Industrial Stormwater, P.O. Box 47696, Olympia, WA 98504-7696

Industrial Stormwater General Permit National Pollutant Discharge Elimination System (NPDES)
Discharge Monitoring Report (DMR)

ADDITIONAL SAMPLING LOG

If you collect more than one sample per quarter, report the results in the table below. Include the date the sample was collected, and the results of the analysis. Calculate the average (mean) for each parameter (except pH and oil sheen) and report the value in the AVERAGE column on the front page. Attach additional sheets if necessary.

Site Name: Independent Metals		WAR009725	
Site Address: 816 South Kenyon St.		Permit Number	Sampling Point
City: Seattle	**County:** King		

Sample Date (MM/DD/YYYY)	Turbidity (NTU)	pH (s.u.)	Zinc, Total (µg/L)	Oil Sheen Present? (circle one)	Copper, Total (µg/L)	Lead, Total (µg/L)	Total Petroleum Hydrocarbons (mg/L)
				Yes / No			
				Yes / No			
				Yes / No			
				Yes / No			
				Yes / No			
				Yes / No			
				Yes / No			
				Yes / No			
				Yes / No			
				Yes / No			
				Yes / No			
				Yes / No			
				Yes / No			
				Yes / No			
				Yes / No			

Mail your DMR to: Department of Ecology, Water Quality Program – Industrial Stormwater, P.O. Box 47696, Olympia, WA 98504-7696

Industrial Stormwater General Permit National Pollutant Discharge Elimination System (NPDES)
Discharge Monitoring Report (DMR)

Mail your DMR to: Department of Ecology, Water Quality Program – Industrial Stormwater, P.O. Box 47696, Olympia, WA 98504-7696

STATE OF WASHINGTON
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October 15, 2008

Mick O'Farrell
INDEPENDENT METALS
816 South Kenyon Street
Seattle, WA 98108

SITE INFORMATION
SO3009725A
INDEPENDENT METALS
816 South Kenyon St.
Seattle, King

Dear Industrial Stormwater General Permit Holder:

New Permit Issued
The Industrial Stormwater NPDES and State Waste Discharge General Permit, issued by the Washington State Department of Ecology (Ecology) on August 21, 2002, and reissued on August 15, 2007, expired on May 31, 2008. Ecology reissued this permit October 15, 2008, without changes, with an expiration date of April 30, 2009. **Your facility, along with 1,100+ other facilities covered under the existing Industrial Stormwater General Permit, will be automatically covered under this reissued permit. Enclosed please find your new permit cover page and attach it to the front of your current permit.**

You may request copies of the permit from Julie Robertson at (360) 407-6575 or by email at jrob461@ecy.wa.gov. In addition, you may download a copy from our website: http://www.ecy.wa.gov/programs/wq/stormwater/industrial/index.html.

Public Notice Process and Comments
Ecology followed a formal public notice process to reissue the expired permit. The permit and fact sheet were available for review and public comment from August 6, 2008 through September 12, 2008. Ecology received written comments during the public comment period and responded to these comments in the fact sheet. The comments and the fact sheet may be reviewed at Ecology's website at:
http://www.ecy.wa.gov/programs/wq/stormwater/industrial/index.html.

Purpose of the Permit
The permit provides coverage for industries located in Washington State that discharge stormwater associated with industrial activities. Under federal and state water quality law (Federal Clean Water Act and State Water Pollution Control Act) a permit is required for the discharge of wastewater. A discharge of stormwater associated with industrial activities is considered a discharge of wastewater.

Appeal Options
The terms and conditions of this general permit, being issued October 15, 2008, may be appealed only by filing an appeal to the Pollution Control Hearings Board and by serving it upon the Department of Ecology at the addresses below. Appeals of the general permit must be made within 30 days of issuance or receipt, whichever is later (see chapter 43.21.B RCW). ("RCW" is the Revised Code of Washington). The procedures and requirements for the appeal process are contained in RCW 43.21B.310. An appeal must be filed with:

Pollution Control Hearings Board	**Department of Ecology**
P.O. Box 40903	P. O. Box 47600
Olympia, Washington	Olympia, Washington
98504-0903	98504-7600

The terms and conditions of a general permit, as they apply to an individual discharger, are also appealable within 30 days of the effective date of coverage of that discharger, in accordance with chapter 43.21.B RCW. This appeal is limited to the general permit's applicability or non-applicability to a specific discharger.

Moving forward
Ecology is working with a small external advisory committee to develop a revised permit to be issued in 2009. More information on the external advisory committee is available at Ecology's website at: http://www.ecy.wa.gov/programs/wq/stormwater/industrial/advcomm.html.

Questions
If you have questions about the permit and what it means for your facility, please contact Jeff Killelea at jkil461@ecy.wa.gov. If you have questions related to the administration of your permit, please contact your permit administrator, Charles Gilman at (360) 407-6437.

Sincerely,

Bill Moore, P.E.
Program Development Services, Section Manager
Water Quality Program

Enclosure

cc: Permittee File, Ecology HQ
Fee Unit, Ecology HQ

Issuance Date: October 15, 2008
Effective Date: November 15, 2008
Expiration Date: April 30, 2009

THE INDUSTRIAL STORMWATER GENERAL PERMIT

A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM AND STATE WASTE DISCHARGE GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES

State of Washington
DEPARTMENT OF ECOLOGY
Olympia, Washington 98504-7600

In compliance with the provisions of
The State of Washington Water Pollution Control Law
Chapter 90.48 Revised Code of Washington
and
The Federal Water Pollution Control Act
(The Clean Water Act)
Title 33 United States Code, Section 1251 et seq.

Until this permit expires, is modified or revoked, Permittees that have properly obtained coverage under this general permit are authorized to discharge in accordance with the special and general conditions which follow.

Kelly Susewind, P.E., P.G.
Interim Water Quality Program Manager
Washington State Department of Ecology

October 15, 2008

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

5 November 2007

Mick O'Farrell
Independent Metals
816 South Kenyon St.
Seattle, WA 98108

Dear Mr. O'Farrell:

RE: Coverage under the Industrial Stormwater General Permit – CORRECTION

Permit Number:	**SO3-009725**
Facility Name:	Independent Metals
Location:	816 South Kenyon St. Seattle, Washington 98108

The Washington Department of Ecology has reviewed your application for coverage under the Industrial Stormwater General Permit. We are granting coverage under the permit as of 10/25/2007. Retain this letter and Site Coverage sheet with your permit. They are the official record of permit coverage for your facility.

Monitoring Requirements:

You are required to conduct visual monitoring but you are not required to conduct monitoring unless otherwise ordered by Ecology.

Questions:

Please include the permit number as printed on page one of this letter in any future correspondence or telephone calls to Ecology. If you still have questions after reviewing your permit or have technical questions regarding stormwater management for your site, please call Greg Stegman (425-649-7019) of Ecology's Northwest Regional Office in Bellevue.

If you have any questions regarding this letter, please do not hesitate to call Charles Gilman at 360-407-7451 or chgi461@ecy.wa.gov.

Sincerely,

Nancy L. Winters

Nancy L. Winters, Section Manager
Program Development Services Section
Water Quality Program

Enclosures

cc: Ecology Permit Fee Unit, HQ
Stormwater File, HQ

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

5 November 2007

Mick O'Farrell
Independent Metals
816 South Kenyon St.
Seattle, WA 98108

Dear Mr. O'Farrell:

RE: Coverage under the Industrial Stormwater General Permit

Permit Number:	**SO3-009725**
Facility Name:	Independent Metals
Location:	816 South Kenyon St. Seattle, Washington 98108

The Washington Department of Ecology has reviewed your application for coverage under the Industrial Stormwater General Permit. We are granting coverage under the permit as of 12/25/2007. Retain this letter and Site Coverage sheet with your permit. They are the official record of permit coverage for your facility.

Monitoring Requirements:

You are required to conduct visual monitoring but you are not required to conduct monitoring unless otherwise ordered by Ecology.

Questions:

Please include the permit number as printed on page one of this letter in any future correspondence or telephone calls to Ecology. If you still have questions after reviewing your permit or have technical questions regarding stormwater management for your site, please call Greg Stegman (425-649-7019) of Ecology's Northwest Regional Office in Bellevue.

If you have any questions regarding this letter, please do not hesitate to call Charles Gilman at 360-407-7451 or chgi461@ecy.wa.gov.

Sincerely,

Nancy L. Winters

Nancy L. Winters, Section Manager
Program Development Services Section
Water Quality Program

Enclosures

cc: Ecology Permit Fee Unit, HQ
Stormwater File, HQ

11/5

DEPARTMENT OF ECOLOGY

SEP 20 2007

WATER QUALITY PROGRAM

Application for General Permit to Discharge Stormwater Associated with **Industrial Activity**

☐ Change of Information

Permit No. WAR009725 S03 11/25/07

Please print clearly in ink or type and read instructions before filling out this form.

AUG 10 2007

WATER QUALITY PROGRAM

I. Permittee Information

Operator/Representative for the Facility (All permit correspondence will be mailed here**)	Billing Address (All billing correspondence will be mailed here*)
Operator/Representative's Name: Mick O'Farrell	Universal Business Identifier (UBI) number: C-601-922-433
Title: President — Phone No.: 206 769-6323	Billing Contact Name: Mick O'Farrell — Phone No.: 206 769 6323
Company Name: Independent Metals	Company Name: Independent Metals
**Street Address or P.O. Box: 816 South Kenyon Street	*Billing Address: 747 South Monroe
City: Seattle, WA — State — Zip + 4: 98108	City: Seattle, WA — State — Zip + 4: 98108

II. Facility Information

10303

Date facility began operation or will begin operation: 1 March 2007	
Name of Facility: Independent Metals	Facility Contact Name: Robb Smith — Phone No.: 206 769 6323
Facility Street Address (or Location Description): Same as above	
City — State — Zip + 4	County: King

A. List the Primary Standard Industrial Classification Code for your facility in No. 1.

1. 42193 2. ____ 3. ____ 4. ____

B. Type or Nature of Business: Metal Recycling

C. Total size of site with industrial activity in acres: (Divide square feet by 43,560 to get acres) .53 acres

III. Receiving Water Information.

1. *Site Map: Prepare a map with the following information and attach it to this form (see permit Special Condition S9.B.1.b.)*
   - Drainage and discharge structures (name each discharge point).
   - An outline of the stormwater drainage areas for each stormwater discharge point.
   - Areas where stormwater discharges to the ground.
   - Paved areas.
   - Sample location.
   - All buildings.
   - Areas of pollutant contact (actual or potential).
   - Surface water locations (include wetlands, drainage ditches, and sloughs).
   - Areas of existing and potential soil erosion.
   - Vehicle service areas.

UBI 601922433 SIC 5093

2. Discharge Identifier: List the name, number, or letter, used on the map to identify the point(s) of discharge. (Please list all points of discharge) *This ID can only be a maximum of four characters long and must be unique for each point of discharge.*

3. If you have identified more than one point of discharge (listed in #2 above), which point(s) of discharge do you expect to take stormwater samples from in order to comply with the permit sampling requirement?

Out fall of Closed Loop circuit. Water is reclaimed & re-used.

4. Latitude/Longitude of the point(s) of discharge: This is the geographical location of the point where stormwater is discharged from your

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facility expressed in latitude/longitude in degrees (°), minutes (′), and seconds (″). Please see instructions for more details.

Latitude: 47 ° 532 ′ 190 ″ Longitude: 122 ° 321 ′ 638 ″

5. **Name of Receiving Water:** Provide the name of the receiving water body where stormwater discharges from your site enter (e.g. Mill Creek, Elliot Bay, Chehalis River)

Duwamish / Elliot Bay

6. **Latitude/Longitude of the Receiving Water:** This is the geographical location of the point where discharge from your facility enters the receiving water listed above expressed in latitude/longitude in degrees (°), minutes (′), and seconds (″). (It may be the same as number 3 above) Please see instructions for more details.

Latitude: 47 ° 532 ′ 190 ″ Longitude: 122 ° 321 ′ 638 ″

7. **Name of Conveyance System:** If you discharge to a municipal stormwater system or other stormwater conveyance system (e.g. Kent stormwater drainage system, roadside ditch). Identify the system by name or if unnamed, by other identifier (e.g. 145th street ditch)

Not Applicable

IV. Request for Mixing Zone

☐ I am requesting a mixing zone as provided for under WAC 173-201A-100(10) consistent with the provisions in the industrial stormwater general permit, Special Condition S3.F. In order to obtain a mixing zone I am providing sufficient information for Ecology to determine that I have implemented all known, available, and reasonable methods of treatment (AKART), the proposed mixing zone will not interfere with the beneficial uses of the receiving water, and will not create a barrier to the migration or translocation of indigenous organisms to a degree that might cause damage to the ecosystem. In support of this I am including the following documentation:

a) A map clearly identifying all waters included in the mixing zone;

b) All known discharges within the requested area for the mixing zone, their location and the source of the discharge;

c) A description of the historic and current uses of all waters in the mixing zone including the typical plant and animal species inhabiting the waters and public uses of the waters; and

d) Characterization of the stormwater discharge consistent with the EPA Form 2510-2F (Form 2F), and a characterization of the receiving water (i.e. pollutant levels of the receiving waters).

V. Stormwater Pollution Prevention Plan (SWPPP)

Has a stormwater pollution prevention plan been developed? ☒ Yes ☐ No

If No, Ecology must be notified by letter when the SWPPP has been developed and implemented. Facilities will not receive permit coverage until a SWPPP has been developed, implemented and Ecology notified. New facilities must submit SWPPP to Ecology before receiving permit coverage.

47 31 55
19 17
-122

VI. Industrial Areas and Activity Information

Areas with industrial activities at facility. Check all that apply.

☐ Access Roads & Rail Lines for Shipping & Receiving	☐ Material H
☐ Air Emissions from Roof or Sides of Buildings	☐ Material Ha
☐ Application or Disposal of Wastewaters	☒ Parking Lots
☐ Bag House Area	☒ Recycling Are
☐ Bulk Storage Tank Areas	☐ Staging Area for Heavy Equipment
☐ Conveyors Located Outside	☐ Storage & Maintenance of Material Handling Equipment
☐ Dismantling of Equipment (Vehicles and/or Machinery)	☐ Vehicle Maintenance
☐ Fueling Station	☐ Vehicle Wash Area
☐ Fueling – Mobile	☐ Waste Treatment, Storage, Disposal
☐ Hazardous Waste Treatment, Storage, or Disposal (Refers to RCRA, Subtitle C Facilities Only)	☐ Other: _____
	☐ Other: _____
☐ Manufacturing Building	☐ Other: _____

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VII. Material Handling

A Types of materials handled and/or stored outdoors. Check all that apply.

- ☐ Acids or Alkalies
- ☐ Antifreeze
- ☐ Compost
- ☐ Deicers
- ☐ Detergents
- ☐ Drums
  - ➢ Steel _____
  - ➢ Plastic _____
- ☐ Equipment (engines, machine parts, etc.)
- ☐ Forklifts
- ☐ Hazardous Wastes
- ☐ Herbicides
- ☐ Logs
- ☒ Metals
  - ➢ Iron ✓
  - ➢ Steel ✓
  - ➢ Other: ✓
- ☐ Organics
- ☐ Paints/Coatings
- ☐ Petroleum or Petrochemical Product
- ☐ Pesticides
- ☐ Plastic Pellets
- ☐ Plating Products
- ☐ Powders
- ☐ Sand or Gravel
- ☒ Scrap Metal
- ☐ Solvents
- ☐ Stockpiled Materials
- ☐ Transformers
- ☐ Waste Piles
- ☐ Wood Chips, Sawdust, Bark
- ☐ Wood Treating Products
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

B Identify existing management practices employed to reduce pollutants in industrial stormwater discharges. Check all that apply.

- ☐ Automatic Shutoff Control Valve System (Spill Control)
- ☒ Berms/Dikes
- ☒ Catch Basins Cleaned Regularly
- ☐ Chemical Treatment for Erosion Control
- ☒ Comply with Uniform Fire Codes
- ☒ Containment
- ☐ Covered Dumpsters
- ☐ Covered Loading/Unloading Areas
- ☒ Curbing
- ☒ Daily Checks for Leaks/Spills
- ☒ Dead End Sumps
- ☐ Detention Facilities
- ☒ Dispose of Debris from Catch Basin Properly
- ☒ Dispose of Waste Materials Properly
- ☐ Double-Walled Storage Tanks
- ☐ Drain Dumpsters to Sanitary Sewer
- ☒ Drip Pans
- ☐ Elevate Materials Stored Outside
- ☐ Infiltration Basins
- ☒ Inspection Storm Drains for Illicit Discharge
- ☐ Label Containers
- ☐ Limit Use of Toxic/ Hazardous Chemicals
- ☐ Maintain Ditches/Culverts
- ☐ Maintenance Records Kept Current
- ☒ Oil/Water Separator
- ☐ Overhead Coverage
- ☒ Procedures for Maintenance and of Deteriorating Equipment Repair/ Replacement
- ☒ Recycling/Source Reduction
- ☒ Slope Impervious Areas to Sanitary Sewer (Particularly Loading/Unloading Area)
- ☒ Spill Prevention Plan
- ☐ Stencil Storm Drains "No Dumping"
- ☒ Storm Drain Plugs and/or Cover Kits
- ☐ Surface Leachate Collection
- ☒ Sweep and Clear Site of Debris
- ☒ Train Employees on Pollution Prevention
- ☐ Vegetation Management
- ☐ Wetland Detention Pond

VIII. Regulatory Status. Check all that apply.

- ☐ NPDES Permit (Individual or General Construction Stormwater) Permit No. _____
- ☐ State Waste Discharge Permit (Ground Discharges) Permit No. _____
- ☐ Air Notice of Construction, Permit, or Order Agency: _____
- ☐ State/USEPA Hazardous Waste ID No: _____
- ☐ Drywell (Ecology) Registration No: _____

IX. State Environmental Policy Act (SEPA). Applies only to new or newly established facilities.

Has a SEPA review been completed? ☐ Yes ☐ No ☐ Exempt

Type of SEPA document: ☐ DNS ☐ Final EIS

Agency issuing DNS, Final EIS, or Exemption: _____ Date: _____

X. Public Notice.

09/20/2007 09:59 2067639093 IND METALS PAGE 05/06

VII. Material Handling

A. Types of materials handled and/or stored outdoors Check all that apply.

- ☐ Acids or Alkalies
- ☐ Antifreeze
- ☐ Compost
- ☐ Deicers
- ☐ Detergents
- ☐ Drums
  - ➢ Steel ____
  - ➢ Plastic ____
- ☐ Equipment (engines, machine parts, etc.)
- ☐ Forklifts
- ☐ Hazardous Wastes
- ☐ Herbicides
- ☐ Logs
- ☐ Metals
  - ➢ Iron ____
  - ➢ Steel ____
  - ➢ Other ____
- ☐ Organics
- ☐ Paints/Coatings
- ☐ Petroleum or Petrochemical Product
- ☐ Pesticides
- ☐ Plastic Pellets
- ☐ Plating Products
- ☐ Powders
- ☐ Sand or Gravel
- ☐ Scrap Metal
- ☐ Solvents
- ☐ Stockpiled Materials
- ☐ Transformers
- ☐ Waste Piles
- ☐ Wood Chips, Sawdust, Bark
- ☐ Wood Treating Products
- ☐ Other: ____
- ☐ Other: ____
- ☐ Other: ____

B Identify existing management practices employed to reduce pollutants in industrial stormwater discharges. Check all that apply.

- ☐ Automatic Shutoff Control Valve System (Spill Control)
- ☒ Berms/Dikes
- ☒ Catch Basins Cleaned Regularly
- ☐ Chemical Treatment for Erosion Control
- ☒ Comply with Uniform Fire Codes
- ☒ Containment
- ☐ Covered Dumpsters
- ☐ Covered Loading/Unloading Areas
- ☐ Curbing
- ☒ Daily Checks for Leaks/Spills
- ☐ Dead End Sumps
- ☐ Detention Facilities
- ☒ Dispose of Debris from Catch Basin Properly
- ☒ Dispose of Waste Materials Properly
- ☐ Double-Walled Storage Tanks
- ☐ Drain Dumpsters to Sanitary Sewer
- ☐ Drip Pans
- ☐ Elevate Materials Stored Outside
- ☐ Infiltration Basins
- ☒ Inspection Storm Drains for Illicit Discharge
- ☐ Label Containers
- ☐ Limit Use of Toxic/ Hazardous Chemicals
- ☐ Maintain Ditches/Culverts
- ☐ Maintenance Records Kept Current
- ☒ Oil/Water Separator
- ☒ Overhead Coverage
- ☐ Procedures for Maintenance and of Deteriorating Equipment Repair/ Replacement
- ☐ Recycling/Source Reduction
- ☐ Slope Impervious Areas to Sanitary Sewer (Particularly Loading/Unloading Area)
- ☒ Spill Prevention Plan
- ☐ Stencil Storm Drains "No Dumping"
- ☒ Storm Drain Plugs and/or Cover Kits
- ☐ Surface Leachate Collection
- ☐ Sweep and Clear Site of Debris
- ☒ Train Employees on Pollution Prevention
- ☐ Vegetation Management
- ☐ Wetland Detention Pond

VIII. Regulatory Status. Check all that apply.

- ☐ NPDES Permit (Individual or General Construction Stormwater) Permit No. ____
- ☐ State Waste Discharge Permit (Ground Discharges) Permit No ____
- ☐ Air Notice of Construction, Permit, or Order Agency: ____
- ☐ State/USEPA Hazardous Waste ID No: ____
- ☐ Drywell (Ecology) Registration No: ____

IX. State Environmental Policy Act (SEPA). Applies only to new or newly established facilities.

Has a SEPA review been completed? ☐ Yes ☐ No ☐ Exempt

Type of SEPA document: ☐ DNS ☐ Final EIS

Agency issuing DNS, Final EIS, or Exemption: ____ Date: ____

09/20/2007 09:59 2067639093 IND METALS PAGE 06/06

X. Public Notice.

This application must be received by Ecology on or before the date of the first public notice. See application instructions.

Date of the first public notice: __9____/ __10____/ _2007_

Date of second public notice: __9____/ ___24__/ ___2007

Name of the newspaper that will publish the public notices: ____Seattle Times _____

PUBLIC NOTICE

Independent Metals 'Plant 2' is seeking coverage/modification of coverage under the Washington Department of Ecology's NPDES General Permit for Stormwater Discharges Associated with Industrial Activities. The less than 1 acre industrial site ('Silver Bay Logging yard'), known as Independent Metals Plant 2 is located at 816 South Kenyon St. in Seattle, WA. Operations are due to startup on August 15, 2007. Industrial activities include storage and sorting of metal for recycling. Stormwater will be reused via a closed-loop System for cleaning operations. Independent Metals is planning on continuous reuse for industrial application. Storm water drains to a catch basin in the middle of the parking area, will be sealed and water is to be continuously cleaned and reused for cleaning operations. This will eliminate any outfall from the Independent Metals operation on 'Plant 2'.

Any person desiring to present their views to the Department of Ecology concerning this application, may notify Ecology in writing within 30 days from the last date of publication of this notice. Comments may be submitted to:

Washington Dept of Ecology
Water Quality Program – Industrial Stormwater Unit
PO Box 47696
Olympia, WA 98504-7696

XI. Certification of Permittee(s)

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Operator/Representative's Printed Name	(If Co-Permittee) Co-Permittee's Printed Name
Robb Smith	
Operator/Representative's Signature: Robb Smith	Co-Permittee's Signature
Title: Operations Manager	Title
Date: September 19, 2007	Date

Please sign and return this document to the following address:

Washington Department of Ecology
Water Quality Program – Industrial Stormwater
PO Box 47696
Olympia, WA 98504-7696

If you have any questions, please call:

- (360) 407-7451 Charles Gilman for city of *Seattle* or counties: *Kitsap, Pierce, Thurston*
- (360) 407-7229 Elaine Worthen for counties: *Island, King (except Seattle), San Juan*
- (360) 407-6437 Linda Matlock for counties: *Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Skagit, Snohomish, Spokane, Stevens, Walla Walla, Whatcom, Whitman.*
- (360) 407-6858 Joyce Smith for counties: *Benton, Chelan, Clallam, Clark, Cowlitz, Douglas, Grays Harbor, Jefferson, Kittitas, Klickitat, Lewis, Mason Okanogan, Pacific, Skamania, Wahkiakum, Yakima.*

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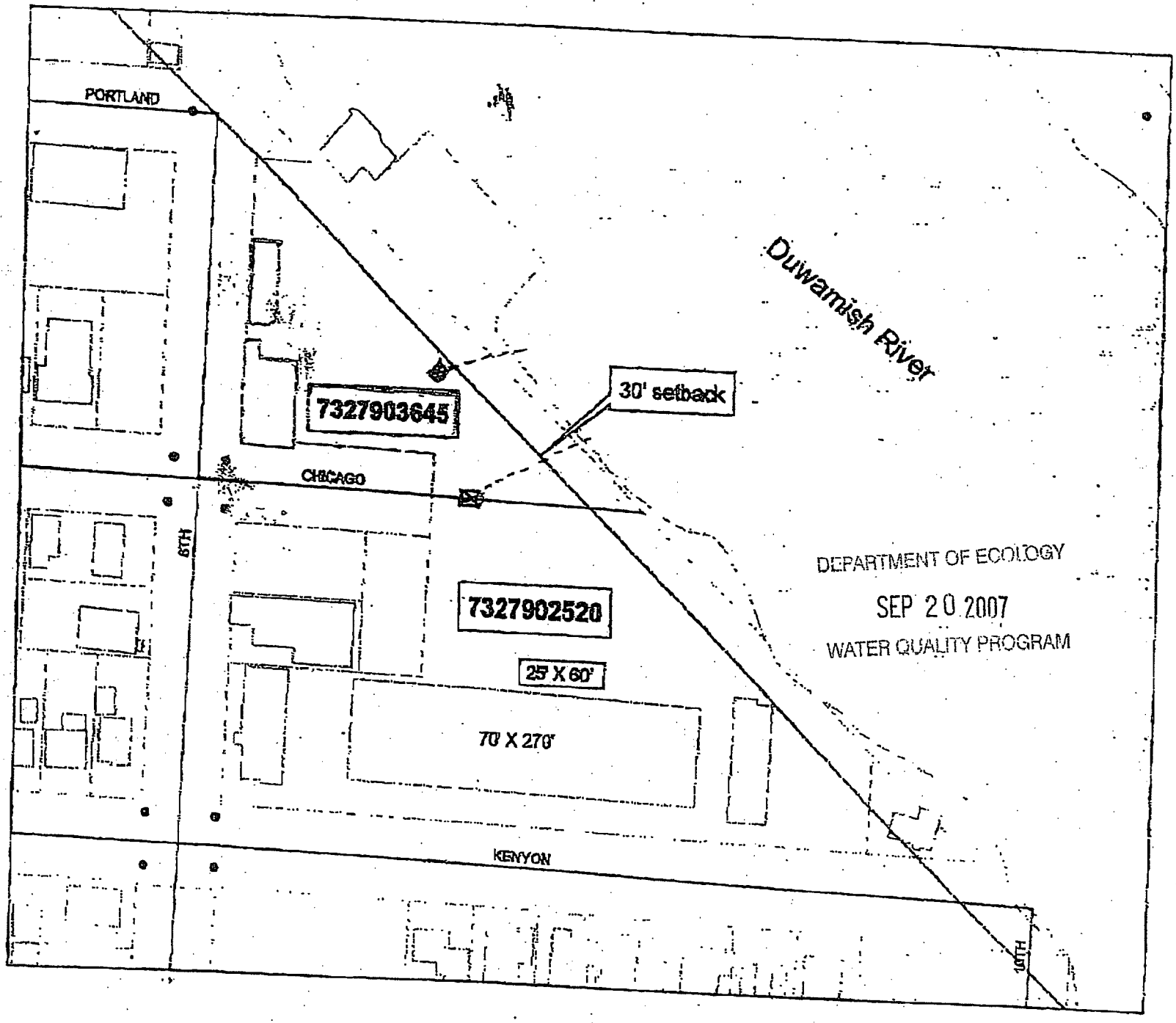


IND METALS PAGE 02/02

To: Charles Gilman II
Department of Ecology
Water Quality
Fax: 360 407-6426

Hi Charles, I hope this is what you asked for. Any questions please feel free to call me on my cell (206) 769-6323

Robb Smith
Independent Metals Co.
Operations Manager
(206) 769-6323

10/25/07

missing pg 4. called 10/19/07 1326 (Frank)

Robb Smith
Operations Manager
Independent Metals Company INC.

DEPARTMENT OF ECOLOGY
SEP 20 2007
WATER QUALITY PROGRAM

To: Charles Gilman
Department of Ecology
Water Quality
Fax: 360-407-6426

Here is the info you asked for. Anything else you need just let me know. The notice was posted on 9/10 and the second will be on 9/24, I had asked for the Seattle Times document to be fast tracked to me on the following Wednesday.

Thanks Robb Smith

Application for General Permit to
Discharge Stormwater Associated with
Industrial Activity

☐ Change of Information
Permit No. SO3-00

Please print clearly in ink or type and read instructions before filling out this form.

DEPARTMENT OF ECOLOGY
AUG 10 2007
WATER QUALITY PROGRAM

I. Permittee Information

Operator/Representative for the Facility (All permit correspondence will be mailed here**)	Billing Address (All billing correspondence will be mailed here*)
Operator/Representative's Name: Mick O'Farrell	Universal Business Identifier (UBI) number: C-601-922-433
Title: President; Phone No.: 206 769-6323	Billing Contact Name: Mick O'Farrell; Phone No.: 206 769 6323
Company Name: Independent Metals	Company Name: Independent Metals
**Street Address or P.O. Box: 816 South Kenyon Street	*Billing Address: 747 South Monroe
City: Seattle, State: WA, Zip + 4: 98108	City: Seattle, State: WA, Zip + 4: 98108

II. Facility Information

Date facility began operation or will begin operation: 1 March 2007

Name of Facility: Independent Metals	Facility Contact Name: Rob Smith; Phone No.: 206 769 6323
Facility Street Address (or Location Description): Same as above	
City / State / Zip + 4	County: King

A. List the Primary Standard Industrial Classification Code for your facility in No. 1.
1. 4219 3 2. ____ 3. ____ 4. ____

B. Type or Nature of Business: Metal Recycling

C. Total size of site with industrial activity in acres: (Divide square feet by 43,560 to get acres) .53 acres

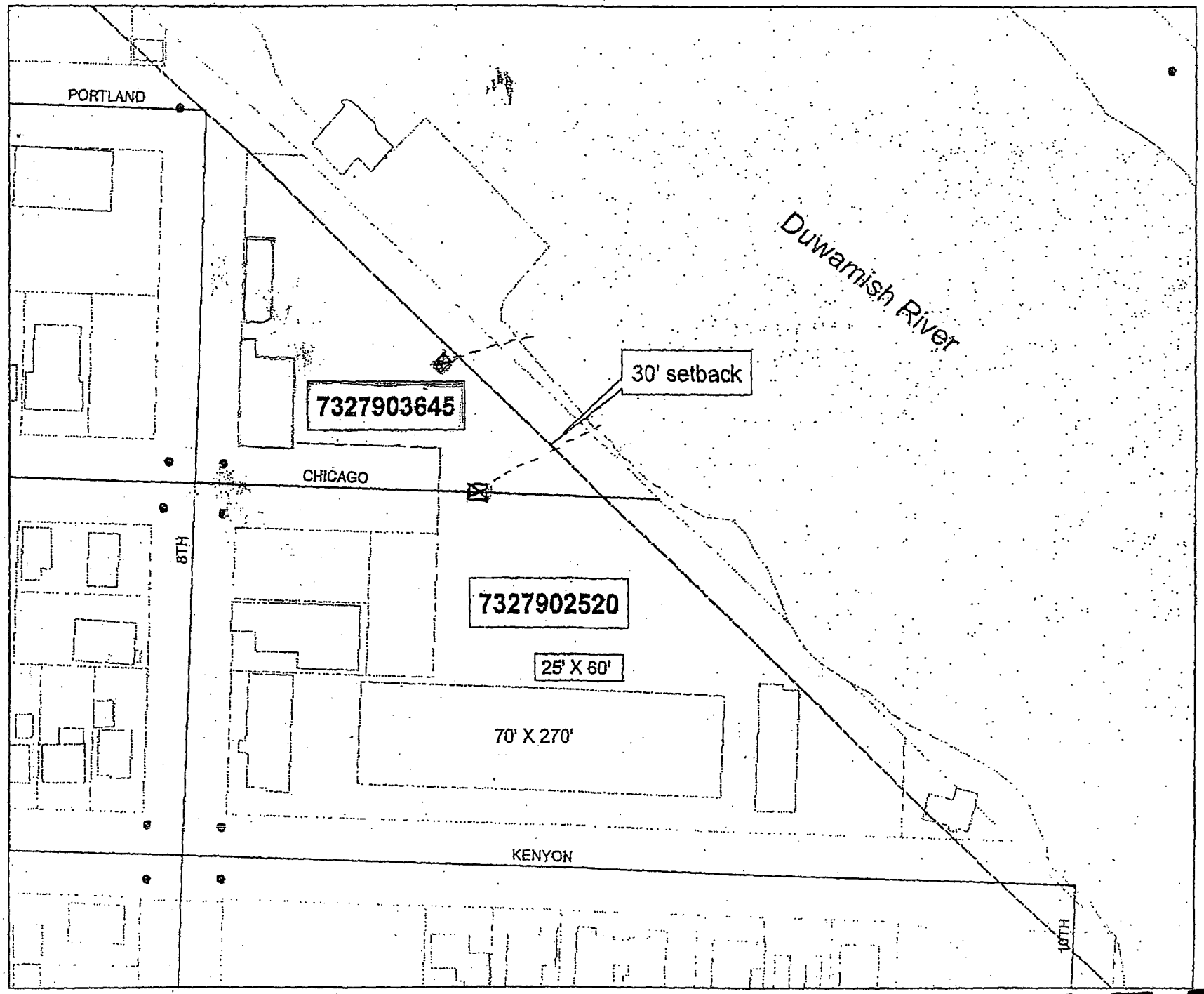
III. Receiving Water Information.

1. Site Map: Prepare a map with the following information and attach it to this form (see permit Special Condition S9.B.1.b.)
   - Drainage and discharge structures (name each discharge point).
   - An outline of the stormwater drainage areas for each stormwater discharge point.
   - Areas where stormwater discharges to the ground.
   - Paved areas.
   - Sample location.
   - All buildings.
   - Areas of pollutant contact (actual or potential).
   - Surface water locations (include wetlands, drainage ditches, and sloughs).
   - Areas of existing and potential soil erosion.
   - Vehicle service areas.

2. Discharge Identifier: List the name, number, or letter, used on the map to identify the point(s) of discharge. (Please list all points of discharge) This ID can only be a maximum of four characters long and must be unique for each point of discharge.

3. If you have identified more than one point of discharge (listed in #2 above), which point(s) of discharge do you expect to take stormwater samples from in order to comply with the permit sampling requirement?
   Out fall of Closed Loop circuit
   Water is reclaimed & re-used.

4. **Latitude/Longitude of the point(s) of discharge:** This is the geographical location of the point where stormwater is discharged from your


PORTLAND
CHICAGO
KENYON
8TH
10TH
Duwamish River
30' setback
7327903645
7327902520
25' X 60'
70' X 270'

facility expressed in latitude/longitude in degrees (°), minutes (′), and seconds (″). Please see instructions for more details.

Latitude: 47 ° 532 ′ 190 ″ Longitude: 122 ° 321 ′ 638 ″

5. **Name of Receiving Water:** Provide the name of the receiving water body where stormwater discharges from your site enter. (e.g. Mill Creek, Elliot Bay, Chehalis River)

Duwamish / Elliot Bay

6. **Latitude/Longitude of the Receiving Water:** This is the geographical location of the point where discharge from your facility enters the receiving water listed above expressed in latitude/longitude in degrees (°), minutes (′), and seconds (″). (It may be the same as number 3 above). Please see instructions for more details.

Latitude: 47 ° 532 ′ 190 ″ Longitude: 122 ° 321 ′ 638 ″

7. **Name of Conveyance System:** if you discharge to a municipal stormwater system or other stormwater conveyance system (e.g. Kent stormwater drainage system, roadside ditch). Identify the system by name or if unnamed, by other identifier (e.g. 145th street ditch)

Not Applicable

IV. Request for Mixing Zone

☐ I am requesting a mixing zone as provided for under WAC 173-201A-100(10) consistent with the provisions in the industrial stormwater general permit, Special Condition S3.F. In order to obtain a mixing zone I am providing sufficient information for Ecology to determine that I have implemented all known, available, and reasonable methods of treatment (AKART), the proposed mixing zone will not interfere with the beneficial uses of the receiving water, and will not create a barrier to the migration or translocation of indigenous organisms to a degree that might cause damage to the ecosystem. In support of this I am including the following documentation:

a) A map clearly identifying all waters included in the mixing zone;

b) All known discharges within the requested area for the mixing zone, their location and the source of the discharge;

c) A description of the historic and current uses of all waters in the mixing zone including the typical plant and animal species inhabiting the waters and public uses of the waters; and

d) Characterization of the stormwater discharge consistent with the EPA Form 3510-2F (Form 2F), and a characterization of the receiving water (i.e. pollutant levels of the receiving waters).

V. Stormwater Pollution Prevention Plan (SWPPP)

Has a stormwater pollution prevention plan been developed? ☒ Yes ☐ No

If No, Ecology must be notified by letter when the SWPPP has been developed and implemented. Facilities will not receive permit coverage until a SWPPP has been developed, implemented and Ecology notified. New facilities must submit SWPPP to Ecology before receiving permit coverage.

VI. Industrial Areas and Activity Information

Areas with industrial activities at facility. Check all that apply.

☐ Access Roads & Rail Lines for Shipping & Receiving	☐ Material Handling to Produce Product
☐ Air Emissions from Roof or Sides of Buildings	☐ Material Handling – Finished Product
☐ Application or Disposal of Wastewaters	☒ Parking Lots Used for Loading/Unloading
☐ Bag House Area	☒ Recycling Area
☐ Bulk Storage Tank Areas	☐ Staging Area for Heavy Equipment
☐ Conveyors Located Outside	☐ Storage & Maintenance of Material Handling Equipment
☐ Dismantling of Equipment (Vehicles and/or Machinery)	☐ Vehicle Maintenance
☐ Fueling Station	☐ Vehicle Wash Area
☐ Fueling – Mobile	☐ Waste Treatment, Storage, Disposal
☐ Hazardous Waste Treatment, Storage, or Disposal (Refers to RCRA, Subtitle C Facilities Only)	☐ Other: _____
	☐ Other: _____
☐ Manufacturing Building	☐ Other: _____

VII. Material Handling

A. Types of materials handled and/or stored outdoors. Check all that apply.

- ☐ Acids or Alkalies
- ☐ Antifreeze
- ☐ Compost
- ☐ Deicers
- ☐ Detergents
- ☐ Drums
  - ➢ Steel _____
  - ➢ Plastic _____
- ☐ Equipment (engines, machine parts, etc.)
- ☐ Forklifts
- ☐ Hazardous Wastes
- ☐ Herbicides
- ☐ Logs
- ☒ Metals
  - ➢ Iron ✓
  - ➢ Steel ✓
  - ➢ Other ✓
- ☐ Organics
- ☐ Paints/Coatings
- ☐ Petroleum or Petrochemical Product
- ☐ Pesticides
- ☐ Plastic Pellets
- ☐ Plating Products
- ☐ Powders
- ☐ Sand or Gravel
- ☒ Scrap Metal
- ☐ Solvents
- ☐ Stockpiled Materials
- ☐ Transformers
- ☐ Waste Piles
- ☐ Wood Chips, Sawdust, Bark
- ☐ Wood Treating Products
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

B. Identify existing management practices employed to reduce pollutants in industrial stormwater discharges. Check all that apply.

- ☐ Automatic Shutoff Control Valve System (Spill Control)
- ☒ Berms/Dikes
- ☒ Catch Basins Cleaned Regularly
- ☐ Chemical Treatment for Erosion Control
- ☒ Comply with Uniform Fire Codes
- ☒ Containment
- ☐ Covered Dumpsters
- ☐ Covered Loading/Unloading Areas
- ☒ Curbing
- ☒ Daily Checks for Leaks/Spills
- ☒ Dead End Sumps
- ☐ Detention Facilities
- ☒ Dispose of Debris from Catch Basin Properly
- ☒ Dispose of Waste Materials Properly
- ☐ Double-Walled Storage Tanks
- ☐ Drain Dumpsters to Sanitary Sewer
- ☒ Drip Pans
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- ☐ Vegetation Management
- ☐ Wetland Detention Pond

VIII. Regulatory Status. Check all that apply.

- ☐ NPDES Permit (Individual or General Construction Stormwater) Permit No. _____
- ☐ State Waste Discharge Permit (Ground Discharges) Permit No. _____
- ☐ Air Notice of Construction, Permit, or Order Agency: _____
- ☐ State/USEPA Hazardous Waste ID No: _____
- ☐ Drywell (Ecology) Registration No: _____

IX. State Environmental Policy Act (SEPA). Applies only to new or newly established facilities.

Has a SEPA review been completed? ☐ Yes ☐ No ☐ Exempt

Type of SEPA document: ☐ DNS ☐ Final EIS

Agency issuing DNS, Final EIS, or Exemption: _____ Date: _____

X. Public Notice.

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- ☐ Drums
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  - ➢ Plastic _____
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- ☐ Hazardous Wastes
- ☐ Herbicides
- ☐ Logs
- ☐ Metals
  - ➢ Iron _____
  - ➢ Steel _____
  - ➢ Other _____
- ☐ Organics
- ☐ Paints/Coatings
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Has a SEPA review been completed? ☐ Yes ☐ No ☐ Exempt

Type of SEPA document: ☐ DNS ☐ Final EIS

Agency issuing DNS, Final EIS, or Exemption: _____ Date: _____

This application must be received by Ecology on or before the date of the first public notice. See application instructions.

Date of the first public notice: _____/ _____/ _____

Date of second public notice: _____/ _____/ _____

Name of the newspaper that will publish the public notices: _____

PUBLIC NOTICE

_____ *(Name of owner; or name of owner % engineering firm, architect, etc.)*
_____ *(Address of owner or % Representative)* is seeking coverage/modification of coverage *(select one)* under the Washington Department of Ecology's NPDES General Permit for Stormwater Discharges Associated with Industrial Activities. [The facility has another permit for wastewater discharges: _____ *(include this sentence if true and add permit number)]* The _____ *(Total acres)* industrial site, known as _____ *(Project name)* is located at _____ *(Street address)* in _____ *(Name of nearest city)*. Operations are due to startup on/started on (select one) _____ *(Date)*. Industrial activities include _____ _____ *(Briefly clarify the industrial activity)*. Stormwater will be _____ _____ *(Brief description of how the stormwater will be managed)*, prior to discharging to _____ _____ _____ *(Clarify the direction of the stormwater flows; list wetlands, unnamed and named receiving waters; storm drains and name of receiving water for storm drains; clarify if buffers will be used to protect sensitive waterbodies).*

Any person desiring to present their views to the Department of Ecology concerning this application, may notify Ecology in writing within 30 days from the last date of publication of this notice. Comments may be submitted to:

Washington Dept of Ecology
Water Quality Program – Industrial Stormwater Unit
PO Box 47696
Olympia, WA 98504-7696

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"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Operator/Representative's Printed Name	(If Co-Permittee) Co-Permittee's Printed Name
K. Clary	
Operator/Representative's Signature	Co-Permittee's Signature
K Clary	
Title: Pollution Prevention Supr	Title
Date	Date

Please sign and return this document to the following address:

Washington Department of Ecology
Water Quality Program – Industrial Stormwater
PO Box 47696
Olympia, WA 98504-7696

If you have any questions, please call:

- (360) 407-7451 Charles Gilman for city of *Seattle* or counties: *Kitsap, Pierce, Thurston*
- (360) 407-7229 Elaine Worthen for counties: *Island, King (except Seattle), San Juan*
- (360) 407-6437 Linda Matlock for counties: *Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Skagit, Snohomish, Spokane, Stevens, Walla Walla, Whatcom, Whitman.*

- (360) 407-6858 Joyce Smith for counties: *Benton, Chelan, Clallam, Clark, Cowlitz, Douglas, Grays Harbor, Jefferson, Kittitas, Klickitat, Lewis, Mason Okanogan, Pacific, Skamania, Wahkiakum, Yakima.*

The Department of Ecology is an equal opportunity agency and does not discriminate on the basis of race, creed, color, disability, age, religion, national origin, sex, marital status, disabled veteran's status, Vietnam Era veteran's status, or sexual orientation.

Catch Basin Services

"Protecting the Environment"

CBS

Storm Water Pollution Prevention Plan

Independent Metals for Both Sites

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PUBLISHED BY DIRECTION OF WAC AND FEDERAL REQUIREMENTS

Catch Basin Services

"Protecting the Environment"

CBS

Overview of Storm Water Pollution Prevention Plan

This document is one element of the overall safety and storm water/environmental management and practices of this company. It provides background and specific information on the practices, procedures, planning, and training of our personnel. By reading this material it is possible to for an inspector to get an overview of the company approach to preventing storm water pollution.

This document is laid out in a step-by-step progression to allow all personnel to understand the reasoning and process that went into the development of our plan and procedures/practices.

Section one of the document outlines and explains the requirements for preventing environmental damage due to impingement of surface water pollutants via the storm water drainage on our property.

Section two of the document outlines and discusses the BMP's that the company is utilizing to prevent impingement of surface water pollutants via the storm water drainage system.

Section three outlines the implementation of the plan.

Section four outlines the facility recycling and disposal plan. This is included to clarify how we control materials that could potentially impinge on the surface water and drainage.

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Catch Basin Services

"Protecting the Environment"

CBS

Section One

Section one of the document outlines and explains the requirements for preventing environmental damage due to impingement of surface water pollutants via the site storm water runoff/drainage on our property.

The primary purpose of this section is to explain the nature of this facility. This facility is a manufacturing facility. The primary manufacturing includes the required attendant buildings, sheds, manufacturing, storage, transport pad, fueling operation, and employee parking for these activities. Storage is a combination of dry and outside. There are outside storm water drains and these are all plumbed into the storm water system that runs in the oil water separator at the facility entrance.

The catch basins that are being serviced are located throughout the facility. The collection devices are a combination of catch basins and strip drains. Servicing these drains and catch basins will utilize various methods of hydrocarbon and silt collection with attendant BMP's for cleaning, silt removal, servicing, and testing.

Technical/Legal Notice

All testing is done in accordance with proprietary procedures and processes. All data collected is the property of the testing service. Summaries may be released only upon written request. The procedures, processes, and proprietary test materials, checks, strips, and equipment are not subject to release. All procedures, processes, proprietary test materials, checks, strips, and equipment are subject and covered in both copyright protection and a pending patent application. Consult copyright holder for any additional information.

For the purposes of simplification, all collection devices will be modified to act as Type SC oily water separators. In addition, we are adding a hydrocarbon collector to the unit and servicing it on a monthly basis. We are using our standard monitoring and documentation procedures. Water condition and quality results are available when requested and approved for release by this firm. All monitoring procedures and water quality information is proprietary, as are the procedures, practices, and documentation.

This activity exists on the sites of Independent Metals, Seattle Washington.

The site is located on fairly level land that is adjacent to the Duwamish and an arterial. The property lies next to the Duwamish and on nearby property on the west side of Seattle. The north side of the Duwamish site is occupied by a logging/lumber loading/unloading facility for an Alaska lumber processor. The south side of the property is occupied by Independent Metals as an accumulation and barge loading activity for scrap metal. The property is basicallylevel from the street to the Duwamish. The property forms a slight dish with a catch bains in the middle. The property has been operated for years as a loading/unloading facilty for lumber and heavy equipment going to and from Alaska.

Given the location and the slight sloping conditions within the site, the Independent Metals operators felt that they must attempt to start to mitigate the possible outflow of surface pollutant materials from site operations.

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Given the nature of the activities on this site. The Independent Metals operators felt that the industrial activities could be mitigated with storm water spill prevention activities and best management practices related to equipment operations and any hydrocarbons on site. The purpose of these activities were to minimize the effect of any water borne polluting materials that may find their way into the storm drainage or the adjacent waters of the river or bay.

In order to accomplish this task, we reviewed the area/surfaces with the operators of Independent Metals.

The primary area to be addressed at this time was the on-site drainage area. This area (may) receive oil drips and leaks from the materials and/or vehicles that use the area.

The secondary concern is the Stormwater that drains across the road and from adjacent properties. These drips/sprays of oil (may) contaminate the storm water and by accumulating and entraining with the surface water through catch basin and into the storm water drainage. This entrained material could cause a surface sheen.

To prevent this from becoming a problem and to conform to our Facility Best Management Practices, we have elected to run all storm water through SC type structures and to remove hydrocarbons/silts/solids with adsorbent materials. This is being accomplished and documented by Catch Basin Services.

The methodology, procedures, and documentation are proprietary.

This plan and the attendant required documentation were developed by our support activity, Catch Basin Services.

All of the material is copyrighted and not intended for use by any other activity.

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Section Two

Section two of the document outlines and discusses the methods that the company is utilizing to prevent impingement of surface water pollutants via the site storm water runoff/drainage system.

The first and primary method of our plan to prevent pollution impingement in the surface water runoff/drainage system is to train the facility personnel to prevent any material spills from occurring, where they may contaminate either the ground or may enter the catch basin.

