01/25/2021

Attention: Compliance Manager
Ms. Hanna Valenzuela
Maricopa County Air Quality Department
3800 N Central Ave, Suite 1400
Phoenix, AZ 85012

Subject: Intel Ocotillo Annual Compliance Certification Report, Reporting Period: 1/1/2020 to 12/31/2020; Intel Ocotillo Semi-Annual Monitoring Report - Reporting Period: 7/1/2020 to 12/31/2020

Dear Ms. Valenzuela,

Intel Corporation is submitting this Annual Compliance Certification Report and Semi-Annual Monitoring Report for the Intel Ocotillo Campus, located at 4500 South Dobson Road in Chandler, Arizona 85248. The Intel Ocotillo Campus operates under the Maricopa County Air Quality Title V Permit #P0006213, Facility ID F000701.

Annual Compliance Certification Reports are required to be submitted in accordance with the requirements contained within Intel Ocotillo's permit #P0006213, Facility ID F000701. Semi-Annual Monitoring Reports are required to be submitted in accordance with the requirements contained within Intel Ocotillo's permit #P0006213, Facility ID F000701. The semi-annual monitoring report containing information regarding emissions and deviations for the certification period of 1/1/2020 to 6/30/2020 was submitted on 7/27/2020. The attached report shall serve as the Annual Compliance Certification Report for the reporting period 1/1/2020 to 12/31/2020 and Semi-Annual Monitoring Report for the reporting period 7/1/2020 to 12/31/2020.

Please contact Giselle Verbera, Site Environmental Engineer, at 480-206-5678 or via email at giselle.verbera@intel.com if you have any questions. Please include the mailstop, OC4-005, on any postal correspondence.

Responsible Official Certification Statement: I certify, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Sincerely,

Jim Evers
Vice President, Manufacturing and Operations
Factory Manager, Ocotillo Technology Fabrication

Cc:

Scott Treece, MCAQD	Aaron Blawn, Intel	Sean Aldrich, Intel	Craig McCurry, Intel
Kristin Mutolo, Intel	Chad Young, Intel	Mark Mueller, Intel	Giselle Verbera, Intel

Attachments:
1. Intel Corporation, Ocotillo Campus: Semi-Annual Monitoring Report for reporting period 7/1/2020 to 12/31/2020
2. Intel Corporation, Ocotillo Campus: Annual Compliance Report for reporting period 1/1/2020 to 12/31/2020

SECTION 1. EMISSIONS CALCULATIONS

Below are the emissions results of all the required rolling 12-month emissions calculations for each month in this reporting period.

INTEL OCOTILLO EMISSION SUMMARY								
12-Month		Table 1: 12 Month Period for PAL Pollutants						
Pollutant	Units	Jul-2020	Aug-2020	Sep-2020	Oct-2020	Nov-2020	Dec-2020	PAL Limit
VOCs	Tons	63.60	64.85	66.93	68.63	69.85	71.70	175
NOx	Tons	71.06	72.27	73.56	75.00	77.93	80.71	198
CO	Tons	106.60	107.48	110.02	110.82	113.88	116.69	388
PM10	Tons	30.39	30.44	30.79	30.87	31.49	32.00	125
PM2.5	Tons	24.14	24.18	24.53	24.62	25.21	25.72	119
PM TOT	Tons	45.61	45.63	45.95	46.01	46.56	47.02	159
SO2	Tons	3.98	3.84	3.88	3.88	3.89	3.85	61
Fluorides	Tons	3.78	3.89	4.10	4.20	4.47	4.56	24

		Table 2: 12 Month Period for HAPs						Limit
HF	Tons	4.54	4.53	4.61	4.57	4.63	4.67	9
HAPs	Tons	7.19	7.20	7.31	7.26	7.35	7.41	22

SECTION 2. DEVIATION REPORTING

Below are the deviations from permit requirements that occurred during this reporting period.