The second method in this area are the procedures and practices outlined in this Stormwater Pollution Prevention Plan. The Stormwater Pollution Prevention Plan governs the response activities to a potential and actual spills during the storage, normal operations, repair, service, cleaning, or loading/storage/unloading operation(s) in/around the facility. The Stormwater Pollution Prevention Plan also governs the facility response in case any other factors outside of our direct control may cause a spill to occur or spread into our operating area. That includes checking for potential spill(s) that may happen in the parking, storage, repair, or storage areas.

The third method involved in this area is the planning, servicing, documentation, and management of the storm water runoff/drainage system and catch basins on the facility by Catch Basin Services. Catch Basin Services manages the catch basin by evaluating the facility, drainage patterns, operations, maintenance practices, and the materials that are expected to be entrained with the storm or incidental discharge water when it enters the catch basin.

Review of the site and the existing catch basin revealed that existing practices leave the basins too dirty to function as designed. Consequently, CBS advised the personnel involved to clean and/or modify the basins for better results. The result of that activity was the modification of the existing units to function as type SC oily water separators.

Evaluation of these areas has indicated that the only materials that should enter the type SC units are hydrocarbon based - fuel, fuels, gasoline, and oil products from the operation, storage, or cleaning of equipment and vehicles.

In order to prevent the possibility of oil or oil products from entering the storm water system, Catch Basin Services has advised the clean up personnel to modify the receiving units and turn them into a type SC units. In addition, Catch Basin Services has added hydrocarbon adsorbent materials. The hydrocarbon products are removed from the water by adsorption into hydrocarbon collector. The material allows water to pass through. The water is therefore/thereby treated to remove the oil from the water prior to discharge from each unit. These materials are removed and replaced on a regular basis. The process is documented and the materials are disposed as required by current regulations.

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This service is supplemented with periodic inspections facility maintenance personnel and by Catch Basin Services regulatory personnel.

All of the water from the roof(s) of the building are currently not treated. The surface of the outside storage and parking areas is currently not treated. This practice was directed by the facility design. The company is considering the treatment of all storm water. All storm water currently flows into existing catch basins connected to the storm water system on the facility.

The parking area inside the facility is a paved lot. The parking in front of the facility is on asphalt and it slopes about four (4) inches in 30 feet to the street. The asphalt seems to be relatively free of grease, oil, or other contaminating materials.

This company is primarily involved in accumulation, storage, and disposal of various scrap metals for recycling/reuse.. Please refer to the next section for information on how the company treats vehicles and/or materials/metals which may end up at this facility.

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Section Three

Section three outlines the facility reuse, recycling, and disposal plan. This is included to clarify how the facility controls materials that could potentially impinge on the surface water and storm drainage.

All hazardous and non-hazardous materials, their containers, and applicators are disposed of in accordance with applicable rules, provisions, requirements, ordinances, policies, laws, codes, and statutes. **Independent Metals** only recycles or disposes of material that are generated by the commercial, maintenance, or repair activities of this company. In addition to other requirements for the safe use, disposal, and recycling of these materials, **Independent Metals** requires that customers or users of the facility recycle all of their own hazardous materials. **Independent Metals** does not accept waste(s) from any person, company, or entity that are not part of a repair activity that the company performs. There are no exceptions to this rule.

Any materials that are generated as a result of normal operation/repair or service operations on this site by the staff in support of facility or repaired equipment, will be disposed of or recycled in accordance with the policies of this company and the regulating agencies. It does not allow the activities of customers to be performed on this property. This company generates waste on this facility only due to the repair activities on this site.

This company's stated policy on reuse, recycling and disposal is to reuse and recycle as much material as possible. We will only use disposal as a last resort.

This company recycles waste/used materials including oil, anti-freeze, solvent(s), batteries, scrap metal, paint, and tires from our equipment and facility maintenance activities.

Normally all waste oil and anti-freeze are taken care of by servicing companies/activities off site. Any waste/used oil or anti-freeze generated on this site will be accumulated and removed by licensed recycling company. Personnel have been advised that they may not accumulate waste materials and must immediately remove all waste materials from this site. Activities on this site may drain, collect, and transfer to a 55 gallon drum for storage until the material is picked up for recycling.

This company recycles all batteries by trading with a battery company that will take all trade-in batteries that are left with us when new batteries are sold. This company recycles all CFC's as required (when applicable/existent). This company recycles tires. All scrap metal is controlled as required. This facility also recycles used tires.

All materials generated within the confines of this property by commercial activity of this facility, customers, or users of the facility, shall be disposed of at a licensed disposal site.

This facility accumulates and stores any hazardous materials or other materials in accordance with the requirements of WAC 173-303, which is incorporated herein by reference.

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Section Four

Section four outlines the Best Management Practices (BMP's) for the company and the implementation of this plan to prevent pollution impact on the parking areas, storage areas, and the equipment working areas. These efforts are aimed at preventing any impact on storm water drainage or catch basins on the property.

This organization has decided to treat surface water runoff by running any water runoff through a type SC catch basin and adding hydrocarbon and silt collection units.

We are currently planning the demonstration of units to enable the facility to remove hydrocarbon contamination, silts, fine, and suspended solids, and are considering adding several others.

The existing type SC units are being serviced on a monthly basis and checked during the periods of heavy use.

> Independent Metals has added a new requirement to personnel using the storage and accumulation area (or other production areas). The person assigned to work in the room/space must open and clean the type SC unit on a weekly basis (minimum). Cleaning consists of removing the grate and removing the Water Management Unit, then emptying any acccummualted dirt/solids for dispoal. Then it is replaced. The WMU is checked monthly and the water sampled by CBS personnel to the ensure that the WMU is not damaged or loaded with contaminants. The WMU Snakes/Slugs used on the periphery of the property and also checked and replaced as necessary. Spill Kits and Spill containment is checked and restocked as necessary.
>
> Any water and any sediment removed from the CB's or other collection devices is allowed to settle and the water is decanted into the waste concrete area. The water is processed for reuse/recycling/disposal. The remaining sediment will solidify (after decanting) and be disposed of as required.

Catch Basin Services is currently servicing this facility on a monthly basis. The hydrocarbon collection units are checked, removed, cleaned, the hydrocarbon materials are used as food for bacteria, reused/recycled, they may also be used as waste fuel.

The long term maintenance activities of this activity have been modified to include projects to improve the collection and treatment of storm water run off. These include the addition of concrete barriers to channel all of the water into the Type SC units.

This Storm Water Pollution Prevention Plan is not intended to be a stand alone document, it should be an integrated part of the overall facility operations.

Additional elements of the Storm Water Pollution Prevention Plans may be included in a Facility Safety Plan, Facility Contingency Plan, Fire Contingency Plan, Best Management Practices, Waste Manifest Log, Spill Prevention Program, Waste Reduction Plan, Hazard Communication Plan, and Employee Policy Program.

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This facility maintains, controls, and disposes of all waste materials in accordance with sound industry practice. The facility BMP's that follow are applicable to fixed equipment, mobile equipment, and vehicles. For the sake of simplicity we will refer consistently to vehicle and their management. This is done because they may need repair in various parts of the facility. We do not repair any equipment or vehicles that are not the property of Independent Metals or this individual facility.

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Facility Best Management Practices

This facility maintains, controls, and disposes of waste materials in the following containers.

Waste Oil:

Waste Oil goes into the fully labeled waste oil tank.
Automatic transmission oil goes into the waste oil tank.
Gear oil goes in the waste oil tank.
The tank is serviced by licensed recycler or waste hauler.

Anti-Freeze:

Anti-Freeze goes into the anti-freeze container
The tank is serviced by licensed recycler or waste hauler.

Brake Fluid:

Brake fluid is stored in a separate fully labeled and dated drum.
The tank is serviced by licensed recycler or waste hauler.

Contaminated gasoline:

Scenario #1 is to store all materials in a segregated; labeled, and dated containers.
The container is serviced by a licensed waste hauler.
Scenario #2 is to strain the gasoline of contaminants and use the fuel in a shop vehicle or piece of equipment. The residue of this scenario is then placed in the container marked "All Others".
The container is serviced by a licensed waste hauler.

Solvent:

Solvent is stored and used from a fully labeled container under the parts washer.
The tank is serviced by licensed recycler or waste hauler.

Catch Basins/Sumps: All service and repair operations are performed in specially designed areas. All repair areas are segregated from the storm water system. All storm water catch basins, strip drains, or sumps were designed for this task. First the area was cleaned, and the surface prepared for a concrete surface. Then a concrete surface was designed and installed that would drain all fluid into a catch basin that would direct all water into and then into the storm water system.

The catch basins are cleaned and serviced on a monthly basis. The catch basin sump is cleaned and serviced on a monthly basis, thereby removing any 'sump sludges'. The 'sump sludges' are removed when they accumulate to approximately 2 inches of material. The materials are placed in a 5 gallon bucket and let stand to allow the excess water to rise to the surface. The excess water is removed and the process is repeated to allow the materials to become quite solid. This solid material is added to the :"All Others" container. When the container is full then it is hauled by a licensed waste hauler.

The residue of the catch basin/sump may be placed in the fully labeled and dated container marked "All Others" or added to the concrete waste materials.

The container is serviced by a licensed waste hauler.

1. *Floor Washing Water*. Floor washing is performed at this facility. All floor washing water is directed into a specially designed sump.
2. *Equipment washing water*. All equipment washing is performed in a specially designed area , that directs all fluid into a specially designed and installed catch basin and sump. The fluid from this sump is treated to remove any entrained hydrocarbons. There are no engine cleaning operations on this site.

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3. *Cooling system flush/flushing water*. All cooling system flush or flushing operations are not performed on this site. All fluids from this operation drain into a specially designed pans and are emptied after each use. The fluids from this operations are stored as waste anti-freeze until they are removed from the site.
4. *Radiator Flush Waste Water*. These activities are not allowed on this facility.

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Anti-Freeze

WARNING

Failure to follow or ensure that all materials are treated as outlined may lead to violation of regulatory policies or practices.

Parking, Storage, Repair Activities

1. Prior to accepting any equipment/vehicle for repair, parking or storage prior to or after a repair, check the vehicle to ensure that no material is dripping from the vehicle.
2. If any leakage is noted place absorbent materials under the drip and investigate the cause.
3. Ensure that any leaking material cannot reach the catch basins or storm water catch basins.
4. Store the vehicle in a location that will prevent any surface contamination.
5. After repair has been accomplished, ensure that any leakage or drips are wiped off.
6. After parking, check under the vehicle and ensure that there is no leakage.

Anti-Freeze - Management

1. Store all used/waste anti-freeze in the fully labeled drum.
2. When drum is approximately 3/4 full, call for the drum to be emptied or removed with an empty drum being left in its place.
3. Ensure that whenever the anti-freeze is picked up that the facility manager is notified, so that he can draw a sample for retention. Have the driver initial and date the sample container label.
4. Note in the Waste Log, the date, the drivers name, the vehicle license number, the time of day, and the destination of the vehicle (it contents) and the TSD # where the material is being taken.
5. Save the sample of the material until the manifest is returned.
   - 5.1. If the manifest is marked OK or it is noted that the material has been processed or recycled, place the sample in a container for long term storage (approximately 60 days).
   - 5.2 If there is any note that the material is contaminated, seal the sample in a container and prepare to have it tested.
   - 5.3. Prior to testing call the vendor to inform him that you have a sample of the load and are preparing to have it tested. You do not agree that the load was contaminated and if testing shows that it is not contaminated as stated on his sheet that he is liable for all testing costs, and shall be liable for all costs associated with disposal of the contaminated material.

Anti-Freeze - Shop Floor

WARNING

Failure to follow or ensure that all materials are treated as outlined may lead to violation of regulatory policies or practices resulting in a fine or operating restriction. Willful violation of shop policy is cause for termination.

1. Ensure that a container is placed under the vehicle to catch all of the waste anti-freeze.
2. Ensure that the container is removed carefully and taken to the used/waste anti-freeze drum and emptied carefully to prevent any spillage.
   - 2.1. Open drum.
   - 2.2. Empty container into drum.
   - 2.3. Close drum and ensure lid is closed tightly.
   - 2.4. Properly clean container and store as required.
3. Store all used/waste anti-freeze in the fully labeled drum.
4. Ensure that any anti-freeze that may have spilled is mopped up.
5. Ensure that removal of anti-freeze is noted on the work order.
6. When drum is approximately 3/4 full, notify management that the drum needs to be emptied.
7. Ensure that whenever the anti-freeze is picked up that the facility manager is notified, so that he can draw a sample for retention. Do not let anyone pick up anti-freeze unless management has been notified and they properly fill out the waste log.

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Catch Basin Services

"Protecting the Environment"

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Brake Fluid

WARNING

Failure to follow or ensure that all materials are treated as outlined may lead to violation of regulatory policies or practices.

Parking, Storage, Repair Activities

1. Prior to accepting any vehicle for repair, parking or storage prior to or after a repair, check the vehicle to ensure that no material is dripping from the vehicle.
2. If any leakage is noted place absorbent materials under the drip and investigate the cause.
3. Ensure that any leaking material cannot reach the catch basins or storm water catch basins.
4. Store the vehicle in a location that will prevent any surface contamination.
5. After repair has been accomplished, ensure that any leakage or drips are wiped off.
6. After parking, check under the vehicle and ensure that there is no leakage.

Brake Fluid - Management

1. Store all used/waste brake fluid in the fully labeled drum.
2. When drum is approximately 3/4 full, call for the drum to be emptied or removed with an empty drum being left in its place.
3. Ensure that whenever the brake fluid is picked up that the facility manager is notified, so that he can draw a sample for retention. Have the driver initial and date the sample container label.
4. Note in the Waste Log, the date, the drivers name, the vehicle license number, the time of day, and the destination of the vehicle (it contents) and the TSD # where the material is being taken.
5. Save the sample of the material until the manifest is returned.
   - 5.1. If the manifest is marked OK or it is noted that the material has been processed or recycled, place the sample in a container for long term storage (approximately 60 days).
   - 5.2 If there is any note that the material is contaminated, seal the sample in a container and prepare to have it tested.
   - 5.3. Prior to testing call the vendor to inform him that you have a sample of the load and are preparing to have it tested. You do not agree that the load was contaminated and if testing shows that it is not contaminated as stated on his sheet that he is liable for all testing costs, and shall be liable for all costs associated with disposal of the contaminated material.

Brake Fluid - Shop Floor

WARNING

Failure to follow or ensure that all materials are treated as outlined may lead to violation of regulatory policies or practices resulting in a fine or operating restriction. Willful violation of shop policy is cause for termination.

1. Ensure that a container is placed under the vehicle to catch all of the waste brake fluid.
2. Ensure that the container is removed carefully and taken to the used/waste brake fluid drum and emptied carefully to prevent any spillage.
   - 2.1. Open drum.
   - 2.2. Empty container into drum.
   - 2.3. Close drum and ensure lid is closed tightly.
   - 2.4. Properly clean container and store as required.
3. Store all used/waste brake fluid in the fully labeled drum.
4. Ensure that any brake fluid that may have spilled is mopped up.
5. Ensure that removal of brake fluid is noted on the work order.
6. When drum is approximately 3/4 full, notify management that the drum needs to be emptied.
7. Ensure that whenever the brake fluid is picked up that the facility manager is notified, so that he can draw a sample for retention. Do not let anyone pick up brake fluid unless management has been notified and they properly fill out the waste log.

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Catch Basin Services

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Waste Oil

WARNING

Failure to follow or ensure that all materials are treated as outlined may lead to violation of regulatory policies or practices.

Parking, Storage, Repair Activities

1. Prior to accepting any vehicle for repair, parking or storage prior to or after a repair, check the vehicle to ensure that no material is dripping from the vehicle.
2. If any leakage is noted place absorbent materials under the drip and investigate the cause.
3. Ensure that any leaking material cannot reach the catch basins or storm water catch basins.
4. Store the vehicle in a location that will prevent any surface contamination.
5. After repair has been accomplished, ensure that any leakage or drips are wiped off.
6. After parking, check under the vehicle and ensure that there is no leakage.

Waste Oil - Management

1. Store all used/waste lubricating oil in a fully labeled waste oil tank.
2. Pour waste oil in the tank, When tank is approximately 3/4 full, call for the tank to be emptied.
3. Ensure that whenever the waste oil is picked up that the facility manager is notified, so that he can draw a sample for retention. Have the driver initial and date the sample container label.
4. Note in the Waste Log, the date, the drivers name, the vehicle license number, the time of day, and the destination of the vehicle (it contents) and the TSD # where the material is being taken.
5. Save the sample of the material until the manifest is returned.
   - 5.1. If the manifest is marked OK or it is noted that the material has been processed or recycled, place the sample in a container for long term storage (approximately 60 days).
   - 5.2 If there is any note that the material is contaminated, seal the sample in a container and prepare to have it tested.
   - 5.3. Prior to testing call the vendor to inform him that you have a sample of the load and are preparing to have it tested. You do not agree that the load was contaminated and if testing shows that it is not contaminated as stated on his sheet that he is liable for all testing costs, and shall be liable for all costs associated with disposal of the contaminated material.

Waste Oil - Shop Floor

WARNING

Failure to follow or ensure that all materials are treated as outlined may lead to violation of regulatory policies or practices resulting in a fine or operating restriction. Willful violation of shop policy is cause for termination.

1. Ensure that a container is placed under the vehicle to catch all of the waste oil.
2. Ensure that the container is removed carefully and taken to the used/waste oil tank and emptied carefully to prevent any spillage.
   - 2.1. Open tank fill.
   - 2.2. Empty container into tank.
   - 2.3. Close tank and ensure lid is closed tightly.
   - 2.4. Properly clean container and store as required.
3. Store all used/waste oil in a fully labeled tank
4. Ensure that any oil that may have spilled is mopped up.
5. Ensure that removal of oil is noted on the work order.
6. When tank is approximately 3/4 full, notify management that the tank needs to be emptied.
7. Ensure that whenever the oil is picked up that the facility manager is notified, so that he can draw a sample for retention. Do not let anyone pick up oil unless management has been notified and they properly fill out the waste log.

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Catch Basin Services

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Gear Oil

WARNING

Failure to follow or ensure that all materials are treated as outlined may lead to violation of regulatory policies or practices.

Parking, Storage, Repair Activities

1. Prior to accepting any vehicle for repair, parking or storage prior to or after a repair, check the vehicle to ensure that no material is dripping from the vehicle.
2. If any leakage is noted place absorbent materials under the drip and investigate the cause.
3. Ensure that any leaking material cannot reach the catch basins or storm water catch basins.
4. Store the vehicle in a location that will prevent any surface contamination.
5. After repair has been accomplished, ensure that any leakage or drips are wiped off.
6. After parking, check under the vehicle and ensure that there is no leakage.

Gear Oil - Management

1. Store all used/waste gear oil in a fully labeled waste oil tank.
2. Pour gear oil in waste oil tank, when tank is approximately 3/4 full, call for the tank to be emptied.
3. Ensure that whenever the waste oil is picked up that the facility manager is notified, so that he can draw a sample for retention. Have the driver initial and date the sample container label.
4. Note in the Waste Log, the date, the drivers name, the vehicle license number, the time of day, and the destination of the vehicle (it contents) and the TSD # where the material is being taken.
5. Save the sample of the material until the manifest is returned.
   - 5.1. If the manifest is marked OK or it is noted that the material has been processed or recycled, place the sample in a container for long term storage (approximately 60 days).
   - 5.2 If there is any note that the material is contaminated, seal the sample in a container and prepare to have it tested.
   - 5.3. Prior to testing call the vendor to inform him that you have a sample of the load and are preparing to have it tested. You do not agree that the load was contaminated and if testing shows that it is not contaminated as stated on his sheet that he is liable for all testing costs, and shall be liable for all costs associated with disposal of the contaminated material.

Gear Oil - Shop Floor

WARNING

Failure to follow or ensure that all materials are treated as outlined may lead to violation of regulatory policies or practices resulting in a fine or operating restriction. Willful violation of shop policy is cause for termination.

1. Ensure that a container is placed under the vehicle to catch all of the waste gear oil.
2. Ensure that the container is removed carefully and taken to the used/waste oil tank and emptied carefully to prevent any spillage.
   - 2.1. Open tank fill.
   - 2.2. Empty container into tank.
   - 2.3. Close tank and ensure lid is closed tightly.
   - 2.4. Properly clean container and store as required.
3. Store all used/waste gear oil in the fully labeled tank.
4. Ensure that any gear oil that may have spilled is mopped up.
5. Ensure that removal of gear oil is noted on the work order.
6. When tank is approximately 3/4 full, notify management that the tank needs to be emptied.
7. Ensure that whenever the oil is picked up that the facility manager is notified, so that he can draw a sample for retention. Do not let anyone pick up oil unless management has been notified and they properly fill out the waste log.

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Transmission Fluid

WARNING
Failure to follow or ensure that all materials are treated as outlined may lead to violation of regulatory policies or practices.

Parking, Storage, Repair Activities

1. Prior to accepting any vehicle for repair, parking or storage prior to or after a repair, check the vehicle to ensure that no material is dripping from the vehicle.
2. If any leakage is noted place absorbent materials under the drip and investigate the cause.
3. Ensure that any leaking material cannot reach the catch basins or storm water catch basins.
4. Store the vehicle in a location that will prevent any surface contamination.
5. After repair has been accomplished, ensure that any leakage or drips are wiped off.
6. After parking, check under the vehicle and ensure that there is no leakage.

Transmission Fluid - Management

1. Store all used/waste automatic transmission fluid in a fully labeled waste oil drum.
2. Pour automatic transmission fluid in waste drum, when drum is approximately 3/4 full, call for the drum to be emptied.
3. Ensure that whenever the waste oil is picked up that the facility manager is notified, so that he can draw a sample for retention. Have the driver initial and date the sample container label.
4. Note in the Waste Log, the date, the drivers name, the vehicle license number, the time of day, and the destination of the vehicle (it contents) and the TSD # where the material is being taken.
5. Save the sample of the material until the manifest is returned.
   - 5.1. If the manifest is marked OK or it is noted that the material has been processed or recycled, place the sample in a container for long term storage (approximately 60 days).
   - 5.2 If there is any note that the material is contaminated, seal the sample in a container and prepare to have it tested.
   - 5.3. Prior to testing call the vendor to inform him that you have a sample of the load and are preparing to have it tested. You do not agree that the load was contaminated and if testing shows that it is not contaminated as stated on his sheet that he is liable for all testing costs, and shall be liable for all costs associated with disposal of the contaminated material.

Transmission Fluid - Shop Floor

WARNING
Failure to follow or ensure that all materials are treated as outlined may lead to violation of regulatory policies or practices resulting in a fine or operating restriction. Willful violation of shop policy is cause for termination.

1. Ensure that a container is placed under the vehicle to catch all of the waste automatic transmission fluid.
2. Ensure that the container is removed carefully and taken to the used/waste oil tank and emptied carefully to prevent any spillage.
   - 2.1. Open tank fill.
   - 2.2. Empty container into tank.
   - 2.3. Close tank and ensure lid is closed tightly.
   - 2.4. Properly clean container and store as required.
3. Store all used/waste automatic transmission fluid in a fully labeled tank.
4. Ensure that any automatic transmission fluid that may have spilled is mopped up.
5. Ensure that removal of automatic transmission fluid is noted on the work order.
6. When tank is approximately 3/4 full, notify management that the tank needs to be emptied.
7. Ensure that whenever the oil is picked up that the facility manager is notified, so that he can draw a sample for retention. Do not let anyone pick up oil unless management has been notified and they properly fill out the waste log.

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Solvent

WARNING
Failure to follow or ensure that all materials are treated as outlined may lead to violation of regulatory policies or practices.

Storage, Repair Activities

1. Prior to accepting any solvent tank or washer for use, check the machine to ensure that no material is dripping from the machine, tank, lid, or any part of the washer/pump assembly.
2. If any leakage is noted do not accept the unit.
3. If you have accepted the unit and notice any leakage, place absorbent materials to contain the solvent material and investigate the cause.
4. Ensure that any leaking material cannot reach the catch basins or storm water catch basins.
5. Store the unit in a location that will prevent any surface contamination.
6. After repair has been accomplished, ensure that any leakage or drips are wiped off.
7. After continued use or daily, check the unit for leaks in any area or part, and ensure that there is no leakage.

WARNING
Failure to follow or ensure that unit is closed when not in use may lead to violation of regulatory policies or practices.

8. Close the lid of the unit when not in use and ensure that it is closed whenever the work day is done.

Solvent (Scenario One) - Management

1. Store all used/waste Solvent in the solvent tank container, below the solvent tank/washer.
2. Approximately every six (6) weeks (whenever necessary), call for the container to be emptied .
3. Ensure that whenever the solvent is picked up that the facility manager is notified, so that he can draw a sample for retention. Have the driver initial and date the sample container label.
4. Note in the Waste Log, the date, the drivers name, the vehicle license number, the time of day, and the destination of the vehicle (it contents) and the TSD # where the material is being taken.
5. Save the sample of the material until the manifest is returned.
   - 5.1. If the manifest is marked OK or it is noted that the material has been processed or recycled, place the sample in a container for long term storage (approximately 60 days).
   - 5.2 If there is any note that the material is contaminated, seal the sample in a container and prepare to have it tested.
   - 5.3. Prior to testing call the vendor to inform him that you have a sample of the load and are preparing to have it tested. You do not agree that the load was contaminated and if testing shows that it is not contaminated as stated on his sheet that he is liable for all testing costs, and shall be liable for all costs associated with disposal of the contaminated material.

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Heavy Greases

WARNING
Failure to follow or ensure that all materials are treated as outlined may lead to violation of regulatory policies or practices.

Parking, Storage, Repair Activities

1. Prior to accepting any vehicle for repair, parking or storage prior to or after a repair, check the vehicle to ensure that no material is dripping from the vehicle.
2. If any leakage is noted place absorbent materials under the drip and investigate the cause.
3. Ensure that any leaking material cannot reach the catch basins or storm water catch basins.
4. Store the vehicle in a location that will prevent any surface contamination.
5. After repair has been accomplished, ensure that any leakage or drips are wiped off.
6. After parking, check under the vehicle and ensure that there is no leakage.

Heavy Greases (Scenario One) - Management

1. Store all used/waste heavy greases in the container marked heavy greases.
2. When container is approximately 3/4 full, call for the container to be emptied .
3. Ensure that whenever the heavy greases are picked up that the facility manager is notified, so that he can draw a sample for retention. Have the driver initial and date the sample container label.
4. Note in the Waste Log, the date, the drivers name, the vehicle license number, the time of day, and the destination of the vehicle (it contents) and the TSD # where the material is being taken.
5. Save the sample of the material until the manifest is returned.
   - 5.1. If the manifest is marked OK or it is noted that the material has been processed or recycled, place the sample in a container for long term storage (approximately 60 days).
   - 5.2 If there is any note that the material is contaminated, seal the sample in a container and prepare to have it tested.
   - 5.3. Prior to testing call the vendor to inform him that you have a sample of the load and are preparing to have it tested. You do not agree that the load was contaminated and if testing shows that it is not contaminated as stated on his sheet that he is liable for all testing costs, and shall be liable for all costs associated with disposal of the contaminated material.

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Solid Waste(s)

This facility maintains, controls, and disposes of solid waste materials in accordance with regulatory requirements and sound industry practice.

Catch Basin/Sump Sludges:

The catch basin is cleaned and serviced on a monthly basis. The catch basin sump is cleaned and serviced on a monthly basis, thereby removing any 'sump sludges'. The 'sump sludges' are removed when they accumulate to approximately 2 inches of material. The materials are placed in a 5 gallon bucket and let stand to allow the excess water to rise to the surface. The excess water is removed and the process is repeated to allow the materials to become quite solid. This solid material is added to the :"All Others" container. When the container is full then it is hauled by a licensed waste hauler.

The residue of the sump(s) and the catch basin(s) are placed in the fully labeled and dated container marked "All Others".
The container is serviced by a licensed waste hauler.

Oil Only Adsorbent(s): Oil Only is reserved for oil based materials.

1. Use only when required, and then only as much as is needed to absorb and clean-up oily spills.
2. First, contain the spill with a slug.
3. Place towel behind slug to clean-up spill. Pick up towel(s) with spilled material entrained and place in plastic bag for disposal.
   3.1. If possible, re-use the absorbent until it is fully saturated.
   3.2. Place fully saturated material in a closed and fully labeled container.
4. Pick up slug and place in plastic bag for disposal.
   4.1. If possible, re-use the absorbent until it is fully saturated.
   4.2. Place fully saturated material in a closed and fully labeled container.
5. Clean up area with a wet mop.
6. Squeegee the area as clean and dry as possible.
7. If necessary, place a towel on the floor to walk on. When finished place towel in disposal bag.
8. Place disposal bag in a closed fully labeled container.

This container is serviced by a licensed waste hauler.

Universal Absorbent(s): Universal is used for everything except oil based materials.

1. Use only when required, and then only as much as is needed to absorb and clean-up spilled material(s).
2. First, contain the spill with a slug.
3. Place towel behind slug to clean-up spill. Pick up towel(s) with spilled material entrained and place in plastic bag for disposal.
   3.1. If possible, re-use the absorbent until it is fully saturated.
   3.2. Place fully saturated material in a closed and fully labeled container.
4. Pick up slug and place in plastic bag for disposal.
   4.1. If possible, re-use the absorbent until it is fully saturated.
   4.2. Place fully saturated material in a closed and fully labeled container.
5. Clean up area with a wet mop.
6. Squeegee the area as clean and dry as possible.
7. If necessary, place a towel on the floor to walk on. When finished place towel in disposal bag.
8. Place disposal bag in a closed fully labeled container.

This container is serviced by a licensed waste hauler.

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Solid Waste(s)

This facility maintains, controls, and disposes of solid waste materials in accordance with regulatory requirements and sound industry practice.

Catch Basin/Sump Sludges:

The catch basin is cleaned and serviced on a monthly basis. The catch basin sump is cleaned and serviced on a monthly basis, thereby removing any 'sump sludges'. The 'sump sludges' are removed when they accumulate to approximately 2 inches of material. The materials are placed in a 5 gallon bucket and let stand for 2 days to allow the excess water to rise to the surface. The excess water is removed and the process is repeated to allow the materials to become quite solid. This solid material is added to the :"All Others" container. When the container is full then it is hauled by a licensed waste hauler.

The residue of the sump(s) and the catch basin(s) are placed in the fully labeled and dated container marked "All Others".

The container is serviced by a licensed waste hauler.

This facility still uses kitty litter or floor sweep type absorbents...

Floor Sweep Absorbent: The use of floor sweep should reserved primarily for oil based or dangerous materials.

1. Use only when required, and then only as much as is needed on oily spills.
2. First (whenever possible) clean up all spills with a wet mop and clean the area.
3. Squeegee the area as clean and dry as possible.
4. If necessary, Apply absorbent to the spill.
5. Place spent absorbent in a closed fully labeled container.
   5.1. If possible, re-use the absorbent until it is fully saturated.
   5.2. Place fully saturated material in a closed and fully labeled container.
   5.3. Remove a sample of the material and have it tested.

This container is serviced by a licensed waste hauler .

The use of floor sweep and water based materials.

1. Respond to all discharges, leaks, or spills of water based materials by used the floor mop and bucket.
2. All materials are drained from mop into the bucket and placed in the drain stream into the deep sink filled with soapy water.
3. Cleanup of all spills or discharges of water based materials are washed up with soap and water to remove any residual materials from the floor
4. The floor is squeegeed off to remove any standing water or residual material."
5. Only if necessary is any floor sweep absorbent used.
   5.1. Place the material on the floor.
   5.2. Absorb any liquid material.
   5.3. Remove the spent material.
6. Place spent absorbent in a closed fully labeled container.
   6.1. If possible, re-use the absorbent until it is fully saturated.
   6.2. Place fully saturated material in a closed and fully labeled container.
   6.3. Remove a sample of the material and have it tested.

This container is serviced by a licensed waste hauler.

These time consuming procedures for water based material spills tend to re-enforce the concept of "Do Not Spill Any Material". It has shown to reduce both the number of spills and their size.

Amendment 1...

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10/04/07

To: Charles Gilman II
Department of Ecology
Water Quality
Fax: 360 407 6426

Here is the Affidavit in full which I signed. If you need any thing else let me know.

Robb Smith
Independent Metals Company
Operations Manager
206 769-6323

DEPARTMENT OF ECOLOGY

OCT 0 5 2007

WATER QUALITY PROGRAM

AFFIDAVIT OF PUBLICATION

State of Washington,
Counties of King and Snohomish,

Kathy Baldwin, being duly sworn, says that he/she is an Authorized Agent of The Seattle Times Company, publisher of *The Seattle Times* and representing the Seattle Post-Intelligencer, separate daily newspapers, printed and published in Seattle, King County, State of Washington; that they are newspapers of general circulation in said County and State; that they have been approved as legal newspapers by order of the Superior Court of King County; that the annexed, being a display advertisement, was published in:

Advertiser	Newspaper	Publication Date
Independent Metals	Seattle Times	09/10/2007 Ad# 3791961 09/24/2007 Ad# 3798265

And not in supplement thereof, and is a true copy of the notice as it was printed and/or distributed in the regular and entire issue of said paper or papers during all of said period, and that said newspaper or newspapers were regularly distributed to its subscribers during all of said period.

Kathy Baldwin

Subscribed and sworn to before me this 2nd day of October 2007.

PATRICIA MARTINEZ
COMMISSION EXPIRES
NOTARY
STATE OF WASHINGTON

Patricia Martinez

Notary Public in and for the State of Washington residing at Seattle.

PUBLIC NOTICE

Independent Metals 'Plant 2' is seeking coverage under the Washington Department of Ecology's NPDES General Permit for Stormwater Discharges Associated with Industrial Activities. The less than 1 acre industrial site ('Silver Bay Logging Yard), known as 'Plant 2' is located at 614 South Kenyon in Seattle, WA Operations are due to startup on/started on 15 August 2007. Industrial activities include Storage and sorting of metal for recycling. Stormwater will be reused via a 'Closed-Loop System' for cleaning operations. Independent Metals is planning on continuous reuse for industrial application. StormWater drains to a catch basin in the middle of the parking area will be sealed and water is to be continuously cleaned and reused for cleaning operations. This will eliminate any outfall from the Independent Metals operation on 'Plant 2'.

Any person desiring to present their views to the Department of Ecology concerning this application, may notify Ecology in writing within 30 days from the last date of publication of this notice. Comments may be submitted to:

Washington Dept of Ecology
Water Quality Program -
Industrial Stormwater Unit
PO Box 47696
Olympia, WA 98504-7696

The Seattle Times, representing the Seattle Post-Intelligencer

Customer:	INDEPENDENT METALS	Phone:	2067639033
Type:	TRAN	Contract Number:	0
Address:	747 S MONROE ST SEATTLE WA 98108		
Ad Number:	3791961	Version:	2
Bill To:	1124372	Placed For:	1124372
Bill To Admc:	071097202	Place For Admc:	071097202
Sort:	PUBLIC NOTICEINDEPENDENT METALS PLANT 2		
Price:	$356.40	RC:	TLNA
Class:	381; PUBLIC NOTICES	Size:	1 (columns) x 44.00 (lines)
Caller:	EMAIL		
Insert Dates:	09/10/2007 09/10/2007		

Sales Rep:	DS:E199 AS:e7999
Entered By:	E199
Printed By:	E199 Date: 10/02/2007 09:51

Signature of Approval: Robb Smith Date: 10/4/07

PUBLIC NOTICE

Independent Metals 'Plant 2' is seeking coverage under the Washington Department of Ecology's NPDES General Permit for Stormwater Discharges Associated with Industrial Activities. The less than 1 acre industrial site ('Silver Bay Logging Yard), known as 'Plant 2' is located at 816 South Kenyon in Seattle, WA Operations are due to startup on/started on 15 August 2007. Industrial activities include Storage and sorting of metal for recycling. Stormwater will be reused via a 'Closed-Loop System' for cleaning operations. Independent Metals is planning on continuous reuse for industrial application. StormWater drains to a catch basin in the middle of the parking area will be sealed and water is to be continuously cleaned and reused for cleaning operations. This will eliminate any outfall from the Independent Metals operation on 'Plant 2'.

Any person desiring to present their views to the Department of Ecology concerning this application, may notify Ecology in writing within 30 days from the last date of publication of this notice. Comments may be submitted to:

Washington Dept of Ecology
Water Quality Program -
Industrial Stormwater Unit
PO Box 47696
Olympia, WA 98504-7696

The Seattle Times, representing the Seattle Post-Intelligencer

Customer:	INDEPENDENT METALS	Phone: 2067639033	
Type:	TRAN	Contract Number:	0
Address:	747 S MONROE ST		
	SEATTLE WA 98108		
Ad Number:	3798265	Version:	2
Bill To:	1124372	Placed For:	1124372
Bill To Admc:	071097202	Place For Admc:	071097202
Sort:	PUBLIC NOTICEINDEPENDENT METALS PLANT 2		
Price:	$356.40	RC:	TLNA
Class:	381; PUBLIC NOTICES	Size: 1 (columns) x 44.00 (lines)	
Caller:	RON		
Insert Dates:	09/24/2007 09/24/2007		

Sales Rep:	DS:E199 AS:e7999
Entered By:	E199
Printed By:	E199 Date: 10/02/2007 09:52

Signature of Approval: Bob Smith Date: 10/4/7

10/05/2007 07:42 206/6396953 IND METALS PAGE 02/02

INDEPENDENT METALS
SO3-009725
12/25/2007

Issuance Date: August 15, 2007
Effective Date: September 15, 2007
Expiration Date: May 31, 2008

THE INDUSTRIAL STORMWATER GENERAL PERMIT

A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM AND STATE WASTE DISCHARGE GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES

State of Washington
DEPARTMENT OF ECOLOGY
Olympia, Washington 98504-7600

In compliance with the provisions of
The State of Washington Water Pollution Control Law
Chapter 90.48 Revised Code of Washington
and
The Federal Water Pollution Control Act
(The Clean Water Act)
Title 33 United States Code, Section 1251 et seq.

Until this permit expires, is modified or revoked, Permittees that have properly obtained coverage under this general permit are authorized to discharge in accordance with the special and general conditions which follow.

David C. Peeler, Manager
Water Quality Program
Washington State Department of Ecology

DEPARTMENT OF ECOLOGY

MAY 22 2009

WATER QUALITY PROGRAM

POSTED

DATE _____

INITIALS _____

ECOLOGY

Application for General Permit to Discharge Stormwater Associated with **Industrial Activity**

X Change of Information

Permit No. SO3-009725

Please print clearly in ink or type and read instructions before filling out this form.

I. Permittee Information

Operator/Representative for the Facility (All permit correspondence will be mailed here**)	**Billing Address** (All billing correspondence will be mailed here*)
Operator/Representative's Name Robb Smith	Universal Business Identifier (UBI) number
Title General Manager Phone No. 206-769-6323	Billing Contact Name Phone No.
Company Name Independent Metals	Company Name
**Street Address or P.O. Box 747 S. Monroe St	*Billing Address
City State Zip + 4 Seattle, WA 98108	City State Zip + 4

II. Facility Information

Date facility began operation or will begin operation.	
Name of Facility	Facility Contact Name Phone No.
Facility Street Address (or Location Description)	
City State Zip + 4	County

A. List the Primary Standard Industrial Classification Code for your facility in No. 1.

1. 5 0 9 3 2. ____ 3. ____ 4. ____

B. Type or Nature of Business: Metal Recycling

C. Total size of site with industrial activity in acres: (Divide square feet by 43,560 to get acres) 3.0

III. Receiving Water Information.

1. Site Map: Prepare a map with the following information and attach it to this form (see permit Special Condition S9.B.1.b.)
   - Drainage and discharge structures (name each discharge point).
   - An outline of the stormwater drainage areas for each stormwater discharge point.
   - Areas where stormwater discharges to the ground.
   - Paved areas.
   - Sample location.
   - All buildings.
   - Areas of pollutant contact (actual or potential).
   - Surface water locations (include wetlands, drainage ditches, and sloughs).
   - Areas of existing and potential soil erosion.
   - Vehicle service areas.
2. Discharge Identifier: List the name, number, or letter, used on the map to identify the point(s) of discharge. (Please list all points of discharge) This ID can only be a maximum of four characters long and must be unique for each point of discharge.

   DP001
3. If you have identified more than one point of discharge (listed in #2 above), which point(s) of discharge do you expect to take stormwater samples from in order to comply with the permit sampling requirement?

4. **Latitude/Longitude of the point(s) of discharge:** This is the geographical location of the point where stormwater is discharged from your facility expressed in latitude/longitude in degrees (°), minutes (′), and seconds (″). Please see instructions for more details.

Latitude: 47____ ° 31____ ′ 58.29__ ″ Longitude: 122___ ° 19____ ′ 17.80__ ″

5. **Name of Receiving Water:** Provide the name of the receiving water body where stormwater discharges from your site enter. (e.g. Mill Creek, Elliot Bay, Chehalis River)

Duwamish River

6. **Latitude/Longitude of the Receiving Water:** This is the geographical location of the point where discharge from your facility enters the receiving water listed above expressed in latitude/longitude in degrees (°), minutes (′), and seconds (″). (It may be the same as number 3 above). Please see instructions for more details.

Latitude: 47____ ° 31____ ′ 58.29__ ″ Longitude: 122___ ° 19____ ′ 17.80__ ″

7. **Name of Conveyance System:** if you discharge to a municipal stormwater system or other stormwater conveyance system (e.g. Kent stormwater drainage system, roadside ditch). Identify the system by name or if unnamed, by other identifier (e.g. 145th street ditch)

_____

IV. Request for Mixing Zone

☐ I am requesting a mixing zone as provided for under WAC 173-201A-100(10) consistent with the provisions in the industrial stormwater general permit, Special Condition S3.F. In order to obtain a mixing zone I am providing sufficient information for Ecology to determine that I have implemented all known, available, and reasonable methods of treatment (AKART), the proposed mixing zone will not interfere with the beneficial uses of the receiving water, and will not create a barrier to the migration or translocation of indigenous organisms to a degree that might cause damage to the ecosystem. In support of this I am including the following documentation:

a) A map clearly identifying all waters included in the mixing zone;
b) All known discharges within the requested area for the mixing zone, their location and the source of the discharge;
c) A description of the historic and current uses of all waters in the mixing zone including the typical plant and animal species inhabiting the waters and public uses of the waters; and
d) Characterization of the stormwater discharge consistent with the EPA Form 3510-2F (Form 2F), and a characterization of the receiving water (i.e. pollutant levels of the receiving waters).

V. Stormwater Pollution Prevention Plan (SWPPP)

Has a stormwater pollution prevention plan been developed? X Yes ☐ No

If No, Ecology must be notified by letter when the SWPPP has been developed and implemented. Facilities will not receive permit coverage until a SWPPP has been developed, implemented and Ecology notified. New facilities must submit SWPPP to Ecology before receiving permit coverage.

VI. Industrial Areas and Activity Information

Areas with industrial activities at facility. Check all that apply.

X Access Roads & Rail Lines for Shipping & Receiving	X Material Handling to Produce Product
☐ Air Emissions from Roof or Sides of Buildings	X Material Handling – Finished Product
☐ Application or Disposal of Wastewaters	X Parking Lots Used for Loading/Unloading
☐ Bag House Area	X Recycling Area
☐ Bulk Storage Tank Areas	X Staging Area for Heavy Equipment
☐ Conveyors Located Outside	X Storage & Maintenance of Material Handling Equipment
☐ Dismantling of Equipment (Vehicles and/or Machinery)	☐ Vehicle Maintenance
☐ Fueling Station	☐ Vehicle Wash Area
X Fueling – Mobile	☐ Waste Treatment, Storage, Disposal
☐ Hazardous Waste Treatment, Storage, or Disposal (Refers to RCRA, Subtitle C Facilities Only)	☐ Other: _____
	☐ Other: _____
☐ Manufacturing Building	☐ Other: _____

VII. Material Handling

A. Types of materials handled and/or stored outdoors. Check all that apply.

- ☐ Acids or Alkalies
- ☐ Antifreeze
- ☐ Compost
- ☐ Deicers
- ☐ Detergents
- ☐ Drums
  - ➢ Steel _____
  - ➢ Plastic _____
- X Equipment (engines, machine parts, etc.)
- X Forklifts
- ☐ Hazardous Wastes
- ☐ Herbicides
- ☐ Logs
- ☐ Metals
  - ➢ Iron __X___
  - ➢ Steel _X____
  - ➢ Other __X___
- ☐ Organics
- ☐ Paints/Coatings
- ☐ Petroleum or Petrochemical Product
- ☐ Pesticides
- ☐ Plastic Pellets
- ☐ Plating Products
- ☐ Powders
- ☐ Sand or Gravel
- X Scrap Metal
- ☐ Solvents
- ☐ Stockpiled Materials
- ☐ Transformers
- ☐ Waste Piles
- ☐ Wood Chips, Sawdust, Bark
- ☐ Wood Treating Products
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

B. Identify existing management practices employed to reduce pollutants in industrial stormwater discharges. Check all that apply.

- ☐ Automatic Shutoff Control Valve System (Spill Control)
- ☐ Berms/Dikes
- X Catch Basins Cleaned Regularly
- ☐ Chemical Treatment for Erosion Control
- X Comply with Uniform Fire Codes
- ☐ Containment
- ☐ Covered Dumpsters
- ☐ Covered Loading/Unloading Areas
- ☐ Curbing
- X Daily Checks for Leaks/Spills
- ☐ Dead End Sumps
- ☐ Detention Facilities
- X Dispose of Debris from Catch Basin Properly
- X Dispose of Waste Materials Properly
- ☐ Double-Walled Storage Tanks
- ☐ Drain Dumpsters to Sanitary Sewer
- ☐ Drip Pans
- ☐ Elevate Materials Stored Outside
- ☐ Infiltration Basins
- X Inspection Storm Drains for Illicit Discharge
- ☐ Label Containers
- X Limit Use of Toxic/ Hazardous Chemicals
- ☐ Maintain Ditches/Culverts
- ☐ Maintenance Records Kept Current
- X Oil/Water Separator
- ☐ Overhead Coverage
- ☐ Procedures for Maintenance and of Deteriorating Equipment Repair/ Replacement
- X Recycling/Source Reduction
- ☐ Slope Impervious Areas to Sanitary Sewer (Particularly Loading/Unloading Area)
- X Spill Prevention Plan
- ☐ Stencil Storm Drains "No Dumping"
- ☐ Storm Drain Plugs and/or Cover Kits
- ☐ Surface Leachate Collection
- X Sweep and Clear Site of Debris
- X Train Employees on Pollution Prevention
- ☐ Vegetation Management
- ☐ Wetland Detention Pond
- X Stormwaterx Treatment System

VIII. Regulatory Status. Check all that apply.

- X NPDES Permit (Individual or General Construction Stormwater) Permit No. __ SO3-009725A _____
- ☐ State Waste Discharge Permit (Ground Discharges) Permit No. _____
- ☐ Air Notice of Construction, Permit, or Order Agency: _____
- ☐ State/USEPA Hazardous Waste ID No: _____
- ☐ Drywell (Ecology) Registration No: _____

IX. State Environmental Policy Act (SEPA). Applies only to new or newly established facilities.

Has a SEPA review been completed? ☐ Yes ☐ No ☐ Exempt

Type of SEPA document: ☐ DNS ☐ Final EIS

Agency issuing DNS, Final EIS, or Exemption: _____ Date: _____

X. Public Notice.

This application must be received by Ecology on or before the date of the first public notice. See application instructions.

Date of the first public notice: ___05___/ __27____/ __09____

Date of second public notice: __06____/ ___03___/ __09____

Name of the newspaper that will publish the public notices: Seattle Daily Journal of Commerce_____

PUBLIC NOTICE

Independent Metals is seeking modified coverage under the Washington Department of Ecology's NPDES General Permit for Stormwater Discharges Associated with Industrial Activities. The 3 acre industrial site, known as Independent Metals, is located at 816 South Kenyon Street, Seattle, Washington and started operations in 2006. Industrial operations include receiving scrap material, cutting the material into smaller sizes, and transporting the material to mills. Stormwater management activities include the periodic sweeping of the loading and unloading areas, inspections of the outdoor equipment, a StormwateRx treatment system at the outfall, periodic testing per the Department of Ecology requirements, employee training, periodic inspections of the stormwater conveyance systems, and other best management practices. Stormwater will be discharged from the site via pipe to the Duwamish Waterway. Modification of the permit includes the addition of the treatment system and the inclusion of an additional 1.5 acres of property to be covered under the permit.

Any person desiring to present their views to the Department of Ecology concerning this application, or interested in the Departments action on this application may notify the Department of Ecology in writing within 30 days of the last day of publication of this notice. Comments shall be submitted to: Department of Ecology, PO Box 47696, Olympia, Washington 98504-7696

XI. Certification of Permittee(s)

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Operator/Representative's Printed Name	(If Co-Permittee) Co-Permittee's Printed Name
Operator/Representative's Signature	Co-Permittee's Signature
Operations Manager Title	Title
5/19/09 Date	Date

Please sign and return this document to the following address:

Washington Department of Ecology
Water Quality Program – Industrial Stormwater
PO Box 47696
Olympia, WA 98504-7696

If you have any questions, please call:

- (360) 407-7451 Charles Gilman for city of *Seattle* or counties: *Kitsap, Pierce, Thurston*
- (360) 407-7229 Elaine Worthen for counties: *Island, King (except Seattle), San Juan*
- (360) 407-6437 Linda Matlock for counties: *Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Skagit, Snohomish, Spokane, Stevens, Walla Walla, Whatcom, Whitman.*
- (360) 407-6858 Joyce Smith for counties: *Benton, Chelan, Clallam, Clark, Cowlitz, Douglas, Grays Harbor, Jefferson, Kittitas, Klickitat, Lewis, Mason Okanogan, Pacific, Skamania, Wahkiakum, Yakima.*

The Department of Ecology is an equal opportunity agency and does not discriminate on the basis of race, creed, color, disability, age, religion, national origin, sex, marital status, disabled veteran's status, Vietnam Era veteran's status, or sexual orientation.

Washington State Department of Ecology **Discharge Monitoring Report (DMR)**

Received Date:

Permit Number: WAR009725 **Permittee:** INDEPENDENT METALS

Facility County: King **Receiving Waterbody:**

Monitoring Period: 04/01/2010 - 06/30/2010 **Outfall:** 1 **Version:** 1

Week	Monitoring Point	Turbidity (Nonhelometric) Unknown NTU Quarterly Grab	pH (Hydrogen Ion) Unknown Standard Units Quarterly Grab	Oil & Grease Not Applicable Yes/No Quarterly Visual Observation	Copper Total Ug/L Quarterly Grab	Zinc, Total Total Ug/L Quarterly Grab	Lead Not Applicable Ug/L Quarterly Grab	Petroleum Hydrocarbons Total Mg/L Quarterly Grab
		001	001	001	001	001	001	001
12-W	6/16/10	9.67	6.9	no	10.1	110	8.1	0.21
Average		9.67			10.1	110	8.1	0.21
		BM: <= 25			BM: <= 14	BM: <= 117	BM: <= 81.6	BM: <= 10

Non Report Codes Used: R --DMR Not Submitted

Washington State Department of Ecology **Discharge Monitoring Report (DMR)**

Received Date:

Permit Number: WAR009725 **Permittee:** INDEPENDENT METALS

Facility County: King **Receiving Waterbody:**

Monitoring Period: 04/01/2010 - 06/30/2010 **Outfall:** 2 **Version:** 1

Week	Monitoring Point	Turbidity (Nephelometric) Unknown NTU Quarterly Grab	pH (Hydrogen Ion) Unknown Standard Units Quarterly Grab	Oil & Grease Not Applicable Yes/No Quarterly Visual Observation	Copper Total Ug/L Quarterly Grab	Zinc, Total Total Ug/L Quarterly Grab	Lead Not Applicable Ug/L Quarterly Grab	Petroleum Hydrocarbons Total Mg/L Quarterly Grab
		002	002	002	002	002	002	002
Average		BM: <= 25			BM: <= 14	BM: <= 117	BM: <= 81.6	BM: <= 10

Non Report Codes Used: R - DMR Not Submitted

Outfall: 2 -

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
002	All Parameters		R	

Printed Date: 10/19/2010 10:46:23 AM

Washington State Department of Ecology **Discharge Monitoring Report (DMR)**

Received Date:

Permit Number: WAR009725 **Permittee:** INDEPENDENT METALS

Facility County: King **Receiving Waterbody:** Puget Sound

Monitoring Period: 07/01/2010 - 09/30/2010 **Outfall:** 1 **Version:** 1

Week	Monitoring Point	Turbidity (Nephelometric) Unknown NTU Quarterly Grab	pH (Hydrogen Ion) Unknown Standard Units Quarterly Grab	Oil & Grease Not Applicable Yes/No Quarterly Visual Observation	Copper Total Ug/L Quarterly Grab	Zinc, Total Total Ug/L Quarterly Grab	Lead Not Applicable Ug/L Quarterly Grab	Petroleum Hydrocarbons* Total Mg/L Quarterly Grab
		001	001	001	001	001	001	001
13-M	9/20/10	6.3	7.2	no	6.0	54.4	3.4	.66
Average		6.3			6.0	54.4	3.4	.66
		BM: <= 25			BM: <= 14	BM: <= 117	BM: <= 81.6	BM: <= 10

Non Report Codes Used: R - DMR Not Submitted

Washington State Department of Ecology **Discharge Monitoring Report (DMR)**

Received Date:

Permit Number: WAR009725 **Permittee:** INDEPENDENT METALS

Facility County: King **Receiving Waterbody:** Puget Sound

Monitoring Period: 07/01/2010 - 09/30/2010 **Outfall:** 2 **Version:** 1

Week	Monitoring Point	Turbidity (Nephelometric) Unknown NTU Quarterly Grab	pH (Hydrogen Ion) Unknown Standard Units Quarterly Grab	Oil & Grease Not Applicable Yes/No Quarterly Visual Observation	Copper Total Ug/L Quarterly Grab	Zinc, Total Total Ug/L Quarterly Grab	Lead Not Applicable Ug/L Quarterly Grab	Petroleum Hydrocarbons Total Mg/L Quarterly Grab
		002	002	002	002	002	002	002
Average		BM: <= 25			BM: <= 14	BM: <= 117	BM: <= 81.6	BM: <= 10

Non Report Codes Used: R - DMR Not Submitted

Outfall: 2 -

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
002	All Parameters		R	

Printed Date: 11/24/2010 12:13:06 PM

DEPARTMENT OF ECOLOGY

OCT 18 2010

WATER QUALITY PROGRAM

Industrial Stormwater General Permit National Pollutant Discharge Elimination System (NPDES)
Discharge Monitoring Report (DMR)

Site Name: Independent Metals	WAR009725	OUT 01
Site Address: 816 South Kenyon St.	Permit Number	Sampling Point
City: Seattle / County: King		

POSTED

Submit one DMR per sampling point.

Reporting Period			
Quarter (circle one) Year: 2010			
1st	2nd	3rd	4th
Jan/Feb/Mar	Apr/May/Jun	Jul/Aug/Sept	Oct/Nov/Dec

Parameter	Units	Benchmark Value	Analytical Method	Laboratory Quantitation Level	Sample Results: SINGLE SAMPLE RESULT	SINGLE SAMPLE DATE (MM/DD)	AVERAGE (If more than one sample collected, complete additional sampling log on next page.)	CONSISTENT ATTAINMENT? (Condition S4.B.6) (✓ for yes)
Turbidity	NTU	25	EPA 180.1, Meter	0.5	9.67	6-16-10		☐
pH	s.u.	5-9	Meter	±0.5	6.9		N/A	☐
Zinc, Total	µg/L	117	EPA 200.8	2.5	110			☐
Oil Sheen	Yes/No	No visible oil sheen	N/A	N/A	Sheen Present? Yes / No (circle)		N/A	N/A
~~Copper, Total~~	~~µg/L~~	~~Western WA: 14~~ Eastern WA: 32	~~EPA 200.8~~	~~2.0~~	10.1			☐
Lead, Total	µg/L	81.6	EPA 200.8	0.5	8.1			☐
Total Petroleum Hydrocarbons (TPH)	mg/L	10	NWTPH-Dx	0.1	0.21	↓		☐

☐ No sample collected – No stormwater was discharged during normal working hours.
☐ No sample collected – Stormwater was discharged during normal working hours, but a sample wasn't collected (explain in comments section).

ADDITIONAL COMMENTS: PCBs = <0.1 ug/L ; Hg = <0.2 ug/L

Mail your DMR to: Department of Ecology, Water Quality Program – Industrial Stormwater, P.O. Box 47696, Olympia, WA 98504-7696

Industrial Stormwater General Permit National Pollutant Discharge Elimination System (NPDES)
Discharge Monitoring Report (DMR)

Certification Statement: I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name / Title (printed)	Signature (not valid unless signed). See Permit Condition G2 for signature requirements.	Date Signed
Mike O'Farrell, President		6/21/10

Mail your DMR to: Department of Ecology, Water Quality Program – Industrial Stormwater, P.O. Box 47696, Olympia, WA 98504-7696

Site name Independent Metals

Facility Name Independent Metals | Inspection Date 6/16/2010 | Inspection Time 12:48

Description of Weather Overcast

Site Map Current (Yes / No) if no, describe changes

SWPPP Inventory correct (Yes / No) if no, describe

Any new potential pollutant sources (Yes / No) if no, describe

Is equipment washed / cleaned in designated areas (Yes / No / NA)

If washing, is wash water captured /disposed of correctly (Yes/ No/ NA)

Fueling areas clean (Yes / No / NA)

Chemicals/Liquids in secondary containment (Yes / No / NA)

Containment areas covered ? (Yes / No / N/A)

If No, is water present? (Yes / No / N/A) Is management plan followed? (Yes / No/ N/A)

Maintenance tools, equipment, materials stored properly? (Yes/ No, N/A)

Drums / Containers stored properly? (Yes/ No/ N/A)

Drums / Containers dirty? (Yes / No/ N/A)

Vehicles leaking fluids? (Yes/ No/ N/A)

Evidence of leaks and spills since last inspection? (Yes/ No/ N/A)

Leaky equipment, materials put out of service and out of stormwater? (Yes / No/ N/A)

Paved surfaces free of dust / debris? (Yes/ No/ N/A) but has treatment system

Quarterly vacuum sweeping occurring? (Yes/ No / N/A)

Waste Receptacles in good condition (Yes/ No/ N/A)

Waste Receptacles closed when not in use? (Yes/ No/ N/A) but has treatment system

Waste Receptacles clean on outside? (Yes/ No/ N/A)

Are the following areas clean of dust, sediment, debris, contaminants, spills, leaks?

Dock Areas	(Yes/ No/ NA)	but has treatment system	Storage Area	(Yes/ No/ NA)	
Shops	(Yes/ No/ NA)		Staging Area	(Yes/ No/ NA)	but has treatment system
Bag Houses	(Yes/ No/ NA)		Bone Yards	(Yes/ No/ NA)	
Other areas	(Yes/ No/ NA)				

Spill kit available at fueling stations/equipment maintenance areas (Yes/ No/ N/A)

Spill Kit contains absorbents, drain plug, containment boom, non-metallic shovel, two 5 gal buckets (Yes/ No/ N/A)

Site name Independent Meta

Are damaged materials stored inside a shelter (Yes/ No/ N/A)	
Are outside materials covered (Yes/ No/ N/A)	but has a treatment system
Are scrap bins covered (Yes/ No/ N/A)	" "
Are outdoor containers covered (Yes/ No/ N/A)	" "
BMP's in good repair (Yes/ No/ N/A)	
BMP's free of buildup? (Yes/ No/ N/A)	
Catch basins need cleaning? (Yes/ No/ N/A)	cleaned on 6/15
Treatment Systems in good shape (Yes/ N/ N/A)	media changed on 6/15
Discharge during dry observations? (Yes/ No)	

If inspection completed during sampling, complete the following (Yes/ No/ N/A)

Discharge free of floating materials, oil sheen, discoloration, turbidity, odor, foam, or any signs of contamination (Yes/No./ N/A)

Process water co-mingling with stormwater? (Yes/ No)	
Any other illicit discharges observed? (Yes/ No)	

Add comments for any of the above observations than need further clarification or follow-up:

looks good

(Yes/No) This facility is in compliance with the terms and conditions of the SWPPP and the Industrial Stormwater General Permit. If "No" then list remedial actions above. *"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"*

Inspectors printed Name	Inspectors Signature	Date
John Allen		6/16/10

"I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering formation, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations"

Printed Name	Signature	Date
Mick O'Farrell		6/21/10

AMENDED

Industrial Stormwater General Permit National Pollutant Discharge Elimination System (NPDES)
Discharge Monitoring Report (DMR)

Site Name: Independent Metals	WAR009725	
Site Address: 816 South Kenyon St.	Permit Number	Sampling Point
City: Seattle **County:** King		

DEPARTMENT OF ECOLOGY
APR 19 2010
WATER QUALITY PROGRAM

Submit one DMR per sampling point.

Reporting Period			
Quarter (circle one) Year:			
1st	2nd	3rd	4th
Jan/Feb/Mar	Apr/May/Jun	Jul/Aug/Sept	Oct/Nov/Dec

Parameter	Units	Benchmark Value	Analytical Method	Laboratory Quantitation Level	Sample Results			
					SINGLE SAMPLE RESULT	SINGLE SAMPLE DATE (MM/DD)	AVERAGE (If more than one sample collected, complete additional sampling log on next page.)	CONSISTENT ATTAINMENT? (Condition S4.B.6) (✓ for yes)
Turbidity	NTU	25	EPA 180.1, Meter	0.5	24.3	1/4/10		☐
pH	s.u.	5 - 9	Meter	±0.5	7.9	1/4/10	N/A	☐
Zinc, Total	µg/L	117	EPA 200.8	2.5			214	☐
Oil Sheen	Yes/No	No visible oil sheen	N/A	N/A	Sheen Present? Yes / No (circle)	1/4/10	N/A	N/A
~~Copper, Total~~	~~µg/L~~	~~Western WA: 14~~ Eastern WA: 32	~~EPA 200.8~~	~~2.0~~			812	☐
Lead, Total	µg/L	81.6	EPA 200.8	0.5			12.8	☐
Total Petroleum Hydrocarbons (TPH)	mg/L	10	NWTPH-Dx	0.1	0.94	1/4/10		☐

☐ No sample collected – No stormwater was discharged during normal working hours.
☐ No sample collected – Stormwater was discharged during normal working hours, but a sample wasn't collected (explain in comments section).

ADDITIONAL COMMENTS:

Mail your DMR to: Department of Ecology, Water Quality Program – Industrial Stormwater, P.O. Box 47696, Olympia, WA 98504-7696

Appendix D. SWPPP Certification Form

The Permittee shall use this form to sign and certify that the Stormwater Pollution Prevention Plan (SWPPP) is complete, accurate and in compliance with Conditions S3 and S8 of the Industrial Stormwater General Permit.

- A SWPPP certification form needs to be completed and attached to all SWPPPs.
- Each time a Level 1, 2, or 3 Corrective Action is required, this form needs to be re-signed and re-certified by the Permittee, and attached to the SWPPP.

Is this SWPPP certification in response to a Level 1, 2 or 3 Corrective Action? ☐Yes ☐No

If Yes:

- Type of Corrective Action?: ☒Level 1 ☐Level 2 ☐Level 3
- Date SWPPP update/revision completed: 4/12/10

"I certify under penalty of law that this SWPPP and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate information to determine compliance with the Industrial Stormwater General Permit. Based on my inquiry of the person or persons who are responsible for stormwater management at my facility, this SWPPP is, to the best of my knowledge and belief, true, accurate, and complete, and in full compliance with Permit Conditions S3 and S8, including the correct Best Management Practices from the applicable Stormwater Management Manual. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Mike O'Farrell — President — 4/15/10

Operator's Printed Name * — Title

[signature] — 4/15/10

Operator's Signature * — Date

* Federal regulations require this document to be signed as follows:
For a corporation, by a principal executive officer of at least the level of vice president;
For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking elected official.

This document shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above and submitted to the Ecology.
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

Changes to authorization. If an authorization under number 2 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of number 2 above shall be submitted to Ecology prior to, or together with, any reports, information, or applications to be signed by an authorized representative.

Notes: Installed intermediate tank before treatment system to settle out some solids.

DEPARTMENT OF ECOLOGY

JAN 2 8 2010

WATER QUALITY PROGRAM

SO3-009725A

INDUSTRIAL STORMWATER GENERAL PERMIT DISCHARGE MONITORING REPORT

MONITORING PERIOD for (year/quarter): 2009 (year) ☐ Jan/Feb/Mar ☐ Apr/May/Jun ☐ Jul/Aug/Sep ☑ Oct/Nov/Dec

Facility/Site Information

Facility Name: Independent Metals
Location: 816 South Kenyon St, Seattle
County: KING SIC Code: 5093

Mailing Information

Company Name: Independent Metals
Mailing Address: 747 S. Monroe Street
Seattle, WA 98108

You must send a Discharge Monitoring Report (DMR) to Ecology every quarter. If there was no discharge *or* you have suspended sampling because of consistent attainment of benchmark values, mark the appropriate boxes and send the DMR to Ecology. Please read the instructions before completing the DMR.

Discharge Point Outfall 1

☐ There was no qualifying storm event this quarter so no values are entered below (see explanation)

Quarterly Monitoring		AVERAGE	MAXIMUM	UNITS	Sample Type	Events Sampled
Turbidity	☐Consistent Attainment	6.2	6.2	NTU	Grab	1
pH	☐Consistent Attainment	6.8	6.8	Standard Units	Grab	1
Zinc (Total)	☐Consistent Attainment	72	72	µg/L	Grab	1
Oil & Grease	☐Consistent Attainment	4.2	4.2	mg/L	Grab	1
Copper	☐Consistent Attainment	<1	<1	ug/L	Grab	1
Lead	☐Consistent Attainment	2	2	ug/L	Grab	1
Hardness	☐Consistent Attainment	118	118	mg/L	Grab	1

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 USC § 1001 AND 33 USC § 1319. *(PENALTIES UNDER THESE STATUES MAY INCLUDE FINES UP TO $10,000.00 AND OR MAXIMUM IMPRISONMENT OF BETWEEN SIX MONTHS AND FIVE YEARS)*

Michael O'Farrell President
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER (TYPED OR PRINTED)

1 01 2010
DATE: MO DAY YEAR

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

206-763-9033
TELEPHONE NUMBER

COMMENTS / EXPLANATIONS

DEPARTMENT OF ECOLOGY

OCT 12 2009

WATER QUALITY PROGRAM

SO3-009725A

INDUSTRIAL STORMWATER GENERAL PERMIT DISCHARGE MONITORING REPORT

MONITORING PERIOD for (year/quarter): 2009 (year) ☐Jan/Feb/Mar ☐Apr/May/Jun ☑Jul/Aug/Sep ☐Oct/Nov/Dec

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Discharge Point Outfall 1

☐ There was no qualifying storm event this quarter so no values are entered below (see explanation)

Quarterly Monitoring		AVERAGE	MAXIMUM	UNITS	Sample Type	Events Sampled
Turbidity	☐Consistent Attainment	14.3	14.3	NTU	Grab	1
pH	☐Consistent Attainment	6.6	6.6	Standard Units	Grab	1
Zinc (Total)	☐Consistent Attainment	64	64	µg/L	Grab	1
Oil & Grease	☐Consistent Attainment	2.0	2.0	mg/L	Grab	1
Copper	☐Consistent Attainment	24	24	ug/L	Grab	1
Lead	☐Consistent Attainment	<40	<40	ug/L	Grab	1
Hardness	☐Consistent Attainment	137	137	mg/L	Grab	1

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 USC § 1001 AND 33 USC § 1319. *(PENALTIES UNDER THESE STATUES MAY INCLUDE FINES UP TO $10,000.00 AND OR MAXIMUM IMPRISONMENT OF BETWEEN SIX MONTHS AND FIVE YEARS.)*

Rob Smith, Operations Manager
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER (TYPED OR PRINTED)

DATE: MO 10 DAY 8 YEAR 09

Rob Smith
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

206 763 9033
TELEPHONE NUMBER

COMMENTS / EXPLANATIONS

DEPARTMENT OF ECOLO
MAY 0 5 2009
WATER QUALITY PROGR

SO3-009725A

INDUSTRIAL STORMWATER GENERAL PERMIT
DISCHARGE MONITORING REPORT

MONITORING PERIOD for (year/quarter): 2009 (year) ☑ Jan/Feb/Mar ☐ Apr/May/Jun ☐ Jul/Aug/Sep ☐ Oct/Nov/Dec

POSTED
DATE _____
INITIALS _____

Facility/Site Information

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Discharge Point Outfall

☐ There was no qualifying storm event this quarter so no values are entered below (see explanation)

Quarterly Monitoring		AVERAGE	MAXIMUM	UNITS	Sample Type	Events Sampled
Turbidity	☐Consistent Attainment	2.6	2.6	NTU	Grab	1
pH	☐Consistent Attainment	6.2	6.2	Standard Units	Grab	1
Zinc (Total)	☐Consistent Attainment	48.1	48.1	µg/L	Grab	1
Oil & Grease	☐Consistent Attainment	<2.0	<2.0	mg/L	Grab	1
Copper	☐Consistent Attainment	1.26	1.26	ug/L	Grab	1
Lead	☐Consistent Attainment	1.22	1.22	ug/L	Grab	1
Hardness	☐Consistent Attainment	128	128	mg/L	Grab	1

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 USC § 1001 AND 33 USC § 1319. (PENALTIES UNDER THESE STATUES MAY INCLUDE FINES UP TO $10,000.00 AND OR MAXIMUM IMPRISONMENT OF BETWEEN SIX MONTHS AND FIVE YEARS.)

Rob Smith, Operations Manager
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER (TYPED OR PRINTED)

Robb Smith
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

DATE: 5 1 09
MO DAY YEAR

206 769 6323
TELEPHONE NUMBER

COMMENTS / EXPLANATIONS

Level 1 Response: Review sample collection protocol

DEPARTMENT OF ECOLOGY
MAY 21 2009
WATER QUALITY PROGRAM

POSTED
DATE
INITIALS

SO3-009725A

INDUSTRIAL STORMWATER GENERAL PERMIT
DISCHARGE MONITORING REPORT

MONITORING PERIOD for (year/quarter): 2009 (year) ☑ Jan/Feb/Mar ☐ Apr/May/Jun ☐ Jul/Aug/Sep ☐ Oct/Nov/Dec

Facility/Site Information

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Location: 816 South Kenyon St, Seattle
County: KING SIC Code: 5093

Mailing Information

Company Name: Independent Metals
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Seattle, WA 98108

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Discharge Point Outfall 1

☐ There was no qualifying storm event this quarter so no values are entered below (see explanation)

Quarterly Monitoring		AVERAGE	MAXIMUM	UNITS	Sample Type	Events Sampled
Turbidity	☐Consistent Attainment	4.6	4.6	NTU	Grab	1
pH	☐Consistent Attainment	7.1	7.1	Standard Units	Grab	1
Zinc (Total)	☐Consistent Attainment	45	45	µg/L	Grab	1
Oil & Grease	☐Consistent Attainment	<2.0	<2.0	mg/L	Grab	1
Copper	☐Consistent Attainment	<6	<6	ug/L	Grab	1
Lead	☐Consistent Attainment	<40	<40	ug/L	Grab	1
Hardness	☐Consistent Attainment	64	64	mg/L	Grab	1

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 USC § 1001 AND 33 USC § 1319. *(PENALTIES UNDER THESE STATUES MAY INCLUDE FINES UP TO $10,000.00 AND OR MAXIMUM IMPRISONMENT OF BETWEEN SIX MONTHS AND FIVE YEARS.)*

Rob Smith, Operations Manager
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER (TYPED OR PRINTED)

DATE: 5 19 09
MO DAY YEAR

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

206 769 6323
TELEPHONE NUMBER

COMMENTS / EXPLANATIONS

AMENDED

DEPARTMENT OF ECOLOGY
MAY 05 2009
WATER QUALITY PROGRAM

SO3-009725A

INDUSTRIAL STORMWATER GENERAL PERMIT DISCHARGE MONITORING REPORT

MONITORING PERIOD for (year/quarter): 2008 (year) ☐ Jan/Feb/Mar ☑ Apr/May/Jun ☐ Jul/Aug/Sep ☐ Oct/Nov/Dec

Facility/Site Information

Facility Name: Independent Metals
Location: 816 South Kenyon St, Seattle
County: KING SIC Code: 5093

Mailing Information

Company Name: Independent Metals
Mailing Address: 747 S. Monroe Street
Seattle, WA 98108

POSTED
DATE
INITIALS

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Discharge Point Outfall

☐ There was no qualifying storm event this quarter so no values are entered below (see explanation)

Quarterly Monitoring		AVERAGE	MAXIMUM	UNITS	Sample Type	Events Sampled
Turbidity	☐Consistent Attainment	61	61	NTU	Grab	1
pH	☐Consistent Attainment	7.6	7.6	Standard Units	Grab	1
Zinc (Total)	☐Consistent Attainment	3620	3620	µg/L	Grab	1
Oil & Grease	☐Consistent Attainment	70	70	mg/L	Grab	1
Copper	☐Consistent Attainment	429	429	ug/L	Grab	1
Lead	☐Consistent Attainment	2160	2160	ug/L	Grab	1
Hardness	☐Consistent Attainment	136	136	mg/L	Grab	1

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 USC § 1001 AND 33 USC § 1319. *(PENALTIES UNDER THESE STATUES MAY INCLUDE FINES UP TO $10,000.00 AND OR MAXIMUM IMPRISONMENT OF BETWEEN SIX MONTHS AND FIVE YEARS.)*

Rob Smith, Operations Manager
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER (TYPED OR PRINTED)

DATE: 5 / 09
MO DAY YEAR

Robb Smith
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

206 769 6323
TELEPHONE NUMBER

COMMENTS / EXPLANATIONS

Amended DMR

Level 1 response for Turbidity, Zinc, O&G, Cu, Pb: Investigate and purchase treatment system

AMENDED

DEPARTMENT OF ECOLOGY

MAY 0 5 2009

WATER QUALITY PROGRAM

SO3-009725A

INDUSTRIAL STORMWATER GENERAL PERMIT DISCHARGE MONITORING REPORT

MONITORING PERIOD for (year/quarter): 2008 (year) ☐ Jan/Feb/Mar ☐ Apr/May/Jun ☐ Jul/Aug/Sep ☑ Oct/Nov/Dec

Facility/Site Information

Facility Name: Independent Metals
Location: 816 South Kenyon St, Seattle
County: KING SIC Code: 5093

Mailing Information

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Seattle, WA 98108

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Discharge Point Outfall

☐ There was no qualifying storm event this quarter so no values are entered below (see explanation)

Quarterly Monitoring		AVERAGE	MAXIMUM	UNITS	Sample Type	Events Sampled
Turbidity	☐Consistent Attainment	1.32	1.32	NTU	Grab	1
pH	☐Consistent Attainment	6.5	6.5	Standard Units	Grab	1
Zinc (Total)	☐Consistent Attainment	125	125	µg/L	Grab	1
Oil & Grease	☐Consistent Attainment	<2	<2	mg/L	Grab	1
Copper	☐Consistent Attainment	<1	<1	ug/L	Grab	1
Lead	☐Consistent Attainment	<1	<1	ug/L	Grab	1
Hardness	☐Consistent Attainment	71.1	71.1	mg/L	Grab	1

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 USC § 1001 AND 33 USC § 1319. *(PENALTIES UNDER THESE STATUES MAY INCLUDE FINES UP TO $10,000.00 AND OR MAXIMUM IMPRISONMENT OF BETWEEN SIX MONTHS AND FIVE YEARS.)*

Rob Smith, Operations Manager
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER (TYPED OR PRINTED)

DATE: 5 / 09
MO DAY YEAR

Rob Smith
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

206 769 6323
TELEPHONE NUMBER

COMMENTS / EXPLANATIONS

Amended DMR

Level 1 response for Zinc: Work with treatment vendor to lower zinc levels

DEPARTMENT OF ECOLOGY

FEB 12 2009

WATER QUALITY PROGRAM

SO3-009725A
INDUSTRIAL STORMWATER GENERAL PERMIT
DISCHARGE MONITORING REPORT

MONITORING PERIOD for (year/quarter): 2008 (year) ☐ Jan/Feb/Mar ☐ Apr/May/Jun ☐ Jul/Aug/Sep ☑ Oct/Nov/Dec

Facility/Site Information

Facility Name: Independent Metals
Location: 816 South Kenyon St, Seattle
County: King
SIC Code: 5093

Mailing Information

Company Name: Independent Metals
Mailing Address: 747 S. Monroe Street
Seattle WA 98108

POSTED
DATE _____
INITIALS _____

You must send a Discharge Monitoring Report (DMR) to Ecology **every quarter**. If there was **no discharge** *or* you have **suspended sampling** because of consistent attainment of benchmark values, mark the appropriate boxes and send the DMR to Ecology. Please read the instructions before completing the DMR.

Discharge Point Outfall

☐ There was no qualifying storm event this quarter so no values are entered below (see explanation)

Quarterly Monitoring		AVERAGE	MAXIMUM	UNITS	Sample Type	Events Sampled
Turbidity	☐ Consistent Attainment		1.32	NTU	Grab	01/14/09
pH	☐ Consistent Attainment		6.49	Standard Units	Grab	01/14/09
Zinc (total)	☐ Consistent Attainment		125	µg/L	Grab	01/14/09
Oil & Grease	☐ Consistent Attainment		< 2	mg/L	Grab	01/14/09
Copper	☐ Consistent Attainment		< 1	µg/L	Grab	01/14/09
Lead	☐ Consistent Attainment		< 1	µg/L	Grab	01/14/09
Hardness	Required if sampling for zinc, copper, or lead		71.1	mg/L (as $CaCO_3$)	Grab	01/14/09

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 USC § 1001 AND 33 USC § 1319. *(PENALTIES UNDER THESE STATUES MAY INCLUDE FINES UP TO $10,000.00 AND OR MAXIMUM IMPRISONMENT OF BETWEEN SIX MONTHS AND FIVE YEARS.)*

Robb Smith, Operations Manager Plant 2
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER (TYPED OR PRINTED)

DATE: MO 2 DAY 11 YEAR 09

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

(206) 763-9033
TELEPHONE NUMBER

COMMENTS / EXPLANATIONS

The sample was collected on January 14, 2009. Snowstorms, holidays, and startup of the stormwater treatment system delayed sample collection during December 2008.

DEPARTMENT OF ECOLOGY

FEB 12 2009

WATER QUALITY PROGRAM

SO3-009725A

INDUSTRIAL STORMWATER GENERAL PERMIT DISCHARGE MONITORING REPORT

MONITORING PERIOD for (year/quarter): 2008 (year) ☐ Jan/Feb/Mar ☐ Apr/May/Jun ☐ Jul/Aug/Sep ☑ Oct/Nov/Dec

Facility/Site Information

Facility Name: Independent Metals
Location: 816 South Kenyon St, Seattle
County: King
SIC Code: 5093

Mailing Information

Company Name: Independent Metals
Mailing Address: 747 S. Monroe Street
Seattle WA 98108

POSTED
DATE _____
INITIALS _____

You must send a Discharge Monitoring Report (DMR) to Ecology **every quarter**. If there was **no discharge** *or* you have **suspended sampling** because of consistent attainment of benchmark values, mark the appropriate boxes and send the DMR to Ecology. Please read the instructions before completing the DMR.

Discharge Point Outfall

☐ There was no qualifying storm event this quarter so no values are entered below (see explanation)

Quarterly Monitoring		AVERAGE	MAXIMUM	UNITS	Sample Type	Events Sampled
Turbidity	☐ Consistent Attainment		**1.32**	NTU	**Grab**	**01/14/09**
pH	☐ Consistent Attainment		**6.49**	Standard Units	**Grab**	**01/14/09**
Zinc (total)	☐ Consistent Attainment		**125**	µg/L	**Grab**	**01/14/09**
Oil & Grease	☐ Consistent Attainment		**< 2**	mg/L	**Grab**	**01/14/09**
Copper	☐ Consistent Attainment		**< 1**	µg/L	**Grab**	**01/14/09**
Lead	☐ Consistent Attainment		**< 1**	µg/L	**Grab**	**01/14/09**
Hardness	Required if sampling for zinc, copper, or lead		**71.1**	mg/L (as $CaCO_3$)	**Grab**	**01/14/09**

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 USC § 1001 AND 33 USC § 1319. *(PENALTIES UNDER THESE STATUES MAY INCLUDE FINES UP TO $10,000.00 AND OR MAXIMUM IMPRISONMENT OF BETWEEN SIX MONTHS AND FIVE YEARS.)*

Robb Smith, Operations Manager Plant 2
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER (TYPED OR PRINTED)

DATE: MO 2 DAY 11 YEAR 09

Robb Smith
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

(206) 763-9033
TELEPHONE NUMBER

COMMENTS / EXPLANATIONS

The sample was collected on January 14, 2009. Snowstorms, holidays, and startup of the stormwater treatment system delayed sample collection during December 2008.

DEPARTMENT OF ECOLOGY
OCT 29 2008
WATER QUALITY PROGRAM

SO3-009725A
INDUSTRIAL STORMWATER GENERAL PERMIT
DISCHARGE MONITORING REPORT

MONITORING PERIOD for (year/quarter): 2008 (year) ☐ Jan/Feb/Mar ☐ Apr/May/Jun ☑ Jul/Aug/Sep ☐ Oct/Nov/Dec

Facility/Site Information

Facility Name: Independent Metals
Location: 816 South Kenyon St, Seattle
County: King
SIC Code: 5093

Mailing Information

Company Name: Independent Metals
Mailing Address: 747 S. Monroe Street
Seattle WA 98108

POSTED
DATE 12/16/08
INITIALS JK

You must send a Discharge Monitoring Report (DMR) to Ecology **every quarter**. If there was **no discharge** *or* you have **suspended sampling** because of consistent attainment of benchmark values, mark the appropriate boxes and send the DMR to Ecology. Please read the instructions before completing the DMR.

Discharge Point Outfall

☐ There was no qualifying storm event this quarter so no values are entered below (see explanation)

Quarterly Monitoring		AVERAGE	MAXIMUM	UNITS	Sample Type	Events Sampled
Turbidity	☐ Consistent Attainment		**2.78**	NTU	**Grab**	**10/03/08**
pH	☐ Consistent Attainment		**7.4**	Standard Units	**Grab**	**10/03/08**
Zinc (total)	☐ Consistent Attainment		**15.7**	µg/L	**Grab**	**10/03/08**
Oil & Grease	☐ Consistent Attainment		**< 2**	mg/L	**Grab**	**10/03/08**
Copper	☐ Consistent Attainment		**47.5**	µg/L	**Grab**	**10/03/08**
Lead	☐ Consistent Attainment		**3.03**	µg/L	**Grab**	**10/03/08**
Hardness	Required if sampling for zinc, copper, or lead		**748**	mg/L (as $CaCO_3$)	**Grab**	**10/03/08**

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 USC § 1001 AND 33 USC § 1319. *(PENALTIES UNDER THESE STATUES MAY INCLUDE FINES UP TO $10,000.00 AND OR MAXIMUM IMPRISONMENT OF BETWEEN SIX MONTHS AND FIVE YEARS.)*

Robb Smith, Operations Manager Plant 2
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER (TYPED OR PRINTED)

DATE: 10 (MO) 27 (DAY) 08 (YEAR)

Robb Smith
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

(206) 763-9033
TELEPHONE NUMBER

COMMENTS / EXPLANATIONS

There were no rain events at the site in September. Sample was collected October 3, 2008 during the first possible storm.

NISQUALLY ENVIRONMENTAL SAMPLING AND CONSULTING
Post Office Box 1402 Tacoma, Washington 98401 (253) 208-2400 Nisquallyenv@aol.com

Environmental Health Services Division
Leonardo Di Toro
401 Fifth Avenue, Suite 1100
Seattle, WA 98104

DearMr. Di Toro,

Thank you for talking with me on the phone regarding the letter from your office to Independent Metals dated March 4, 2010. I appreciate our conversation and the options you provided for us to pursue in this matter. As we discussed, we believe that Independent Metals is in full compliance with the Industrial Stormwater Permit. Additionally, we believe that it may be lost in the discussion that all of the findings occur *before* the onsite stormwater treatment system and that no contaminates have been indicated by any authority to have entered the river.

As you may recall, the warning letter from Robert Wright, December 23rd, 2009, listed several items that he would like to see addressed for the site based on his last inspection to the facility. We addressed each of these items which included revisions to the SWPPP to include the newly acquired property from Silver Bay Logging, include operation and maintenance procedures for the Oily Water Separator and the treatment system, indicate more clearly the drainage flows during storm events, and to update the SWPPP to the new, 2010, permit requirements indicated that the appropriate BMPs for metal recyclers are those listed in the Department of Ecology publication 94-106, Best Management Practices to Prevent Stormwater Pollution at Vehicle Recycler Facilities. Other items listed and addressed included improvement of operational controls to minimize track out of debris, repair holes in the asphalt near the river, install further curbing to prevent possible riverbank runoff, and to perform voluntary monitoring for Mercury and PCB's.

Your letter also indicates that the EPA indicated that the site had high levels of lead, mercury and PCB's at an onsite catch basin. Independent Metals has not received direct information from the EPA on this but has heard from Robert Wright on his concern on this matter. He indicated that he would like Independent Metals to perform voluntary testing for PCB's and Mercury at the site, which we are doing on a quarterly basis.

I would like restate and to be well understood that all of the pollutants, issues, and findings by the Department of Ecology and the EPA occur *before* the onsite treatment system. There is no indication, by any agency, that there has been contaminates entering the river. To support this, we have our first quarterly PCB and Mercury test results back (attached), which indicate a non detectable value for these two items as well as below action level values for Copper, Lead, and Zinc.

The Industrial Storm Water Permit and program is an adaptive management process (by law) and as such, constant improvements are required to maintain compliance to the permit. Independent Metals has followed this philosophy continuously by installing a treatment system, joining the voluntary program to remove mercury switches from vehicles before processing, and following through with the suggestions from the Department of Ecology on the additional operational and structural controls and agreeing to the voluntary monitoring of the stormwater effluent for PCB's and Mercury.

Because of the adaptive management expectations of the permit and Independent Metals follow through on all suggestions from the Department of Ecology, the fact that there has been no indication of PCB's or Mercury entering the river from the site, and indications from Robert Wright in my last conversation with him on the site that it appears that both the Department of Ecology and the EPA are satisfied with the current situation at the site, we believe that the Environmental Health Services Division interpretation of the inspection report from the Department of Ecology was in error and should be withdrawn. Independent Metals is in, and always has been, in compliance with the Industrial Stormwater Permit and to this issue, withdrawal of their current exemption is not warranted.

I have spoken with Robert Wright regarding this matter, he indicated that he is willing to discuss with you further his opinions of the site and Independent Metals performance to date in regards to the permit requirements. As stated earlier, Independent Metals has not received communication from the EPA on any issue and as such, is not able to respond to any claims made by them.

I am attaching the site map, which indicates the location of the catch basins before the treatment system, the latest analytical results showing the above stated values for PCB's, Mercury, Copper, Lead, and Zinc, and a copy of the cover letter we sent to Robert Wright in response to his warning letter sent to facility as well as a copy of your letter to Independent Metals dated March 4th, 2010.

Please feel free to give me a call on any item in this issue, we are eager to resolve this matter in a timely fashion.

3/17/10

John Allen
Nisqually Environmental
253-208-2400

Cc: Robert Wright, Larry Brewer

NISQUALLY ENVIRONMENTAL SAMPLING AND CONSULTING
Post Office Box 1402 Tacoma, Washington 98401 (253) 208-2400 Nisquallyenv@aol.com

Robert Wright
State of Washington – Ecology Northwest Regional Office
3190 160th Ave SE
Bellevue, WA 98008-5452

Dear Mr. Wright,

In response to your warning letter sent to Independent Metals on December 23rd, 2009, we would like to provide you with the following completion information on the specific items listed in your report.

Revisions to the Stormwater Pollution Prevention Plan

We have written a storm water pollution prevention plan (SWPPP) to meet the requirements of your letter and also to meet the requirements of the new permit. As you know, the Department guidance for scrap recycling yards is to follow the Department of Ecology publication 94-106, Best Management Practices to Prevent Stormwater Pollution at Vehicle Recycler Facilities, in the writing of the new permit SWPPP. We have done so, and also include the mandatory BMP's otherwise listed as required in the new permit. Where there was overlap, we indicated so in each section. There is a new site map in which we have indicated the flows and drainage areas per your letter, and indicated that all water on the North yard flows into the treatment system. Additionally, we have included the maintenance procedures for the Oily Water Separator and the Modified Sand Filter in the Appendix of the SWPPP (Attached).

Track Out of Dirt and Debris

Independent Metals has increased the sweeping frequency at the entrance's as well as the newly cleaned out Area 4 (see map) entrance toe S Kenyon Street. They are continuing to look at other possible BMP's to decrease the drag-out from the vehicles.

Holes in Pavement

Per our discussion, and formalized in the letter from the companies legal representation, the area 25 feet back from the rivers edge has been inspected and a paving contractor has been placed under contract to repair the holes in the pavement in this area. We are attaching documentation showing the signed PO from Independent Metals to the paving contractor.

Total Mercury and Total PCB's

Independent Metals has directed Nisqually Environmental to collect 1 sample per quarter of

Total Mercury and Total PCB's to be analyzed using methods 245.1 and 8082A respectfully. We will commence with this additional sampling this quarter and will continue until directed to halt by Independent Metals. Please let us know how you would like this data reported to you. We would prefer to report this data independent of the DMR forms if possible.

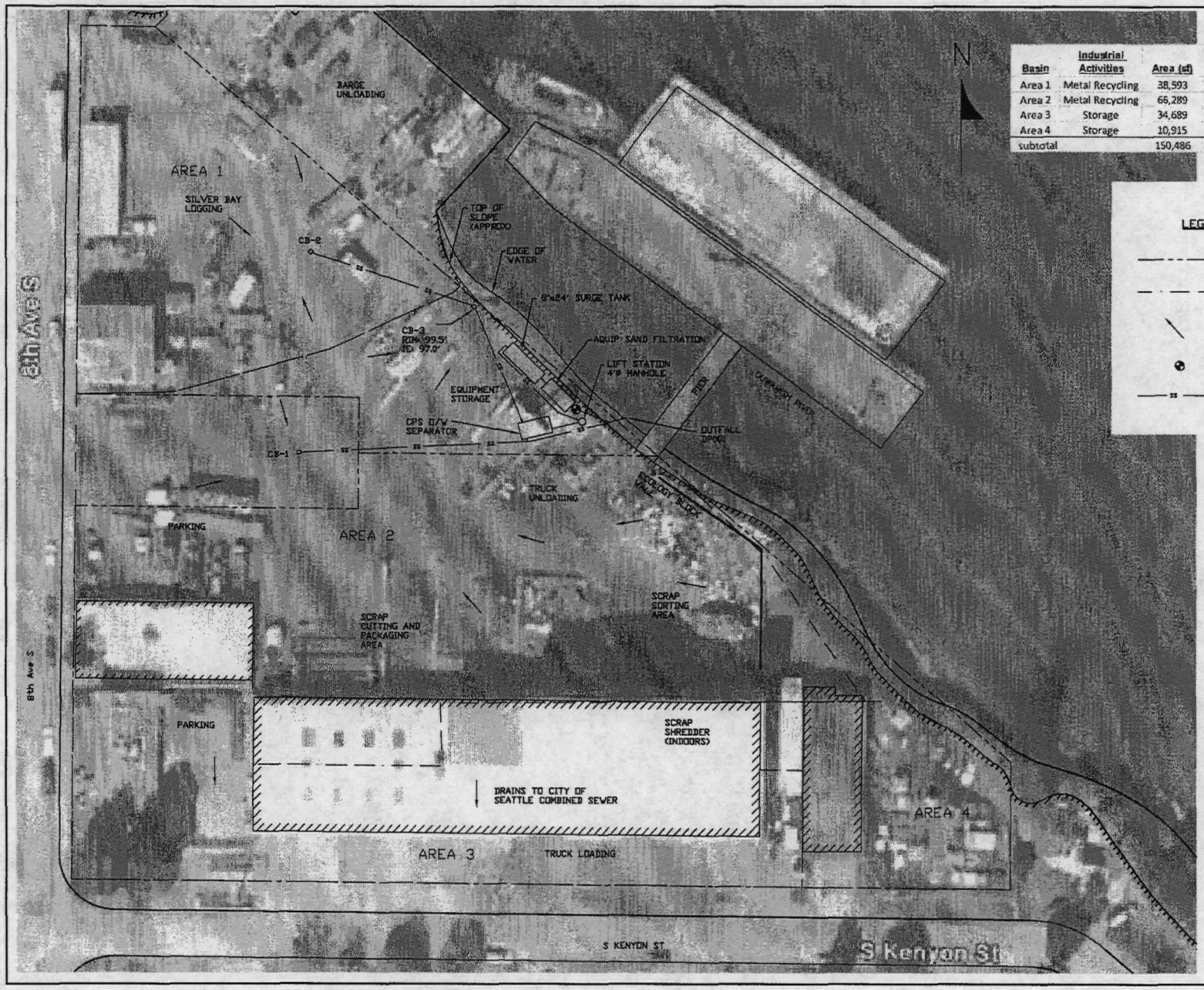
I hope this meets with your approval, as you know, the new permit requires a new SWPPP to be written. We used the template provided by Ecology and the publication listed above. As we discussed, there is some conflicting directions in the two documents and we hope that you will provide official direction as to which document should be followed.

Please give me a call if you have any questions.

Thanks

John Allen
Nisqually Environmental
253-208-2400

Attachments: SWPPP, Paving Contract, Maintenance Documents



Basin	Industrial Activities	Area (sf)	Area (ac)	Pervious Area (%)	Impervious Area (ac)
Area 1	Metal Recycling	38,593	0.89	0%	0.89
Area 2	Metal Recycling	66,289	1.52	0%	1.52
Area 3	Storage	34,689	0.80	0%	0.80
Area 4	Storage	10,915	0.25	60%	0.10
subtotal		150,486	3.45		3.30

LEGEND

- PROPERTY LINE
- DRAINAGE BASIN AREA
- SURFACE FLOW DIRECTION
- MONITORING POINT
- WATER TREATMENT PIPING

GENERAL NOTES:

1. THIS INFORMATION WAS COMPILED FROM VARIOUS RESOURCES INCLUDING CITY OF SEATTLE GEOGRAPHIC INFORMATION SYSTEMS, FIELD MEASUREMENTS AND AERIAL PHOTOS. WHILE THIS INFORMATION IS DEEMED RELIABLE, NO GUARANTEE OF THE ACCURACY OF THIS INFORMATION IS MADE.
2. REFERENCES:
   BACKGROUND MAPS: GOOGLE EARTH AERIAL IMAGES
   PROPERTY LINE DIMENSIONS: KING COUNTY TAXLOT MAP VIA IMAP

Aquarius Environmental
www.aquariusenv.com

Designed: DS
Drawn: REH/DEK
Checked: DEK
Date: 01.14.10
Scale: 1"= 50' (11x17)

INDEPENDENT METALS - PLANT 2
SEATTLE, WASHINGTON
SWPPP SITE MAP PLANT 2

REVISIONS

Rev	Date	Description

SHEET
1
1 OF 1

SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

03/11/2010

Nisqually Environmental
PO Box 1402
Tacoma, WA 98401
Attn: John Allen

P.O.#: *
Project: Independent Metals
Client ID: GRAB 01
Sample Matrix: Aqueous
Date Sampled: 02/26/2010
Date Received: 02/26/2010
Spectra Project: 2010020518
Spectra Number: 1

Analyte	Result	Units	Method
Copper	4.1	µg/L	EPA 200.8
Lead	3.6	µg/L	EPA 200.8
Zinc	31.5	ug/L	EPA 200.8
Mercury	< 0.2	µg/L	SW846 7470A
PCB	<0.1	µg/L	SW846 8082A

Surrogate	Recovery	Method
Decachlorobiphenyl	103	SW846 8082A

SPECTRA LABORATORIES

Steve Hibbs, Laboratory Manager
a6/jjb

SPECTRA Laboratories
2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

March 11, 2010

Nisqually Environmental
P.O. Box 1402
Tacoma, WA 98401
Attn: John Allen

Method: EPA Method 608
Sample Matrix: Water
Units: ug/L
Spectra Project: 2010020518
Applies to Spectra # 1

PCB ANALYSIS
QUALITY CONTROL RESULTS

LCS/LCSD

Spiked Sample: Method Blank

Date Extracted: 2/23/2010
Date Analyzed: 3/3/2010

Compound	Sample Result	Spike Amount Added	Spike Amount Found	Percent Recovery	Dup. Spike Amount Found	Percent Recovery	RPD
AR1260	<0.1	0.500	0.530	106	0.540	108	2

METHOD BLANK

Date Extracted: 3/10/2010

Date Analyzed: 3/11/2010

PCB's <0.1

Surrogate Percent Recoveries:

Decachlorobiphenyl 100%

SPECTRA LABORATORIES

Steven G. Hibbs, Laboratory Manager

SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

March 2, 2010

Nisqually Environmental
PO Box 1402
Tacoma, WA 98401

Units: ug/L
Spectra Project: 2010020518
Applies to Spectra #'s 1

QUALITY CONTROL RESULTS

ICP-MS Metals - EPA Method 200.8 - Water

Method Blank

Date Digested: 3/2/2010 Date Analyzed: 3/2/2010

Element	Method Blank
Copper	< 0.1
Lead	< 0.1
Zinc	< 0.2

Blank Spike (LCS)

Date Digested: 3/2/2010 Date Analyzed: 3/2/2010

Element	Spike Added	LCS Conc.	LCS %Rec
Copper	50.0	52.00	104.0
Lead	50.0	52.84	105.7
Zinc	50.0	49.57	99.1

LCS Recovery limits 85-115%

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Digested: 3/1/2010 Date Analyzed: 3/1/2010
Sample Spiked: 2010020517-1

Element	Sample Conc.	Spike Conc.	MS Conc.	MS %Rec	MSD Conc	MSD %Rec	RPD
Copper	2.13	50.0	56.65	109.0	55.74	107.2	1.7
Lead	0.46	50.0	52.92	104.9	52.68	104.4	0.5
Zinc	48.55	50.0	106.60	116.1	105.10	113.1	2.6

Recovery Limits 75-125%
RPD Limit 20

SPECTRA LABORATORIES

Steven G. Hibbs
Laboratory Manager

SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

March 4, 2010

Nisqually Environmental
PO Box 1402
Tacoma, WA 98401

Method: SW846 7470A
Spectra Project: 2010020518
Applies to Spectra #'s 1
Sample Matrix: Aqueous

MERCURY
QUALITY CONTROL RESULTS

MS/MSD

Units: ug/L Date Analyzed: 3/3/2010

Spike Sample	Sample Result	Spike Amount Added	MS Result	% Recovery	MSD Result	% Recovery	RPD
2010020518-1	< 0.2	4.00	3.78	94.6	3.52	88.0	2.6

BLANK SPIKE (LCS)

Units ug/L Date Analyzed: 3/3/2010

Spike Sample	Sample Result	Spike Amount Added	MS Result	% Recovery
LCS	< 0.2	5.00	4.61	92.1

METHOD BLANK

Units: mg/L Date Analyzed: 3/3/2010

Mercury < 0.2

SPECTRA LABORATORIES

Steve Hibbs, Laboratory Manager

CHAIN of CUSTODY

SPECTRA Laboratories 2010020518

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

PAGE 1 of 1

STANDARD ☑ RUSH ☐

CLIENT: Nisqually Environmental ADDRESS:

PROJECT: Independent metals

CONTACT: John Allen

PHONE: FAX:

e-MAIL: Prefer FAX ☐ or e-MAIL ☐

PURCHASE ORDER #:

	SAMPLE ID	DATE SAMPLED	TIME SAMPLED	MATRIX	NUMBER OF CONTAINERS	HYDROCARBONS: NWTPH-HCID	BTEX	BTEX/NWTPH-G	NWTPH-G	NWTPH-Dx	1664 SGT-HEM (TPH)	1664 HEM (O&G)	ORGANICS: 8260/624 VOA	8260 CHLOR SOLVENTS	8270/625 SEMI VOA	8270 PAH/PNA	8082/608 PCB	METALS: TOTAL METALS RCRA8	TOTAL METALS (SPECIFY)	TCLP METALS RCRA 8	TCLP METALS (SPECIFY)	OTHER: pH 9040/9045	TX/TOX 9076	TURBIDITY	FLASH POINT	BOD	SOLIDS (SPECIFY)
1	CGRA301	2/26/10	1115	A	3												X		X								
2																											
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											

SPECIAL INSTRUCTIONS/COMMENTS:

Hg:

Cu, Pb, Zn by 200.8

	SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME
RELINQUISHED BY	[signature]	John Allen	Nisqually Env	2/26/10	1407
RECEIVED BY	[signature]	[signature]	Spectra	2/26/10	2:11
RELINQUISHED BY					
RECEIVED BY					

RETURN SAMPLES ☐ DISPOSE SAMPLES ☑

(Shipping Fee Applies)

Payment Terms: Net 30 days. Past due accounts subject to 1½% per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. *Spectra Analytical, Inc.*

M99CS000569M 01/06

Environmental Health Services Division
401 Fifth Avenue, Suite 1100
Seattle, WA 98104-1818
206-205-4394 Fax 206-296-0189
TTY Relay: 711
www.kingcounty.gov/health

Public Health
Seattle & King County

March 4, 2010

Independent Metals Company
Attn: Larry Brewer
747 South Monroe Street
Seattle, WA 98108

RE: Independent Metals Company Facility 816 South Kenyon Street (Plant 2) in Seattle (PR0077952)

Dear Mr. Brewer:

We have received information from the State of Washington Department of Ecology (DOE) that the Independent Metals Company facility at Plant 2 is not in compliance with the Industrial Stormwater General Permit. We have also received information from the United States Environmental Protection Agency (EPA) that this facility has had high levels of lead, mercury and *polychlorinated biphenyls* (PCB's) at an on-site catch basin which discharges to the Duwamish River.