No.	Condition	Description	Cause	Corrective Action	Preventative Measures	Date of identification	Log Date
1	28. c, 28. D, 30. A, 30.b	Contractor began landscape maintenance using mechanized equipment without first obtaining a dust control permit from MCAQD.	Project manager was still learning about the requirements of Rule 310 and assumed the vendor had obtained all required permits prior to starting work. Pre-task planning process did not include verification of permits obtained versus required.	Work was stopped until a dust control permit was obtained. Contractor had been stabilizing the area with a water truck during work to mitigate fugitive dust emissions.	Contractor is updating their pre-task plan process to include understanding which permits or approvals are needed for the scope of work and verifying permits/approvals are in place before starting work.	9/15/2020	9/16/2020
2	16.a.i	Oil sampling and analysis performed during the Annual PM in February 2020 of one emergency engine subject to 40 CFR 63 Subpart ZZZZ yielded results for Total Base Number (TBN) lower than 30% of the TBN of the oil when it was new. The engine continued to run until the results were reviewed in December 2020.	System owner misinterpreted 'yellow' designation on oil sample analysis report and was not aware it was an indication to condemn the oil.	Vendor was contacted to confirm initial results and clear up ambiguity in the initial report. Additional oil sampling and oil change were scheduled with the vendor.	Procedures and documents have been updated to review oil analysis reports and parameters for oil analysis at time of PM by system owner. PM and oil analysis documentation will be reviewed jointly by EHS and electrical system owner quarterly moving forward.	12/15/2020	12/16/2020

INTEL CORPORATION, OCOTILLO CAMPUS: SEMI-ANNUAL MONITORING REPORT

REPORTING PERIOD July 1st 2020 to December 31st 2020

SECTION 3. DATA RELIED UPON FOR PAL POLLUTANT EMISSION CALCULATIONS

Below are the data relied upon in calculating the monthly and annual PAL pollutant emissions during the reporting period

2.1 Emergency Engines and Fire Pumps

A. NO_X, CO, PM, PM_{10}, $PM_{2.5}$ and VOC Emissions

Table 1. Emission Factors for Emergency Generator Engines and Fire Pump Engines

Emissions Unit	Location of Emissions Unit	NO_X	CO	$PM/PM_{10}/PM_{2.5}$	VOC
		lb/hr	lb/hr	lb/hr	lb/hr
3516 D1TA / #11147-01 (gen 1)	Fab 12	58.40	7.83	0.45	0.22
3516 D1TA / #11147-02 (gen 2)	Fab 12	58.40	7.83	0.45	0.22
3516 D1TA / #11147-03 (gen 3)	Fab 12	58.40	7.83	0.45	0.22
3516 D1TA / #11976 (gen 4)	Fab 12	58.40	7.83	0.45	0.22
3516 D1TA / #16894 (gen 5)	Fab 12	58.40	7.83	0.45	0.22
3412C D1TA / #3FZ08267 (Litho)	Fab 12	12.22	0.30	0.56	0.07
F12 Litho Gen 1A 3516 - HD (Litho)	Fab 12	34.89	1.91	0.17	0.69
F12 Litho Gen 2A 3516 - HD (Litho)	Fab 12	34.89	1.91	0.17	0.69
F12 Litho Gen 3A 3516 - HD (Litho)	Fab 12	34.89	1.91	0.17	0.69
3516 D1TA / 24Z09816 (DPS gen 1)	Fab 32S	58.40	7.83	0.45	0.22
3516 D1TA / 24Z09825 (CPS gen 2)	Fab 32S	58.40	7.83	0.45	0.22
3516 D1TA / 24Z09820 (CPS gen 3)	Fab 32S	58.40	7.83	0.45	0.22
3516 D1TA / 24Z09814 (CPS Gen 4)	Fab 32S	58.40	7.83	0.45	0.22
DQKB / I000148784 (Gen 1 regular)	Fab 32S	45.09	5.80	0.67	1.29
DQKB / I000148786 (Gen 2 regular)	Fab 32S	45.09	5.80	0.67	1.29
DQKB / I000148785 (Gen 3 regular)	Fab 32S	45.09	5.80	0.67	1.29
DQKB / I000146278 (Gen 3 regular)	Fab 32S	45.09	5.80	0.67	1.29
DQKC / E060920878 (gen 1)	Fab 32	45.09	5.80	0.67	1.29
DQKC / E060920879 (gen 2)	Fab 32	45.09	5.80	0.67	1.29
DQKC / E060920877 (gen 3)	Fab 32	45.09	5.80	0.67	1.29
DQKAB / I080208703 (gen 4)	Fab 32	34.11	1.35	0.27	1.48
3516C D1TA / G5J00197	Fab 32	34.89	1.91	0.17	0.69
3516C D1TA / G5J00191	Fab 32	34.89	1.91	0.17	0.69
2000-XC6DT2 / New - Litho 3	Fab 32S	35.53	4.04	0.42	1.28
2000-XC6DT2 / New - Litho 4	Fab 32S	35.53	4.04	0.42	1.28
C15-D1TA BRW Tank	Whole Site	4.01	0.64	0.06	0.05
DQLE-1 (1A)	Fab 42	46.41	1.54	0.76	1.05
DQLE-2 (1B)	Fab 42	46.41	1.54	0.76	1.05
DQLE-3 (1C)	Fab 42	46.41	1.54	0.76	1.05