Independent Metals Company applied for a *Material Recovery Facility Solid Waste Permit Exemption* under Board of Health (BOH) Title 10 Section 10.12.173-350-310(2). Since the facility is not in compliance *with all other applicable local, state, and federal laws and regulations* (Section 10.12.173-350-040(5)), the Independent Metals Company facility does not meet the *Performance Standards* as stated in BOH Title 10 Section 10.12.173-350-040. As a result, an owner or operator that does not comply with the terms and conditions of subsection 10.12.173-350-310(2) (b) is required to obtain a Solid Waste Permit and work toward compliance with all regulations or discontinue handling solid waste. Copies of the applicable BOH code sections are enclosed, or may be viewed online at:
http://www.kingcounty.gov/healthservices/health/BOH/code.aspx

The Independent Metals Company facility must submit a *Solid Waste Permit Application*, with a compliance schedule and plan review fees, to Public Health Seattle-King County or discontinue handling solid waste. The above conditions must be met no later than **April 26, 2010**. The permit application and plan review fee is $728.00 for the first 4 hours of review. Each additional hour will be billed at $182.00 per hour. The annual operating permit fee for a *Material Recovery Facility* is $5,096.00. The operating permit fee is due prior to permit issuance.

A copy of the *Solid Waste Permit Application* and the *Intermediate Solid Waste Handling Facilities Checklist* has been enclosed. These forms are also available on line at: *http://www.ecy.wa.gov/programs/swfa/facilities/forms.html*

Thank you for your attention to the Solid Waste Handling compliance issues at the Independent Metals Company facility. If you have any questions or need further assistance, please contact Leonard Di Toro at 206-263-8441.

Sincerely,

Bill Lasby

Bill Lasby, Supervisor
Solid Waste Program
Environmental Health Services Division
Public Health – Seattle & King County

BL:mp
Enclosures: WA Department of Ecology forms:
- Solid Waste Permit Application
- Intermediate Solid Waste Handling Facilities Checklist

BOH Title 10 sections:
- 10.12.173-350-025 Owner responsibilities for solid waste
- 10.12.173-350-040 Performance standards
- 10.12.173-350-310 Intermediate solid waste handling facilities

cc: Leonard Di Toro, Health & Environmental Investigator II, PHSKC
Dawn Marie Maurer, Facilities Specialist, WA State Department of Ecology
Robert Wright, Water Quality Specialist, WA State Department of Ecology

Stormwater Pollution Prevention Plan (SWPPP)

for:

Independent Metals
816 S Kenyan St
Seattle,WA 98108
206-769-6323

SWPPP Contact(s):

Larry Brewer
816 S Kenyan St
Seattle,WA 98108
206-769-6323

SWPPP Preparation Date:

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Revisions:

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Section 1. Facility Description and Contact Information

1.1 Facility Information

Facility Information

Name of Facility: Independent Metals
Street: 816 S Kenyan Street
City: Seattle State: WA ZIP Code: 98108
County: King
Permit Number: WAR-009725A
Latitude: 47° 31'58.29'' N
Longitude: 122° 19'17.80'' W

Estimated area of industrial activity at site exposed to stormwater: 3.2 (acres)

Discharge Information

Does this facility discharge stormwater into surface waters? ☒Yes ☐ No

Does this facility discharge stormwater into a municipal storm water conveyance system?

☒ Yes☒ No

SIC Code(s): 5093

1.2. Contact Information/Responsible Parties

Facility Operator :

Name: Larry Brewer
Address: 816 S Kenyan Street
City, State, Zip Code: Seattle, WA 98108
Telephone Number: 206-769-6323

Facility Owner (s):

Name: Mick O'Farrell, President
Address: 816 S Kenyan Street
City, State, Zip Code: Seattle, WA 98108
Telephone Number: 206-769-6323

SWPPP Contact:

Name: Larry Brewer
Telephone number: 206-769-6323

1.3. General Location Map

A copy of the general location map for this facility is found in Appendix A.

1.4. Site Map

A copy of the site map for this facility in found in Appendix B.

1.5. Stormwater Pollution Prevention Team

Storm Water Pollution Prevention Team

The following personnel comprise the Storm Water Pollution Prevention Team.

Table 1.5-1: Pollution Prevention Team Member Roster and Responsibilities

POLLUTION PREVENTION TEAM MEMBER ROSTER	
Leader: Larry Brewer Title: Safety Operations Manager Office Phone: (206)-769-6323	Responsibilities: Determines changes required to SWPPP due to operational changes Determines changes required to SWPPP due to maintenance changes Conducts inspections Conducts site evaluations Ensures reports are submitted Keeps pertinent records Revises Plan as needed Implements all general permit and pollution prevention plan requirement Monitors other company environmental plans for changes impacting the SWPPP Member Spill Prevention Team
Member: Mick O'Farrell Title: President Office Phone: (206) 769-6323	Responsibilities: Holds signatory responsibility
Member: Ben Northcut Title: Yard Supervisor Office Phone: (206) 769-6323	Responsibilities: Daily walkthrough inspections Member Spill Prevention Team

Section 2. Facility Assessment

2.1. Facility Description

Industrial Activity:

Independent Metals Plant 2 is scrap metal sorting and handling facility located at 816 South Kenyon Street in Seattle, Washington. The facility is located on a 3.2-acre site bordering the Duwamish River..

The site includes a paved yard, dock for barge loading\unloading, parking areas, and three buildings as well as an area occupied by heavy equipment, temporarily stored by Silver Bay Logging. The buildings consist of an unused office building, a large prefabricated steel warehouse, and a smaller prefabricated steel storage building. The office, palletized scrap storage, scrap processing machine, and maintenance shop are located in the large warehouse. There are no floor drains inside the warehouse.

Site access is from 8th Avenue through a gate opposite S Chicago Street or on the south side of the warehouse off South Kenyon Street. The majority of the site is fenced to control access. Generally, trucks bringing scrap metal to the facility enter and exit through the gate off 8th Avenue. Scrap is unloaded, sorted, cut or sheared to size, and heavier scrap loaded on pallets in the yard area. Lighter scrap is transferred inside the warehouse to a scrap processor. Pallets of heavier scrap are stored in the warehouse. Finished scrap is loaded into trucks on the south side of the warehouse for shipping.

Site topography is relatively flat. The southern portion of the site, including the majority of roof drains from the warehouse, discharges stormwater to the City of Seattle combined sewer. The interior yard area, and a few roof drains from the buildings, drain to a single catch basin located near the center of the yard. This catch basin (CB01) has a single pipe that heads directly to an oiley water separator, a storm water treatment system, and eventually to an outfall on the bank of the Duwamish River.

Additionally, during high tides, water from the Duwamish River may enter the drainage system or overtop the asphalt berm at the edge of the site and flow into low points of the yard. The site also receives stormwater run-on from 8th Ave at the entrance on Chicago Street.

Regular Business Hours:

Independent Metals regular business hours are from 0700 to 1700 hours, Monday through Friday with variations which include a second shift and Saturdays when business conditions allow.

General Layout:

The general layout is outlined in the site map in appendix B. Raw materials are loaded into the facility through the street entrances and through barge off-loading, materials leaving the site leave via truck through the same street entrances.

Industrial Activity, Materials Inventory, and Associated Pollutants

The following table lists exposed materials or industrial activities that have the potential to pollute stormwater leaving the site.

There have been no significant past spills or leaks at the site.

Industrial Activity / Exposed Materials	Associated Pollutants
Scrap Steel / Metal	Heavy Metals, Oil and Grease, dirt, grime
Roofs	Zinc from galvanized material
Tire dust from heavy equipment	Zinc compounds
Heavy Equipment	Oil and Grease, fuel
Material Transport	Trackout of grease, grime, dirt

2.2. Spills and Leaks

Areas of Site Where Potential Spills/Leaks Could Occur

Location	Outfalls
Loading area	Outfall 1, post treatment system
Unloading Area	Outfall 1, post treatment system
Heavy Equipment Area	Outfall 1, post treatment system

Section 3, Best Management Practices (BMP's)

Guidance from the Department of Ecology webpage and Storm Water Pollution Prevention Plan preparation documents indicate that Independent Metals should follow the Best Management Practices from Publication 94-106 per the following statement in the Template Documents:

For facilities subject to Ecology's Industrial Stormwater General Permit refer to BMP Guidance Document "Best Management Practices to Prevent Stormwater Pollution at Vehicle Recycler Facilities," for selection of BMPs. The BMPs in that guidance document can also be applied to scrap material recycling facilities depending on the pollutant sources existing at those facilities and to non-permitted facilities.

The following are extracts from that document:

1. **Use Operational Best Management Practices**
   Best management practices (BMPs) are activities and procedures that can be followed to

prevent and reduce stormwater pollution. Operational BMPs are any managerial practices used to prevent pollutants from entering stormwater. The following are a list of necessary operational BMPs and how to use them. Following these best management practices is the best way to keep your vehicle recycling yard in compliance with your permit.

a. Create a Pollution Prevention Team

1. Identify one or more individuals who is/are responsible for developing and implementing the SWPPP.
2. Hold regular meetings to review the overall operation of the BMPs and the results of inspections.
3. Establish responsibilities for inspections, operation, and maintenance of BMPs, availability in emergency situations, and recordkeeping.
4. Train all team members in reporting procedures and the operation, maintenance and inspection of BMPs.

b. Practice Good Housekeeping

1. Promptly clean up fluid and fuel leaks and spills.
2. Clean catchbasins (sumps) if the depth of the deposit is equal to or greater than 1/3 the depth from the bottom to the lowest pipe into or out of the catchbasin.
3. Remove and properly dispose of debris and sludge from all treatment BMP systems such as oil/water separators or settling/detention basins at least once per year. Determine, by lab analysis, if sludge is a dangerous waste.
4. Regularly remove accumulated oil from oil/water separators and all other oil containment and removal systems to ensure proper operational efficiency of these systems is maintained. Properly dispose of waste oil.
5. Promptly repair or replace all substantially cracked or otherwise damaged paved process areas (such as the dismantling area) and other impervious containment areas that can be contaminated by pollutant fluid leaks or spills.

c. Preventative Maintenance

1. Prevent the discharge of pollutants to storm drains, ground water, and surface water.
2. Transfer fluids from the vehicles and parts to storage tanks or containers that are located in a covered impervious contained area. Pump fluids from cars. Always use drip pans. Empty drip pans immediately after fluids are collected using appropriate funnels. Replace drain plugs in fluid containing parts to reduce the slow release of remaining fluid.
3. Construct impervious maintenance areas using Portland cement concrete or equivalent. Chemically resistant asphalt can be used for battery storage. Do not pave over contaminated soil.
4. Discard empty oil and fuel filters, oily rags, and other oily solid waste into appropriately closed and properly labeled containers. If oil filters are removed, drain the oil for 24 hours before disposal. Puncture hole in top of filters to help draining. Recycle your drained filters with your vehicles.
5. Clean all oily parts inside a building or on a covered impervious contained area, such as a diked/bermed concrete pad. Check for visible sheen on the contained stormwater and consider use of floating sorbent pads or booms before discharge. Wash water should not go directly into a stormwater drain or septic system.

6. Store fluids in steel or plastic drums that are rigid and durable, resistant to corrosion from the weather and fluid content, nonabsorbent, water tight, rodent-proof, and equipped with a close-fitting cover. Place drums in covered impervious containment areas. Use containers, piping, tubing, pumps, fittings, and valves that are adequate for the fluid and intended use. Waste haulers for used oil and dangerous materials often provide safe containers.
7. Label all containers and tanks clearly to prevent mixing wastes. Mixed wastes are considered dangerous wastes. Batteries should be stored in a covered plastic bin or in a covered building.
8. Use dumpsters, garbage cans, drums, or other suitable containers for disposal of solid wastes contaminated with fluids and other pollutants. These containers must be durable, corrosion resistant, nonabsorbent, non-leaking, and have either a solid cover or screen cover to prevent littering. If covered with a screen, the container must be stored under a cover to keep precipitation out of the container.
9. Use only water or local and state government approved materials for dust control.
10. Stencil warning signs such as "Dump No Waste" at stormwater catchbasins and drains.
11. Use a licensed recycler to collect fluids.
12. Post stormwater pollution prevention signs at fluid removal and storage areas.

d. Spill Prevention

1. Identify areas of the facility where oil, toxic material, hazardous material, or other pollutant spills are likely to occur and their drainage points.
2. Ensure that employees are aware of spill response procedures, including material handling and storage requirements. Provide access to appropriate spill cleanup equipment.
3. Stop, contain, and clean up all spills immediately upon discovery. Do not flush absorbent materials or other spill cleanup materials into a storm drain or to surface water. Collect the contaminated absorbent material as a solid, place in appropriate disposal containers, and provide disposal according to state and local regulations.
4. Notify Ecology and the local sewer authority immediately (within 1 hour) if a spill of reportable quantities has reached or may reach a sanitary or storm sewer, ground water, or surface water. A spill of reportable quantity is any amount of material that can cause sheen or any amount of material that can pose a threat to human health or the environment. Take reasonable steps to minimize any adverse impacts to waters of the state and to correct the problem. If you call in the spill report, follow up with written documentation covering the event within thirty (30) days unless Ecology waives or extends this requirement.
5. Place and maintain emergency spill containment and cleanup kits at all areas where there is a potential for fluid spills. Provide appropriate types and amounts of cleanup materials in cleanup kits. Kits should be readily accessible to personnel.

e. Training

The permit requires an annual employee training program on the SWPPP and its

implementation.

1. Train all employees who work in pollutant source areas to identify pollutant sources and understand pollutant control measures such as spill prevention and response, good housekeeping, and environmentally acceptable vehicle component and other material handling practices, particularly the handling of all fluids.
2. Include in the SWPPP the content, method, and frequency of the training and a log of the training dates.

f. Reporting

This section is superseded by the requirement to inspect monthly in the 2010 Industrial Stormwater Permit, and the new reporting requirements listed later in this document.

2. Use Structural Best Management Practices

Structural BMPs are physical, structural, or mechanical devices or facilities designed to prevent pollution from entering stormwater. The following is a list of typical areas that produce pollutants and associated best management practices. Following these best management practices is the best way to keep your vehicle recycling yard in compliance with your permit.

a. Vehicle Holding Yard

Definition:

The holding yard is where a wrecked or used vehicle is temporarily stored on pervious (soil) or impervious paved surfaces (concrete, asphalt, etc.) prior to the dismantling.

Vehicle Holding Yard BMPs:

1. Inspect all vehicles arriving at the holding area immediately upon arrival for leakage or potential leakage of fluids. Promptly fix and clean up any leaks from the vehicles. You may store vehicles that do not leak in the holding area without draining any of the fluids. *The majority of vehicles processed by Independent Metals have been pre-cleaned and crushed, Independent Metals pre-processes approximately 15% themselves.*
2. Do not dismantle fluid-containing components in the holding area. Parts that do not contain fluids (such as fenders, hoods, and seats) may be removed in the holding area.
3. Move vehicles with leakage to the process/dismantling area immediately. Remove the fluids from the leaking components. Use drip pans under leaking components as needed.
4. Examine the holding area, at least monthly, for contamination of holding yard paved and soil surfaces. The inspection date, location, observations, and the inspector's signature need to be recorded by a member of the Pollution Prevention Team.

b. The Processing Area – Vehicle Dismantling and Fluid Removal

Definition:

The processing area is where all dismantling work is done on vehicle components that contain fluids. Processing may involve: draining of fuel or other fluid from a single leaking component; removing part or all of the fluid containing components; and water or steam cleaning of parts, vehicles, and equipment. Parts that do not contain fluids (such as fenders, hoods, and seats) and sealed units (such as spicer axle assemblies, shock absorbers, and bumper shocks) may be removed outside the process area. *The majority of vehicles processed by Independent Metals have been pre-cleaned and crushed, Independent Metals pre-processes approximately 15% themselves*

Process Area BMPs:

1. Design the process area to retain all fluids that may be spilled or released so they do not disperse and pollute stormwater or ground water. Refer to cover and containment options below.
2. Design the process area so that surface stormwater cannot drain into the process area. The process area needs to be sufficiently above the grade level of the non-process area to stop run-on of stormwater from the non-process area into the process area.
3. Do not drain any sump located in the process area to surface waters or ground water unless the water collected in the sump is properly treated. Wastewater (wash water from vehicle, equipment, and parts washing or steam cleaning) discharges from the processing area must be conveyed to sanitary sewer with sewer authority approval and proper pretreatment needed, permitted under another Ecology permit which would require proper treatment (for additional information contact the Ecology regional office in your area), or totally recycled, if practicable.
4. Remove fluids with an effort to prevent spillage in the process area by using drip pans or other devices to collect fluids.
5. Remove the fluid from fluid-containing components to the greatest extent possible prior to any partial or total dismantling of the component.
6. Close engine hoods after parts and/or fluid removal if possible.

Process Area Cover and Containment BMPs:

Enclosed Building

An enclosed building with a contained impervious floor, such as Portland cement concrete, or other impervious surface that is chemically resistant to all vehicle fluids. There shall be no floor drainage to the outside other than connections to sanitary sewers authorized by the local sewer authority. There shall be no discharge to a storm drain or to a surface water unless authorized by an Ecology wastewater discharge permit.

c. Fluid Storage Area

Definition:

The **fluid storage area** is the area(s) where solvents, fuel, oil, coolants, liquid chemicals, and other fluids from vehicles are stored prior to use, resale, recycle, treatment, or disposal.

Fluid Storage Area Cover and Containment BMPs:

Enclosed Building

An enclosed building with a contained impervious floor, such as Portland cement concrete, or other impervious surface that is chemically resistant to all vehicle fluids. There shall be no floor drainage to the outside other than connections to sanitary sewers authorized by the local sewer authority. There shall be no discharge to a storm drain or to a surface water unless authorized by an Ecology wastewater discharge permit.

BMPs for Tank Storage (typically used for waste oils) and Container Storage (typically 30 or 55 gallon drums):

1. **Label each container/tank with its contents. For on site reusable fluids, label as follows: "Useable Antifreeze," "Useable Gasoline," etc.**
2. Use impervious secondary containment of tanks (Figures 1 and 2) or double-walled tanks. Double-walled tanks do not need additional containment but should be Underwriters Laboratory (UL) approved.
3. The secondary containment area must be:
   - Paved, or equivalent.
   - Free from cracks and gaps.
   - Impervious to contain leaks and spills.
4. Enclosed with walls or dikes sufficient to contain 10 percent of the total volume of all the containers/tanks or 110 percent of the largest container/tank stored in the containment area, whichever is greater.
5. Do not mix incompatible materials such as oils, antifreeze, windshield washer fluids, and brake fluids with solvents (Appendix C, pg. 30).
6. Store reactive, ignitable, or flammable liquids in compliance with applicable uniform fire code requirements and hazardous waste regulations (Chapter 173-303 WAC).
7. Recycle, treat, or dispose of all fluids in accordance with applicable state and local government requirements (Appendix C, pg. 30 and Reference 9, pg. 24).

d. Vehicle Storage Yards

Definition:

The **vehicle storage yard** is generally an outdoor area on a pervious surface such as soil or rock, used to store vehicles in various stages of dismantling.

Storage Yard BMPs:

1. Remove all fluids and batteries in the vehicle process area prior to transfer to the yard with the exception of sealed units such as spicer axle assemblies, shock absorbers, and bumper shocks.
2. Do not remove fluids or dismantle or remove vehicle components in the vehicle storage yard. This may result in a release of hazardous liquids to the environment.
3. Remove windshield washer fluid. Recycle or reuse the washer fluid.
4. Promptly clean up any fluid leaks found in the storage yard.

5. Use drip pans to temporarily contain drips/leaks of fluids from the stored vehicles or use plastic sheets to cover oily parts until the vehicle is transferred back to the process area.
6. If the stormwater runoff from the vehicle storage yard contains a significant amount of oil, use additional operational and source control BMPs and/or direct the contaminated stormwater to an oil/water separator or equivalent oil removal system until the benchmark value for oil is no longer exceeded
7. Employees must continually watch for spills or releases while attending to their normal work activities. Employees must immediately report any spill or releases of materials which may contaminate stormwater to the appropriate person or persons identified in the SWPPP (preferably a lead person). This person(s) must order a prompt cleanup of the spilled or released materials.
8. Devise a system for identifying which vehicles have been drained of fluids and which have not. This will help ensure that all vehicles have been drained before entering the storage yard and ensure that only drained vehicles are going to the crusher

e. Vehicle Crusher

Definition:

A **vehicle crusher** is a mechanical device which reduces the volume of vehicle hulks prior to transporting to a scrap metal yard. It can be either portable (mobile) or stationary. A crusher is a source of stormwater and/or soil contamination when fluid containing parts are crushed.

Stationary Vehicle Crusher Cover and Containment BMPs:

Impervious Surface with Cover

Crush the vehicles on an impervious concrete or asphalt pad that is resistant to the fluids. This area should have a dike or other physical barrier around the perimeter and a roof or cover. Otherwise it must be located inside a building.

Mobile Vehicle Crusher Cover and Containment BMPs:

Containment with Cover

Crush the vehicles on an impervious concrete or asphalt pad that is resistant to the fluids. This containment area must have a dike or other physical barrier around the perimeter and a roof or cover. Otherwise it must be located inside a building.

Vehicle Crusher BMP's

1. Crush only vehicles which have had fluids removed from all components except the sealed units such as spicer axle assemblies, shock absorbers, and bumper shocks.
2. Only remove fluids in the process area.
3. Angle crushers to allow fluids to flow out of crusher. All fluids should be collected in a labeled container that has secondary containment. If crushing on a pervious surface, place a tarp under the collection container.
4. Check fluid collection container regularly to ensure fluids do not reach top of

container.

5. Empty fluid collection container when it is 75 percent full and crusher is not in operation. You must handle fluids released during crushing as hazardous waste.
6. The use of self-contained crushers designed to collect leaks within the crusher unit is recommended.
7. Clean up all fluid leaks and spills promptly.
8. After each crushing operation clean area around crusher. Dispose of all wastes appropriately.

Ecology highly recommends removal of all mercury switches from the vehicles prior to crushing. Most vehicle shredders require that all mercury switches are removed from the vehicles

f. Waste/Scrap Piles of Vehicle Components

Definition:

Scrap engines, transmissions, and other scrap parts stored outside can cause pollution of surface water and contamination of soil.

Waste/Scrap Pile BMPs:

1. Remove fluids from all scrap components prior to transfer to outside storage except for sealed units such as spicer axle assemblies, shock absorbers, and bumper shocks.
2. Store all batteries separately in a nonleaking covered container or under a roof area with containment.

Waste/Scrap Pile Cover and Containment BMPs:

Uncovered Containment Pad (minimally acceptable)

Ensure that all fluids have been drained from parts. Store parts on an uncovered impervious concrete or chemically resistant asphalt pad with inward sloping (with appropriate outside grading to prevent run-on), a dike, or other physical barrier for containment. Direct the stormwater runoff from the pad to an oil/water separator or other appropriate treatment system if the stormwater drainage from the containment contains a significant amount of oil or any other pollutant.

3.1 Operational Source Control BMP

In addition to the above, the following are the required BMP's listed in the 2010 permit for all sites.

Good Housekeeping

Good housekeeping practices maintain a clean and orderly work environment. Often the first step towards preventing pollution in storm water from industrial sites involves using common sense to improve the facility's basic housekeeping methods. The following procedures are those we have selected to incorporate into our existing housekeeping program.

- Provide adequate aisle space to facilitate materials transfer and easy access for inspections.

- Store containers, drums, and bags away from direct traffic routes to prevent accidental spills. (See Spill Prevention and Response BMP.)
- Store containers on pallets or similar devices to prevent corrosion of the containers from coming in contact with moisture on the ground.
- Clearly mark the inventory hazardous materials that require special handling, storage, use, and disposal consideration.
- Regularly remove scrap metal, wood, plastic, miscellaneous trash, paper, glass, industrial scrap, insulation, welding rods, packaging, etc. from the plant grounds.
- Vacuum paved surfaces with a vacuum sweeper (or a sweeper with a vacuum attachment) to remove accumulated pollutants a minimum of once per quarter
- .Identify and control all on-site sources of dust to minimize stormwater contamination from the deposition of dust on areas exposed to precipitation.
- Inspect and maintain bag houses monthly to prevent the escape of dust from the system. Immediately remove any accumulated dust at the base of exterior bag houses.
- Keep all dumpsters under cover or fit with a lid that must remain closed when not in use. *Dumpsters are located in areas where the stormwater is conveyed to a storm water treatment system.*

Preventive Maintenance:

- Clean catch basins when the depth of debris reaches 60% of the sump depth. In addition, the Permittee must keep the debris surface at least 6 inches below the outlet pipe.
- Inspect all equipment and vehicles during monthly site inspections for leaking fluids such as oil, antifreeze, etc. Take leaking equipment and vehicles out of service or prevent leaks from spilling on the ground until repaired.
- Immediately clean up spills and leaks (e.g., using absorbents, vacuuming, etc.) to prevent the discharge of pollutants.

Spill Prevention and Emergency Cleanup:

- Store all chemical liquids, fluids, and petroleum products, on an impervious surface that is surrounded with a containment berm or dike that is capable of containing 10% of the total enclosed tank volume or 110% of the volume contained in the largest tank, whichever is greater.
- Prevent precipitation from accumulating in containment areas with a roof or equivalent structure or include a written plan on how it will manage and dispose of accumulated water if a containment area cover is not practical.
- Locate spill kits within 25 feet of all stationary fueling stations, fuel transfer stations, and mobile fueling units. At a minimum, spill kits shall include:
    1. Oil absorbents capable of absorbing 15 gallons of fuel.
    2. A storm drain plug or cover kit.
    3. A non-water containment boom, a minimum of 10 feet in length with a 12 gallon absorbent capacity.
    4. A non-metallic shovel.
    5. Two five-gallon buckets with lids.
- Locate materials, equipment, and activities so that leaks are contained in existing containment and diversion systems (confine the storage of leaky or leak-prone vehicles and equipment awaiting maintenance to protected areas).

- Use drip pans and absorbents under or around leaky vehicles and equipment or store indoors where feasible. Drain fluids from equipment and vehicles prior to on-site storage or disposal.
- Maintain a spill log that includes the following information for chemical and petroleum spills: date, time, amount, location, and reason for spill; date/time clean-up completed, notifications made and staff involved.

Spill Prevention and Response
Our Spill Prevention and Response Program include education for employee awareness and training in proper material handling and storage. We also ensure that all employees have access to appropriate spill cleanup equipment..

- Provide appropriate spill clean-up equipment to personnel.
- Stop the source of the spill immediately.
- Contain the liquid until cleanup is complete.
- Use brooms, squeegees, or other mechanical devices/equipment to remove small amounts of dry chemicals or dry solids from areas exposed to precipitation or storm water runoff.
- Sweep up dry material spills and dispose properly..
- Remove contaminated soil, material, or debris promptly and dispose of in accordance with Federal, State, and local requirements.
- Control fuel spills with kitty litter, straw, or sawdust
- Locate loading/unloading equipment and vehicles where leaks an be contained in existing containment and flow diversion systems.

Employee Training
Employee training of all employees who have activities in industrial areas and all members of the Pollution Prevention Team will occur at least once per year. The training will contain elements that

- Contain an overview of what is in the SWPPP
- Show how employees make a difference I complying with the SWPPP and preventing contamination of stormwater
- Describe spill response procedures, good housekeeping, maintenance requirements, ad material management practices.

The training will be conducted by the Company either by a qualified employee or an outside consultant. The training will include a log of the employees trained, date and time of the training, and who conducted the training.

Inspections, Reporting, and Recordkeeping

Visual monitoring is to be conducted during sampling events. Visual monitoring during storm events shall be conducted to observe the presence of floating materials, suspended solids, oil and grease, visible sheen, discoloration, turbidity, odor, etc. as well as meet the requirements of the monthly inspection sections of the permit.

Monthly inspections shall use the monthly inspection form found in the Appendix, the inspections shall be performed by a qualified person as defined by the Department of Ecology.

This inspection is to determine the presence of non-storm water discharges such as domestic wastewater, noncontact cooling water, or process wastewater (including leach ate) to the storm water drainage system. If such a discharge is identified, DOE is to be notified immediately and the illicit discharge is to be eliminated within 30 days.

Copies of all records and reports are to be kept with the SWPPP for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants or when requested by Ecology.

Illicit Discharges

Water from washing vehicles or equipment, steam cleaning and/or pressure washing is considered process wastewater. The Permittee must not allow this process wastewater to comingle with stormwater or enter storm drains; and must collect in a tank for off-site disposal, or discharge it to a sanitary sewer, with written approval from the local sewage authority.

During each monthly site inspection, look for signs of illicit discharges, especially during dry weather when stormwater isn't discharging from the site. Each monthly site inspection will include:

- Observations made at stormwater sampling locations and areas where stormwater associated with industrial activity is discharged off-site; or discharged to waters of the state, or to a storm sewer system that drains to waters of the state.
- Observations for the presence of floating materials, visible oil sheen, discoloration, turbidity, odor, etc. in the stormwater discharge(s).
- Observations for the presence of illicit discharges such as domestic wastewater, noncontact cooling water, or process wastewater (including leachate).
    - If an illicit discharge is discovered, the Permittee shall notify Ecology within seven days.
    - The Permittee shall eliminate the illicit discharge within 30 days.

3.2. Structural Source Control BMPs

<u>Structural Source Control BMPs</u>

- Use grading, berming, or curbing to prevent runoff of contaminated flows and divert run-on away from manufacturing, processing, and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations).
- Perform all cleaning operations indoors, under cover, or in bermed areas that prevent stormwater runoff and run-on and also that capture any overspray.
- Ensure that all washwater drains to a collection system that directs the washwater to further treatment or storage and not to the stormwater drainage system.

<u>Structural Source Control BMPs for Loading and Unloading Areas for Liquid or Solid Material</u>:

All Loading/ Unloading Areas:

- Consistent with Uniform Fire Code requirements (Appendix IV-D R.2) and to the extent practicable, conduct unloading or loading of solids and liquids in a manufacturing building, under a roof, or lean-to, or other appropriate cover.
- Berm, dike, and/or slope the loading/unloading area to prevent run-on of stormwater and to prevent the runoff or loss of any spilled material from the area.
- Pave and slope loading/unloading areas to prevent the pooling of water. The use of catch basins and drain lines within the interior of the paved area must be minimized as they will frequently be covered by material, or they should be placed in designated "alleyways" that are not covered by material, containers or equipment.

Loading and Unloading Docks:

- Design the loading/unloading area with berms, sloping, etc. to prevent the run-on of stormwater.
- Retain on-site the necessary materials for rapid cleanup of spills.

3.3. Treatment BMPs

Independent Metals has a Stormwaterx Treatment system on site which has been designed to the Western Washington Stormwater Manual requirements. A Professional Engineer designed the system, performed the water calculations, and provided the stamped designs. The system includes a pre-holding tank, an oily water separator, and a modified sand filter (Aquip).

Structure:	Aquip	
Date of Implementation:	2009	
Discharge Point:	Outfall 1	
Area(s) Treated:	North Yard (main processing area)	
Pollutants Removed:	Heavy metals, oil and grease, turbidity	
Maintenance Requirement(s):		Frequency:
Rake top gravel		As needed
Replace Media		As needed

Structure:	Oily Water Seperator	
Date of Implementation:	2008	
Discharge Point:	Holding Tank	
Area(s) Treated:	North Yard (main processing area)	
Pollutants Removed:	Oil and grease, some sediment	
Maintenance Requirement(s):		Frequency:
Clean		As Needed

The maintenance documents for each are included in Appendix G.

3.4. Stormwater Peak Runoff and Volume Control BMPs

Only required at facilities with "new development or redevelopment".

3.5. Erosion and Sediment Control BMPs

The SWPPP must describe the erosion and sediment control BMPs necessary to prevent off-site sedimentation and violations of water quality standards. The Permittee shall implement and maintain:

1) Sediment control BMPs such as detention or retention ponds or traps, vegetated filter strips, bioswales, or other permanent sediment control BMPs to minimize sediment loads in stormwater discharges. *Area is landscaped to reduce erosion. Area 4 has been cleaned and will either be landscaped or other erosion control BMP's will be implemented.*

2) Filtration BMPs to remove solids from catch basins, sumps or other stormwater collection and conveyance system components (filter socks, modular canisters, sand filtration, centrifugal separators, etc.).- *Catchbasins have inserts.*

Definition:
Erosion and Sediment Control BMPs means BMPs that are intended to prevent erosion and sedimentation, such as preserving natural vegetation, seeding, mulching and matting, plastic covering, filter fences, and sediment traps and ponds.

Section 4. Sampling Plan

1) **Discharge Location(s).**

Discharge ID	Common description	Discharge Type	Comments
Outfall 1	Outfall 1	Surface Water	Duwamish River

2) **Substantially identical outfall exception**

There is only one outfall from the identified industrial area.

3) **Staff Responsible for Sampling.**

Larry Brewer or a qualified person identified by him.

4) **Sample Collection and Handling.**

Sampling should occur only if there is discharge at the discharge location. Sample bottles should be obtained in advance from a qualified, accredited regional laboratory. Sampling should be performed to the guidelines provided by the Washington Department of Ecology (http://www.ecy.wa.gov/programs/wq/stormwater/industrial/guidance.html) and should include the following:

- Gloves should be worn.
- Non-preserved sample bottles should be filled before preserved sample bottles
- Hold times (provided by laboratory) should be observed.
- Samples should be chilled immediately after collection.
- Sample Bottles should be labeled with location, date, time, and project
- Field equipment, if used, should be calibrated per the manufacturers recommendation before sampling.

All samples should be grab samples within 12 hours of discharge. The first storm event that produces a discharge in the third quarter must be sampled if within normal business hours, if not sampled, a reason must be given to the DOE as to why it was not sampled

5) **Submitting Sample Results to Ecology.**

- The Permittee shall submit sampling data obtained during each reporting period on a Discharge Monitoring Report (DMR) form provided, or otherwise approved, by *Ecology*.
- The Permittee shall submit sampling results within 45 days of the end of each reporting period.
- The first reporting period shall begin on the effective date of permit coverage.
- Upon permit coverage, the Permittee shall ensure that DMRs are postmarked or received by *Ecology* by the DMR Due Dates below:

Reporting Dates and DMR Due Dates

Reporting Period	Months	DMR Due Date
1st	January-March	May 15
2nd	April-June	August 14
3rd	July-Sept	November 14
4th	October-December	February 14

- DMRs shall be submitted using *Ecology*'s WebDMR system or by mail to the following address:

  Department of Ecology
  Water Quality Program – Industrial Stormwater
  PO Box 47696
  Olympia, Washington 98504-7696

- Upon permit coverage, the Permittee shall submit a DMR each reporting period, whether or not the *facility* has discharged *stormwater* from the site.
- If discharge(s) occurred during normal working hours, and during safe conditions; but no sample was collected during the entire quarter, the Permittee shall submit a DMR form indicating "no sample obtained". If no discharge(s) occurred during the entire quarter or the discharges during the quarter occurred outside normal working hours or during unsafe conditions, the Permittee shall submit a DMR indicating "no discharge".

- If a Permittee has suspended sampling for a parameter due to consistent attainment, the Permittee shall submit a DMR and indicate that it has achieved Consistent Attainment for that parameter(s).

Permittees that exceed any applicable *benchmark* values (described below) shall complete a Level 1 Corrective Action for each parameter exceeded in accordance with the following:

1. Review the SWPPP and ensure that it fully complies with Permit Condition S3, and contains the correct BMPs from the applicable *Stormwater Management Manual.*
2. Make appropriate revisions to the SWPPP to include additional *Operational SourceControl BMPs* with the goal of achieving the applicable *benchmark* value(s) in future discharges. The Permittee shall sign and certify the revised SWPPP in accordance with S3.A.6.
3. Summarize the Level 1 Corrective Actions in the Annual Report (Condition S9.B)

Level One Deadline: The Permittee shall fully implement the revised SWPPP according to Permit Condition S3 and the applicable *Stormwater Management Manual* as soon as possible, but no later than the DMR due date for the quarter the *benchmark* was exceeded.

Level Two Corrective Actions – Structural Source Control BMPs Permittees that exceed an applicable *benchmark* value (for a single parameter) for any two quarters during a calendar year shall complete a Level 2 Corrective Action in accordance with the following:

1. Review the SWPPP and ensure that it fully complies with Permit Condition S3.
2. Make appropriate revisions to the SWPPP to include additional *Structural Source Control BMPs* with the goal of achieving the applicable *benchmark* value(s) in future discharges. The Permittee shall sign and certify the revised SWPPP in accordance with S3.A.6.
3. Summarize the Level 2 Corrective Actions (planned or taken) in the Annual Report (Condition S9.B).

Level 2 Deadline: The Permittee shall fully implement the revised SWPPP according to Permit Condition S3 and the applicable *Stormwater Management Manual* as soon as possible, but no later than September 30th the following year.

Level Three Corrective Actions – Treatment BMPs Permittees that exceed an applicable *benchmark* value (for a single parameter) for any three quarters during a calendar year shall complete a Level 3 Corrective Action in accordance with the following:

1. Review the SWPPP and ensure that it fully complies with Permit Condition S3.
2. Make appropriate revisions to the SWPPP to include additional *Treatment BMPs* with the goal of achieving the applicable *benchmark* value(s) in future discharges.
    - The Permittee shall sign and certify the revised SWPPP in accordance with S3.A.6.

- A licensed professional engineer, geologist, hydrogeologist, or Certified Professional in Storm Water Quality (CPSWQ) shall design and stamp the portion of the SWPPP that addresses *stormwater* treatment structures or processes.

3 Summarize the Level 3 Corrective Actions (planned or taken) in the Annual Report.

Level 3 Deadline: The Permittee shall fully implement the revised SWPPP according to Permit Condition S3 and the applicable *Stormwater Management Manual* as soon as possible, but no later than September 30th the following year.

6) **Sampling Parameters.**

The following table outlines the sampling parameters for the site:

Table 1 Benchmarks and Sampling Requirements

Parameter	Units	Benchmark Value	Analytical Method	Laboratory Quantitation Level [a]	Minimum Sampling Frequency [b]
Turbidity	NTU	25	EPA 180.1 Meter	0.5	1/quarter
pH	Standard Units	Between 5.0 and 9.0	Meter/Paper [c]	±0.5	1/quarter
Oil Sheen	Yes/No	No Visible Oil Sheen	N/A	N/A	1/quarter
Copper, Total	µg/L	Western WA: 14 Eastern WA: 32	EPA 200.8	2.0	1/quarter
Zinc, Total	µg/L	117	EPA 200.8	2.5	1/quarter
Lead, Total	Ug/L	81.6	EPA 200.8	0.5	1/quarter
TPH	mg/L	10	NWTPH-Dx	.1	1/quarter

[a] The Permittee shall ensure laboratory results comply with the *quantitation level* specified in the table. However, if a Permittee knows that an alternate, less sensitive method (higher detection level and *quantitation level*) from *40 CFR* Part 136 is sufficient to produce measurable results in its effluent, it may use that method for analysis.

[b.] 1/quarter means 1 sample taken each quarter, year-round.

[c.] Permittees shall use either a calibrated pH meter or narrow-range pH indicator paper with a resolution not greater than ± 0.5 SU.

Section 5. SWPPP Certification

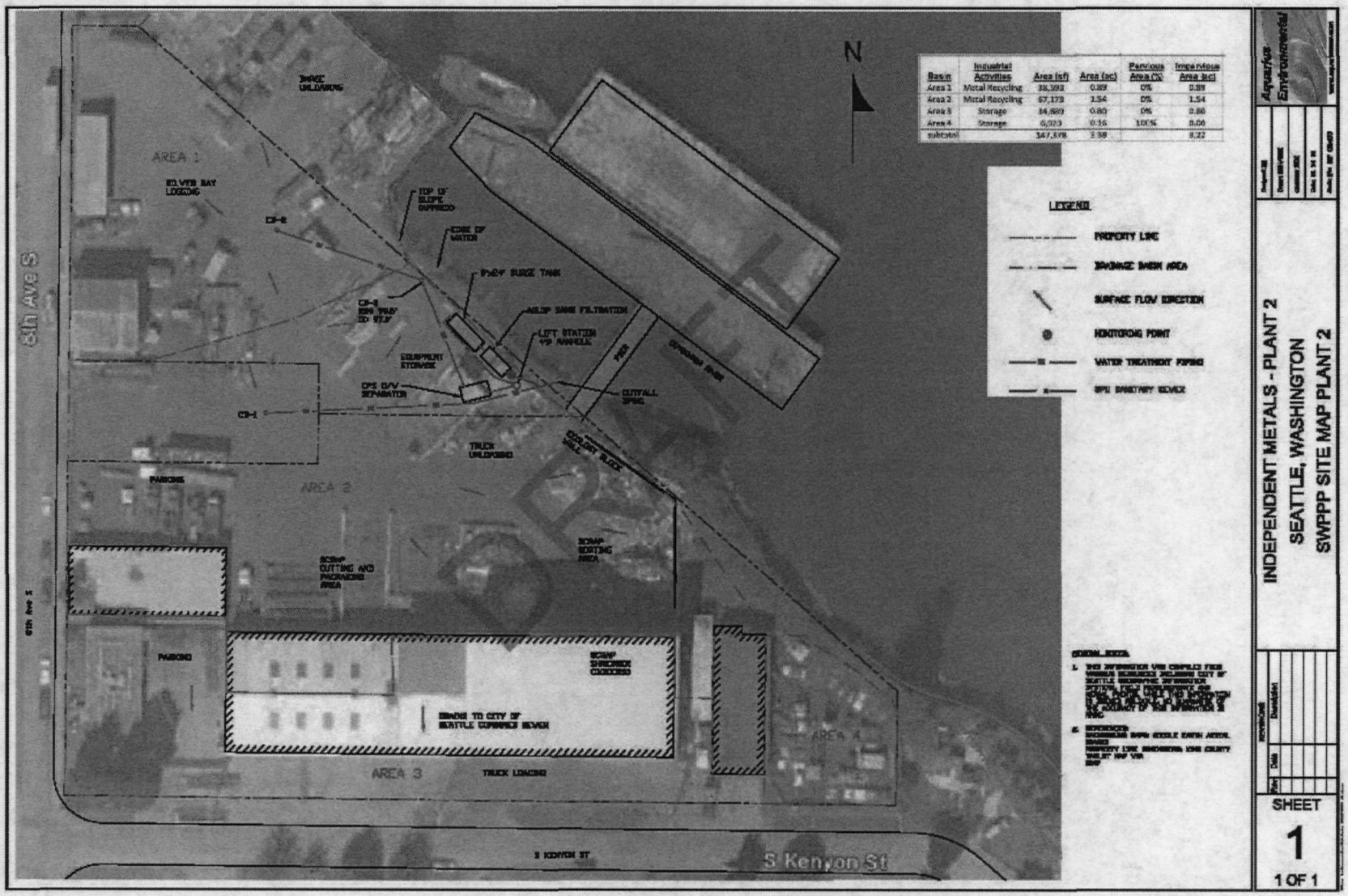
A new SWPPP certification form will be completed with each level 1,2, or 3 report and with each revision of the SWPPP. The certification form can be found in the appendix.

SWPPP Appendices

Appendix A – General Location Map
Appendix B – Site Map
Appendix C – BlankForms
Appendix D – SWPPP Certification or Recertification Form (for Level 1, 2, or 3 Corrective Action(s))
Appendix E – Industrial Stormwater Monthly Inspection Report
Appendix F – Maintenance documents

Appendix A Location Map

Appendix B Site Map



Appendix C = Blank Forms

Spill Log

Worksheet #4A
Completed by:
Title:
Date:

List all chemical and petroleum spills and leaks

Date and Time	Location	Description				Response Procedure		Comments
		Amount	Type of Material	Source, If Known	Reason for Spill/Leak	Notifications Made	Staff Involved	

Employee Training	Worksheet #10 _____ Completed by: _____ Title: _____ Date: _____

Describe the annual training of employees on the SWPPP, addressing spill response, good housekeeping, and material management practices.

Training Topics 1.) LINE WORKERS	Brief Description of Training Program/Materials (e.g., film, newsletter, course)	Schedule for Training (list dates)	Attendees
Spill Prevention and Response			
Good Housekeeping			
Material Management Practices			
2.) P2 TEAM:			
SWPPP Implementation			
Monitoring Procedures			

Appendix D. SWPPP Certification Form

The Permittee shall use this form to sign and certify that the Stormwater Pollution Prevention Plan (SWPPP) is complete, accurate and in compliance with Conditions S3 and S8 of the Industrial Stormwater General Permit.

- A SWPPP certification form needs to be completed and attached to all SWPPPs.
- Each time a Level 1, 2, or 3 Corrective Action is required, this form needs to be re-signed and re-certified by the Permittee, and attached to the SWPPP.

Is this SWPPP certification in response to a Level 1, 2 or 3 Corrective Action? ☐Yes ☐No

If Yes:

- Type of Corrective Action?: ☐Level 1 ☐Level 2 ☐Level 3
- Date SWPPP update/revision completed:_____.

"I certify under penalty of law that this SWPPP and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate information to determine compliance with the Industrial Stormwater General Permit. Based on my inquiry of the person or persons who are responsible for stormwater management at my facility, this SWPPP is, to the best of my knowledge and belief, true, accurate, and complete, and in full compliance with Permit Conditions S3 and S8, including the correct Best Management Practices from the applicable Stormwater Management Manual. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

_____ _____

Operator's Printed Name * Title

_____ _____

Operator's Signature * Date

* Federal regulations require this document to be signed as follows:
For a corporation, by a principal executive officer of at least the level of vice president;
For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking elected official.

This document shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above and submitted to the Ecology.
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

Changes to authorization. If an authorization under number 2 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of number 2 above shall be submitted to Ecology prior to, or together with, any reports, information, or applications to be signed by an authorized representative.

Appendix E: Monthly Inspection Form

Appendix F: Maintenance Documents

STORMWATER POLLUTION PREVENTION PLAN

Prepared for: Independent Metals

Project No. 080094 • May 20, 2008
Revised April 30th, 2009

STORMWATER POLLUTION PREVENTION PLAN

Prepared for: Independent Metals

Project No. 080094 • May 20, 2008
Revised April 30th, 2009

Aspect Consulting, LLC

V:\080094 SWPPP Update and Monitoring Plan\Deliverables\Independent Metals SWPPP.doc

Revisions

April 30, 2009

Updated site map to include installed treatment system
Added maintenance procedures for treatment system
Updated Pollution Prevention Team names and phone numbers
Added spill plan to document
Modified pH limits for impaired water body in section 4.4
Added contamination source risk section to site assessment
Added Treatment system to Section 3, BMPs
Fixed numbering in section 3.2 and table of contents for same section
Added Stormwater x system to section 3.4
Modified outfall location in section 3.6
Changed sampling location in section 4.2.1
Modified 4.2.5 to change sampling location and method

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SWPPP Certification and Signature

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature	Date
Printed Name	Title

1 General Information

This document presents the Stormwater Pollution Prevention Plan (SWPPP) for Independent Metal's Plant 2 facility in Seattle, Washington. This facility is covered under the Industrial Stormwater General Permit issued by the Washington State Department of Ecology (Appendix A). This SWPPP was developed in accordance with the requirements of that permit.

1.1 SWPPP Objectives

The objectives of the SWPPP include:

- To implement and maintain best management practices (BMPs) that identify, reduce, eliminate, and/or prevent the discharge of stormwater pollutants.
- To prevent violations of surface water quality, ground water quality, and sediment management standards.
- To prevent adverse impacts to receiving waters by controlling peak rates and volumes of stormwater runoff.
- To eliminate discharge of un-permitted process wastewater, domestic wastewater, non-contact cooling water, and other illicit discharges to stormwater drainage systems.

1.2 SWPPP Updates

The SWPPP does not normally require revision following implementation. Reasons to review and revise the SWPPP include:

- If there are significant changes to processes or operations at the facility, which require modification of permit coverage.
- If there are changes in design, construction, operation, or maintenance of BMPs at the facility which cause the SWPPP to be less effective in controlling pollutants.
- As required to meet permit conditions, including water quality standards. Ecology may require implementation of additional BMPs, including treatment BMPs, if an applicable benchmark value specified in the current permit is exceeded.

1.3 SWPPP Availability

Ecology may request a current copy of or an update to the SWPPP. Independent Metals must submit their SWPPP/update to Ecology within 2 weeks of receiving the request, or at a later date approved by Ecology.

Ecology will maintain a copy of the SWPPP at the appropriate Ecology regional office. For Independent Metals, the SWPPP will be kept at the Northwest Regional Office. The public may view a copy of the SWPPP at the regional office.

Also, Independent Metals must provide a copy, or access to a copy, of the SWPPP to the public if requested in writing. The SWPPP must be provided in a reasonable time frame. Permit condition S5.F provides more detail about the requirements for making the SWPPP publicly available.

1.4 Signatory Requirements

Permit condition G17 requires that "all applications, reports, or information submitted to Ecology shall be signed and certified" shall be signed by a principal executive officer of the company, or an authorized representative. Robb Smith has been identified as an authorized representative for Plant 2.

Each document signed under this permit shall include the following certification:

"I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. "

2 Facility Assessment

2.1 Facility Description

Independent Metals Plant 2 is scrap metal sorting and handling facility located at 816 South Kenyon Street in Seattle, Washington (Figure 1). The facility is located on a 3.2-acre site bordering the Duwamish River (Figure 2). The property is owned by Silver Bay Logging, whose operations are located on the northern portion of the site.

The portion of the site used by Independent Metals includes a paved yard, dock for barge loading\unloading, parking areas, and three buildings. The buildings consist of an unused office building, a large prefabricated steel warehouse, and a smaller prefabricated steel storage building. The office, palletized scrap storage, scrap processing machine, and maintenance shop are located in the large warehouse. There are no floor drains inside the warehouse.

Site access is from 8th Avenue through a gate opposite S Chicago Street or on the south side of the warehouse off South Kenyon Street. The majority of the site is fenced to control access. Generally, trucks bringing scrap metal to the facility enter and exit through the gate off 8th Avenue. Scrap is unloaded, sorted, cut or sheared to size, and heavier scrap loaded on pallets in the yard area. Lighter scrap is transferred inside the warehouse to a scrap processor. Pallets of heavier scrap are stored in the warehouse. Finished scrap is loaded into trucks on the south side of the warehouse for shipping.

Site topography is relatively flat. The southern portion of the site, including the majority of roof drains from the warehouse, discharges stormwater to the City of Seattle combined sewer. The interior yard area, and a few roof drains from the buildings, drain to a single catch basin located near the center of the yard. This catch basin (CB01) has a single pipe that heads directly to an outfall on the bank of the Duwamish River.

Stormwater from a portion of the Silver Bay Logging operations drains to the catch basin CB01 in the center of the paved yard. In addition, during high tides, water from the Duwamish River may enter the drainage system or overtop the asphalt berm at the edge of the site and flow into low points of the yard. The site also receives stormwater run-on from 8th Ave at the entrance on Chicago Street.

Primary risks for storm water contamination are from fluids received in incoming material to be recycled. Independent Metals does not allow fluids to be brought on the site and has a pre-inspection procedure to verify this is the case. Secondary sources include leaks and hose breaks from heavy equipment and leaching from the scrap material on site.

2.2 Industrial Activities

The following industrial activities are conducted at the site:

- Heavy Equipment Storage (Indoors and Outdoors) – heavy equipment used to load/unload, handle, cut, and haul scrap is stored in the warehouse and outdoors in the yard area.
- Mobile Fueling (Indoors and Outdoors) – heavy equipment located outdoors is fuel from a small, skid mounted diesel tank brought to each location by fork lift.
- Loading and Unloading of Solid Materials (Outdoors) – scrap materials are unloaded from barges and trucks in the yard area. Processed scrap is loaded into trucks on the south side of the warehouse.
- Cutting Metal (Outdoors) – larger scrap metal is cut to size with a torch, or mechanical shear in the yard area.
- Parking (Outdoors) – trucks and employee vehicles are parked in the yard area and also in a dedicated parking area.
- Scrap Processing (Indoors) – light scrap is processed inside the warehouse.
- Equipment Maintenance (Indoors) – equipment maintenance is performed in a dedicated area inside the warehouse.
- Galvanized Roofs (Outdoors) – the roof of the warehouse appears to be made of painted or otherwise coated galvanized sheet metal.

2.3 Materials Inventory

The following materials are stored, handled or used at the site and have the potential to be exposed to precipitation or runoff.

- Hydraulic Oil – Spills, drips or leaks from hydraulic lines used in heavy equipment could contaminate stormwater.
- Diesel – Spills, drips or leaks during mobile fueling or from vehicles and equipment could contaminate stormwater.
- Lube Oil – Spills, drips or leaks from vehicles could contaminate stormwater.
- Antifreeze – Spills, drips or leaks from vehicles could contaminate stormwater.
- Brake Pads and Tires – Wear from brake pads and tires could create metal particles (particularly zinc and copper) that could contaminate stormwater.
- Scrap Metal – Scrap metal is stored outside in piles and could leach metals to stormwater. Metal particles from cutting could be transported by stormwater.
- Used Absorbent – granular absorbent material used to clean up spills is stored indoors in drums.
- Galvanized Roof – metals (particularly zinc) from the galvanized roof could leach into stormwater.
- Incidental Maintenance Products (paints, soaps, solvents, etc.) – various maintenance products are stored in small quantities inside the warehouse. There is little potential for contamination of stormwater.

3 Best Management Practices

There are three main categories of BMPs for long-term management of stormwater at developed sites, including:

- Source control BMPs, which address the prevention of stormwater pollution from potential sources.
- Treatment BMPs, which address treatment of stormwater runoff to remove pollutants.
- Volume/flow rate control BMPs, which address the volume and timing of stormwater flows.

This facility primarily relies upon source control BMPs and Treatment BMPs for stormwater pollution prevention. There are two categories of source control BMPs, operational and structural. Operational source control BMPs are non-structural practices that prevent or reduce pollutants from entering stormwater. Structural source control BMPs are physical, structural, or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater. Independent Metals has installed an AQUIP Model treatment system from Stormwaterx. The following sections describe the BMPs implemented at this facility.

3.1 BMP Selection Procedure

BMPs were selected from the City of Seattle Source Control Technical Manual using the presumptive approach.

As of May 2008, the Source Control Technical Manual is being evaluated by Ecology for equivalency with the 2005 Stormwater Management Manual for Western Washington. If approved by Ecology, the site will be required by Seattle Municipal Code to comply with the source control requirements. BMPs were selected from this manual to meet the goals of complying with Industrial Permit requirements and City Code requirements at the same time.

3.2 General Source Control BMPs

- The operational BMPs described in this section are implemented on a facility-wide basis to prevent or reduce pollutants from entering stormwater.

3.2.1 Pollution Prevention Team

- The Pollutions Prevention Team consists of the following:
- Robb Smith, Operations Manager, Phone 206-769-6323:
  - Implementing, maintaining, and modifying the SWPPP,

- Holding regular meetings with facility personnel to review the overall operation of the BMPs,
- Establishing responsibilities for sampling, inspections, operation and maintenance, and availability for emergency situations,
- Arranging training of facility personnel in the operation, maintenance, and inspection of the BMPs,
- Preparing and submitting quarterly Discharge Monitoring Reports (DMRs),
- Signatory authority, and
- Permit renewal.

- **Marianne Napoli, Environmental and Safety Manager. Phone 206-763-9033**
  - Maintain clear lines of communication with the operations manager.
  - Monitor Environmental and Safety regulations and modify the SWPPP as needed to comply.
- **Jose Roman, Yard Manager Phone 206-763-9033**
  - Maintain clear lines of communication with the Operations Manager
  - Report issues in the Yard to the Operations Manager, address as required

3.2.2 *Good Housekeeping*

Good housekeeping is the ongoing approach to improve and maintain a clean and orderly work environment and includes the following BMPs. These BMPs will be conducted on a daily or as needed basis in each area of the facility.

- Promptly containing and cleaning up pollutant leaks and/or spills including oils, solvents, and fuels.
- Sweeping paved material handling and storage areas regularly to collect and dispose of dust and debris that could contaminate stormwater. Do not hose down pollutants from any area to the ground, storm drain, or receiving water unless necessary for dust control purposes.
- Cleaning oils, debris, sludge, etc. from structural and treatment BMP systems regularly, including catch basins the oil/water separator, to prevent contamination of stormwater.
- Promptly repairing or replacing substantially cracked or otherwise damaged paved secondary containment and/or drainage areas subject to pollutant material leaks or spills.
- Promptly repairing or replacing leaking connections, pipes, hoses, valves, etc., which could contaminate stormwater.
- Using solid absorbents for cleanup of liquid spills/leaks, where practicable.

3.2.3 Preventive Maintenance

- Regularly inspect and maintain stormwater management devices and drainage systems
- Regularly inspect and maintain heavy equipment used in handling scrap.
- Use appropriate containers for storage of liquids and solid materials.

3.2.4 Spill Prevention, Reporting, and Emergency Cleanup

Spill prevention, reporting, and emergency cleanup will be conducted in accordance with the Spill Plan developed for the site. Independent Metals worked with the Environmental Coalition of South Seattle (ECOSS), to develop the spill plan. A copy of the plan is included in Appendix C. The Spill Plan addresses emergency training and response, material handling, and material storage procedures for the site. If a spill reaches a sanitary or storm sewer, groundwater, or surface water Ecology will be notified immediately.

3.2.5 Employee Training

Employees will receive annual training including an overview of the SWPPP and how complying with the SWPPP makes a difference in and preventing contamination of stormwater. Training will address spill response procedures, good housekeeping, and material management practices. The form provided in Appendix B will be used to document the training and includes training topics, a brief description of the training program/materials, the date the training was conducted, and the attendees.

3.2.6 Inspections and Reporting

A visual inspection will be conducted quarterly during storm events to verify that pollutant sources, source control and treatment BMPs, and current site conditions identified in the SWPPP are accurate. Visual inspections and response actions will be conducted and reported on concurrently with the quarterly stormwater monitoring and sampling activities described in Section 4.

In addition, one dry season visual inspection will be conducted annually during the months of July, August, or September following seven consecutive days of no precipitation to determine whether there are any un-permitted non-stormwater discharges to storm drains or receiving waters.

Based on the visual inspections of the facility, additional or enhanced BMPs may be required for implementation at the site. Within 30 days of the inspection, a schedule will be established for implementation of additional BMPs. The forms provided in Appendix B will be used to identify the required BMPs and schedule a completion date. Non-capital BMPs will be completed within two weeks and capital BMPs will be completed within six months of identification. The SWPPP will be revised to reflect these modifications.

3.2.7 Record Keeping

Records of visual inspections, spill reporting, and discharge monitoring will be retained for a minimum of five years as follows:

- Records for inspection and maintenance of the facility and documentation of spills will be maintained with the SPCC Plan.
- Records for the quarterly Discharge Monitoring Reports (DMRs), the quarterly stormwater discharge inspections, and the annual non-stormwater discharge inspections will be kept in Appendix D of the SWPPP.
- Records for the implementation of additional or enhanced BMPs will be maintained as attachments to the SWPPP.
-

3.3 Activity-Specific Source Control BMPs

Activity-specific source control BMPs were identified using the Worksheet for Identifying Applicable Best Management Practices from the 2007 Draft Source Control Technical Manual.

BMP descriptions for the selected BMPs and the six City-wide BMPs are included in Appendix C.

Table 1. Worksheet for Identifying Applicable BMPs

	Activity	Required BMP
CLEANING AND WASHING		
☐	Cleaning or washing of tools, engines, and manufacturing equipment • Applies to cleaning or washing, including pressure washing, parts or equipment outside or where the washwater can enter the outside drainage system.	BMP 7
☐	Cleaning or washing of food service establishment equipment • Applies to vents, filters, pots and pans, grills, floor mats, and related items.	BMP 8
☐	Washing, pressure washing, and steam cleaning of vehicles, equipment, and building structures • Applies to cleaning and washing at all types of establishments, including fleet vehicle yards, car dealerships, car washes, and maintenance facilities.	BMP 9
☐	Collection and disposal of wastewater from mobile interior washing operations • Applies to carpet cleaners, upholstery cleaners, and other interior items, including ventilation systems	BMP 10
TRANSFER OF LIQUID OR SOLID MATERIALS		
☒	Loading and unloading of liquid or solid material • Applies to loading and unloading of liquid or solid materials at industrial, commercial, and transportation facilities.	BMP 11
☐	Fueling at dedicated stations • Applies to gas stations, pumps at fleet vehicle yards or shops, and other privately owned pumps, including construction sites.	BMP 12
☒	Automotive repair and maintenance • Applies to oil changes and other engine fluids at permanent or temporary sites.	BMP 13
☒	Mobile fueling of vehicles and heavy equipment	BMP 14

	• Applies to fleet fueling, wet fueling, and wet hosing.	
PRODUCTION AND APPLICATION ACTIVITIES		
☒	Manufacturing and post-processing of metal products • Applies to machining, grinding, soldering, cutting, welding, quenching, rinsing, etc.	BMP 17
☐	Wood treatment • Applies to wood treatment by means of pressure processes, dipping, or spraying.	BMP 18
☐	Commercial composting • Applies to commercial composting facilities that operate outside without cover.	BMP 19
Activity		**Required BMP**
☐	Landscaping and lawn and vegetation management • Applies to businesses involved in vegetation removal, including moss control, application of herbicides, pesticides and insecticides; application of fertilizer; irrigation, watering, gardening and lawn care.	BMP 20
☐	Painting, finishing, and coating of vehicles, boats, buildings, and equipment • Applies to surface preparation and the applications of paints, finishes, and/or coatings.	BMP 21
☐	Commercial printing operations • Applies to materials used in the printing process.	BMP 22
☐	Outdoor manufacturing activities • Applies to manufacturing activities in outdoor areas.	BMP 23
STORAGE AND STOCKPILING		
☒	Outdoor storage or transfer of solid raw materials, byproducts, or finished products • Includes sand, topsoil, lumber, and other products.	BMP 24
☐	Storage of treated and contaminated soils • Applies to contaminated soils that are excavated and left on site.	BMP 25
☐	Temporary storage or processing of fruits or vegetables • Applies to storage of fruits and vegetables outdoors, processing activities at wineries, by fresh and frozen juice makers, and other food and beverage processing operations.	BMP 26
☒	Recycling, wrecking yard, and scrap yard operations • Applies to scrapped equipment, vehicles, construction materials, and assorted recyclables.	BMP 27
☒	Outdoor portable container storage • Applies to containers that are located outside a building and used for temporary storage.	BMP 28
☐	Storage of liquids in permanent aboveground tanks • Applies to all liquids in aboveground tanks.	BMP 29
☒	Parking lot maintenance and storage of vehicles and equipment • Applies to public and commercial parking areas.	BMP 30
DUST CONTROL AND SOIL AND SEDIMENT CONTROL		
☐	Dust control in disturbed land areas and on unpaved roadways and parking lots	BMP 31
☐	Dust control at manufacturing sites • Applies to grain dust, sawdust, coal, gravel, crushed rock, cement, boiler fly ash and other airborne polluting materials.	BMP 32
☐	Soil erosion and sediment control at industrial sites • Applies to industrial activities that take place on soil.	BMP 33

OTHER		
☐	Commercial animal care and handling • Applies to operations at kennels, fenced pens, veterinary clinics, and businesses that board animals.	BMP 34
☐	Log sorting and handling • Applies to log yards typically located at sawmills, ports, and pulp mills.	BMP 35
☐	Boat building, mooring, maintenance, and repair • Applies to all types of maintenance, repair, and building operations at shipyards, ports, and marinas.	BMP 36
Activity		**Required BMP**
☐	Logging and tree removal • Applies to logging activities that fall under Class IV general forest practices.	BMP 37
☐	Mining and quarrying of sand, gravel, rock, peat, clay, and other materials • Applies to excavation and storage of mined materials.	BMP 38
☐	Cleaning and maintenance of swimming pools and spas • Applies to swimming pools and spas, including all commercial pool cleaners.	BMP 39
☐	Deicing and anti-icing operations for airports and streets • Applies to highways, aircraft, runways, and taxiways, and streets.	BMP 40
☒	Maintenance and management of roof and building drains at manufacturing and commercial buildings	BMP 41
☐	Maintenance and operation of railroad yards	BMP 42
☐	Maintenance of public and private utility corridors and facilities • Applies to maintenance activities related to public and private utilities, including pipelines, pump stations, rights-of-way and transmission corridors.	BMP 43
☐	Maintenance of roadside ditches	BMP 44

A BMP implementation plan, detailing how each of these BMPs will be implemented and who is responsible for implementation, is shown in Table X. In general, applicable operational BMPs will be implemented immediately. Structural BMPs will be implemented at redevelopment of that portion of the site, or if required as part of a Level Two or Level Three response.

The following list summarizes the key, or unique, elements of how these BMPs are implemented at the site:

BMP 11 – Loading and Unloading of Liquid or Solid Materials – Only solid materials are loaded\unloaded. Paved yard is swept daily.

BMP 13 – Automotive Repair and Maintenance – Equipment maintenance and repair is performed in a designated location inside the warehouse building.

BMP 14 – Mobile Fueling of Vehicles and Heavy Equipment – Facility has spill plan, and multiple spill kits, including one mounted on mobile fuel tank.

BMP 17 – Manufacturing and Post-Processing of Metals – Area swept daily to collect small pieces of metal. Catch basin filter installed to catch metal pieces. No water is used for quenching or rinsing.

BMP 24 – Outdoor Storage or Transfer of Solid Raw Materials, Byproducts, or Finished Products – Storage area swept daily. Storage area is paved and has a perimeter berm. Drains to catch basin filter.

BMP 27 – Recycling, Wrecking Yard, and Scrap Yard Operations – Area is bermed, sloped to drain, and frequently inspected. Spills cleaned up immediately.

BMP 28 – Outdoor Portable Container Storage – Limited outdoor storage of containers (dumpster, used sorbent). Appropriate containers used, with tight fitting lids. Containers stored on paved surface.

BMP 30 – Parking Lot Maintenance and Storage of Vehicles and Equipment – Paved area swept daily. One parking area discharges to combined sewer.

BMP 41 – Maintenance and Management of Roof and Building Drains at Manufacturing and Commercial Buildings – Metal roofs is painted and/or coated.

3.4 Treatment BMPs

A Stormwaterx passive treatment system has been installed on site. The maintenance procedures for this system can be found in the appendix..

3.5 Flow Control BMPs

Flow control BMPs are required when development or redevelopment exceeds a threshold determined by Seattle City Code. No flow control BMPs are installed on the site. The need for Flow Control BMPs will be considered during future site redevelopment.

3.6 Erosion and Sediment Control BMPs

The risk of soil erosion from the majority of the site is low because the site is paved or covered by roof. Erosion sediment control (ESC) BMPs for these areas are not required.

The outfall from the treatment system discharges to a concrete discharge pipe in the Duwamish.

4 Monitoring Plan

The goal of the monitoring program is to comply with the monitoring requirements of the Industrial Stormwater General NPDES Permit. The monitoring program consists of visual monitoring, including a dry season inspection, and stormwater sampling.

4.1 Visual Monitoring

A total of five visual inspections are required each year: four quarterly inspections during sampling events, and one dry season inspection. Details on how to perform each type of inspection are outlined below.

4.1.1 Quarterly Inspections

A visual inspection will be performed each quarter during the stormwater sampling event. Visual inspections associated with sampling events will be documented on the form in Appendix D. If stormwater is not sampled during any particular quarter, a visual inspection will still be performed. Visual inspections will include the following:

- Inspection of the discharge, looking for the following at the discharge location:
  - Floating materials
  - Trash
  - Visible sheen
  - Discoloration
  - Turbidity
  - Odor
- Assessment of stormwater BMPs required by the permit, or listed in the SWPPP, including but not limited to the following:
  - Overall Good Housekeeping – look for spills, leaks, and debris. Proper storage of liquids, equipment, etc.
  - Spill kit(s) – check and restock kit contents.
  - Barge loading area – look for spills, leaks, and debris. check equipment. check for potential pollutant sources
  - Scrap sorting area – look for spills, leaks, and debris. check equipment. check for potential pollutant sources.
  - Catch basin and pipe– accumulation of sediment, erosion, maintenance needs.
  - Verify that the SWPPP accurately describes potential pollutant sources.
  - Verify that the site map is accurate and up to date.

4.1.2 Dry Season Inspection

One dry season inspection will be performed each year sometime during July, August, or September. The inspection will be performed after at least seven consecutive days of no precipitation. The purpose of the inspection is to look for non-stormwater discharges to the stormwater system such as wastewater, process waters, or non-contact cooling water.

When performing the dry season inspection, keep in mind that the following are not necessarily considered illicit discharges according to the permit:

- Discharges from fire fighting activities;
- Fire protection system flushing, testing, and maintenance;
- Discharges of potable water including water line flushing, provided that water line flushing must be de-chlorinated prior to discharge;
- Uncontaminated air conditioning or compressor condensate;
- Irrigation drainage;
- Uncontaminated ground water or spring water;
- Discharges associated with dewatering of foundations, footing drains, or utility vaults where flows are not contaminated with process materials such as solvents; and
- Incidental windblown mist from cooling towers that collects on rooftops or areas adjacent to the cooling tower. This does not include intentional discharges from cooling towers such as piped cooling tower blow down or drains.

These discharges are conditionally allowed by the permit if they are documented in the SWPPP and efforts are taken to eliminate or reduce the discharge according to Permit Condition S3.C.2.

The dry season inspection form provided in Appendix D will be completed to document each inspection. If it is not possible to test for the presence of non-stormwater discharges then a "failure to certify" form included in Appendix D will be completed and certified instead.

4.2 Stormwater Sampling

Stormwater samples will be collected quarterly according to the following procedures:

4.2.1 Where to Collect Stormwater Samples

Samples should be collected from the stormwater treatment system discharge to the Duwamish River. There is a valve on the discharge portion of the treatment system that can be opened during storm events to collect a sample. Make sure the treatment system is active before taking samples.

4.2.2 When to Collect Stormwater Samples

One stormwater sample will be collected during each quarter. The permit defines quarters as follows:

- First Quarter – January to March
- Second Quarter – April to June
- Third Quarter – July to September
- Fourth Quarter – October to December.

Stormwater samples should be collected within the first hour that discharge occurs from a storm event meeting the following criteria:

1. The storm event sampled has at least 0.1 inches of rain in a 24-hour period, or the storm event has an intensity of at least 0.1 inches in 24-hours prior to sample collection.
2. The storm event has been preceded by at least 24-hours of no greater than trace precipitation.

Sample collection outside of regular business hours is not required.

Independent Metals will use its best efforts to collect a sample from a storm meeting the above criteria. However, if a sample is collected from a storm that does not meet one or more of the criteria, the sample still should be analyzed and the results will be submitted to Ecology on the quarterly Discharge Monitoring Report (DMR). Once a sample has been collected for a quarter, no further sampling efforts will be undertaken, unless as part of a level 1, 2, or 3 response.

4.2.3 How to analyze stormwater samples

Stormwater shall be sampled for the following parameters. Stormwater sampling may be suspended based on consistent attainment (eight consecutive quarters where reported values are less than or equal to the benchmark values listed in the table).

Samples will be analyzed for the following parameters:

- Parameters required of all permittees (S4.D.2)
  - Turbidity
  - pH
  - Total Zinc
  - Oil & Grease
- Additional monitoring required by industrial group - scrap recycling (S4.E.4):
  - Total Copper
  - Total Lead
  - Hardness

- Parameters required for facilities discharging to 303(d) listed waterbodies
  - pH
  - The facility discharges to a reach of the Duwamish Waterway that is on the 2004 303(d) list for high pH (listing 7417). pH monitoring is already required of all permittees.

Stormwater samples will be analyzed by an accredited laboratory.

Table 3 – Monitoring Parameters, Methods, Bottles, and Hold Times

Parameter	Units	Analytical Method(s) "Considered Appropriate" by Permit (1)	Samples Bottle and Preservative	Maximum Hold Time
Turbidity	NTU	meter	one 500 mL HDPE	48 hours
pH	Std. Units	meter/litmus paper	Field	NA
Oil & Grease	mg/L	EPA 1664 or 1664A	one 1 L glass w/ HCl to pH<2	28 days
Total Zinc	µg/L	EPA 200.7	one 500 mL HDPE w/ 5 mL 1:1 HNO_3	6 months
Total Copper	µg/L	EPA 200.7		6 months
Total Lead	µg/L	EPA 200.7		6 months
Hardness	mg/L	EPA 130.1 or 130.2		6 months

1) Equivalent or superior methods may be substituted by an accredited lab according to Permit Condition S4.D.2

4.2.4 Preparing to collect stormwater samples

Prior to a storm sampling event, contact the laboratory and order sample bottles. The sample container requirements for the various analyses are shown in Table 2. It is important that samples are collected in the correct type of bottles. Pre-cleaned sample bottles will be supplied by the laboratory with any required preservative already inside.

4.2.5 How to collect stormwater samples

These sample collection procedures were developed in accordance with the guidance provided by *How to Do Stormwater Sampling, a guide for industrial facilities* (Ecology 2002).

During a storm sampling event, do the following:

1. Perform visual inspection and complete visual inspection form.
2. Put on clean gloves. Powder-free nitrile gloves should be worn during sample collection. Change gloves between sampling locations.

3. Measure field parameters (pH) by immersing the litmus paper or pH meter in the flowing water. If a pH meter is used, check the calibration of the meter prior to each sampling event. Record the calibration value, and the sample result on the field form (Appendix D)
4. Fill the oil and grease sample bottle (1 L amber glass bottle) from the valve on the treatment system, do not allow the bottle to overfill.
5. Fill bottle for other parameters using the same method. Do not rinse or overfill the sample bottles.
6. Label the sample bottles. Each sample bottle should be labeled with the sample number, location, date and time of collection, requested analyses, any preservatives used, and the initials of the sample collector.
7. Transfer the bottles to an ice-filled cooler and store at approximately 4° C (see sample procedures below) until transferred to the laboratory.
8. Complete the Chain of Custody using the laboratory's standard Chain of Custody form.
9. Submit sample and Chain of Custody to laboratory.
10. Complete visual inspection/sampling form by recording the 24-hour precipitation totals for the sample day, and previous day, from SeaTac weather station.

4.3 Sampling Team and Responsibilities

Robb Smith, Plant 2 Operations Manager, will be responsible for overall implementation of the monitoring program, including training, modifications to the monitoring plan, coordination with the laboratory as well as reporting and recordkeeping.

The Operations Manager will oversee the field program including identifying when to collect stormwater samples.

Visual Inspections and Stormwater Sampling will be performed by the Operations Manager, or trained facility personnel under the direction of the Operations Manager.

4.4 Data Analysis and Response

Laboratory data will be reviewed upon receipt from the laboratory. Data will be compared with benchmarks identified in the permit. Benchmark values applicable to the site are summarized in the following Table . Each time a sample result exceeds a benchmark, a level one response will be performed.

Table 4 – Benchmark Values and Action Levels

Parameter	Permit Condition Requiring Monitoring this Parameter	Benchmark Value	Action Level
Turbidity	All Permittees (S4.D.2)	25 NTU	50 NTU
pH	All Permittees (S4.D.2)	6.5 to 8.5	pH < 5 or pH >10
Total Zinc	All Permittees (S4.D.2)	117 µg/L	372 µg/L
Oil & Grease	All Permittees (S4.D.2)	15 mg/L	30 mg/L
Total Copper	Additional Monitoring Required by Industrial Group – Scrap Recycling (S4.E.4)	63.6 µg/L	149 µg/L
Total Lead	Additional Monitoring Required by Industrial Group – Scrap Recycling (S4.E.4)	81.6 µg/L	159 µg/L
Hardness	Additional Monitoring Required by Industrial Group – Scrap Recycling (S4.E.4)	None	None

If a benchmark is exceeded, a level one response is required. If any two out of the four previous quarterly sampling results for a parameter are above the action levels shown in Table 3, a level two response is required. If any four quarterly samples for a particular parameter are above the action levels shown in Table 3, then a level three response is required.

4.4.1 Level One Response

A level one response is required each time a benchmark is exceeded. In a level one response, the following actions will be performed by Independent Metals, as required by the permit (S4.C):

1. Conduct an inspection of the facility as promptly as possible, but no later than two weeks after receipt of sampling results. The inspection shall:
   a. evaluate possible sources of the benchmark parameter in the stormwater discharge;
   b. identify source /operational control methods by which the permittee can further reduce stormwater contamination; and

c. evaluate whether any improvements or changes to the stormwater pollution prevention plan are warranted to control the benchmark parameter.

2. Summarize the results, including remedial actions taken, if any, and place them in the SWPPP.

3. Evaluate the need for a level two or three response as outlined below.

4. Include a brief summary of inspection results and remedial actions with the quarterly discharge monitoring report for the quarter for which sample results were above benchmark values.

4.4.2 Level Two Response

If any two out of the four previous quarterly sampling results for a parameter are above the action levels shown in Table 3, proceed with a level two response as follows:

1. Promptly identify the potential sources of stormwater contamination that are causing or contributing to the presence of the benchmark parameter.

2. Investigate all available options of source control, operational control and stormwater treatment best management practices to reduce stormwater contaminate levels below permit benchmark values.

3. Implement additional source and operational best management practices identified as part of this investigation.

4. Prepare a level two source control report outlining actions taken, planned and any schedule for implementing source and operational best management practices to reduce stormwater contaminate levels.

5. Submit the level two source control report to Ecology within six months of initiating a level two response.

4.4.3 Level Three Response

If any four quarterly samples for a particular parameter are above the action levels shown in Table 3, proceed with a level three response, as follows:

1. Promptly identify the potential sources of stormwater contamination that are causing or contributing to the presence of the benchmark parameter.

2. Investigate all available options of source control, operational control and stormwater treatment best management practices to reduce stormwater contaminant levels to or below permit benchmark values.

3. Implement additional source control, operational control and stormwater treatment best management practices identified as part of this investigation within twelve months of initiating the level three response.

4. Prepare a level three source control report outlining actions taken, planned and scheduled to reduce stormwater contaminant levels including stormwater treatment best management practices.

5. Submit the level three source control report to Ecology within twelve months of initiating a level three response.

4.4.4 Consistent Attainment

Stormwater sampling for any parameter may be suspended based on consistent attainment of benchmark values for that parameter. Consistent attainment is defined as eight consecutive quarters (any quarter with no stormwater discharge is not counted) where the reported values are equal to or less than the benchmark level. For pH, this means that sample results are not greater than 9 or less than 6.

Quarterly visual monitoring is still required even if consistent attainment is achieved for all parameters.

4.5 Reporting and Recordkeeping

This section describes the reporting and recordkeeping requirements for complying with the Reporting and Recordkeeping Requirements presented in Condition S5 of the permit.

4.5.1 Reporting

Monitoring data will be submitted quarterly to Ecology with the DMR form provided by Ecology. Monitoring reports will be submitted according to the following deadlines stipulated in the permit:

- First Quarter – not later than May 15
- Second Quarter – not later than August 14
- Third Quarter – not later than November 14
- Fourth Quarter – not later than February 14

Reports will be submitted to Ecology headquarters at:

Industrial Stormwater Permit Manager
Department of Ecology
Water Quality Program
PO Box 47696
Olympia, WA 98504-7696

4.5.2 Recordkeeping

All field sampling records, pH meter calibration and maintenance records, inspection reports, chains of custody, laboratory data reports, DMRs, and any other documentation of compliance with permit requirements will be retained for a minimum of five years.

References

City of Seattle 2008, Volume 1 – Source Control Technical Manual, Draft, February 15.

Ecology 2002, How to Do Stormwater Sampling, A guide for industrial facilities, pub no. 02-10-071, December 2002, revised 1/05)

Ecology 2004, The Industrial Stormwater General Permit, Modified December 1, 2004.

APPENDIX A

NPDES Permit

APPENDIX B

Employee Training Logs

APPENDIX C

BMP Descriptions

APPENDIX D

Monitoring Forms:

1. Visual Inspection and Field Sample Collection Form
2. Non-Stormwater Discharge Certification Form

APPENDIX E

Monitoring Results

Industrial Stormwater General Permit National Pollutant Discharge Elimination System (NPDES)
Discharge Monitoring Report (DMR)

Site Name: Independent Metals	WAR009725	C4T01
Site Address: 816 South Kenyon St.	Permit Number	Sampling Point
City: Seattle **County:** King		

Submit **one** DMR per sampling point.

Reporting Period			
Quarter (circle one) Year:			
1st	2nd	3rd	4th
Jan/Feb/Mar	Apr/May/Jun	Jul/Aug/Sept	Oct/Nov/Dec

Parameter	Units	Benchmark Value	Analytical Method	Laboratory Quantitation Level	Sample Results			
					SINGLE SAMPLE RESULT	SINGLE SAMPLE DATE (MM/DD)	AVERAGE (If more than one sample collected, complete additional sampling log on next page.)	CONSISTENT ATTAINMENT? (Condition S4.B.6) (✓ for yes)
Turbidity	NTU	25	EPA 180.1, Meter	0.5	24.3	1/4/10		☐
pH	s.u.	5 - 9	Meter	±0.5	7.9	1/4/10	N/A	☐
Zinc, Total	µg/L	117	EPA 200.8	2.5	495	1/4/10		☐
Oil Sheen	Yes/No	No visible oil sheen	N/A	N/A	Sheen Present? Yes (No) (circle)	1/4/10	N/A	N/A
~~Copper, Total~~	~~µg/L~~	~~Western WA: 14~~ Eastern WA: 32	~~EPA 200.8~~	~~2.0~~	16	1/4/10		☐
Lead, Total	µg/L	81.6	EPA 200.8	0.5	32	1/4/10		☐
Total Petroleum Hydrocarbons (TPH)	mg/L	10	NWTPH-Dx	0.1	.94	1/4/10		☐

☐ No sample collected – No stormwater was discharged during normal working hours.
☐ No sample collected – Stormwater was discharged during normal working hours, but a sample wasn't collected (explain in comments section).

ADDITIONAL COMMENTS:

Mail your DMR to: Department of Ecology, Water Quality Program – Industrial Stormwater, P.O. Box 47696, Olympia, WA 98504-7696

NISQUALLY ENVIRONMENTAL SAMPLING AND CONSULTING

Nisquallyenv@aol.com
Post Office Box 1402 Phone253.208.2400
Tacoma, WA 98401 Fax 360-400-3566

ANALYTICAL REPORT

Independent Metals
Larry Brewer
816 South Kenyon St
Seattle, WA 98108

Date: 12/31/09
Report Number: IND123109
Project Name: White River: Storm Water Monitoring

Sample I.D.	Sample Type	Date Sampled	Date Analyzed	Method/ Description	Value
OUT01	Grab	01/04/10	01/04/10	180.1/Turbidity	7.9**
OUT01	Grab	01/04/10	01/04/10	150.1/pH	24.3**

N/D = No Discharge
** Sample analyzed on site

John Allen
Nisqually Environmental & Consulting

Facility Name	Independent metals	Inspection Date	1/4/10	Inspection Time	1300
Description of Weather					

Site Map Current (Yes / No) if no, describe changes	new swppp will have correct map
SWPPP Inventory correct (Yes / No) if no, describe	
Any new potential pollutant sources (Yes / No) if no, describe	
Is equipment washed / cleaned in designated areas (Yes / No / NA)	
If washing, is wash water captured /disposed of correctly (Yes/ No/ NA)	
Fueling areas clean (Yes / No / NA)	
Chemicals/Liquids in secondary containment (Yes / No / NA)	
Containment areas covered ? (Yes / No / N/A)	
If No, is water present? (Yes / No / N/A/) Is management plan followed? (Yes / No/ N/A)	
Maintenance tools, equipment, materials stored properly? (Yes/ No, N/A)	
Drums / Containers stored properly? (Yes / No/ N/A)	
Drums / Containers dirty? (Yes / No/ N/A)	
Vehicles leaking fluids? (Yes/ No/ N/A)	Drip pans in place - vehicles out of service
Evidence of leaks and spills since last inspection? (Yes/ No/ N/A)	
Leaky equipment, materials put out of service and out of stormwater? (Yes / No/ N/A)	
Paved surfaces free of dust / debris? (Yes/ No/ N/A)	
Quarterly vacuum sweeping occurring? (Yes/ No / N/A)	
Waste Receptacles in good condition (Yes/ No/ N/A)	
Waste Receptacles closed when not in use? (Yes/ No/ N/A)	
Waste Receptacles clean on outside? (Yes/ No/ N/A)	

Are the following areas clean of dust, sediment, debris, contaminants, spills, leaks?

Dock Areas	(Yes/ No/ NA)		Storage Area	(Yes/ No/ NA)	
Shops	(Yes/ No/ NA)		Staging Area	(Yes/ No/ NA)	see below
Bag Houses	(Yes/ No/ NA)		Bone Yards	(Yes/ No/ NA)	see below
Other areas	(Yes/ No/ NA)	- some debris on ground but flows into treatment system			

Spill kit available at fueling stations/equipment maintenance areas (Yes/ No/ N/A)	
Spill Kit contains absorbents, drain plug, containment boom, non-metallic shovel, two 5 gal buckets (Yes/ No/ N/A)	

Are damaged materials stored inside a shelter (Yes/ No/ N/A)	
Are outside materials covered (Yes / No/ N/A)	flows to a treatment system
Are scrap bins covered (Yes / No/ N/A)	" " "
Are outdoor containers covered (Yes/ No/ N/A)	" " "
BMP's in good repair (Yes/ No/ N/A)	
BMP's free of buildup? (Yes / No/ N/A)	
Catch basins need cleaning? (Yes/ No/ N/A)	
Treatment Systems in good shape (Yes/ No/ N/A)	— needs making —
Discharge during dry observations? (Yes/ No)	

If inspection completed during sampling, complete the following (Yes/ No/ N/A)

Discharge free of floating materials, oil sheen, discoloration, turbidity, odor, foam, or any signs of contamination (Yes/No./ N/A)

Process water co-mingling with stormwater? (Yes/ No)	
Any other illicit discharges observed? (Yes/ No)	

Add comments for any of the above observations than need further clarification or follow-up:

site relies on treatment system

(Yes/ No) This facility is in compliance with the terms and conditions of the SWPPP and the Industrial Stormwater General Permit
If "No" then list remedial actions above. *"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"*

John Allen		1/4/10
Inspectors printed Name	Inspectors Signature	Date

"I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering formation, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations"

Printed Name	Signature	Date

SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

01/22/2010

Nisqually Environmental
PO Box 1402
Tacoma, WA 98401
Attn: John Allen

P.O.#: *
Project: Independent Metals
Client ID: Grab 01
Date Collected: 01/04/2010
Date Received: 01/04/2010
Spectra Project: 2010010032
Spectra Number: 1

PARAMETER	RESULTS	UNITS	METHOD	BENCHMARK VALUE	MDL	PQL	ANALYST	ANALYSIS DATE
Copper	**16**	µg/L	EPA 200.8	14	0.1	0.7	SCJ	01/06/2010
Lead	**32**	µg/L	EPA 200.8	81.6	0.1	0.7	SCJ	01/06/2010
Zinc	**495**	µg/L	EPA 200.8	117	0.20	1.0	SCJ	01/06/2010
Total Pet. Hydrocarbons	**0.94**	mg/L	NWTPH-D	10	---	0.10	JJB	01/14/2010

SPECTRA LABORATORIES

Steve Hibbs, Laboratory Manager

SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

January 22, 2010

Nisqually Environmental
PO Box 1402
Tacoma, WA 98401
Attn: John Allen

Method: NWTPH-Dx
Sample Matrix: Water
Spectra Project: 2010010032
Applies to Spectra #: 1

HYDROCARBON ANALYSIS
QUALITY CONTROL RESULTS

MS/MSD

Spiked Sample: Method Blank
Units: mg/L
Date Extracted: 12/10/2009
Date Analyzed: 12/11/2009

Compound	Sample Result	Spike Amount Added	Spike Amount Found	Percent Recovery	Dup. Spike Amount Found	Percent Recovery	% RPD
Diesel	0	2.50	2.20	88	1.84	73	18

METHOD BLANK

Date Extracted: 1/5/2010
Units: mg/L
Date Analyzed: 1/14/2010

WTPH-D	<0.10
Heavy Oils	<0.50

Surrogate Recoveries:

p-terphenyl 97%

SPECTRA LABORATORIES

Steven G. Hibbs, Laboratory Manager

CHAIN of CUSTODY

SPECTRA Laboratories 2010010032

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

PAGE 1 of 1

STANDARD ☒ RUSH ☐

CLIENT: Aisqually Environmental ADDRESS:

PROJECT:

CONTACT:

PHONE: FAX:

e-MAIL: Prefer FAX ☐ or e-MAIL ☐

PURCHASE ORDER #:

	SAMPLE ID	DATE SAMPLED	TIME SAMPLED	MATRIX	NUMBER OF CONTAINERS	HYDROCARBONS: NWTPH-HCID	BTEX	BTEX/NWTPH-G	NWTPH-G	NWTPH-Dx	1664 SGT-HEM (TPH)	1664 HEM (O&G)	ORGANICS: 8260/624 VOA	8260 CHLOR SOLVENTS	8270/625 SEMI VOA	8270 PAH/PNA	8082/608 PCB	METALS: TOTAL METALS RCRA8	TOTAL METALS (SPECIFY)	TCLP METALS RCRA 8	TCLP METALS (SPECIFY)	OTHER: pH 9040/9045	TX/TOX 9076	TURBIDITY	FLASH POINT	BOD	SOLIDS (SPECIFY)
1	GRAB01	1/4/09	1315	A	2					X									X								
2																											
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											

SPECIAL INSTRUCTIONS/COMMENTS:

Cu, Pb, Zn by 200.8

	SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME
RELINQUISHED BY	[signature]	John Allen	nesc	1/4/09	1415
RECEIVED BY	Karleigh Beck	K Beck	Spectra	01/04/10	2:15
RELINQUISHED BY					
RECEIVED BY					

RETURN SAMPLES ☐ DISPOSE SAMPLES ☒

(Shipping Fee Applies)

Payment Terms: Net 30 days. Past due accounts subject to 1½% per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. *Spectra Analytical, Inc.*

M99CS000569M 01/06

Nisqually Environmental

Nisqually Environmental
Post Office Box 1402
Tacoma, WA 98401

253-208-2400
nisquallyenv@aol.com

Invoice

DATE	INVOICE #
10/27/2010	IND102710
TERMS	**DUE DATE**
Net 15	11/11/2010

BILL TO
Independent Metals Robb Smith 747 S Monroe Street Seattle, WA 98108

AMOUNT DUE	ENCLOSED
$884.00	

Please detach top portion and return with your payment.

Date	Activity	Quantity	Rate	Amount
10/09/2010	Storm Water Monitoring	1	375.00	375.00
10/19/2010	Monthly Storm Water Inspection	1	90.00	90.00
10/19/2010	Consulting-book audit	2	90.00	180.00
10/27/2010	analytical fees (cu,pb,zn, Hg, nwtph-dx, pcb's)	1	239.00	239.00
			TOTAL	$884.00

Industrial Stormwater General Permit National Pollutant Discharge Elimination System (NPDES)
Discharge Monitoring Report (DMR)

Site Name: Independent Metals	WAR009725	OUTFALL 1
Site Address: 816 South Kenyon St.	Permit Number	Sampling Point
City: Seattle **County:** King		

Submit one DMR per sampling point.

Reporting Period			
Quarter (circle one) Year: 2010			
1st	2nd	3rd	4th
Jan/Feb/Mar	Apr/May/Jun	Jul/Aug/Sept	Oct/Nov/Dec

Parameter	Units	Benchmark Value	Analytical Method	Laboratory Quantitation Level	Sample Results			
					SINGLE SAMPLE RESULT	SINGLE SAMPLE DATE (MM/DD)	AVERAGE (If more than one sample collected, complete additional sampling log on next page.)	CONSISTENT ATTAINMENT? (Condition S4.B.6) (✓ for yes)
Turbidity	NTU	25	EPA 180.1, Meter	0.5	10.2	10/9/10		☐
pH	s.u.	5 - 9	Meter	±0.5	7.4		N/A	☐
Zinc, Total	µg/L	117	EPA 200.8	2.5	166			☐
Oil Sheen	Yes/No	No visible oil sheen	N/A	N/A	Sheen Present? Yes / No (circle)		N/A	N/A
Copper, Total	µg/L	Western WA: 14 Eastern WA: 32	EPA 200.8	2.0	17.6			☐
Lead, Total	µg/L	81.6	EPA 200.8	0.5	2.0			☐
Total Petroleum Hydrocarbons (TPH)	mg/L	10	NWTPH-Dx	0.1	0.49			☐

☐ No sample collected – No stormwater was discharged during normal working hours.

☐ No sample collected – Stormwater was discharged during normal working hours, but a sample wasn't collected (explain in comments section).

ADDITIONAL COMMENTS: Hg = <0.2 µg/L , PCB = <1.0 µg/L

Mail your DMR to: Department of Ecology, Water Quality Program – Industrial Stormwater, P.O. Box 47696, Olympia, WA 98504-7696

Industrial Stormwater General Permit National Pollutant Discharge Elimination System (NPDES)
Discharge Monitoring Report (DMR)

Certification Statement: I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name / Title (printed)	Signature (not valid unless signed). See Permit Condition G2 for signature requirements.	Date Signed

Mail your DMR to: Department of Ecology, Water Quality Program – Industrial Stormwater, P.O. Box 47696, Olympia, WA 98504-7696

Site name: Independent metals

Facility Name	Independent metals	Inspection Date	10/19/10	Inspection Time	11:30
Description of Weather	Clear				

Site Map Current (Yes / No) if no, describe changes	
SWPPP Inventory correct (Yes / No) if no, describe	
Any new potential pollutant sources (Yes / No) if no, describe	
Is equipment washed / cleaned in designated areas (Yes / No / NA)	
If washing, is wash water captured /disposed of correctly (Yes/ No/ NA)	
Fueling areas clean (Yes / No / NA)	
Chemicals/Liquids in secondary containment (Yes / No / NA)	
Containment areas covered ? (Yes / No / N/A)	
If No, is water present? (Yes / No / N/A) Is management plan followed? (Yes / No / N/A)	
Maintenance tools, equipment, materials stored properly? (Yes/ No; N/A)	
Drums / Containers stored properly? (Yes / No/ N/A)	
Drums / Containers dirty? (Yes / No/ N/A)	
Vehicles leaking fluids? (Yes/ No/ N/A)	
Evidence of leaks and spills since last inspection? (Yes/ No/ N/A)	no new oil spots
Leaky equipment, materials put out of service and out of stormwater? (Yes / No / N/A)	
Paved surfaces free of dust / debris? (Yes/ No/ N/A)	
Quarterly vacuum sweeping occurring? (Yes/ No / N/A)	
Waste Receptacles in good condition (Yes/ No/ N/A)	
Waste Receptacles closed when not in use? (Yes/ No/ N/A)	— bins Investment system
Waste Receptacles clean on outside? (Yes/ No/ N/A)	

Are the following areas clean of dust, sediment, debris, contaminants, spills, leaks?

Dock Areas	(Yes/ No/ NA)		Storage Area	(Yes/ No/ NA)	— Treatment system
Shops	(Yes/ No/ NA)		Staging Area	(Yes/ No/ NA)	— " "
Bag Houses	(Yes/ No/ NA)		Bone Yards	(Yes/ No/ NA)	" "
Other areas	(Yes/ No/ NA)				

Spill kit available at fueling stations/equipment maintenance areas (Yes/ No/ N/A)	
Spill Kit contains absorbents, drain plug, containment boom, non-metallic shovel, two 5 gal buckets (Yes/ No/ N/A)	

Site name Indy

Are damaged materials stored inside a shelter (Yes/ No/ N/A)	
Are outside materials covered (Yes / No/ N/A)	Treatment system
Are scrap bins covered (Yes / No/ N/A)	" "
Are outdoor containers covered (Yes/ No/ N/A)	" "
BMP's in good repair (Yes/ No/ N/A)	
BMP's free of buildup? (Yes / No/ N/A)	
Catch basins need cleaning? (Yes/ No/ N/A)	
Treatment Systems in good shape (Yes/ N/ N/A)	
Discharge during dry observations? (Yes/ No)	

If inspection completed during sampling, complete the following (Yes/ No/ N/A)

Discharge free of floating materials, oil sheen, discoloration, turbidity, odor, foam, or any signs of contamination (Yes/No./ N/A)

Process water co-mingling with stormwater? (Yes/ No)	
Any other illicit discharges observed? (Yes/ No)	

Add comments for any of the above observations than need further clarification or follow-up:

Looks good - holes round or repaired

(Yes/ No) This facility is in compliance with the terms and conditions of the SWPPP and the Industrial Stormwater General Permit
If "No" then list remedial actions above. *"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"*

John Allen		10/19/10
Inspectors printed Name	Inspectors Signature	Date

"I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering formation, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations"

Printed Name	Signature	Date

SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

10/27/2010

Nisqually Environmental
PO Box 1402
Tacoma, WA 98401
Attn: John Allen

P.O.#: *
Project: Independent Metals S/W
Client ID: Grab 01
Date Collected: 10/09/2010
Date Received: 10/11/2010
Spectra Project: 2010100236
Spectra Number: 1

PARAMETER	RESULTS	UNITS	METHOD	BENCHMARK VALUE	MDL	PQL	ANALYST	ANALYSIS DATE
Copper	**17.6**	µg/L	EPA 200.8	14	0.14	0.5	SCJ	10/12/2010
Lead	**2.0**	µg/L	EPA 200.8	81.6	0.14	0.5	SCJ	10/12/2010
Zinc	**166**	µg/L	EPA 200.8	117	0.20	1.0	SCJ	10/12/2010
Mercury	**< 0.2**	µg/L	EPA 245.1	0.00000	0.00000	0.00000	SNB	10/12/2010
PCB	**<1.0**	µg/L	EPA 608	0.00000	0.00000	0.00000	JJB	10/21/2010
Total Pet. Hydrocarbons	**0.49**	mg/L	NWTPH-D	10	--	0.10	JJB	10/25/2010

SPECTRA LABORATORIES

Steve Hibbs, Laboratory Manager

SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

October 12, 2010

Nisqually Environmental
PO Box 1402
Tacoma, WA 98401

Units: ug/L
Spectra Project: 2010100236
Applies to Spectra #'s 1

QUALITY CONTROL RESULTS

ICP-MS Metals - EPA Method 200.8 - Water

Method Blank

Date Digested: 10/12/2010 Date Analyzed: 10/12/2010

Element	CAS #	Result
Copper	7440-50-8	< 0.5
Lead	7439-92-1	< 0.5
Zinc	7440-66-6	< 1.0

Blank Spike (LCS)

Date Digested: 10/12/2010 Date Analyzed: 10/12/2010

Element	Spike Added	LCS Conc.	LCS %Rec
Copper	50.0	50.56	101.1
Lead	50.0	54.25	108.5
Zinc	50.0	49.95	99.9

LCS Recovery limits 85-115%

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Digested: 10/12/2010 Date Analyzed: 10/12/2010
Sample Spiked: 2010100204-1

Element	Sample Conc.	Spike Conc.	MS Conc.	MS %Rec	MSD Conc	MSD %Rec	RPD
Copper	5.96	50.0	54.03	96.1	51.92	91.9	4.5
Lead	3.44	50.0	56.70	106.5	51.39	95.9	10.5
Zinc	70.98	50.0	119.60	97.2	114.00	86.0	12.2

Recovery Limits 70-130%
RPD Limit 20

SPECTRA LABORATORIES

Steven G. Hibbs
Laboratory Manager

SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

October 27, 2010

Nisqually Environmental
PO Box 1402
Tacoma, WA 98401

Method: NWTPH-Dx
Sample Matrix: Water
Spectra Project: 2010100236
Applies to Spectra #: 1

HYDROCARBON ANALYSIS
QUALITY CONTROL RESULTS

MS/MSD

Spiked Sample: Method Blank
Units: mg/L

Date Extracted: 10/14/2010
Date Analyzed: 10/19/2010

Compound	Sample Result	Spike Amount Added	Spike Amount Found	Percent Recovery	Dup. Spike Amount Found	Percent Recovery	% RPD
Diesel	0	2.50	2.11	84	2.16	86	2

METHOD BLANK

Date Extracted: 10/21/2010
Units: mg/L

Date Analyzed: 10/25/2010

WTPH-D	<0.05
Heavy Oils	<0.05

Surrogate Recoveries:

p-terphenyl 87%

SPECTRA LABORATORIES

Steven G. Hibbs, Laboratory Manager

SPECTRA Laboratories

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October 27, 2010

Nisqually Environmental
PO Box 1402
Tacoma, WA 98401

Method: EPA Method 608
Sample Matrix: Water
Units: ug/L
Spectra Project: 2010100236
Applies to Spectra # 1

PCB ANALYSIS
QUALITY CONTROL RESULTS

LCS/LCSD

Spiked Sample: Method Blank

Date Extracted: 9/28/2010
Date Analyzed: 9/28/2010

Compound	Sample Result	Spike Amount Added	Spike Amount Found	Percent Recovery	Dup. Spike Amount Found	Percent Recovery	RPD
AR1260	<0.1	0.500	0.420	84	0.440	88	5

METHOD BLANK

Date Extracted: 10/19/2010

Date Analyzed: 10/21/2010

PCB's <0.1

Surrogate Percent Recoveries:

Decachlorobiphenyl 69%

SPECTRA LABORATORIES

Steven G. Hibbs, Laboratory Manager

CHAIN of CUSTODY

PAGE 1 of 1

STANDARD [X] RUSH [ ]

SPECTRA Laboratories 2000100236

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CLIENT: Nisqually Environmental ADDRESS: PO Box 1402, Tacoma Washington 98401 ADDRESS CHANGE [ ]

PROJECT: Independent Metals S/W

CONTACT: John Allen

PHONE: 253-208-2400 FAX:

e-MAIL: john@nisquallyenvironmental.com Prefer FAX [ ] or e-MAIL [ ]

PURCHASE ORDER #

	SAMPLE ID	DATE SAMPLED	TIME SAMPLED	MATRIX	NUMBER OF CONTAINERS	HYDROCARBONS: NWTPH-HCID	BTEX	BTEX/NWTPH-G	NWTPH-G	NWTPH-Dx	1664 SGT-HEM (TPH)	1664 HEM (FOG)	ORGANICS: 8260/624 VOA	8260 CHLOR SOLVENTS	8270/625 SEMI VOA	8270 PAH/PNA	8082/608 PCB	METALS: TOTAL METALS RCRA 8	TOTAL METALS (SPECIFY)	TCLP METALS RCRA 8	TCLP METALS (SPECIFY)	OTHER: PH 9040/9045	TX/TOX 9076	TURBIDITY	FLASH POINT	BOD	SOLIDS (SPECIFY)	PCB's	Hg
1	Grab 01	10/9/10	1255	A	4					X									X									X	X
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
0																													

SPECIAL INSTRUCTIONS/COMMENTS:
Cu, Zn, Pb, by 200.8 Sheen
Detected Yes No

	SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME
RELINQUISHED BY	Deanna Hatten	Deonna Hatten	NESC	10/11/10	12:01
RECEIVED BY	Randa Ross	Randa Ross	Spectra	10/11/10	1201
RELINQUISHED BY					
RECEIVED BY					

RETURN SAMPLES [ ] DISPOSE SAMPLES [X]
(Shipping Fee Applies)

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2 % per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. *Spectra Analytical, Inc.*

NISQUALLY ENVIRONMENTAL SAMPLING AND CONSULTING

Nisquallyenv@aol.com

Post Office Box 1402 Phone253.208.2400

Tacoma, WA 98401 Fax 360-400-3566

ANALYTICAL REPORT

Independent Metals
Larry Brewer
816 South Kenyon St
Seattle, WA 98108

Date: 10/27/10
Report Number: IND102710
Project Name: Storm Water Monitoring

Sample I.D.	Sample Type	Date Sampled	Date Analyzed	Method/ Description	Value
OUT01	Grab	10/09/10	10/09/10	180.1/Turbidity	10.2**
OUT01	Grab	10/09/10	10/09/10	150.1/pH	7.4**

N/D = No Discharge
** Sample analyzed on site

John Allen
Nisqually Environmental & Consulting

Nisqually Environmental

Nisqually Environmental
Post Office Box 1402
Tacoma, WA 98401

253-208-2400
nisquallyenv@aol.com

Invoice

DATE	INVOICE #
10/04/2010	Indy104010
TERMS	**DUE DATE**
Net 15	10/19/2010

BILL TO
Independent Metals Robb Smith 747 S Monroe Street Seattle, WA 98108

AMOUNT DUE	ENCLOSED
$704.00	

Please detach top portion and return with your payment.

Date	Activity	Quantity	Rate	Amount
09/20/2010	Storm Water Monitoring	1	375.00	375.00
09/20/2010	Monthly Storm Water Inspection	1	90.00	90.00
10/04/2010	analytical fees (cu,pb,zn, Hg, nwtph-dx, pcb's)	1	239.00	239.00
			TOTAL	$704.00

Industrial Stormwater General Permit National Pollutant Discharge Elimination System (NPDES)
Discharge Monitoring Report (DMR)

Site Name: Independent Metals	WAR009725	OUTFALL 01
Site Address: 816 South Kenyon St.	Permit Number	Sampling Point
City: Seattle **County:** King		

Submit one DMR per sampling point.

Reporting Period			
Quarter (circle one) Year: 2010			
1st	2nd	3rd	4th
Jan/Feb/Mar	Apr/May/Jun	Jul/Aug/Sept	Oct/Nov/Dec

Parameter	Units	Benchmark Value	Analytical Method	Laboratory Quantitation Level	Sample Results: SINGLE SAMPLE RESULT	SINGLE SAMPLE DATE (MM/DD)	AVERAGE (If more than one sample collected, complete additional sampling log on next page.)	CONSISTENT ATTAINMENT? (Condition S4.B.6) (✓ for yes)
Turbidity	NTU	25	EPA 180.1, Meter	0.5	6.3	9/20/10		☐
pH	s.u.	5 - 9	Meter	±0.5	7.2		N/A	☐
Zinc, Total	µg/L	117	EPA 200.8	2.5	54.4			☐
Oil Sheen	Yes/No	No visible oil sheen	N/A	N/A	Sheen Present? Yes / No (circle)		N/A	N/A
Copper, Total	µg/L	Western WA: 14 Eastern WA: 32	EPA 200.8	2.0	6.0			☐
Lead, Total	µg/L	81.6	EPA 200.8	0.5	3.4			☐
Total Petroleum Hydrocarbons (TPH)	mg/L	10	NWTPH-Dx	0.1	.66			☐

☐ No sample collected – No stormwater was discharged during normal working hours.
☐ No sample collected – Stormwater was discharged during normal working hours, but a sample wasn't collected (explain in comments section).

ADDITIONAL COMMENTS: PCB <0.1 ug/L, Hg <0.1 ug/L

Mail your DMR to: Department of Ecology, Water Quality Program – Industrial Stormwater, P.O. Box 47696, Olympia, WA 98504-7696

Industrial Stormwater General Permit National Pollutant Discharge Elimination System (NPDES)
Discharge Monitoring Report (DMR)

Certification Statement I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____ / _____ Name / Title (printed)	_____ Signature (not valid unless signed). See Permit Condition G2 for signature requirements.	_____ Date Signed

Mail your DMR to: Department of Ecology, Water Quality Program – Industrial Stormwater, P.O. Box 47696, Olympia, WA 98504-7696

Site name _____

Facility Name	Independent molds	Inspection Date	9/30/10	Inspection Time	1015
Description of Weather	RAIN				

Site Map Current (Yes / No) if no, describe changes	
SWPPP Inventory correct (Yes / No) if no, describe	
Any new potential pollutant sources (Yes / No) if no, describe	
Is equipment washed / cleaned in designated areas (Yes / No / NA)	
If washing, is wash water captured /disposed of correctly (Yes/ No/ NA)	
Fueling areas clean (Yes / No / NA)	
Chemicals/Liquids in secondary containment (Yes / No / NA)	
Containment areas covered ? (Yes / No / N/A)	
If No, is water present? (Yes / No / N/A/) Is management plan followed? (Yes / No/ N/A)	
Maintenance tools, equipment, materials stored properly? (Yes/ No, N/A)	
Drums / Containers stored properly? (Yes / No/ N/A)	
Drums / Containers dirty? (Yes / No/ N/A)	
Vehicles leaking fluids? (Yes/ No/ N/A)	
Evidence of leaks and spills since last inspection? (Yes/ No/ N/A)	
Leaky equipment, materials put out of service and out of stormwater? (Yes / No/ N/A)	
Paved surfaces free of dust / debris? (Yes/ No/ N/A)	TREATMENT SYSTEM
Quarterly vacuum sweeping occurring? (Yes/ No / N/A)	
Waste Receptacles in good condition (Yes/ No/ N/A)	
Waste Receptacles closed when not in use? (Yes/ No/ N/A)	
Waste Receptacles clean on outside? (Yes/ No/ N/A)	

Are the following areas clean of dust, sediment, debris, contaminants, spills, leaks?

Dock Areas	(Yes/ No/ NA)		Storage Area	(Yes/ No/ NA)	
Shops	(Yes/ No/ NA)		Staging Area	(Yes/ No/ NA)	TREATMENT SYSTEM
Bag Houses	(Yes/ No/ NA)		Bone Yards	(Yes/ No/ NA)	
Other areas	(Yes/ No/ NA)	TREATMENT SYSTEM			

Spill kit available at fueling stations/equipment maintenance areas (Yes/ No/ N/A)	
Spill Kit contains absorbents, drain plug, containment boom, non-metallic shovel, two 5 gal buckets (Yes/ No/ N/A)	

Site name _____

Are damaged materials stored inside a shelter (Yes/ No/ N/A)	
Are outside materials covered (Yes / No/ N/A)	— TREATMENT SYSTEM
Are scrap bins covered (Yes / No/ N/A)	— " "
Are outdoor containers covered (Yes/ No/ N/A)	— " "
BMP's in good repair (Yes/ No/ N/A)	
BMP's free of buildup? (Yes / No/ N/A)	
Catch basins need cleaning? (Yes/ No/ N/A)	
Treatment Systems in good shape (Yes/ N/ N/A)	
Discharge during dry observations? (Yes/ No)	

If inspection completed during sampling, complete the following (Yes/ No/ N/A)

Discharge free of floating materials, oil sheen, discoloration, turbidity, odor, foam, or any signs of contamination (Yes/No./ N/A)

Process water co-mingling with stormwater? (Yes/ No)

Any other illicit discharges observed? (Yes/ No)

Add comments for any of the above observations than need further clarification or follow-up:

(Yes/ No) This facility is in compliance with the terms and conditions of the SWPPP and the Industrial Stormwater General Permit
If "No" then list remedial actions above. *"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"*

John Allen		9/20/10
Inspectors printed Name	Inspectors Signature	Date

"I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering formation, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations"

Printed Name	Signature	Date

NISQUALLY ENVIRONMENTAL SAMPLING AND CONSULTING

Nisquallyenv@aol.com

Post Office Box 1402
Tacoma, WA 98401

Phone253.208.2400
Fax 360-400-3566

ANALYTICAL REPORT

Independent Metals
Larry Brewer
816 South Kenyon St
Seattle, WA 98108

Date: 10/04/10
Report Number: IND093010
Project Name: Storm Water Monitoring

Sample I.D.	Sample Type	Date Sampled	Date Analyzed	Method/ Description	Value
OUT01	Grab	09/20/10	09/20/10	180.1/Turbidity	6.3**
OUT01	Grab	09/20/10	09/20/10	150.1/pH	7.2**

N/D = No Discharge
** Sample analyzed on site

John Allen
Nisqually Environmental & Consulting

SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

09/30/2010

Nisqually Environmental
PO Box 1402
Tacoma, WA 98401
Attn: John Allen

P.O.#: *
Project: Independent Metals
Client ID: Grab 01
Sample Matrix: Aqueous
Date Sampled: 09/20/2010
Date Received: 09/20/2010
Spectra Project: 2010090440
Spectra Number: 1

Analyte	Result	Units	Method
Copper	6.0	µg/L	EPA 200.8
Lead	3.4	µg/L	EPA 200.8
Zinc	54.4	ug/L	EPA 200.8
Mercury	< 0.2	µg/L	EPA 245.1
PCB	<0.1	µg/L	EPA 608
Diesel	155	µg/L	NWTPH-D
Oil	<500	µg/L	NWTPH-D

Surrogate	Recovery	Method
p-Terphenyl	92	NWTPH-D
Decachlorobiphenyl	69	EPA 608

SPECTRA LABORATORIES

for

Steve Hibbs, Laboratory Manager
a6/jjb

SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

September 22, 2010

Nisqually Environmental
PO Box 1402
Tacoma, WA 98401

Units: ug/L
Spectra Project: 2010090440
Applies to Spectra #'s 1

QUALITY CONTROL RESULTS
ICP-MS Metals - EPA Method 200.8 - Water

Method Blank

Date Digested: 9/22/2010 Date Analyzed: 9/22/2010

Element	CAS #	Result
Copper	7440-50-8	< 0.5
Lead	7439-92-1	< 0.5
Zinc	7440-66-6	< 1.0

Blank Spike (LCS)

Date Digested: 9/22/2010 Date Analyzed: 9/22/2010

Element	Spike Added	LCS Conc.	LCS %Rec
Copper	50.0	52.50	105.0
Lead	50.0	54.95	109.9
Zinc	50.0	52.18	104.4

LCS Recovery limits 85-115%

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Digested: 9/21/2010 Date Analyzed: 9/21/2010
Sample Spiked: 2010090379-1

Element	Sample Conc.	Spike Conc.	MS Conc.	MS %Rec	MSD Conc	MSD %Rec	RPD
Copper	6.04	50.0	60.60	109.1	61.28	110.5	1.2
Lead	1.41	50.0	55.00	107.2	55.43	108.0	0.8
Zinc	67.04	50.0	121.50	108.9	123.10	112.1	2.9

Recovery Limits 70-130%
RPD Limit 20

SPECTRA LABORATORIES

Steven G. Hibbs
Laboratory Manager

SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

September 30, 2010

Nisqually Environmental
PO Box 1402
Tacoma, WA 98401

Method: EPA Method 608
Sample Matrix: Water
Units: ug/L
Spectra Project: 2010090440
Applies to Spectra # 1

PCB ANALYSIS
QUALITY CONTROL RESULTS

LCS/LCSD

Spiked Sample: Method Blank

Date Extracted: 9/28/2010
Date Analyzed: 9/28/2010

Compound	Sample Result	Spike Amount Added	Spike Amount Found	Percent Recovery	Dup. Spike Amount Found	Percent Recovery	RPD
AR1260	<0.1	0.500	0.420	84	0.440	88	5

METHOD BLANK

Date Extracted: 9/27/2010 Date Analyzed: 9/27/2010

PCB's <0.1

Surrogate Percent Recoveries:

Decachlorobiphenyl 62%

SPECTRA LABORATORIES

Steven G. Hibbs, Laboratory Manager

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September 30, 2010

Nisqually Environmental
PO Box 1402
Tacoma, WA 98401

Method: NWTPH-Dx
Sample Matrix: Water
Spectra Project: 2010090440
Applies to Spectra #: 1

HYDROCARBON ANALYSIS
QUALITY CONTROL RESULTS

MS/MSD

Spiked Sample: Method Blank
Units: ug/L

Date Extracted: 9/2/2010
Date Analyzed: 9/7/2010

Compound	Sample Result	Spike Amount Added	Spike Amount Found	Percent Recovery	Dup. Spike Amount Found	Percent Recovery	% RPD
Diesel	0	2500	2472	99	2550	102	3

METHOD BLANK

Date Extracted: 9/22/2010
Units: ug/L

Date Analyzed: 9/22/2010

WTPH-D	<100
Heavy Oils	<500

Surrogate Recoveries:

p-terphenyl 124%

SPECTRA LABORATORIES

Steven G. Hibbs, Laboratory Manager

CHAIN of CUSTODY

SPECTRA Laboratories 2010090440

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PAGE 1 of 1

STANDARD ☑ RUSH ☐

CLIENT: ~~Lade~~ Nisqually End

ADDRESS:

PROJECT: Independent Metals

CONTACT: John Allen

PHONE: FAX:

e-MAIL: Prefer FAX ☐ or e-MAIL ☐

PURCHASE ORDER #:

	SAMPLE ID	DATE SAMPLED	TIME SAMPLED	MATRIX	NUMBER OF CONTAINERS	HYDROCARBONS: NWTPH-HCID	BTEX	BTEX/NWTPH-G	NWTPH-G	NWTPH-D_x	1664 SGT-HEM	1664 HEM (O&G)	ORGANICS: 8260/624 VOA	8260 CHLOR SOLVENTS	8270/625 SEMI VOA	8270 PAH/PNA	8082/608 PCB	METALS: TOTAL METALS RCRA8	TOTAL METALS (SPECIFY)	TCLP METALS RCRA 8	TCLP METALS (SPECIFY)	OTHER: pH 9040/9045	TX/TOX/EOX	TURBIDITY	FLASH POINT	BOD	SOLIDS (SPECIFY)
1	GRAB01	9/20/10	1015	A	3					X							X		X								
2																											
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											

SPECIAL INSTRUCTIONS/COMMENTS:

Cu, Pb, Zn by 200.8

Hg

~~pb~~ pcbs no sheen detected

	SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME
RELINQUISHED BY	[signature]	John Allen	NSC	9/20/10	1205
RECEIVED BY	[signature]	Randa Ross	Spectra	9/20/10	1205
RELINQUISHED BY					
RECEIVED BY					

RETURN SAMPLES ☐ DISPOSE SAMPLES ☐

(Shipping Fee Applies)

Payment Terms: Net 30 days. Past due accounts subject to 1½% per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. *Spectra Analytical, Inc.*

M99CS000569M 01/08

Nisqually Environmental

Nisqually Environmental
Post Office Box 1402
Tacoma, WA 98401

253-208-2400
nisquallyenv@aol.com

Invoice

DATE	INVOICE #
07/06/2010	OLY70411
TERMS	**DUE DATE**
Net 15	07/21/2010

BILL TO
Independent Metals Robb Smith 747 S Monroe Street Seattle, WA 98108

AMOUNT DUE	ENCLOSED
$794.00	

Please detach top portion and return with your payment.

Date	Activity	Quantity	Rate	Amount
06/16/2010	Storm Water Monitoring	1	375.00	375.00
06/16/2010	analytical fees (cu,pb,zn, Hg, nwtph-dx, pcb's)	1	239.00	239.00
06/16/2010	Consulting-additional consulting re: waste plan, customer requests	2	90.00	180.00
			TOTAL	$794.00

Industrial Stormwater General Permit National Pollutant Discharge Elimination System (NPDES)
Discharge Monitoring Report (DMR)

Site Name: Independent Metals	WAR009725	OUT01
Site Address: 816 South Kenyon St.	Permit Number	Sampling Point
City: Seattle **County:** King		

Submit one DMR per sampling point.

Reporting Period			
Quarter (circle one) Year: 2010			
1st	2nd	3rd	4th
Jan/Feb/Mar	Apr/May/Jun	Jul/Aug/Sept	Oct/Nov/Dec

Parameter	Units	Benchmark Value	Analytical Method	Laboratory Quantitation Level	Sample Results: SINGLE SAMPLE RESULT	SINGLE SAMPLE DATE (MM/DD)	AVERAGE (If more than one sample collected, complete additional sampling log on next page.)	CONSISTENT ATTAINMENT? (Condition S4.B.6) (✓ for yes)
Turbidity	NTU	25	EPA 180.1, Meter	0.5	9.67	6-16-10		☐
pH	s.u.	5 - 9	Meter	±0.5	6.9		N/A	☐
Zinc, Total	µg/L	117	EPA 200.8	2.5	110			☐
Oil Sheen	Yes/No	No visible oil sheen	N/A	N/A	Sheen Present? Yes / No (circle)		N/A	N/A
~~Copper, Total~~	~~µg/L~~	~~Western WA: 14~~ Eastern WA: 32	~~EPA 200.8~~	~~2.0~~	10.1			☐
Lead, Total	µg/L	81.6	EPA 200.8	0.5	8.1			☐
Total Petroleum Hydrocarbons (TPH)	mg/L	10	NWTPH-Dx	0.1	0.21			☐

☐ No sample collected – No stormwater was discharged during normal working hours.
☐ No sample collected – Stormwater was discharged during normal working hours, but a sample wasn't collected (explain in comments section).

ADDITIONAL COMMENTS: PCBs = <0.1 ug/L, Hg = <0.2 ug/L

Mail your DMR to: Department of Ecology, Water Quality Program – Industrial Stormwater, P.O. Box 47696, Olympia, WA 98504-7696

Industrial Stormwater General Permit National Pollutant Discharge Elimination System (NPDES)
Discharge Monitoring Report (DMR)

Certification Statement I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.		
_____ / _____	_____	_____
Name / Title (printed)	Signature (not valid unless signed). See Permit Condition G2 for signature requirements.	Date Signed

Mail your DMR to: Department of Ecology, Water Quality Program – Industrial Stormwater, P.O. Box 47696, Olympia, WA 98504-7696

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07/02/2010

Nisqually Environmental
PO Box 1402
Tacoma, WA 98401
Attn: John Allen

P.O.#: *
Project: Independent Metals S/W
Client ID: Grab 01
Sample Matrix: Aqueous
Date Sampled: 06/16/2010
Date Received: 06/17/2010
Spectra Project: 2010060441
Spectra Number: 1

Analyte	Result	Units	Method
Copper	10.1	µg/L	EPA 200.8
Lead	8.1	µg/L	EPA 200.8
Zinc	110	µg/L	EPA 200.8
Mercury	< 0.2	µg/L	EPA 245.1
Total Pet. Hydrocarbons	0.21	mg/L	NWTPH-D
PCB	<0.1	µg/L	SW846 8082A

Surrogate	Recovery	Method
Decachlorobiphenyl	72	SW846 8082A

SPECTRA LABORATORIES

JBm for

Steve Hibbs, Laboratory Manager
a6/jjb

SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

July 2, 2010

Nisqually Environmental
PO Box 1402
Tacoma, WA 98401
Attn: John Allen

Method: NWTPH-Dx
Sample Matrix: Water
Spectra Project: 2010060441
Applies to Spectra #: 1

HYDROCARBON ANALYSIS
QUALITY CONTROL RESULTS

MS/MSD

Spiked Sample: Method Blank
Units: mg/L

Date Extracted: 5/27/2010
Date Analyzed: 6/1/2010

Compound	Sample Result	Spike Amount Added	Spike Amount Found	Percent Recovery	Dup. Spike Amount Found	Percent Recovery	% RPD
Diesel	0	2.50	2.80	112	2.95	118	5

METHOD BLANK

Date Extracted: 6/28/2010
Units: mg/L

Date Analyzed: 7/1/2010

WTPH-D	<0.05
Heavy Oils	<0.05

Surrogate Recoveries:

p-terphenyl 66%

SPECTRA LABORATORIES

for

Steven G. Hibbs, Laboratory Manager

SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

July 2, 2010

Nisqually Environmental
PO Box 1402
Tacoma, WA 98401
Attn: John Allen

Method: EPA Method 608
Sample Matrix: Water
Units: ug/L
Spectra Project: 2010060441
Applies to Spectra # 1

PCB ANALYSIS
QUALITY CONTROL RESULTS

LCS/LCSD

Spiked Sample: Method Blank

Date Extracted: 6/29/2010
Date Analyzed: 7/1/2010

Compound	Sample Result	Spike Amount Added	Spike Amount Found	Percent Recovery	Dup. Spike Amount Found	Percent Recovery	RPD
AR1260	<0.1	0.500	0.440	88	0.430	86	2

METHOD BLANK

Date Extracted: 6/29/2010

Date Analyzed: 7/1/2010

PCB's <0.1

Surrogate Percent Recoveries:

Decachlorobiphenyl 81%

SPECTRA LABORATORIES

Steven G. Hibbs, Laboratory Manager

CHAIN of CUSTODY

SPECTRA Laboratories 2010060411

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PAGE 1 of 1

STANDARD ☑ RUSH ☐

CLIENT: Nisqually Environmental ADDRESS:

PROJECT: Independent Models S/W

CONTACT: John Allen

PHONE: FAX:

e-MAIL: Prefer FAX ☐ or e-MAIL ☐

PURCHASE ORDER #:

	SAMPLE ID	DATE SAMPLED	TIME SAMPLED	MATRIX	NUMBER OF CONTAINERS	HYDROCARBONS							ORGANICS					METALS				OTHER									
						NWTPH-HCID	BTEX	BTEX/NWTPH-G	NWTPH-G	NWTPH-Dx	1664 SGT-HEM (TPH)	1664 HEM (O&G)	8260/624 VOA	8260 CHLOR SOLVENTS	8270/625 SEMI VOA	8270 PAH/PNA	8082/608 PCB	TOTAL METALS RCRA8	TOTAL METALS (SPECIFY)	TCLP METALS RCRA 8	TCLP METALS (SPECIFY)	pH 9040/9045	TX/TOX 9076	TURBIDITY	FLASH POINT	BOD	SOLIDS (SPECIFY)	RCB				
1	CORA301	6/16/10	1240	A	3					X									X									X			
2																															
3																															
4																															
5																															
6																															
7																															
8																															
9																															
10																															

SPECIAL INSTRUCTIONS/COMMENTS:

Cu, Pb, Zn, Hg

no sheen detected

RETURN SAMPLES ☐ DISPOSE SAMPLES ☐

(Shipping Fee Applies)

	SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME
RELINQUISHED BY	[signature]	John Allen	NOSC	6/17/10	915
RECEIVED BY	[signature]	Randa Ross	Spectra	6/17/10	9:17
RELINQUISHED BY					
RECEIVED BY					

Payment Terms: Net 30 days. Past due accounts subject to 1½% per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. *Spectra Analytical, Inc.*

M99CS000569M 01/06

NISQUALLY ENVIRONMENTAL SAMPLING AND CONSULTING

Nisquallyenv@aol.com

Post Office Box 1402 Phone253.208.2400

Tacoma, WA 98401 Fax 360-400-3566

ANALYTICAL REPORT

Independent Metals
Larry Brewer
816 South Kenyon St
Seattle, WA 98108

Date: 06/16/10
Report Number: IND061610
Project Name: White River: Storm Water Monitoring

Sample I.D.	Sample Type	Date Sampled	Date Analyzed	Method/ Description	Value
OUT01	Grab	06/16/10	06/16/10	180.1/Turbidity	9.67**
OUT01	Grab	06/16/10	06/16/10	150.1/pH	6.9**

N/D = No Discharge
** Sample analyzed on site

John Allen
Nisqually Environmental & Consulting

Site name Independent Metal

Are damaged materials stored inside a shelter (Yes/ No/ N/A)	
Are outside materials covered (Yes/ No/ N/A)	but has a treatment system
Are scrap bins covered (Yes/ No/ N/A)	" "
Are outdoor containers covered (Yes/ No/ N/A)	" "
BMP's in good repair (Yes/ No/ N/A)	
BMP's free of buildup? (Yes/ No/ N/A)	
Catch basins need cleaning? (Yes/ No/ N/A)	cleaned on 6/15
Treatment Systems in good shape (Yes/ N/ N/A)	media changed on 6/15
Discharge during dry observations? (Yes/ No)	

If inspection completed during sampling, complete the following (Yes/ No/ N/A)

Discharge free of floating materials, oil sheen, discoloration, turbidity, odor, foam, or any signs of contamination (Yes/No./ N/A)

Process water co-mingling with stormwater? (Yes/ No)	
Any other illicit discharges observed? (Yes/ No)	

Add comments for any of the above observations than need further clarification or follow-up:

looks good

(Yes/ No) This facility is in compliance with the terms and conditions of the SWPPP and the Industrial Stormwater General Permit
If "No" then list remedial actions above. *"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"*

Inspectors printed Name	Inspectors Signature	Date
John Allen		6/16/10

"I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering formation, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations"

Printed Name	Signature	Date

Site name Independent Metals

Facility Name Independent Metals | Inspection Date 6/16/2010 | Inspection Time 12:48

Description of Weather Overcast

Site Map Current (Yes / No) if no, describe changes

SWPPP Inventory correct (Yes / No) if no, describe

Any new potential pollutant sources (Yes / No) if no, describe

Is equipment washed / cleaned in designated areas (Yes / No / NA)

If washing, is wash water captured /disposed of correctly (Yes/ No/ NA)

Fueling areas clean (Yes / No / NA)

Chemicals/Liquids in secondary containment (Yes / No / NA)

Containment areas covered ? (Yes / No / N/A)

If No, is water present? (Yes / No / N/A) Is management plan followed? (Yes / No/ N/A)

Maintenance tools, equipment, materials stored properly? (Yes/ No, N/A)

Drums / Containers stored properly? (Yes/ No/ N/A)

Drums / Containers dirty? (Yes / No/ N/A)

Vehicles leaking fluids? (Yes/ No/ N/A)

Evidence of leaks and spills since last inspection? (Yes/ No/ N/A)

Leaky equipment, materials put out of service and out of stormwater? (Yes / No/ N/A)

Paved surfaces free of dust / debris? (Yes/ No/ N/A) but has treatment system

Quarterly vacuum sweeping occurring? (Yes/ No / N/A)

Waste Receptacles in good condition (Yes/ No/ N/A)

Waste Receptacles closed when not in use? (Yes/ No/ N/A) but has treatment system

Waste Receptacles clean on outside? (Yes/ No/ N/A)

Are the following areas clean of dust, sediment, debris, contaminants, spills, leaks?

Dock Areas	(Yes/ No/ NA)	but has treatment system	Storage Area	(Yes/ No/ NA)	
Shops	(Yes/ No/ NA)		Staging Area	(Yes/ No/ NA)	but has treatment system
Bag Houses	(Yes/ No/ NA)		Bone Yards	(Yes/ No/ NA)	
Other areas	(Yes/ No/ NA)				

Spill kit available at fueling stations/equipment maintenance areas (Yes/ No/ N/A)

Spill Kit contains absorbents, drain plug, containment boom, non-metallic shovel, two 5 gal buckets (Yes/ No/ N/A)

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Nisquallyenv@aol.com
Post Office Box 1402 Phone253.208.2400
Tacoma, WA 98401 Fax 360-400-3566

ANALYTICAL REPORT

Independent Metals
Larry Brewer
816 South Kenyon St
Seattle, WA 98108

Date: 12/31/09
Report Number: IND123109
Project Name: White River: Storm Water Monitoring

Sample I.D.	Sample Type	Date Sampled	Date Analyzed	Method/ Description	Value
OUT01	Grab	12/15/09	12/15/09	180.1/Turbidity	6.2**
OUT01	Grab	12/15/09	12/15/09	150.1/pH	6.8**

N/D = No Discharge
** Sample analyzed on site

John Allen
Nisqually Environmental & Consulting

NISQUALLY ENVIRONMENTAL SAMPLING AND CONSULTING

Nisquallyenv@aol.com
Post Office Box 1402 Phone253.208.2400
Tacoma, WA 98401 Fax 360-400-3566

ANALYTICAL REPORT

Independent Metals
Robb Smith
816 South Kenyon St
Seattle, WA 98108

Date: 09/30/09
Report Number: IND093009
Project Name: White River: Storm Water Monitoring

Sample I.D.	Sample Type	Date Sampled	Date Analyzed	Method/ Description	Value
OUT01	Grab	09/19/09	09/19/09	180.1/Turbidity	14.3**
OUT01	Grab	09/19/09	09/19/09	150.1/pH	6.6**

N/D = No Discharge
** Sample analyzed on site

John Allen
Nisqually Environmental & Consulting

NISQUALLY ENVIRONMENTAL SAMPLING AND CONSULTING

Nisquallyenv@aol.com
Post Office Box 1402 Phone253.208.2400
Tacoma, WA 98401 Fax 360-400-3566

ANALYTICAL REPORT

Independent Metals
Robb Smith
816 South Kenyon St
Seattle, WA 98108

Date: 05/18/09
Report Number: IND051809
Project Name: White River: Storm Water Monitoring

Sample I.D.	Sample Type	Date Sampled	Date Analyzed	Method/ Description	Value
OUT01	Grab	05/07/09	05/07/09	180.1/Turbidity	4.6**
OUT01	Grab	05/07/09	05/07/09	150.1/pH	7.1**

N/D = No Discharge
** Sample analyzed on site

John Allen
Nisqually Environmental & Consulting

SO3-009725A

INDUSTRIAL STORMWATER GENERAL PERMIT
DISCHARGE MONITORING REPORT

MONITORING PERIOD for (year/quarter): 2009 (year) ☐ Jan/Feb/Mar ☐ Apr/May/Jun ☐ Jul/Aug/Sep ☑ Oct/Nov/Dec

Facility/Site Information

Facility Name: Independent Metals
Location: 816 South Kenyon St, Seattle
County: KING SIC Code: 5093

Mailing Information

Company Name: Independent Metals
Mailing Address: 747 S. Monroe Street
Seattle, WA 98108

You must send a Discharge Monitoring Report (DMR) to Ecology **every quarter**. If there was **no discharge** *or* you have **suspended sampling** because of consistent attainment of benchmark values, mark the appropriate boxes and send the DMR to Ecology. Please read the instructions before completing the DMR.

Discharge Point DP001

☐ There was no qualifying storm event this quarter so no values are entered below (see explanation)

Quarterly Monitoring		AVERAGE	MAXIMUM	UNITS	Sample Type	Events Sampled
Turbidity	☐Consistent Attainment	6.2	6.2	NTU	Grab	1
pH	☐Consistent Attainment	6.8	6.8	Standard Units	Grab	1
Zinc (Total)	☐Consistent Attainment	72	72	µg/L	Grab	1
Oil & Grease	☐Consistent Attainment	4.2	4.2	mg/L	Grab	1
Copper	☐Consistent Attainment	<1	<1	ug/L	Grab	1
Lead	☐Consistent Attainment	2	2	ug/L	Grab	1
Hardness	☐Consistent Attainment	118	118	mg/L	Grab	1

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 USC § 1001 AND 33 USC § 1319. *(PENALTIES UNDER THESE STATUES MAY INCLUDE FINES UP TO $10,000.00 AND OR MAXIMUM IMPRISONMENT OF BETWEEN SIX MONTHS AND FIVE YEARS.)*

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER (TYPED OR PRINTED) DATE: MO DAY YEAR

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT TELEPHONE NUMBER

COMMENTS / EXPLANATIONS

SO3-009725A

INDUSTRIAL STORMWATER GENERAL PERMIT
DISCHARGE MONITORING REPORT

MONITORING PERIOD for (year/quarter): 2009 (year) ☐ Jan/Feb/Mar ☐ Apr/May/Jun ☑ Jul/Aug/Sep ☐ Oct/Nov/Dec

Facility/Site Information

Facility Name: Independent Metals
Location: 816 South Kenyon St, Seattle
County: KING SIC Code: 5093

Mailing Information

Company Name: Independent Metals
Mailing Address: 747 S. Monroe Street
Seattle, WA 98108

You must send a Discharge Monitoring Report (DMR) to Ecology **every quarter**. If there was **no discharge** *or* you have **suspended sampling** because of consistent attainment of benchmark values, mark the appropriate boxes and send the DMR to Ecology. Please read the instructions before completing the DMR.

Discharge Point Outfall 1

☐ There was no qualifying storm event this quarter so no values are entered below (see explanation)

Quarterly Monitoring		AVERAGE	MAXIMUM	UNITS	Sample Type	Events Sampled
Turbidity	☐Consistent Attainment	14.3	14.3	NTU	Grab	1
pH	☐Consistent Attainment	6.6	6.6	Standard Units	Grab	1
Zinc (Total)	☐Consistent Attainment	64	64	µg/L	Grab	1
Oil & Grease	☐Consistent Attainment	2.0	2.0	mg/L	Grab	1
Copper	☐Consistent Attainment	24	24	ug/L	Grab	1
Lead	☐Consistent Attainment	<40	<40	ug/L	Grab	1
Hardness	☐Consistent Attainment	137	137	mg/L	Grab	1

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 USC § 1001 AND 33 USC § 1319. *(PENALTIES UNDER THESE STATUES MAY INCLUDE FINES UP TO $10,000.00 AND OR MAXIMUM IMPRISONMENT OF BETWEEN SIX MONTHS AND FIVE YEARS.)*

Rob Smith, Operations Manager
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER (TYPED OR PRINTED)

DATE: MO DAY YEAR

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE NUMBER

COMMENTS / EXPLANATIONS

SO3-009725A

INDUSTRIAL STORMWATER GENERAL PERMIT
DISCHARGE MONITORING REPORT

MONITORING PERIOD for (year/quarter): 2009 (year) ☑ Jan/Feb/Mar ☐ Apr/May/Jun ☐ Jul/Aug/Sep ☐ Oct/Nov/Dec

Facility/Site Information

Facility Name: Independent Metals
Location: 816 South Kenyon St, Seattle
County: KING SIC Code: 5093

Mailing Information

Company Name: Independent Metals
Mailing Address: 747 S. Monroe Street
Seattle, WA 98108

You must send a Discharge Monitoring Report (DMR) to Ecology **every quarter**. If there was **no discharge** *or* you have **suspended sampling** because of consistent attainment of benchmark values, mark the appropriate boxes and send the DMR to Ecology. Please read the instructions before completing the DMR.

Discharge Point Outfall 1

☐ There was no qualifying storm event this quarter so no values are entered below (see explanation)

Quarterly Monitoring		AVERAGE	MAXIMUM	UNITS	Sample Type	Events Sampled
Turbidity	☐Consistent Attainment	**4.6**	**4.6**	NTU	**Grab**	**1**
pH	☐Consistent Attainment	**7.1**	**7.1**	Standard Units	**Grab**	**1**
Zinc (Total)	☐Consistent Attainment	**45**	**45**	µg/L	**Grab**	**1**
Oil & Grease	☐Consistent Attainment	**<2.0**	**<2.0**	mg/L	**Grab**	**1**
Copper	☐Consistent Attainment	**<6**	**<6**	ug/L	**Grab**	**1**
Lead	☐Consistent Attainment	**<40**	**<40**	ug/L	**Grab**	**1**
Hardness	☐Consistent Attainment	**64**	**64**	mg/L	**Grab**	**1**

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 USC § 1001 AND 33 USC § 1319. *(PENALTIES UNDER THESE STATUES MAY INCLUDE FINES UP TO $10,000.00 AND OR MAXIMUM IMPRISONMENT OF BETWEEN SIX MONTHS AND FIVE YEARS.)*

Rob Smith, Operations Manager
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER (TYPED OR PRINTED)

DATE: MO DAY YEAR

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE NUMBER

COMMENTS / EXPLANATIONS

SO3-009725A

INDUSTRIAL STORMWATER GENERAL PERMIT
DISCHARGE MONITORING REPORT

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Discharge Point Outfall

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Quarterly Monitoring		AVERAGE	MAXIMUM	UNITS	Sample Type	Events Sampled
Turbidity	☐Consistent Attainment	**2.6**	**2.6**	NTU	**Grab**	**1**
pH	☐Consistent Attainment	**6.2**	**6.2**	Standard Units	**Grab**	**1**
Zinc (Total)	☐Consistent Attainment	**48.1**	**48.1**	µg/L	**Grab**	**1**
Oil & Grease	☐Consistent Attainment	**<2.0**	**<2.0**	mg/L	**Grab**	**1**
Copper	☐Consistent Attainment	**1.26**	**1.26**	ug/L	**Grab**	**1**
Lead	☐Consistent Attainment	**1.22**	**1.22**	ug/L	**Grab**	**1**
Hardness	☐Consistent Attainment	**128**	**128**	mg/L	**Grab**	**1**

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DATE: MO DAY YEAR

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE NUMBER

COMMENTS / EXPLANATIONS

Level 1 Response: Review sample collection protocol

SO3-009725A

INDUSTRIAL STORMWATER GENERAL PERMIT
DISCHARGE MONITORING REPORT

MONITORING PERIOD for (year/quarter): 2008 (year) ☐ Jan/Feb/Mar ☐ Apr/May/Jun ☐ Jul/Aug/Sep ☑ Oct/Nov/Dec

Facility/Site Information

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Location: 816 South Kenyon St, Seattle
County: KING SIC Code: 5093

Mailing Information

Company Name: Independent Metals
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Discharge Point Outfall

☐ There was no qualifying storm event this quarter so no values are entered below (see explanation)

Quarterly Monitoring		AVERAGE	MAXIMUM	UNITS	Sample Type	Events Sampled
Turbidity	☐Consistent Attainment	1.32	1.32	NTU	Grab	1
pH	☐Consistent Attainment	6.5	6.5	Standard Units	Grab	1
Zinc (Total)	☐Consistent Attainment	125	125	µg/L	Grab	1
Oil & Grease	☐Consistent Attainment	<2	<2	mg/L	Grab	1
Copper	☐Consistent Attainment	<1	<1	ug/L	Grab	1
Lead	☐Consistent Attainment	<1	<1	ug/L	Grab	1
Hardness	☐Consistent Attainment	71.1	71.1	mg/L	Grab	1

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NAME/TITLE PRINCIPAL EXECUTIVE OFFICER (TYPED OR PRINTED)

DATE: MO DAY YEAR

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE NUMBER

COMMENTS / EXPLANATIONS

Amended DMR

Level 1 response for Zinc: Work with treatment vendor to lower zinc levels

SO3-009725A

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Discharge Point Outfall

☐ There was no qualifying storm event this quarter so no values are entered below (see explanation)

Quarterly Monitoring		AVERAGE	MAXIMUM	UNITS	Sample Type	Events Sampled
Turbidity	☐Consistent Attainment	61	61	NTU	Grab	1
pH	☐Consistent Attainment	7.6	7.6	Standard Units	Grab	1
Zinc (Total)	☐Consistent Attainment	3620	3620	µg/L	Grab	1
Oil & Grease	☐Consistent Attainment	70	70	mg/L	Grab	1
Copper	☐Consistent Attainment	429	429	ug/L	Grab	1
Lead	☐Consistent Attainment	2160	2160	ug/L	Grab	1
Hardness	☐Consistent Attainment	136	136	mg/L	Grab	1

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DATE: MO DAY YEAR

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE NUMBER

COMMENTS / EXPLANATIONS

Amended DMR

Level 1 response for Turbidity, Zinc, O&G, Cu, Pb: Investigate and purchase treatment system

SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

03/11/2010

Nisqually Environmental
PO Box 1402
Tacoma, WA 98401
Attn: John Allen

P.O.#: *
Project: Independent Metals
Client ID: GRAB 01
Sample Matrix: Aqueous
Date Sampled: 02/26/2010
Date Received: 02/26/2010
Spectra Project: 2010020518
Spectra Number: 1

Analyte	Result	Units	Method
Copper	4.1	µg/L	EPA 200.8
Lead	3.6	µg/L	EPA 200.8
Zinc	31.5	ug/L	EPA 200.8
Mercury	< 0.2	µg/L	SW846 7470A
PCB	<0.1	µg/L	SW846 8082A

Surrogate	Recovery	Method
Decachlorobiphenyl	103	SW846 8082A

SPECTRA LABORATORIES

Steve Hibbs, Laboratory Manager
a6/jjb

SPECTRA Laboratories

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March 11, 2010

Nisqually Environmental
P.O. Box 1402
Tacoma, WA 98401
Attn: John Allen

Method: EPA Method 608
Sample Matrix: Water
Units: ug/L
Spectra Project: 2010020518
Applies to Spectra # 1

PCB ANALYSIS
QUALITY CONTROL RESULTS

LCS/LCSD

Spiked Sample: Method Blank

Date Extracted: 2/23/2010
Date Analyzed: 3/3/2010

Compound	Sample Result	Spike Amount Added	Spike Amount Found	Percent Recovery	Dup. Spike Amount Found	Percent Recovery	RPD
AR1260	<0.1	0.500	0.530	106	0.540	108	2

METHOD BLANK

Date Extracted: 3/10/2010

Date Analyzed: 3/11/2010

PCB's <0.1

Surrogate Percent Recoveries:

Decachlorobiphenyl 100%

SPECTRA LABORATORIES

Steven G. Hibbs, Laboratory Manager

SPECTRA Laboratories

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March 2, 2010

Nisqually Environmental
PO Box 1402
Tacoma, WA 98401

Units: ug/L
Spectra Project: 2010020518
Applies to Spectra #'s 1

QUALITY CONTROL RESULTS

ICP-MS Metals - EPA Method 200.8 - Water

Method Blank

Date Digested: 3/2/2010 Date Analyzed: 3/2/2010

Element	Method Blank
Copper	< 0.1
Lead	< 0.1
Zinc	< 0.2

Blank Spike (LCS)

Date Digested: 3/2/2010 Date Analyzed: 3/2/2010

Element	Spike Added	LCS Conc.	LCS %Rec
Copper	50.0	52.00	104.0
Lead	50.0	52.84	105.7
Zinc	50.0	49.57	99.1

LCS Recovery limits 85-115%

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Digested: 3/1/2010 Date Analyzed: 3/1/2010
Sample Spiked: 2010020517-1

Element	Sample Conc.	Spike Conc.	MS Conc.	MS %Rec.	MSD Conc	MSD %Rec	RPD
Copper	2.13	50.0	56.65	109.0	55.74	107.2	1.7
Lead	0.46	50.0	52.92	104.9	52.68	104.4	0.5
Zinc	48.55	50.0	106.60	116.1	105.10	113.1	2.6

Recovery Limits 75-125%
RPD Limit 20

SPECTRA LABORATORIES

Steven G. Hibbs
Laboratory Manager

SPECTRA Laboratories

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March 4, 2010

Nisqually Environmental
PO Box 1402
Tacoma, WA 98401

Method: SW846 7470A
Spectra Project: 2010020518
Applies to Spectra #'s 1
Sample Matrix: Aqueous

MERCURY
QUALITY CONTROL RESULTS

MS/MSD

Units: ug/L Date Analyzed: 3/3/2010

Spike Sample	Sample Result	Spike Amount Added	MS Result	% Recovery	MSD Result	% Recovery	RPD
2010020518-1	< 0.2	4.00	3.78	94.6	3.52	88.0	2.6

BLANK SPIKE (LCS)

Units ug/L Date Analyzed: 3/3/2010

Spike Sample	Sample Result	Spike Amount Added	MS Result	% Recovery
LCS	< 0.2	5.00	4.61	92.1

METHOD BLANK

Units: mg/L Date Analyzed: 3/3/2010

Mercury < 0.2

SPECTRA LABORATORIES

Steve Hibbs, Laboratory Manager

CHAIN of CUSTODY

SPECTRA Laboratories 2010020518

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

PAGE 1 of 1

STANDARD ☑ RUSH ☐

CLIENT: Nisqually Environmental ADDRESS:

PROJECT: Independent Metals

CONTACT: John Allen

PHONE: FAX:

e-MAIL: Prefer FAX ☐ or e-MAIL ☐

PURCHASE ORDER #:

	SAMPLE ID	DATE SAMPLED	TIME SAMPLED	MATRIX	NUMBER OF CONTAINERS	HYDROCARBONS: NWTPH-HCID	BTEX	BTEX/NWTPH-G	NWTPH-G	NWTPH-Dx	1664 SGT-HEM (TPH)	1664 HEM (O&G)		ORGANICS: 8260/624 VOA	8260 CHLOR SOLVENTS	8270/625 SEMI VOA	8270 PAH/PNA	8082/608 PCB		METALS: TOTAL METALS RCRA8	TOTAL METALS (SPECIFY)	TCLP METALS RCRA 8	TCLP METALS (SPECIFY)		OTHER: pH 9040/9045	TX/TOX 9076	TURBIDITY	FLASH POINT	BOD	SOLIDS (SPECIFY)						
1	CORA301	2/26/10	1115	A	3													X			X															
2																																				
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10																																				

SPECIAL INSTRUCTIONS/COMMENTS:

Hg:

Cu, Pb, Zn by 200.8

	SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME
RELINQUISHED BY	[signature]	John Allen	Nisqually Env	2/26/10	1407
RECEIVED BY	Karleighbeck	KBeck	Spectra	2/26/10	2:11
RELINQUISHED BY					
RECEIVED BY					

RETURN SAMPLES ☐ DISPOSE SAMPLES ☑

(Shipping Fee Applies)

Payment Terms: Net 30 days. Past due accounts subject to 1½% per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. *Spectra Analytical, Inc.*

M99CS000569M 01/06

pscleanair.org
Puget Sound Clean Air Agency

PUGET SOUND CLEAN AIR AGENCY
1904 3rd Ave Ste 105
Seattle WA 98101-3317
(206) 689-4052 Fax: (206) 343-7522 www.pscleanair.org

NOTICE OF CONSTRUCTION AND APPLICATION FOR APPROVAL

Incomplete applications delay Agency review, so please fill out your application thoroughly. Instructions for filling out the application are available on the NOC Permit Application Instructions webpage.

GENERAL EQUIPMENT FORM — FORM P

AGENCY USE ONLY Date: Reg No.: NOC No.:

Type of business: (check)
- ☐ new
- ☒ existing

Status of equipment (check):
- ☐ new ☐ altered
- ☒ existing ☐ relocation

Applicant Name & Mailing Address: DAVID VANSKIKE 2005 1st AVE, #500. SEATTLE WA. 98121
Phone No.: 206-382-9540
Fax No.: 206-626-0675
Email Address: DVANSKIKE@GORDONDERR.COM

Company (or owner) name & mailing address: INDEPENDENT METALS

Nature of Business / Type of Process: METAL RECYCLING

Installation address (Include city & zip code): 7814 8TH AVE SOUTH, SEATTLE 98108

PROCESS EQUIPMENT AND CONTROL EQUIPMENT

Process Equipment		Air Pollution Control Equipment	
# Units	Equipment Type	# Units	Equipment Type
1	HAMMER MILL	1	CYCLONE
		1	BAGHOUSE

☐ Attach a process flow diagram ☒ Attach a project description

PREPARER'S CERTIFICATION STATEMENT

I, the undersigned, certify that the information contained in this application and the accompanying forms, plans, and supplemental data described herein is, to the best of my knowledge, accurate and complete.

Signature: [signature] Date: MAR 5, 2009

Type or print name: DAVID VANSKIKE Title: PLANNER Phone: 206-382-9540

Prepared by (signature and title): SAME

Your application will not be processed unless you mail a $1,000 filing fee payment *along with this application.* Additional fees may apply after application review. An Environmental Checklist form and additional equipment specific forms may also be needed. These forms are available on the Agency's Regulatory Forms webpage. See the NOC Permit Application Instructions webpage for instructions on filling out the permit application. If you want to pay by credit card, please call Andrea King at 206) 689-4014.

Hammer Mill process description.

The hammermill is one step in the multi-step recycling process. Independent Metals first uses a metal shear and shaker table to reduce in size primarily ferrous metal scrap (rebar, appliance enclosures, scrap pipe, automotive body panels, etc.). The reduced metal scrap is fed via a conveyor into the hammermill. The hammermill cuts the scrap into even smaller pieces roughly the size of quarry spalls. The hammermill also separates non-metal components through two separate processes. First it uses magnets to separate metal from non-metal. The remaining materials not collected by the magnets are run through a cyclone which further separates non-metallic material from metal, and directs the non-metallic material and particulate matter into a baghouse where it is collected for disposal. The types of material likely to be found in the waste product include particulate amounts of plastics, fiberglass, and small amounts of non-ferrous metal such as lead and copper. The cyclone an baghouse as shown in the attached material represent best available control technology for toxics.

CYCLONE

General

Equipment or Process Being Controlled

Hammermill. Metal shredding/recycling

Identify which of the following categories the project fits into:

1. New Construction *(New construction also includes existing, unpermitted equipment or processes)*

New Installation

Estimated Hours of Operation (hr/day, day/wk, wk/yr) *[Estimate the hours of operation for the new cyclone - not necessarily the entire facility]*

12 hours per day 7 days a week

Estimated Installation Date *[Estimate the date when the new cyclone will be put into service]*

May 2009

Inlet Gas Stream Characteristics

Particulate Concentration (lb/hr, gr/acf, or gr/dscf) *[Specify the amount of particulate matter being vented to the cyclone in pounds per hour, grains per actual cubic foot, or grains per dry standard cubic foot. (One pound contains 7000 grains.)]*

Depends on rate of material fed into hammer mill. The maximum average grain loading into the cyclone is 5 grains per CFM. The remaining carryover of 1.5 grain per CFM are captured in the bag house. The exit emission rate would not exceed .02 grains per CFM.

Design *[Most design information is available from the manufacturer or vendor. Submittal of a brochure, scale drawing or process and instrumentation diagram will facilitate the review of the permit application]*

Design specifications are attached to this application.

Type of Cyclone *[Specify single cyclone or multiclone (including the number of tubes).]*

SINGLE

Make & Model *[Specify the manufacturer and model of the cyclone - not the serial number.]*
MAGNATECH ENGINEERING MODEL CYC85

Diameter of Cylindrical Section (inches) *[Specify the diameter of the body (cylindrical section) of the cyclone in inches]*

85"

Length of Cylindrical Section (inches) *[Specify the length of the cylindrical section (above the conical section) of the cyclone in inches]*

125 1/8"

Length of Conical Section (inches) *[Specify the length of the conical section of the cyclone in inches]*

99 7/9"

Height of Inlet (inches) *[Specify the height (the vertical dimension) of the inlet duct in inches]*

52"

Type of Entry *[Specify the type of inlet (tangential, helical, involute, vane axial).]*

TANGENTIAL Rotary Airlock with airlock at base of YES

Method Used to Design/Size the Cyclone *[Specify the method used to select this design and size of cyclone. If design calculations were performed, they should be submitted. If the design and sizing was based on similar (successful) applications, list the facilities and the city and state where they are located]*

SIMILAR APPLICATIONS
MARTIN BROTHERS, SARDIS, MS
ALLOTECH SHEBOYGAN, WI

<u>Stack</u>

Stack Height (ft) *[Specify the height of the top of the stack above ground level - not above the building or sea level]*

Horizontal discharge approximately 25 feet above ground level

Stack Diameter or Rectangular Cross-Sectional Dimensions (inches) *[Specify the internal dimensions - not the external dimensions]*

24"

Exhaust Flowrate (acfm) *[Specify the airflow in actual cubic feet per minute. This is usually determined from the fan performance 'curve' based upon the expected static pressure caused by the sum of the pressure losses from each component in the ductwork, including the cyclone]*

15,000 CFM

Exhaust Temperature (°F) *[Specify the temperature of the exhaust leaving the stack]*

Process imparts little or no heat. Temperature is ambient.

Distance to Nearest Property Line (ft) *[Specify the distance from the base of the stack to the nearest property line]*

Approximately 50 feet

Height, Length and Width of Buildings (ft) *[Specify the approximate dimensions of any buildings that are >40% of the stack height and are located within 5 building heights from the stack.]*

See Attached Building and equipment schematics

Exhaust Direction *[Specify the direction that the exhaust is pointed (upward, horizontal, or downward).]*

Horizontal

Operation and Maintenance

Describe Preventive Maintenance *[For example, specify the inspection frequencies for visible emissions, fallout, holes and leaks in the cyclone and ductwork. Also specify the records to be kept (e.g., records of all inspections and repairs, the amount of dust collected per month), and specify any spare parts to be kept on-site]*

MAINTENANCE
Maintenance for this unit consists of weekly, monthly and yearly visual inspections of the unit, periodic replacement of the filters based on the pressure drop across the filters and trouble-shooting based upon the finding of these inspections.

WEEKLY:
1. **Inspect ducting for material buildup. If buildup exists clean ducting.**
2. **Inspect all rotating machinery to ensure correct operation (i.e. lubrication, sounds of rubbing, bearings, etc...)**
3. **Ensure bag house solenoid valves are pulsing per the manufacturers recommended cleaning cycle.**

MONTHLY:

During these monthly inspections the following items should be checked or performed:

1. **Inspect the mounting of the unit for tightness and leaks and adjust as necessary.**
2. **Inspect for any air leaks in the cleaning system, dislodged, or missing tubing.**
3. **Inspect the discharge of the unit for presence of dust.**
4. **Check auto drain for correct operation.**

ANNUAL INSPECTIONS:

1. **Inspect fan wheel and housing for wear. Signs of wear will indicate bag/tube sheet failures.**
2. **Inspect cyclone rotary valve for wear. Replace valve components as necessary**

Methods Used to Prevent Emissions From Handling and Disposal of Dust *[Specify the equipment, procedures, and methods used to prevent emissions from the handling and disposal of dust. Is the receiving hopper completely enclosed? How is the dust hopper emptied without causing emissions?]*

Typical installations use a discharge hose from the cyclone rotary valve and baghouse screw feeder into the dust bin. The dust bin should be enclosed with a penetration for the discharge hose. This arrangement prevents fugitive emissions from escaping the bins below the two devices.

Bag House

General

Equipment or Process Being Controlled *[Specify the source(s) of the particulate matter to be controlled. If the source(s) are also new, complete the applicable permit forms]*

Identify which of the following categories the project fits into:

Same as above.

Estimated Hours of Operation (hr/day, day/wk, wk/yr) *[Estimate the hours of operation for the new baghouse - not necessarily the entire facility]*

12 hours a day 7 days a week.

Estimated Installation Date *[Estimate the date when the new baghouse will be put into service]*

May 2009

Inlet Gas Stream Characteristics *[Pretreatment (e.g., heating or dilution) is necessary if the temperature is not 50-100 °F above the dewpoint.]*

Inlet gas stream is ambient temperature.

Particulate Concentration (lb/hr, gr/acf, or gr/dscf) [*Specify the amount of particulate matter being vented to the baghouse in pounds per hour, grains per actual cubic foot, or grains per dry standard cubic foot. (One pound contains 7000 grains.)]*

Depends on rate of material fed into hammer mill. The maximum average grain loading into the cyclone is 5 grains per CFM. The remaining 1.5 grain per CFM are captured in the bag house. The emission would not exceed .02 grains per CFM.

Flowrate (acfm) *[Specify the air flowrate in actual cubic feet per minute. This is usually determined from the fan performance 'curve' based upon the expected static pressure caused by the sum of the pressure losses from each component in the ductwork, including the baghouse]*

15,000 CFM

Average Temperature (°F) *[Specify the average expected temperature of the air going into the baghouse in degrees Fahrenheit.]*

Ambient temperature

Maximum Temperature (°F) *[Specify the maximum expected temperature of the air going into the baghouse in degrees Fahrenheit.]*

100 degree maximum

Moisture (% by volume) [*Specify the moisture (water vapor) concentration of the air going into the baghouse in percent.]*

Design max 10% above ambient.

Design [Most design information is available from the manufacturer or vendor. Submittal of a brochure, scale drawing or process and instrumentation diagram will facilitate the review of the permit application]

Make & Model *[Specify the manufacturer and model of the baghouse - not the serial number]*

MAGNATECH ENGINEERING MODEL DC156X120

Filter Fabric Material *[Specify the type of fabric material used. Common bag materials include modacrylic (e.g., Dynel), cotton, wool, polypropylene, nylon polyamide (e.g., Nylon 6 & 66), acrylic (e.g., Orlon), polyester (e.g., Dacron, Creslan), nylon aromatic (e.g., Nomex), fluorocarbon (e.g., Teflon, TFE), and fiberglass. Also specify whether it is woven or felted, and any type of treatments (e.g., heat setting) or finishes applied to the fabric (e.g., Teflon, Gore-tex, silicone).]*

POLYESTER SINGED

Filter Cleaning Method *[Specify either mechanically shaken, reverse air, or pulse-jet.]*

PULSE JET

Air to Cloth Ratio *[Specify the air to cloth ratio of the baghouse. This is the airflow (acfm) divided by the total surface area of fabric exposed to dust. The surface area of an individual bag is equal to 3.14159 x bag diameter x bag length. The surface area of a pleated cartridge generally must be obtained from the manufacturer or distributor. The total surface area is just the individual bag or cartridge surface area times the number of bags or cartridges cleaning the exhaust.]* (acfm/ft2)

5.9

Baghouse Configuration *[Specify whether the baghouse equipped with an induced draft fan on the clean side (negative pressure) or with a forced draft fan on the dirty side (positive pressure)]*

NEGATIVE PRESSURE

Method Used to Design/Size the Baghouse *[Specify the method used to select this design and size of baghouse. If design calculations were performed, they should be submitted. If the design and sizing was based on similar (successful) applications, list the facilities and the city and state where they are located]*

SIMILAR DESIGN:

MARTIN BROTHERS SARDIS, MS
ALLOTECH SHEBOYGAN, WI

Stack

Stack Height (ft) *[Specify the height of the top of the stack above ground level - not above the building or sea level]*

Horizontal discharge approximately 25 feet above ground level

Stack Diameter or Rectangular Cross-Sectional Dimensions (inches) *[Specify the internal dimensions - not the external dimensions]*

24"

Exhaust Flowrate (acfm) *[Specify the airflow in actual cubic feet per minute]* 15,000 CFM
Email?

Exhaust Temperature (°F) *[Specify the temperature of the exhaust leaving the stack]*

100 degrees

Distance to Nearest Property Line (ft) *[Specify the distance from the base of the stack to the nearest property line.]*

Approximately 50 feet.

Height, Length and Width of Buildings (ft) *[Specify the approximate dimensions of any buildings that are >40% of the stack height and are located within 5 building heights from the stack]*

See attached schematics.

Operation and Maintenance

Method Used to Establish Cleaning Frequency *[Specify the method used to establish the duration between bag cleanings. If a timer is used, specify the timer setting and the criteria for selecting the time interval. If cleaning is actuated by the pressure differential, specify the criteria for selecting the pressure drop.*

TIMER SETTINGS DETERMINED BY DIFFERENTIAL PRESSURE ACROSS BAGs

Describe Preventive Maintenance *[Specify the intended inspection frequencies for visible emissions, fallout and pressure drop across the filters, viewing of the interior 'clean side' for leaks, filter wear and strength, assuring that the gauge is not plugged. Also specify the records to be kept (e.g., records of all inspections and repairs, the age of each filter and its fabric type; amount of dust collected per month), and specify the spare parts to be kept on-site]*

MAINTENANCE

Maintenance for this unit consists of weekly, monthly and yearly visual inspections of the unit, periodic replacement of the filters based on the pressure drop across the filters and trouble-shooting based upon the finding of these inspections.

WEEKLY:

1. **Inspect ducting for material buildup. If buildup exists clean ducting.**
2. **Inspect all rotating machinery to ensure correct operation (i.e. lubrication, sounds of rubbing, bearings, etc...)**
3. **Ensure baghouse solenoid valves are pulsing per the manufacturers recommeded cleaning cycle.**

MONTHLY:

During these monthly inspections the following items should be checked or performed:

1. **Inspect the mounting of the unit for tightness and leaks and adjust as necessary.**
2. **Inspect for any air leaks in the cleaning system, dislodged, or missing tubing.**
3. **Inspect the discharge of the unit for presence of dust.**
4. **Check auto drain for correct operation.**

ANNUAL INSPECTIONS:

1. Inspect fan wheel and housing for wear. Signs of wear will indicate bag/tube sheet failures.

2. Inspect cyclone rotary valve for wear. Replace valve components as necessary

Methods Used to Prevent Emissions From Handling and Disposal of Dust *[Specify the equipment, procedures, and methods used to prevent emissions from the handling and disposal of dust. Is the baghouse equipped with a rotary airlock? Is the receiving hopper completely enclosed? How is the dust hopper emptied without causing emissions?]*

Typical installations use a discharge hose from the cyclone rotary valve and baghouse screw feeder into the dust bin. The dust bin should be enclosed with a penetration for the discharge hose. This arrangement prevents fugitive emissions from escaping the bins below the two devices.

ENVIRONMENTAL (SEPA) CHECKLIST

A. BACKGROUND

1. Name of proposed project, if applicable:

   Independent Metal Plant 2: Air Handling System, Cyclone and Baghouse associated with a hammermill.

2. Name of applicant:

   Independent Metals

3. Address and phone number of applicant and contact person:

   Contact: David Van Skike.

   Gordon Derr LLP
   2025 1st Avenue Suite 500
   Seattle, WA 98121

   Phone: 206.382-9540

4. Date checklist prepared:

   November 4, 2009

5. Agency requesting checklist:

   PSCAA

6. Proposed timing or schedule (including phasing, if applicable):

   Already installed.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

   Independent Metals is currently seeking shoreline substantial development permit for a re-organization of the facility and expansion of the yard, which may result in relocation of the hammermill to a different portion of the facility.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

   None

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

   City of Seattle Shoreline Permit application for general facilities upgrades.

   Application to discharge to combined sewer system.

10. List any government approvals or permits that will be needed for your proposal, if known.

Electrical Permit from City of Seattle. Already issued.

PSCAA Notice of Construction Order

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

Independent Metals is a water-dependent metal recycling company located in the Duwamish Manufacturing Industrial Urban Village in Seattle. Operations are divided between two facilities: Plant 1 at 747 South Monroe Street and Plant 2 located at 7814 8th Avenue South along the Duwamish River where scrap metals are purchased or collected and stored. Independent Metals uses Plant 1 as a Utility Service Use/ Recycling Center and for office operations as well as recycling collection open to the general public. Plant 2 is a water dependant recycling use where metals are sorted, scrapped, baled and loaded to trucks or barges for transport.

The proposed project will take place at Plant 2. The plant operates a maintains a Hammermill, which shreds metal. This permit application concerns the air handling system for the Hammer mill, a cyclone and Bag house as described in the attached specifications.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The Plant 2 site is located in the South Park neighborhood of the City of Seattle at 7814 8th Avenue S. The site is made up of four parcels in a triangular formation. The Duwamish River borders the site to the northeast and South Kenyon Street borders the site to the south, and 8th Avenue S. borders the site to the west.

The City of Seattle's Parcel Data provides the following the parcel numbers: 7327902520, 7327903645, 7327902480, and 7327902490.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (circle one):
Flat, rolling, hilly, steep slopes, mountainous, other___

b. What is the steepest slope on the site (approximate percent slope)?

0%

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

Liquefaction

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

See above.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

NA

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

NA.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

The entire site is currently covered with impervious surfaces and would remain covered as a result of the proposed project.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

NA

2. Air

a. What type of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke, greenhouse gases) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

The existing Hammermill sorts and mills scrap metal. This machine discharges air through a Cyclone and Baghouse as described in the specifications attached to the permit application. The system is designed to meet or exceed regulations of the discharge of airborne pollutants.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

The project site is located in a high-intensity industrial district; therefore emissions or odors may be present in the project vicinity as a result of nearby industrial activity. This proposal is not impacted by nearby industrial activities.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

No additional measures are necessary.

3. Water

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

The Duwamish River is located immediately to the northeast of the project site.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Yes, the project will require work within 200 feet of the Duwamish River, but will be within an enclosed building.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

None.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No surface water withdrawals will be necessary.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No portions of this site are located within the 100-year floodplain, but the western portion of the site is located in the City of Seattle Department of Planning and Development's 100-foot flood prone buffer.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No

b. Ground:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

No groundwater will be withdrawn and no water will be discharged to groundwater as part of this proposal.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for

example: domestic sewage; industrial, containing the following chemicals ...; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

None.

c. Water Runoff (including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

NA

2) Could waste materials enter ground or surface waters? If so, generally describe.

NA

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

Surface runoff at the facility is controlled through the a stormwater treatment facility. Stormwater from the site is collected via catchbasin and delivered to the stormwater treatment facility. This proposal is for equipment located indoors such that there are no impacts to stormwater related to the proposal.

4. Plants

a. Check or circle types of vegetation found on the site:

__ deciduous tree: alder, maple, aspen, other
__ evergreen tree: fir, cedar, pine, other
__ shrubs
X_ grass
__ pasture
__ crop or grain
__ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
__ water plants: water lily, eelgrass, milfoil, other
__ other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

No vegetation removal is involved in the proposed project.

c. List threatened or endangered species known to be on or near the site.

The Duwamish River is habituate for Juvenile Chinook. No work will be taking place waterward of OHW.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

No landscaping is included in this proposal.

5. Animals

a. Circle any birds and animals that have been observed on or near the site or are known to be on or near the site:

Songbirds, Gulls, Crows, raccoons

b. List any threatened or endangered species known to be on or near the site.

As described above. Chinook Salmon.

c. Is the site part of a migration route? If so, explain.

Waters of the Duwamish River serve as a migration route for Salmonids.

d. Proposed measures to preserve or enhance wildlife, if any:

NA.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

The site is served by electric power. Electric power is used for both heat and plant operations and is used to power the hammermill. The City of Seattle has already issued an electrical permit for the hammermill.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

NA.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

NA.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste that could occur as a result of this proposal? If so, describe.

No.

1) Describe special emergency services that might be required.

None required.

2) Proposed measures to reduce or control environmental health hazards, if any:

None required.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment operation, other)?

There are several existing sources of industrial noise in the neighborhood, including noise coming from current operations at Plant 2. Some traffic noise associated with SR-99 also reaches the site. None of the sources of noise impact the proposed improvements to an existing industrial facility

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from site.

The air handling system and Hammermill will not exceed the limits of the City of Seattle Noise ordinance.

Operating hours are between 7:00 a.m. and 10:00 p.m. weekdays and 9:00 a.m. and 10:00 p.m. weekends.

3) Proposed measures to reduce or control noise impacts, if any:

NA

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties?

The site is currently used by Independent Metals to sort and process scrap metal for recycling.

b. Has the site been used for agriculture? If so, describe.

No, this site has not been used for agriculture.

c. Describe any structures on the site.

Yes, this site includes seven building. Elevations for these buildings are included in the application materials.

Building A: Administrative offices, metal processing, tool room

Building B: Warehouse/storage (not used by Independent Metals)

Building C: Administrative offices

Building D: Crane shop, maintenance

Building E: Administrative office

Building F: Maintenance shack

d. Will any structures be demolished? If so, what?

No structures will be demolished.

e. What is the current zoning classification of the site?

Current zoning is General Industrial 2, (IG2 U/65). This site is located within the Greater Duwamish Manufacturing Industrial Urban Village.

According to SMC Chart A for Section 23.50.012, Section M.4 "Recycling" is a permitted use in the IG2 Zone within the Greater Duwamish Manufacturing Industrial Urban Village.

f. What is the current comprehensive plan designation of the site?

According to the current City of Seattle *Comprehensive Plan* Future Land Use Map, the subject parcel is designated "Industrial Areas."

g. If applicable, what is the current shoreline master program designation of the site?

The current shoreline designation is "Urban Industrial"

Independent Metal's principal use for Plant 2 is processing scrap metal and loading it onto water vessels for transport.

According to the *Shoreline Master Program*, the use "high-impact, water-dependent or water-related" is permitted outright in the "Urban Industrial" shoreline district.

h. Has any part of the site been classified as an "environmentally critical" area? If so, specify.

The following environmentally critical areas have been identified on this site:

DPD's 100-foot Flood Prone Buffer

Shoreline Habitat Buffer

Liquefaction Zone

i. Approximately how many people would reside or work in the completed project?

There would be no residents residing in the completed project.

Between 10 and 20 people would be employed at this plant.

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any:

Not applicable.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

As proposed, the project is compatible with existing and projected land uses and plans of the zoning district and land use designation.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

No housing units are provided.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

Not applicable.

c. Proposed measures to reduce or control housing impacts, if any:

Not applicable.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

No exterior construction is proposed.

b. What views in the immediate vicinity would be altered or obstructed?

No exterior construction is proposed.

c. Proposed measures to reduce or control aesthetic impacts, if any:

No exterior construction is proposed.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

No exterior construction is proposed.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

NA

c. What existing off-site sources of light or glare may affect your proposal?

NA

d. Proposed measures to reduce or control light and glare impacts, if any:

NA.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

The proposed project is located in an industrial district in the South Park neighborhood. The South Park playground is approximately a

quarter mile from the project site, but the area generally is not used for informal recreation.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

No proposed measures.

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

No known cultural resources are on this site.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

No known cultural resources are on this site.

c. Proposed measures to reduce or control impacts, if any:

None required.

14. Transportation

a. Identify public streets and highways serving the site, and describe the proposed access to the existing street system. Show on site plans, if any.

The site is located at the corner of 8th Avenue South and South Kenyon Street. The site currently has its main access off of 8th Avenue South. No changes in access are proposed as part of this proposal.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

The site is currently served by Metro Transit route 132. This travels north and south on 8th Avenue South, turning west at South Kenyon Street.

c. How many parking spaces would the completed project have? How many would the project eliminate?

NA

. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

No new roads or streets are included in this proposal. No improvements are proposed to existing roads or streets.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

The existing facility is water-dependent and uses its access to the Duwamish River to transport its goods. No change in water transportation is proposed as part of this development.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

NA

g. Proposed measures to reduce or control transportation impacts, if any.

No transportation impacts are anticipated to result from the proposed project.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

No.

b. Proposed measures to reduce or control direct impacts on public services, if any.

No measures are necessary.

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

All of the above systems except septic are available at the site.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in immediate vicinity which might be needed.

NA. Facility already has adequate electrical service to accommodate the air handling system.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand the lead agency is relying on them to make its decision.

Signature: _____

Date submitted: November 5, 2009

This checklist was reviewed by:

_____

Any comments or changes made by the Agency are entered in the body of the checklist and contain the initials of the reviewer.

_____

Independent Metals Company

Seattle, Washington

SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN

Independent Metals Company
7814 South 8th Avenue
Seattle, Washington 98108

Provided By:

envirosure
SOLUTIONS, LLC.

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APPENDICES

Appendix A - Area Map
Appendix B - Site Plan (indicating on-site predicted sheet flow pattern)
Appendix C - Employee Training Documentation and Forms
Appendix D - Drainage Discharge Report Form
Appendix E - Storage Tank & Equipment Inspection Report Form
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Appendix G - Certification of the Applicability of Substantial Harm Checklist
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SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN CERTIFICATION

I hereby certify that I have examined the facility, I am familiar with the provisions of 40 CFR Part 112, and I have prepared this SPCC Plan in accordance with the applicable federal requirements.

Name & Title: Hal D. Rosen, CHMM, Environmental Consultant

Signature: _____

Date: _____

PLAN REVIEW REQUIREMENTS AND MANAGEMENT APPROVAL

SPCC PLAN REVIEW

In accordance with 40 CFR 112.5(b), a review and evaluation of this SPCC Plan will be conducted at least once every five years by owners/operators. After this review and evaluation, Independent Metals Company ("facility") will amend/update the SPCC Plan, as necessary, within six months of the review. The amendments may include more effective prevention and control technology if: (1) such technology will significantly reduce the likelihood of a spill event from the facility and (2) if such technology has been field-proven at the time of review. Any amendment to the SPCC Plan shall be certified by an Environmental Professional for the plan to be effective within six months after a change in the facility design, construction, operation, or maintenance occurs which materially affects the facility's potential for the discharge of oil into or upon the navigable waters of the United States or adjoining shorelines. The Plan shall also be revised after every reportable spill event by incorporation of the spill report, evaluation of the cause of the spill, and whatever changes are deemed appropriate to prevent recurrence of the spill. In addition, the Plan shall be reviewed by management, whenever any of the following take place:

a) When required by the United States Environmental Protection Agency (EPA) or after a reportable spill event.
b) The Plan fails in any way during an emergency.
c) The list of emergency coordinator, emergency equipment, or containment procedures change.
d) If facility operations or maintenance procedures, and/or oil storage volumes significantly change.

The facility will maintain a copy of the SPCC Plan to be available for on-site review during normal working hours.

SPCC Plan review shall be duly signed by the owner/operator or its authorized representative. The Plan review dates will be noted on this page.

Original Date of Plan: October 2010

Designated person accountable for spill prevention: Larry Brewer, Operations Manager

	Review Dates	Signature
1.	10/10	
2.	/ /	
3.	/ /	
4.	/ /	
5.	/ /	

MANAGEMENT APPROVAL (40 CFR 112.7)

This SPCC Plan provides specific policies and procedures for the protection and well-being of the facility's employees, the public, and the environment. This Plan has been prepared with the full support and approval of the management, who have the authority to commit necessary resources to implement the Plan. This SPCC Plan will be implemented as herein described and shall be effective only after the Management Approval as demonstrated by signing below. As the management understands that it is the owner or operator who is ultimately responsible for complying with the SPCC Rules.

Authorized Representative:

Name: Larry Brewer _____

Title: Operations Manager _____

Signature: _____

Date: _____

Spill Prevention, Control, and Countermeasures (SPCC) Plan

1.0 General Information
[40 CFR 112.7(a)(1)]

1.1 Regulatory Considerations

The United States Environmental Protection Agency (EPA) requires facilities to implement measures that will prevent and control oil spills due to human operational error or equipment failure. Specifically, the EPA requires that owners or operators of onshore and offshore facilities that have discharged or, due to their location, could reasonably be expected to discharge oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines, shall prepare a Spill Prevention Control and Countermeasure (SPCC) Plan. This plan is prepared in accordance with the federal SPCC requirements as defined in 40 CFR 112 addressing oil products as defined by the EPA. However, the plan also includes descriptions of "non-oil" products (such as chemicals) stored at the facility. The description of "non-oil" products is out of the scope of the federal SPCC requirements.

The Plan addresses the following three essential elements of a SPCC.

1) Operating procedures the facility implements to prevent petroleum product and/or chemical spills;
2) Control measures installed to prevent petroleum product and/or chemicals from entering navigable waters or adjoining shorelines; and
3) Countermeasures to contain, cleanup, and mitigate the effects of a petroleum product and/or chemical release that has an impact on navigable waters or adjoining shorelines.

The Plan is written to follow the general requirements listed in 40 CFR 112.7 and the requirements specific to onshore (non-production) facilities listed in 40 CFR 112.8 and provides cross-references to these requirements, where applicable. The elements of this SPCC Plan include the following (where applicable):

- Facility description
- Facility site plan and drainage
- Types of petroleum products used/stored at the facility, storage location, and storage capacity
- Oil spill and chemical spill predictions
- Discharge prevention measures
  - Bulk storage container compliance
  - Transfer procedures and equipment (including piping)
  - Loading/unloading requirements and procedures for tank car and/or tank trucks
- Spill response procedures / release reporting procedures
  - Discharge controls / secondary containment
  - Discharge countermeasures
  - Contact list and phone numbers
- Facility inspection procedures
  - AST Integrity testing
  - Brittle fracture evaluations where applicable
- Personnel training and oil discharge prevention briefings
- Site security

1.2 Scope

This plan covers all buildings and all grounds with in the legal property boundary of the Independent Metals Company ("facility") located at 7814 South 8th Avenue, Seattle, Washington. The facility is located north of Kenyon Street. The nearest navigable water course (Duwamish Waterway) abuts the facility from the northeast.

The facility operates for more than four hours per day; therefore, a copy of this SPCC Plan shall be kept onsite. The materials covered by this plan essentially include all oil products as defined by the EPA. The chemicals used and stored at the facility and mentioned in this document are not covered under the provisions of 40 CFR Part 112.

2.0 Facility Information

2.1 Facility Owner

Independent Metals Company
7814 South 8th Avenue
Seattle, Washington 98108
206-763-9033

2.2 Facility Operator

Independent Metals Company
7814 South 8th Avenue
Seattle, Washington 98108
206-763-9033

2.3 Facility Contact

Larry Brewer
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Cell: 206-786-9746

Ben Northcutt
Yard Manager
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3.0 Facility Description
[40 CFR 112.7(a)(3)]

3.1 Facility Operations

Independent Metals Company ("facility") primarily engages in assembling, breaking up, sorting, and wholesale distribution of scrap and waste materials. The following activities are conducted at the Independent Metals Company facility: loading/unloading of incoming scrap materials; cutting of large pieces of metal by torches; shredding operations; removal of non-metal materials through eddy current separator operations; storage of scrap materials; and other support activities for above-mentioned facility operations using on-site equipment. The majority of processing operations such as the shredder operations and eddy current separator operations are conducted indoors. Outdoor processes such as torching and material storage are performed under overhead coverage when possible.

Aboveground storage tanks (ASTs) contribute to a large portion of the storage of fuels and oil-based products, which are found in various areas of the site and have various capacities. There is one stationary 150-Gallon Used Oil AST, one mobile 100-Gallon Diesel Mobile AST, one Sierra Shear with a 500-Gallon Hydraulic Reservoir, one Transformer with a 500-gallon capacity, and one Sand/Oil/Water Separator with a capacity of 3,900 gallons. Fuels and oil-based products within 55-gallon drums are primarily stored within the Chemical Storage Area.

Non-oil chemicals are also stored throughout the site. There are no ASTs containing non-oil products located onsite at this time. Smaller quantities of non-oil chemicals are primarily stored within the Chemical Storage Area, Parts Room, and Shredder area within 55-gallon capacity or smaller containers.

There are three locations (Drains directed to Sand/Oil/Water Separator) around the facility where stormwater generally flows: one is in the northwest quadrant within the Sub-leased Area; the second is in the northern portion of the facility, adjacent to the 8,000-Gallon Stormwater Holding Tank; and the third is in the southwestern quadrant of the facility near the Material Storage area. The water that flows into the Drains is directed to the 3,900-Gallon Sand/Oil/Water Separator where it undergoes filtration before being discharged. Refer to the site map (Appendix B) for locations of oil and/or fuel storage and operations.

4.0 Facility Oil Storage
[40 CFR 112.7(a)(3)(i)]

Oil products at the facility consist of one stationary AST, one mobile AST, one equipment reservoir, one transformer, and one oil/water separator, all of which are of various capacities. Additionally, there are 55-gallon drums stored in the Chemical Storage Area. Contained in these ASTs, reservoir, transformer, and drums are used oil, hydraulic oil, transformer oil, diesel fuel, and PowerDrive Fluid. The oil/water separator contains oily water. Refer to Section 7.0 for further information.

The following tables provide the existing oil product storage capacities at the facility.

Above Ground Tanks

Tank ID (Site Map Key)	Tank Capacity (gallons)	Contents
150-Gallon Used Oil AST	150	Used Oil
Sierra Shear (500-Gallon Hydraulic Oil Reservoir)	500	Hydraulic Oil
Transformer (500-Gallon Capacity)	500	Transformer Oil

Underground Storage Tanks

Tank ID (Site Map Key)	Volume (gallons)	Contents
N/A		

Portable Tanks

Location (Site Map Key)	Volume (gallons)	Contents
100-Gallon Diesel Mobile AST	100	Diesel Fuel

Oil/Water Separators

Location (Site Map Key)	Volume (gallons)	Contents
Sand/Oil/Water Separator (3,900-Gallon Capacity)	3,900	Oily/Sandy Water

Drums/Containers (Aboveground)

Location (Site Map Key)	Volume (gallons)	Contents
Chemical Storage Area	440	Hydraulic Oil, PowerDrive Fluid

	Capacity	Contents
Total Estimated Amount of Oil	Approximately: 5,590 gallons	Used Oil, Hydraulic Oil, Transformer Oil, Diesel Fuel, Oily/Sandy Water, PowerDrive Fluid

5.0 Facility Chemical Storage ("Non-Oil Products")

In addition to oil-based products, the facility also uses several types of chemicals, or non-oil products. Small quantities of non-oil products are stored in the Chemical Storage Area, Parts Room, and Shredder area. The storage and handling of chemicals shall meet the Uniform Fire Code, Chemical Compatibility requirements, City of Seattle requirements, and all other applicable regulatory requirements.

The following tables provide the existing chemicals and other "non-oil products" storage capacities at the facility.

Above Ground Tanks

Tank ID (Site Map Key)	Tank Capacity (gallons)	Contents
N/A		

Underground Storage Tanks

Tank ID (Site Map Key)	Volume (gallons)	Contents
N/A		

Portable Tanks

Tank ID (Site Map Key)	Volume (gallons)	Contents
N/A		

Drums/Containers

Container/Location ID (Site Map Key)	Volume (gallons)	Contents
Chemical Storage Area	165	Antifreeze, Used Antifreeze
Parts Room	1	Gear Oil
Shredder	35	Enamel Paint, Turbine Oil

	Capacity	Contents
Total Estimated Amount of Chemicals ("Non-Oil Products")	Approximately: 201 gallons	Antifreeze, Used Antifreeze, Gear Oil, Enamel Paint, Turbine Oil

6.0 Spill History

Spill Events within Twelve Months Prior to the Effective Date of this Plan:

- As reported by the facility, to date, there have been no spill incidents of Reportable Quantity (RQ) at the facility.

Written description of such spill, corrective action, and plans for prevention recurrence:

- This section is not applicable.

7.0 Potential Spill Predictions - Oil Storage
[40 CFR 112.7(b)]

Source	Type of Failure	Content	Capacity (gallons)[1]	Rate (gallons/minute)	Predicted Direction of Flow[2]	Secondary Containment Requirement[3]
150-Gallon Used Oil AST	Spills / Leaks Tank Rupture	Used Oil	150	Dependent Upon Size of Spill / Rupture	Indoors	Secondary Containment (Volume >110 % of Largest Vessel), Spill Kits and Employee Training
Sierra Shear (500-Gallon Hydraulic Oil Reservoir)	Spills / Leaks Tank Rupture	Hydraulic Oil	500	Dependent Upon Size of Spill / Rupture	North Toward Drain (directed to the Sand / Oil / Water Separator)	Secondary Containment (Volume >110 % of Largest Vessel), Spill Kits and Employee Training
Transformer (500-Gallon Capacity)	Spills / Leaks Tank Rupture	Transformer Oil	500	Dependent Upon Size of Spill / Rupture	South Toward Outfall	Secondary Containment (Volume >110 % of Largest Vessel), Spill Kits and Employee Training
100-Gallon Diesel Mobile AST	Spills / Leaks Tank Rupture	Diesel Fuel	100	Dependent Upon Size of Spill / Rupture	Dependent Upon Tank Location; Generally Staged Indoors	Secondary Containment (Volume >110 % of Largest Vessel), Spill Kits and Employee Training
Sand / Oil / Water Separator (3,900-Gallon Capacity)	Spills / Leaks Tank Rupture	Oily/Sandy Water	3,900	Dependent Upon Size of Spill / Rupture	Northwest Toward Drain (directed to the Sand / Oil / Water Separator)	Secondary Containment (Volume >110 % of Largest Vessel), Spill Kits and Employee Training

Source	Type of Failure	Content	Capacity (gallons)[1]	Rate (gallons/minute)	Predicted Direction of Flow[2]	Secondary Containment Requirement[3]
Chemical Storage Area	Spills / Leaks Tank Rupture	Hydraulic Oil, PowerDrive Fluid	440	Dependent Upon Size of Spill / Rupture	Indoors	Secondary Containment (Volume >110 % of Largest Vessel), Spill Kits and Employee Training

1. As reported by the facility.
2. As shown on the attached Site Plan.
3. As required by 40 CFR 112.7(c)

8.0 Potential Spill Predictions - "Non-Oil Products"

Source	Type of Failure	Content	Capacity (gallons)[1]	Rate (gallons/minute)	Direction of Flow	Secondary Containment
Chemical Storage Area	Spills / Leaks Tank Rupture	Antifreeze, Used Antifreeze	165	Dependent Upon Size of Spill / Rupture	Indoors	Spill Kits and Employee Training
Parts Room	Spills / Leaks Container Rupture	Gear Oil	1	Dependent Upon Size of Spill / Rupture	Indoors	Spill Kits and Employee Training
Shredder	Spills / Leaks Container Rupture	Enamel Paint, Turbine Oil	35	Dependent Upon Size of Spill / Rupture	Indoors	Spill Kits and Employee Training

1. As reported by the facility.
2. As shown on the attached Site Plan.

9.0 Discharge Prevention Measures
[40 CFR 112.7(a)(3)(ii)]

9.1 Bulk Storage Tanks
[40 CFR 112.8(c)]

Tank Compatibility with Its Contents [40 CFR 112.8(c)(1)]

All tanks are compatible with their contents. All tanks shall be labeled with their contents and shall only contain the designated material. The tanks shall remain sealed except during material transfer. They shall be visually inspected daily to ensure propriety and integrity as described in Section 15.0 of this plan. Any non-compliance items noted during the daily visual inspections should be noted on the monthly inspection forms included in Appendix E and F and kept on site with this plan. All steel tanks should periodically be subjected to integrity testing using appropriate API-approved methods. This section requires special inspections for tanks that have been damaged and/or repaired.

Tank Fail-Safe Engineered [40 CFR 112.8(c)(8)]

Every storage tank at the facility must have a liquid level-gauging device to avoid spills due to overfilling. The operator must pay close attention at all times to the level gauge during transfer operations to avoid spills due to possible overfill. Where applicable, the tanks should be equipped with vents to prevent pressurization of the tanks.

Corrosion Protection of Buried Metallic Storage Tanks [40 CFR 112.8(c)(4)]

There are no buried metallic storage tanks located within the facility.

Corrosion Protection of Partially Buried Metallic Storage Tanks [40 CFR 112.8(c)(5)]

There are no partially buried metallic storage tanks located at this facility.

Aboveground Tank Periodic Integrity Testing [40 CFR 112.8(c)(6)]

All steel tanks should periodically be subjected to integrity testing using appropriate API-approved methods. This section requires special inspections for tanks that have been damaged and/or repaired. Tank conditions are to be observed during daily operations to ensure proper integrity. Monthly tank inspections should also be conducted using the form included as Appendix E. All monthly inspection reports should be kept on record with the Facility SPCC Plan.

Control of Leakage Through Internal Heating Coils [40 CFR 112.8(c)(7)]

No oil storage tank uses heat exchange equipment. Currently, there are no heating coils used at the facility.

Position of Mobile or Portable Storage Tanks [40 CFR 112.8(c)(11)]

The facility has one 100-Gallon Diesel Mobile AST, however it typically remains indoors within the Warehouse. All mobile tanks are required to be positioned so as to contain spills from reaching navigable waters. Spill kits shall also be provided to all portable and mobile tanks. Tanks with capacities greater than or equal to 55 gallons are required to have, at all times, sufficient secondary containment greater or equal to 110% of the volume of the tank, and shall also include, but not limited to, deployables and spill kits.

9.2 Facility Transfer Operations [40 CFR 112.8(d)]

Buried Piping Installation Protection and Examination [40 CFR 112.8(d)(1)]

The buried pipelines associated with the Sand/Oil/Water Separator should be regularly maintained and examined to ensure that the pipelines are not damaged and/or leaking. Any signs of disrepair or damage should be addressed and repaired as soon as practical.

Not-in-Service and Standby Service Terminal Connections [40 CFR 112.8(d)(2)]

There are no "not-in-service" and standby service terminal connections associated with transfer operations at the facility.

Design of Pipe Supports [40 CFR 112.8(d)(3)]

Pipe supports associated with oil and/or chemical transfer are required to minimize abrasion and corrosion and will allow for pipe expansion and contraction. Currently, there are no pipe supports associated with transfer operations at the facility.

Valve and Pipeline Examination [40 CFR 112.8(d)(4)]

Aboveground piping and valves shall be regularly maintained and examined to ensure that the pipelines are not damaged and/or leaking. Any signs of disrepair or damage shall be addressed and repaired as soon as practical. Currently, there are no aboveground pipelines located onsite.

Aboveground Piping Protected from Vehicular Traffic [40 CFR 112.8(d)(5)]

The pipelines associated with the ASTs are to be protected from vehicular traffic with bollards. It is recommended that warning signs also be used in conjunction with the bollards to prevent accidental discharge associated with damage from vehicular accidents.

9.3 Facility Tank Car and/or Truck Loading/Unloading Operations [40 CFR §112.7(h)]

Loading/Unloading Procedures Meet U.S. Department of Transportation (DOT) Regulations

The facility requires all drivers to comply with DOT regulations in 49 CFR Part 177 and facility standard operating procedures. All drivers must be authorized and certified by the facility to load or unload products. All fuel loading and unloading operations shall follow the fuel supplier's standard operating specifications.

Facility policy requires the presence of one qualified employee during both unloading operations and during loading operations. The loading operator is present and attentive at all times during loading and unloading. The start/stop control for the transfer pump is located such that all tanks and lines are in view.

Truck Loading/Unloading Areas [40 CFR 112.7(h)(1)]

The Oil Loading/Unloading Area, located in the southwest corner of the site, just north of the Warehouse, is sloped to drain north toward a Drain (directed to the Sand/Oil/Water Separator). This area has the potential to release oil-based and/or chemical products should oil-based and/or chemical products be transferred at this place. Secondary containment is recommended for this area. A complete and capable spill kit shall be available at all times to contain a spill and prevent a release of a petroleum-based or chemical product.

Railcar Loading/Unloading Area [40 CFR 112.7(h)(1)]

Currently, there are no Railcar Loading/Unloading Areas onsite.

Truck Parking Areas [40 CFR 112.7(h)(1)]

The Truck Staging Area is located in the southwestern portion of the site, southeast of the western gate. The Truck Staging Area is sloped to drain northeast toward a Drain (directed to the Oil/Sand/Water Separator). Secondary containment and spill kits are recommended for this area to help mitigate incidental spills or leaks.

Secondary Containment for Vehicles Adequate [40 CFR 112.7(h)(1)]

The largest tank trailer compartment that is typically used is 6,800 gallons. The Loading/Unloading Area is sloped so that any spilled liquids flow directly to the Drain, which is then directed to the Oil/Sand/Water Separator. In addition, the facility will have a spill kit readily available during oil/chemical unloading and loading designed for spill and stormwater containment. Vehicular tankers solely associated with petroleum product delivery and/or transferals are exempt from sized secondary containment as of December 26, 2007.

Warning or Barrier System for Vehicles [40 CFR 112.7(h)(2)]

The facility will provide caution signs around the tanks and valves to warn vehicles and employees of the oil and/or chemical hazards. The facility will prevent vehicular departure before complete disconnect of transfer lines has occurred via warning signs, physical barriers, wheel chocks, and/or an interlocked warning light.

Vehicles Examined for Lowermost Drainage Outlets Before Leaving [40 CFR 112.7(h)(3)]

A trained facility employee will be present to observe and assist in all loading/unloading operations. Upon completion of any material transfer, examination of vehicle equipment is reviewed as per the fueling procedures referenced above.

10.0 Spill Controls
[40 CFR 112.7(a)(3)(iii)]

10.1 Diversionary and Containment Structures
[40 CFR 112.7(c)]

The facility is required to contain and/or divert oil discharge from reaching a navigable watercourse by having a combination of one or more of the following systems in place:

- Dikes, berms or retaining walls sufficiently impervious to contain spilled oil [40 CFR 112.7(c)(1)(i)]
- Curbing [40 CFR 112.7(c)(1)(ii)]
- Culverting, gutters or other drainage systems to divert drainage to the on-site retention basins or drainage swales [40 CFR 112.7(c)(1)(iii)]
- Spill diversion pond (Spill Retention Basin) [40 CFR 112.7(c)(1)(v)]
- Stormwater retention (Stormwater Detention Basin) [40 CFR 112.7(c)(1)(vi)]
- Wiers, booms, sorbent materials [40 CFR 112.7(c)(1)(vii)]

The nearest navigable water course (Duwamish Waterway) abuts the facility from the northeast.

Containment Construction and Volume [40 CFR 112.8(c)(2)]

Of the ASTs, reservoirs, and transformers at the facility, two ASTs are located inside, one reservoir is located outside, and one transformer is located outside. None of these oil-containing structures currently feature secondary containment. Sized secondary containment is required on all oil-containing ASTs, drums, and non-motive-power reservoirs. Secondary containment structures are required to hold 110% of the capacity of the single largest vessel that they contain. Mobile refuelers, such as the tanks on the fuel truck, are exempt from the sizing requirement, but still require a secondary means of containment.

Drum Storage Areas [40 CFR 112.8(c)(2)]

The Chemical Storage Area is used for drum storage of oil product and chemical drums. Drums should be stored upon secondary containment pallets. These storage areas should be visually inspected daily. Additionally, the inspection must confirm that all drums in the facility are properly labeled according to the contents. Any damage to the drums or associated dispensing equipment must be noted and repaired/replaced, as necessary, to prevent oil releases to the environment.

Inspection and Drainage of Secondary Containment [40 CFR 112.8(c)(3)]

Under normal circumstances, rainwater is not expected to cause contamination due to the fact that petroleum products are primarily stored in sealed bulk containers. If the facility installed secondary containment structures and precipitation were to enter into the secondary containment structures, it would be retained until it evaporates. Alternatively, the accumulated stormwater will be held pending receipt of analytical results to confirm compliance with applicable water quality standards and then discharged to the Duwamish Waterway in compliance with the local (city's) regulatory requirements. No drains, sumps, or valves at the facility's containment structures have been found to lead to open watercourses, lakes, or ponds.

Disposal Facilities for Effluent Discharge [40 CFR 112.8(c)(3)]

Effluent discharge shall be directed to the City Industrial Sewer or the publicly owned treatment works (POTW).

Visible Oil Leak Corrections from Tank Seams and Gaskets

Any spill or leak within the facility will be immediately cleaned and minimized by facility personnel. Such deficiencies will be recorded to monthly inspection reports included as Appendix E. Daily inspections include visual monitoring of tank seams, flanges, gaskets, rivets, and bolts.

10.2 Drainage Control [40 CFR 112.8(b)]

Drainage from Diked Storage Areas/Secondary Containments [40 CFR 112.8(b)(1)]

All precipitation into secondary containment areas is retained in the area in which it accumulates, held pending receipt of analytical results to confirm compliance with applicable water quality standards, or pumped out by a licensed contractor for proper disposal. The facility shall maintain records of each discharge.

Valves Used on Diked Area Storage [40 CFR 112.8(b)(2)]

The facility does not operate any diked storage areas with valves.

Facility Drainage Systems and Equipment from Undiked Areas [40 CFR 112.8(b)(3)]

Spill and Stormwater Retention/Detention Basins

Currently there are no Stormwater Retention/Detention Basins at the facility, nor are there any Stormwater Puddling Areas. Instead, spills are directed to one of three Drains onsite which are directed to the Oil/Sand/Water Separator.

Paved Areas

Of the total 3.04 acres of the site, the entire facility is made up of roofed buildings and/or asphalt. The gradient of the site allows for drainage of stormwater to the northeastern and northwestern portions of the site into Drains that are directed to the Oil/Sand/Water Separator. Please refer to the Site Plan (Appendix B).

Unpaved Areas

There are currently no unpaved portions of the facility. Please refer to the Site Plan (Appendix B).

11.0 Spill Response / Countermeasures
[40 CFR 112.7(a)(3)(iv)]

11.1 Readily Usable Response Procedures
[40 CFR 112.7(a)(5)]

Spill response procedures are summarized in Appendix H including a flow chart for response procedures. The appendix tab is highlighted for quick reference in the event of a spill.

Emergency Organization

Upon discovery of a spill, employees will immediately notify the properly trained Spill Coordinator (designated by duly authorized official of the facility). Spill response procedures are summarized in Appendix H. The Spill Coordinator is in charge of all spill response activities and has the authority and training to mobilize the appropriate personnel and equipment in the event of a spill.

The Spill Coordinator will provide immediate notification and follow-up written reports to the appropriate federal state and local agencies. An emergency organization table lists the current key personnel in the emergency organization and is presented in Section 14.0.

General Duties of Spill Coordinator

- The Spill Coordinator will first assess the nature and extent of the spill and the potential threat to human life or the environment.
- As necessary, the Spill Coordinator will evacuate personnel; notify local authorities and advise if area control or evacuation of the surrounding community is recommended; activate emergency response personnel and equipment; and enlist outside emergency services.
- The Spill Coordinator will follow-up with written reports to the appropriate regulatory agencies.
- The Spill Coordinator will authorize immediate action to contain the spill to the site. If the spill should reach a drainage ditch or the city sewer, the Spill Coordinator will authorize appropriate further action(s) to stop and/or significantly impede migration of the spill.
- To the extent feasible the spilled material will be recovered, reclaimed, or disposed of. Materials such as absorbents and contaminated soil and water will be disposed of appropriately in accordance with all applicable regulatory requirements.
- The Spill Coordinator will keep a log of activities during the spill event including the nature and extent of the spill, the response actions, any outside assistance required or obtained, the quantity and disposition of spill materials, initial assessment of environmental damage, if any, and any contact made (verbal or written) with regulatory agencies.

Response Measures and Equipment

The facility shall at least maintain the following spill prevention equipment on-site:

- Bulk absorbent, absorbent pillows, booms, brooms, and other necessary spill preventive equipment, and non-sparking tools.
- Prominently located and maintained fire extinguishers.
- Emergency first-aid kits located within the fuel delivery and maintenance areas.
- Explosion proof flash lights with batteries.

- Cell/radio phones for emergency notification of management and appropriate emergency response personnel.

In the event of a spill, facility employees will take immediate action to protect human health and the environment. Response measures may include the use of absorbent materials or the construction of temporary dikes or berms to prohibit or control the flow of the spilled materials. Facility personnel shall be trained to take immediate action to contain any spills. It is company policy to report all spills to management. The facility will take all necessary action to remedy any area impacted by a spill to eliminate any hazard to human health and/or the environment.

Outside Assistance

The Spill Coordinator is responsible for notifying outside emergency response organizations in the event their services are needed. Outside assistance may be requested for traffic control, community evacuation, fire, spill control, cleanup, and medical emergencies. Per company policy, the Spill Coordinator is also responsible for retaining cleanup and medical subcontractors and procuring necessary materials and equipment, as needed. The Spill Coordinator shall maintain a log of the progress of activities and itemized expenditure during the cleanup.

12.0 Methods of Disposal
[40 CFR 112.7(a)(3)(v)]

Spilled materials are collected through spill kits and/or portable pumps and transferred to on-site storage drums (acquired for this specific purpose) for holding until they can be removed by a licensed waste hauler. All methods of disposal of recovered materials shall remain in accordance with applicable federal, state, and local requirements.

13.0 Spill Reporting Procedure
[40 CFR 112.7(a)(4)]

The notification and reporting procedures to be followed in the event of a spill and the designated personnel responsible for each notification or report are outlined in this section.

- In the event of a spill, the employee discovering the spill shall immediately contact the Spill Coordinator by radio or telephone.

- If the spill poses a threat to human health or the environment, the Spill Coordinator will notify the local sheriff, police, fire department and medical personnel as needed.

- The Spill Coordinator will determine if the spill is reportable and immediately notify the appropriate agencies, U.S. EPA/U.S. Coast Guard National Response Center, the Washington Emergency Management Division (WEMD) Spill Response, State Emergency Response Centers (SERC), and Local Emergency Planning Committee (LEPC) (See SARA Title III – Section 304 Reporting Requirements below).

- If a spill is observed to reach the city sewer or drywell, the Spill Coordinator will notify the WEMD Spill Response and the City of Seattle POTW by telephone or other immediate means of communications.

Following the incident, the Spill Coordinator shall complete the Spill Report Form in Appendix H.

SARA Title III - Section 304 Reporting

Facilities must immediately (within 1 hour) notify the National Response Center (NRC), the LEPC and the SERC likely to be affected, if there is a release into the environment of a listed hazardous substance that exceeds the reportable quantity (RQ) for that substance. Substances subject to this requirement are those on the list of Extremely Hazardous Substances (EHS) or on a list of approximately 725 substances subject to the emergency notification requirements under CERCLA 103(a)(40 CFR 302.4). Some chemicals are common on both lists.

Oil and oil products are exempt from Section 304 reporting requirements; however, oil spills that may reach navigable waters of the United States, as defined in the Oil Pollution Prevention Act must be reported to the NRC immediately.

Initial notification can be made by telephone, radio, or in person. Emergency notification requirements involving transportation incidents can be met by dialing 911, or in the absence of 911, calling the operator.

The Spill Coordinator will be prepared to provide the following information for this emergency notification:

- The oil product or name of any other chemical (the substance of concern);
- Whether the substance is an EHS;
- An estimate of the quantity released;
- The time and duration of the release;
- Medium released into (air, water, land);
- Any known or anticipated acute or chronic health risks associated with the release, and where necessary, advice regarding medical attention for exposed individuals;
- Proper precautions required, such as evacuation; and
- Name and telephone of contact person for the facility.

Section 304 also requires a written follow-up emergency notice within five (5) days after the release. The follow-up notice or notices must:

- Update information included in the initial notification; and
- Provide information on:
  - Actual response actions taken; and
  - Advise regarding medical attention necessary for exposed individuals.

The follow-up notification must be submitted to the SERC and LEPC.

This section does not apply to any release which results in exposure to persons solely within the site or sites on which a facility is located. However, owners and operators should be cautious in making this determination. EPA has determined that a release need not result in actual exposure to persons off-site in order to be subject to release reporting requirements; potential exposure is sufficient. Any release into the environment above the RQ may have the potential to result in exposure to persons off-site and therefore should be reported under Section 304.

Additionally, under CERCLA 103(a), a release of a listed hazardous substance above its RQ into the environment is reportable to the NRC. There is no exemption under CERCLA for off-site exposure limits. The 24-hour in-service telephone number for the NRC is 1-800-424-8802.

Facilities must make initial telephone notifications to the NRC, SERC, and LEPC; submit an initial written report, within 30 days, to the EPA Regional Office, SERC, and LEPC; submit a written follow-up report to the EPA Regional Office one year after the initial written report; as well as any changes in the release to the EPA Regional Office. Additionally, the facility must immediately make notifications to the NRC, SERC, and LEPC if the facility experiences a statistically significant increase (SSI). An SSI is any release that exceeds the upper bound of the normal range of the release. The normal range is all releases of a hazardous substance reported or occurring during any 24-hour period under normal operating conditions during the previous year. Following the incident, the Spill Coordinator shall complete the Spill Report Form in Appendix H.

Regulatory Agencies

The regulatory agencies and their telephone numbers are listed in Section 14.0.

Records

The Spill Coordinator will keep a log of activities during the spill event including the quantity of product spilled, recovered, and disposed; itemized expenditures; general assessment of environmental damage; and any other notable events which may occur during the spill and subsequent response activities. Upon completion of all activities, the Spill Coordinator will complete the Spill Report Form and prepare a summary of the incident for entry into the SPCC Plan. Copies of the Spill Report Form will be kept on record with the Facility SPCC Plan.

14.0 Emergency Contacts
[40 CFR 112.7(a)(3)(vi)]

Emergency contacts and telephone numbers are provided to all facility employees upon employment and are posted in employee common areas. It is the responsibility of the Spill Coordinator to determine the need for spill response support in addition to facility personnel and equipment. Dispatchers are directed by a manager for appropriate reporting action.

Spill Response Contacts:
Larry Brewer
Operations Manager
Office: 206-763-9033
Cell: 206-786-9746

Ben Northcutt
Yard Manager
Office: 206-763-9033
Cell: 206-793-8298

Envirosure Solutions, LLC.
Emergency Contractor
Phone: 480-784-4621

Emergency Contacts:

EPA Region 10, 24-hour Environmental Emergency	800-424-4372
Washington Emergency Management Division (WEMD)	800-258-5990
LEPC – Ecology Northwest Regional Office	425-649-7000
SERC – Washington Emergency Response Commission	253-512-7069
City of Seattle Fire Department (Special Hazards Unit)	911
Washington Highway Patrol	911
National Response Center	800-424-8802
Envirosure Solutions, LLC	480-784-4621

15.0 Inspections/Record Keeping
[40 CFR 112.7(e)]

It is the responsibility of the facility operating personnel to ensure that ***visual equipment inspections occur daily*** as a part of the regular operations. ***Inspection procedures and checklists are to be reviewed monthly*** with respect to facility grounds and related equipment. In the event any manual discharges of water from accumulated areas occurs at the facility, the Drainage Discharge Report Form should be completed (Appendix D). The facility should conduct a monthly inspection of all storage tanks and equipment (Appendix E), as well as conduct a general site inspection on a monthly basis (Appendix F). Additionally, ***once per year, a review and drill exercise will be performed and documented*** on the checklist, emphasizing proper plan implementation and procedures in the event of a spill incident.

All records will be monitored by the facility and kept on file at least until the due date for the next review of this SPCC Plan. The records will include the following:

- A copy of all inspections and tank/line testing reports.
- A copy of equipment maintenance work.
- All reports that resulted from implementation of the SPCC plan.
- Product inventory documentation.

SPCC regulation requires that the inspections outlined below take place on a regular basis. The following procedures will be followed to comply with the intent of the regulation.

Aboveground Storage Tanks

The ASTs located at the facility should be inspected during an operating day, and the condition documented in an AST inspection report. The dispensing hoses, pipes, leaks, connections, and valves should be inspected each operating day for damage, such as cracks, leaks, and proper functioning. Any damage to the dispensing equipment must be noted and repaired as soon as possible and necessary to prevent oil releases to the environment. Refer to Appendix G for a copy of the AST inspection report. Refer to Appendices E and F for copies of the monthly inspection logs and checklists. If any petroleum products are accumulated in the secondary containment, the liquid will be removed and transported off-site for disposal. Any major spills shall be reported and documented as stipulated in Section 13.0 of this plan.

Fuel Trucks

The facility does not currently utilize a fuel truck.

Drum Storage Areas

The drum storage areas (Chemical Storage Area) at the facility should be inspected each operating day, and the condition of the drums must be noted. Additionally, the inspection must confirm that all drums in the facility are properly labeled according to the contents of the drums. The dispensing hoses, pipes, connections, and valves should be inspected each operating day for damage, such as cracks, leaks, and proper functioning. Any damage to the dispensing equipment must be noted and repaired as soon as possible to prevent oil releases to the environment.

Retention Areas

Currently there are no Retention Areas located onsite. Water is directed into drains.

Oil / Water Separators

There is one 3,900-Gallon Oil/Sand/Water Separator at the facility, which is located in the central portion of the northeastern perimeter. This Oil/Sand/Water Separator must be routinely inspected for deterioration, presence of liquids, or obstructions to stormwater flow. If any damage to Oil/Sand/Water Separator is observed, the structure must be repaired, as necessary, to prevent potential oil releases to the environment. If any obstructions are observed in the Oil/Sand/Water Separator, the obstructions must be removed. If any petroleum products are accumulated in the Oil/Sand/Water Separator, the liquid will be removed and transported off-site for disposal. The Oil/Sand/Water Separator shall be inspected monthly and/or after any significant storm event (greater than 0.25 inches of precipitation).

Storm Drains/Drywells

The facility utilizes three Drains that are all directed to the Oil/Sand/Water Separator. One is in the northwest quadrant within the Sub-leased Area; the second is in the northern portion of the facility, adjacent to the 8,000-Gallon Stormwater Holding Tank; and the third is in the southwestern quadrant of the facility near the Material Storage area. In an emergency situation or spill event, absorbent booms and drain covers shall be placed to prevent an accidental release of petroleum product into the Drains, however, because they are directed to the Oil/Sand/Water Separator, there should be no chance of accidental release into the sewer. The Drains must be inspected for signs of contamination and disrepair. Evidence of either must be noted in the monthly inspection report and dealt with accordingly to prevent release or loss in functionality.

Safety Equipment/Miscellaneous

Fire extinguishers must be checked to ensure that the units are charged and accessible. Spill control kits must be inspected for completeness. Additionally, the proper operation of eyewash units must be confirmed, and first aid kits and absorbents must be inspected for adequate content and accessibility. A checklist or inventory of all safety emergency kits should be made monthly, and the contents must be replenished, if necessary, on a monthly basis.

Brittle Fracture Evaluation Record

The facility does not have any field-constructed aboveground storage tanks; therefore, the brittle fracture evaluation requirements do not apply. If a facility undergoes repair, alteration, or change in service of any field-constructed aboveground storage tanks that affects the risk of a discharge or failure due to brittle fracture, then such an evaluation is required. If any of these activities has occurred, the brittle fracture evaluation shall be performed in a manner outlined in American

Petroleum Institute (API) Standard 653 "Tank Inspection, Repair, Alteration, and Reconstruction," or equivalent.

16.0 Personnel Training and Spill Prevention Procedures
[40 CFR 112.7(f)]

Personnel Instructions

Facility personnel that receive, manage, dispense or handle oil products and chemicals will receive instructions for mitigating spills with absorbent materials and notifying the spill coordinator or the spill coordinator's alternate(s). Employees who are involved with oil-handling operations will receive discharge prevention briefings for oil handling at least once a year.

All new hires are required to have spill prevention training including Hazardous Communication, which includes a complete review of the Facility SPCC Plan. Employees are also instructed and tested on the job. Once a year, refresher training and deployment exercises for spill response are conducted. All training attendance is recorded on the SPCC Training/Meeting Record in Appendix C.

Fueling and Spill Prevention/Response Standard Operating Procedures are also to be reviewed at production safety meetings.

Designated Person Accountable for Spill Prevention

The facility has designated a person to be accountable for spill prevention, spill mitigation and reporting to both facility management and applicable authorities. The qualified individual (QI) is listed in Section 14.0 of this SPCC Plan.

Spill Prevention Briefings

As required by 40 CFR 112.7, a spill prevention drill and discussion will be executed at least annually for all operations employees of facility. The briefing will be designed to prepare for and prevent a spill event. At this time, facility equipment for spill prevention and safety will be discussed and recommendations for improvement will be documented. All training attendance will be recorded on the SPCC Training/Meeting Record in Appendix C.

17.0 Site Security
[40 CFR 112.7(g)]

The operation of each door and lock should be checked each operating day. In general, all chemical containers and oil containers must be equipped with proper lids/covers and inspected daily.

Fencing/Physical Barrier

The facility utilizes perimeter fencing (wall). The main access gates remain closed and locked when the facility is unattended.

Parking Permit System

The facility does not have a parking permit system, however, employee and visitor parking is clearly indicated.

Flow Valves Locked

All tank valves and pumps must be equipped with locking end caps, locking valves, and/or electrical lockout panels. Keys should be provided only to authorize facility personnel.

Starter Controls Locked

There are no starter controls (generally related to an oil-pump) located at the facility.

Pipeline Loading/Unloading Connections Securely Capped

All connections, hoses, and pipelines should be securely capped when not in service, including empty connections maintained as standby or extension apparatus. All out-of-service pipelines/hoses should be evacuated of their contents.

Lighting Adequate to Detect Spills

Area lights should be located so that all activity areas receive adequate illumination. Lighting must be adequate to detect spills during nighttime hours and to deter vandalism.

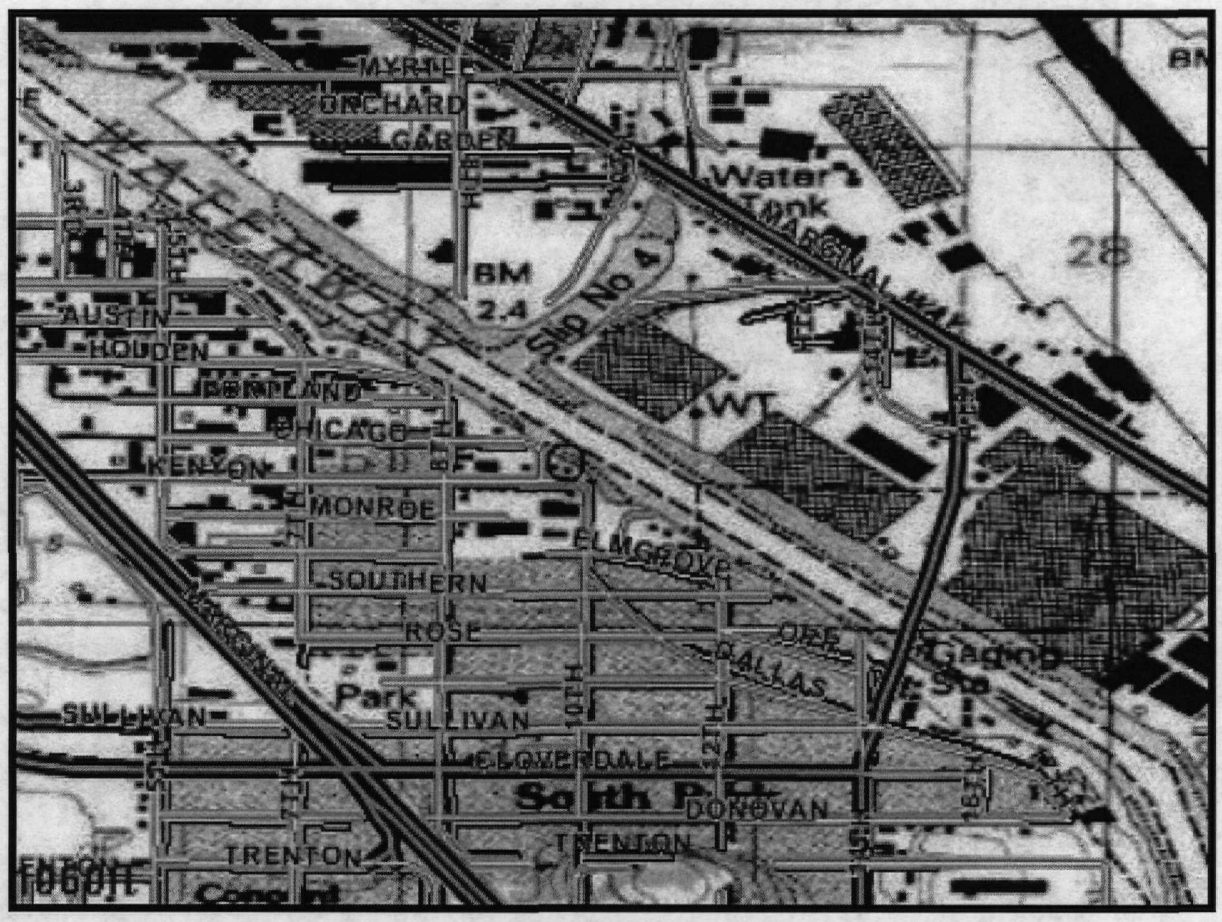
18.0 Conformance with State and Local Applicable Requirements
[40 CFR 112.7(j)]

The ASTs at the facility are registered with the state and local authorities (Seattle Fire Department) via the hazardous materials permit application that is annually submitted to the Fire Department.

APPENDIX A
Area Map

Independent Metals Company
Seattle, Washington
Source: Google Earth (Accessed 10/10)

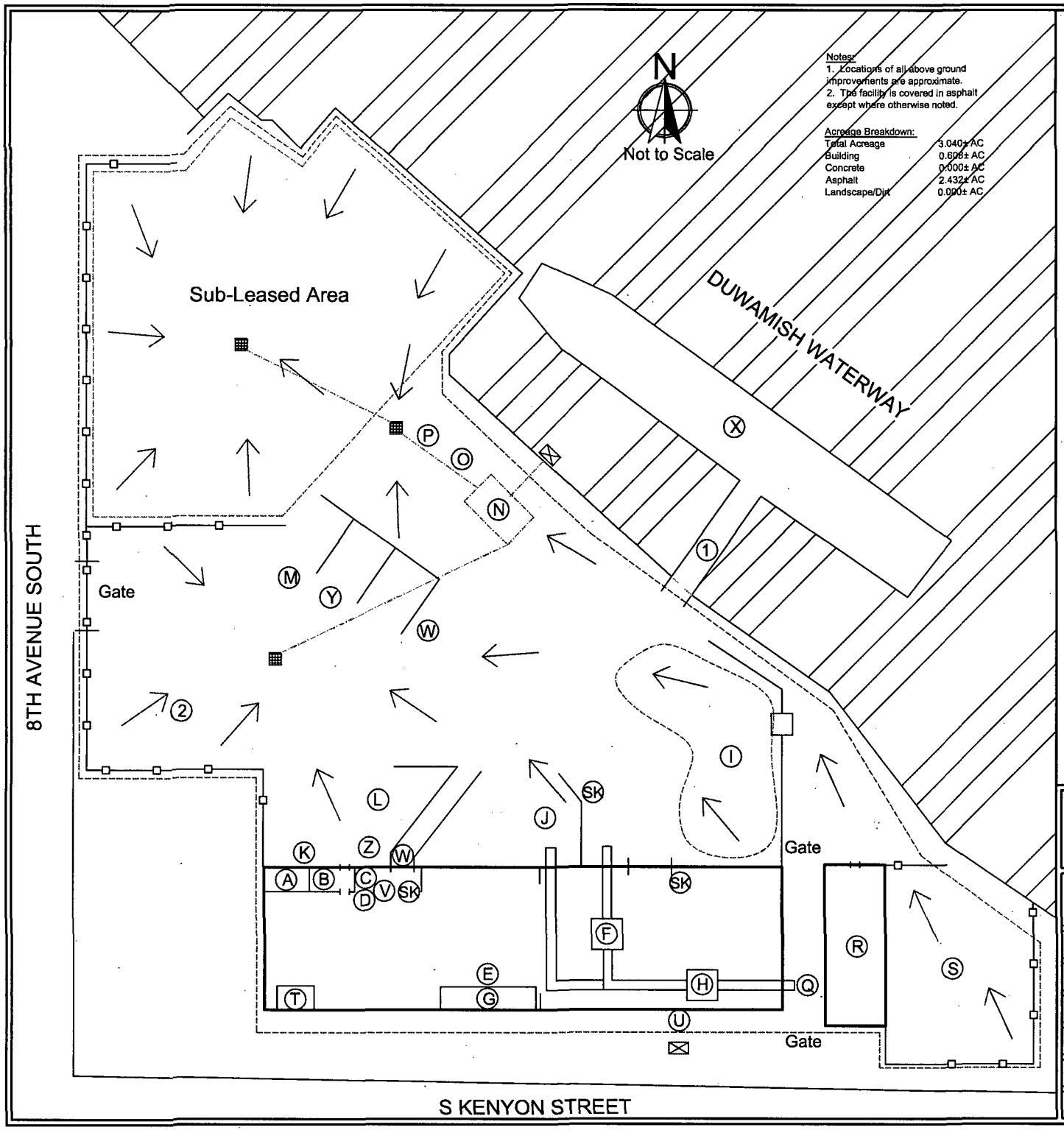
APPENDIX A
Topographical Map



Independent Metals Company
Seattle, Washington
Source: National Map Viewer (Accessed 10/10)
Note: Not to scale, approximate facility location

APPENDIX B

Site Plan
(Predicted Flow Pattern Map)



Notes:
1. Locations of all above ground improvements are approximate.
2. The facility is covered in asphalt except where otherwise noted.

Acreage Breakdown:

Total Acreage	3.040± AC
Building	0.608± AC
Concrete	0.000± AC
Asphalt	2.432± AC
Landscape/Dirt	0.000± AC

- (A) Tool Room
- (B) Parts Storage
- (C) Chemical Storage Area (55-Gallon Drum Storage)
- (D) 150-Gallon Used Oil AST (No Secondary Containment)
- (E) Warehouse
- (F) Shredder
- (G) Employee Breakroom/ Changing Room
- (H) Eddy Current Separator
- (I) Scrap Metal Pile
- (J) Ferrous Steel Pile
- (K) Sierra Shear (500-Gallon Hydraulic Reservoir)
- (L) Shear Pile
- (M) Torching Area
- (N) Sand/Oil/Water Separator (3,900-Gallon Capacity)
- (O) Stormwater RX Filtration System (3,800-Gallon Capacity)
- (P) Stormwater Holding Tank (8,000-Gallon Capacity)
- (Q) ASR Bin
- (R) Vacant Building
- (S) Storage Area
- (T) Office
- (U) Transformer (500-Gallon Capacity)
- (V) 100-Gallon Diesel Mobile AST (No Secondary Containment)
- (W) Material Loading/Unloading Area
- (X) Dock
- (Y) Material Storage
- (Z) Oil Loading/Unloading Area
- (1) Pier
- (2) Truck Staging Area
- (SK) Spill Kit
- Water
- Underground Structure
- Underground Piping
- Site Boundary
- Area Boundary
- Drain (To Sand/Oil/Water Separator)
- Wall Structure
- Outfall
- Stormwater Sheet Flow

envirosure SOLUTIONS, LLC.
1979 E. Broadway Rd.
Tempe, Arizona 85282
480.784.4621
www.envirosure.com

Facility Layout

Company - Independent Metals Company	
Address - 7814 South 8th Avenue	
City - Seattle	State - WA
County - King	Date - 10/21/10
Drawn By - CR	Approved By - JP
Project No - I005-10-01	

APPENDIX C

Employee Training Documentation and Forms

Independent Metals Company
Seattle, Washington

Safety Meeting

Department: _____ Week Ending: _____

Meeting Leader: _____ Shift(s) Attending: _____

I. Safety topic covered: **Used Oil**

The federal government regulates waste chemicals as "hazardous wastes." These wastes are expensive to manage on-site and are costly to dispose of. Used oil is considered a hazardous waste if it is not managed in accordance with the rules listed below. Review these rules and take all steps necessary to assure that we comply.

USED OIL POLICY

1. All containers of used oil must be marked with the words "USED OIL."
2. All used oil containers must remain closed at all times unless you are adding to the container.
3. Areas used to store and accumulate used oil must be kept clean at all times. Do not store any combustible or flammable materials in the used oil storage area. This area must be reserved for used oil only.
4. Never add anything to a used oil container other than used oil. If you have any questions about waste oil, see your supervisor or environmental specialist.
5. Never add solvents or fuels to used oil containers. These are hazardous wastes and must be handled accordingly.
6. Never dispose of waste oil in trash cans, or by pouring it onto the soil.

Cut out the above sign and post it in your oil storage area. Handling oil properly is critical to the protection of our environment and to the success of our company.

II. Safety concerns raised and addressed:

_____

_____

III. Training and general information topics covered:

_____

_____

IV. Attendees (print or sign legibly):

1. _____	7. _____	13. _____
2. _____	8. _____	14. _____
3. _____	9. _____	15. _____
4. _____	10. _____	16. _____
5. _____	11. _____	17. _____
6. _____	12. _____	18. _____

Once completed, return to the Safety Department.

Independent Metals Company
Seattle, Washington

Safety Meeting

Department: _____ Week Ending: _____

Meeting Leader: _____ Shift(s) Attending: _____

I. Safety topic covered: **Emergency Spill Response:** Prevention and preparation are the keys to preventing and minimizing the consequences of emergency situations. Discuss with your group what you can do to prevent and prepare for emergencies.

Prevention: *Is your area free from hazards that could cause an emergency*? Ask yourselves *"What could happen here?"* Have the group discuss three potential emergencies and then make sure that steps have been taken to prevent these.

Preparation: *Is your area prepared if there is an emergency*? Some businesses have formal Emergency Response Teams, other do not. Formal teams are not required in order for a response to be effective. What is required is that everyone prepare and work together to resolve the situation.

EXERCISE: Take this time to discuss the following questions with the people in your area:

- What are the possible emergencies? (Fire, spill, medical, storm, etc.)
- Does everyone know who the Emergency Responders are?
- Does everyone know how to contact the in-house Emergency Responders?
- Are 24 hour phone numbers available?
- Does everyone know where the evacuation congregation area is?
- Are there plans for verifying that everyone is out of the building?
- Are facilities (eyewashes or showers) available to decontaminate individuals who are exposed to chemicals?
- Are supplies (pumps, absorbents) available to pick-up spilled materials?
- Are first aid supplies and emergency medical services available at all times?

II. Safety concerns raised and addressed:

_____

_____

_____

III. Training and general information topics covered:

_____

_____

_____

IV. Attendees (print or sign legibly):

1. _____	7. _____	13. _____
2. _____	8. _____	14. _____
3. _____	9. _____	15. _____
4. _____	10. _____	16. _____
5. _____	11. _____	17. _____
6. _____	12. _____	18. _____

Once completed, return to the Safety Department.

APPENDIX D
Drainage Discharge Report Form

This report is to be used to document any manual discharges of water from accumulated areas such as water oil separators or secondary containment vessels.

Operator's Name: _____

Date and Time of Discharge: _____

Approximate Volume of Discharge: _____

Description of Area Discharged From: _____

_____

_____

Appearance of Water at Time of Pumping or Discharge:

_____

_____

_____

_____

_____

_____

_____

Comments:

_____

_____

_____

_____

Signature of Operator: _____

APPENDIX E

Storage Tank and Equipment Inspection Summary Report

Date & Time	Tanks / Equipment	Inspector	Spill Equipment Condition	Correction Actions

APPENDIX F
Monthly Facility General Inspection Report and Checklist

Date:	Time:	Inspector:
X= Satisfactory; NA= Not Applicable; 0 = Repair or adjustment required; C = See comment under remarks/recommendations		

Drainage ___ Any noticeable oil sheen on runoff. ___ Containment area drainage valves are closed and locked. ___ Oil/water separator systems working properly. ___ Effluent from oil/water separator inspected. ___ No visible oil sheen in containment area. ___ No standing water in containment area.	AST / Fuel Trucks ___ Tank surfaces checked for signs of leakage. ___ Tank condition good (no rusting, corrosion, pitting). ___ Bolts, rivets, or seams are not damaged. ___ Hoses are intact. ___ Level gauges and alarms working properly. ___ Vents are not obstructed. ___ Valves, flanges, and gaskets are free from leaks.
Pipelines ___ No signs of corrosion damage to pipelines or supports. ___ Buried pipelines are not exposed. ___ Out-of-service pipes capped. ___ Signs/barriers to protect pipelines from vehicles are in place. ___ No leaks at valves, flanged, or other fittings.	Truck Loading/Unloading Area ___ No standing water in rack area. ___ Warning signs posted. ___ No leaks in hoses. ___ Drip pans not overflowing. ___ Catch basins free of contamination. ___ Containment curbing or trenches intact. ___ Connections are capped or blank-flanged.
Security ___ Fence and gates intact. ___ Gates have locks. ___ Fuel Trucks locked when not in use. ___ Starter controls for pumps locked when not in use. ___ Lighting is working properly.	Spill Equipment ___ Spill kits are readily available in areas with oil and/or chemical storage. ___ All spill kits contain all materials as set forth by the facility. ___ Absorbent materials that were used to clean up any type of spill are disposed of properly. ___ Spill kits are clearly labeled.
Training ___ Spill prevention briefing held. ___ Training records are in order.	

Remarks/Recommendations:

APPENDIX G

Certification of the Applicability of the Substantial Harm Criteria Checklist

Section 112.20(e) of the Facility response plan regulation requires that all facilities regulated by the Oil Pollution Prevention Regulation (40 CFR part 112) conduct an initial screening to determine whether they are required to develop a Facility response plan. The criteria in this checklist can be found in 40 CFR 112.20(f)(1). Facilities should include this form with their SPCC Plan.

FACILITY NAME: Independent Metals Company
FACILITY ADDRESS: 7814 South 8th Avenue, Seattle, Washington 98108

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?
   Yes _____ No X

2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?
   Yes _____ No X

3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the formula in Attachment C-III, Appendix C, 40 CFR 112 or a comparable formula1) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "Guidance for facility and Vessel Response Environments" (Section 10, Appendix E, 40 CFR 112 for availability) and the applicable Area Contingency Plan.
   Yes _____ No X

4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula (Attachment C-III, Appendix C, 40 CFR 112 or a comparable formula1) such that a discharge from the facility would shut down a public drinking water intake2?
   Yes _____ No X

5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?
   Yes _____ No X

CERTIFICATION:
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

Larry Brewer
Name of Owner/Operator (please type or print)

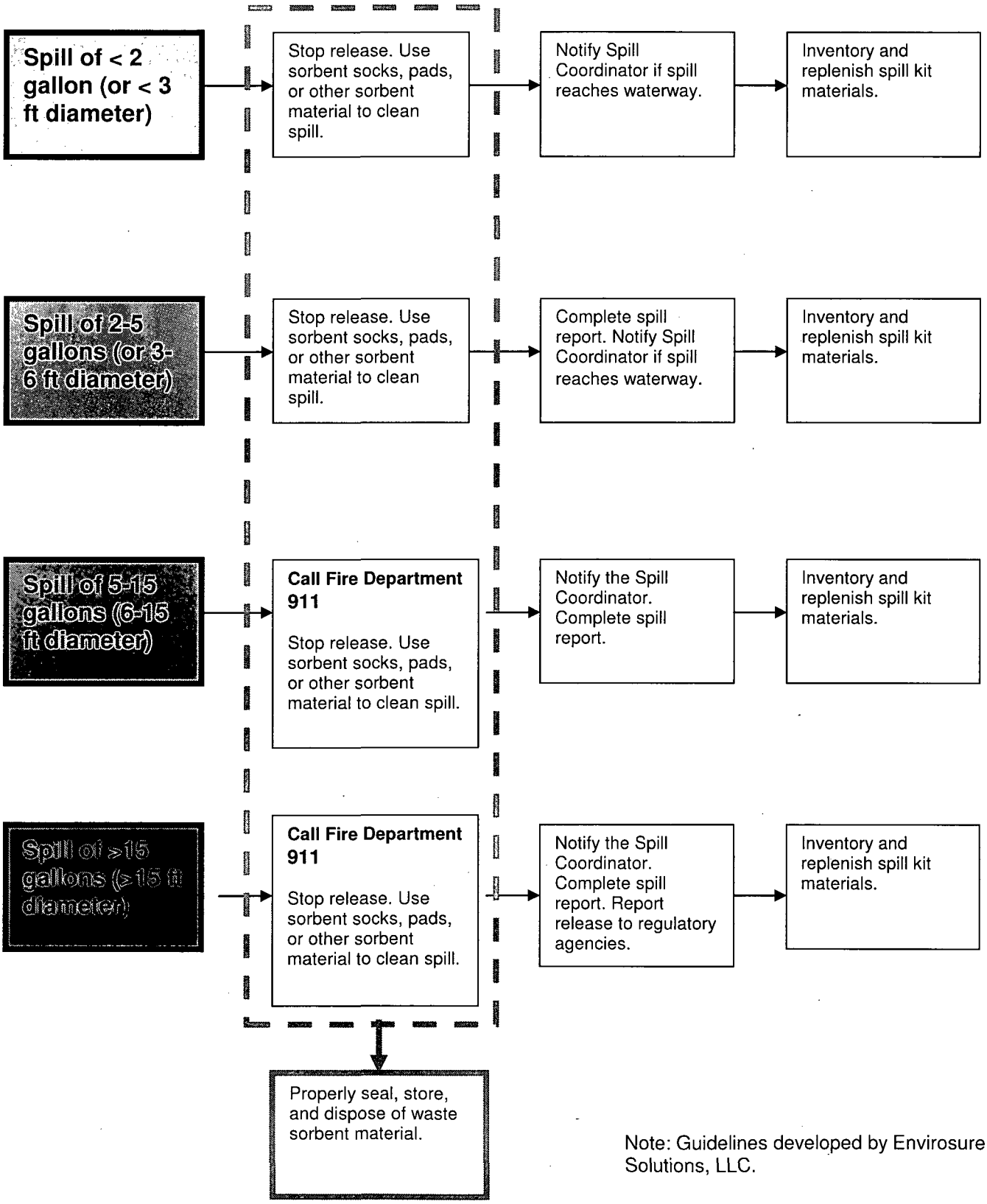
_____
Signature

Operations Manager
Title

_____
Date

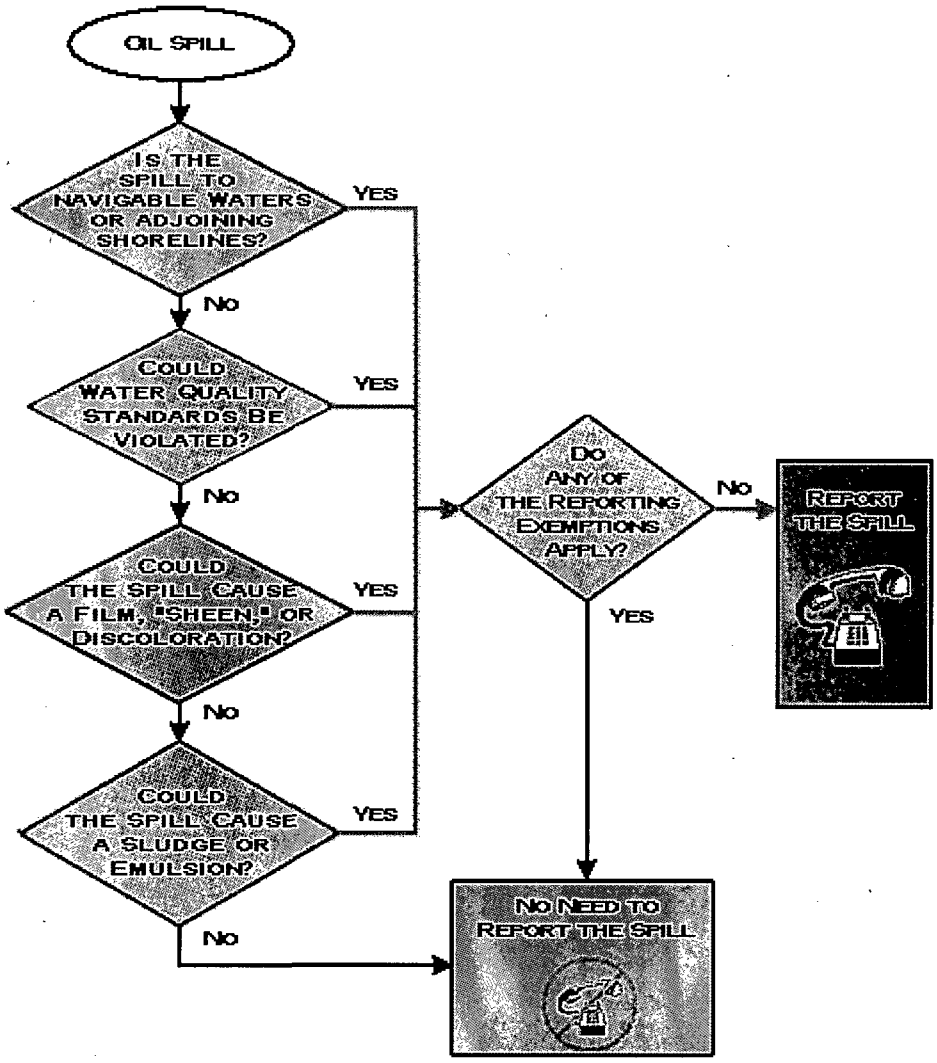
APPENDIX H
Spill Response

SPILL RESPONSE QUICK REFERENCE SHEET



Note: Guidelines developed by Envirosure Solutions, LLC.

EPA RELEASE REPORTING GUIDELINE (REGARDLESS OF SPILL QUANTITY)



Exemptions:

- **Releases from Properly Functioning Vessel Engines**
- **Research and Development Releases**
- **National Pollutant Discharge Elimination System (NPDES)-Permitted Releases under Clean Water Act**
- **Discharges Permitted Under International Convention for the Prevention of Pollution from Ships (MARPOL)**

Spill Control and Countermeasures

Responding to a Spill of Oil, Non-Flammable Petroleum Products

1. If working in the area where the liquid has spilled, personnel must wear the following protective equipment:

   a. Synthetic gloves, and
   b. Splash-proof goggles or face shield

2. The following general procedures must be followed by the Committee and designees in the event of a spill:

   a. Remove unnecessary persons from the affected area.
   b. To the extent practical, eliminate or remove all ignition sources including sources of flames and sparks from the area.
   c. Remove incompatible materials from affected area. Strong acids and oxidizers are examples of incompatible materials. Consult the Material Safety Data Sheet ("MSDS") for more information.
   d. Use rags, absorbent material, or absorbent tubes to dike around the spill.
   e. Place hazardous material, contaminated absorbent, and other materials in a labeled container in accordance with the labeling requirements for hazardous waste.
   f. Do not mix waste oil with solvents, water, or any other incompatible hazardous waste or material.
   g. Provide the proper oral and written notifications to outside agencies, if required.

Responding to a Spill of Flammable or Combustible Liquid

Only small fires are to be suppressed by facility personnel. If the fire persists, the building and (if necessary, based on the discretion of the Committee) the entire facility must be evacuated.

CAUTION: Water must not be used to suppress fires involving flammable or combustible liquids.

1. Employees responding to a spill of flammable or combustible liquid must be wearing personal protective equipment prior to entering the area affected by the spill.

2. If working in the area where the liquid has spilled, personnel must wear the following protective equipment:

   a. Synthetic gloves,
   b. Synthetic apron or Tyvek suit,
   c. Splash-proof goggles or face shield,
   d. Synthetic boots,
   e. Vapor respirator (half or full face), with a new, unused NIOSH/MSHA-approved organic vapor cartridge.

3. The following general procedures must be followed by the Committee and designees in the event of a spill:

   a. Remove unnecessary persons from the affected area.
   b. To the extent practical, eliminate or remove all ignition sources including sources of flames and sparks from the area.

c. Remove incompatible materials from affected area. Consult the Material Safety Data Sheet ("MSDS") for more information.
d. Use rags, absorbent material, or absorbent tubes to dike around the spill.
e. Use explosion and spark proof equipment to clean up the spill (do not use a wet-dry vacuum). All tools must be made of a beryllium-copper alloy, bronze alloy, or similar non-sparking, non-ferrous materials.
f. Place hazardous material, contaminated absorbent, and other materials in a labeled container in accordance with the labeling requirements for hazardous waste.
g. Do not mix waste oil with solvents, water, or any other incompatible hazardous waste or material.
h. Provide the proper oral and written notifications to outside agencies, if required.

Responding to a Spill of Dry Materials

In the event of spill of dry hazardous materials, the following procedures will be followed:

1. Employees responding to a spill of dry material must be wearing personal protective equipment prior to entering the area affected by the spill.

2. If working in the area where the powder has spilled, personnel must wear the following protective equipment:

   a. Synthetic gloves,
   b. Synthetic apron or "Tyvek" suit,
   c. Splash-proof goggles or face shield,
   d. Synthetic boots,
   e. An MSHA-approved particle mask.

3. The following general procedure must be followed by the Committee and designees in the event of a spill:

   a. Evacuate unnecessary persons from the affected area.
   b. Cover material with plastic sheets to prevent the material from becoming airborne.
   c. Use shovels to clean up the spill. If a wet-dry vacuum is used to collect the material, make certain the wet-dry vacuum canister and hoses are clean and dry before using.
   d. Place hazardous material, contaminated absorbent, and other materials in a labeled container in accordance with the labeling requirements for hazardous waste.
   e. Provide the proper oral and written notifications to outside agencies, if required.

Spill Report

Date: _____ Time: _____

1. Approximate location and type of incident (e.g., fire, explosion, release): _____

2. Material released: _____ Time of release _____

3. Approximate quantity: _____ Total possible: _____

4. Extent of injuries (if any): _____

5. Assessment of actual or potential hazards to human health or the environment: _____

6. Present physical state (i.e., gas, liquid, or solid) and characteristics of the material (e.g., color, smell, and physical effects) only if readily detectable. Direction height, color, odor of any vapor clouds or plumes: _____

7. Other hazardous material in the area: _____

8. Do significant amounts of the material appear to be entering the atmosphere, water, storm drains, or soil? _____

9. If so, describe weather conditions (wind speed, direction, etc. _____

10. Personnel at the site: _____

11. Corrective action taken to control incident: _____

12. Date and time incident contained: _____

Signature of reporter: _____ Date: _____