INTEL CORPORATION, OCOTILLO CAMPUS: SEMI-ANNUAL MONITORING REPORT

REPORTING PERIOD July 1st 2020 to December 31st 2020

Emissions Unit	Location of Emissions Unit	NO_X	CO	$PM/PM_{10}/PM_{2.5}$	VOC
		lb/hr	lb/hr	lb/hr	lb/hr
DQLE-4 (2A)	Fab 42	46.41	1.54	0.76	1.05
DQLE-5 (2B)	Fab 42	46.41	1.54	0.76	1.05
DQLE-6 (2C)	Fab 42	46.41	1.54	0.76	1.05
DQLE-7	Fab 42	46.41	1.54	0.76	1.05
DQLE-8	Fab 42	46.41	1.54	0.76	1.05
DQLE-9	Fab 42	46.41	1.54	0.76	1.05
DQLE-10	Fab 42	46.41	1.54	0.76	1.05
DQLE-11	Fab 42	46.41	1.54	0.76	1.05
DQLE-12	Fab 42	46.41	1.54	0.76	1.05
750 KVA CAP Water Engine	Whole Site (new)	12.08	0.56	0.14	0.48
3000 EKW	Fab 42/WATR	46.36	1.86	0.42	0.62
Fire Pump 1	Whole Site	8.53	1.84	0.61	0.68
Fire Pump 2	Whole Site	8.53	1.84	0.61	0.68
3000 EKW	Fab 42 /WATR (new)	46.36	1.86	0.41	0.62
ASU Emergency Generator 1	ASU (new)	25.98	7.83	0.57	1.21

Table 2. Hours of Operation for Emergency Generator Engines and Fire Pump Engines

Emissions Unit	Hours of Operation in July 2020	Hours of Operation in Aug 2020	Hours of Operation in Sept 2020	Hours of Operation in Oct 2020	Hours of Operation in Nov 2020	Hours of Operation in Dec 2020
	hours	hours	hours	hours	hours	hours
3516 D1TA / #11147-01 (gen 1)	0.0	1.3	0.6	0.6	1.2	0.0
3516 D1TA / #11147-02 (gen 2)	0.0	1.4	0.6	0.6	1.1	0.0
3516 D1TA / #11147-03 (gen 3)	0.0	1.2	0.6	0.6	1.2	0.0
3516 D1TA / #11976 (gen 4)	0.0	1.2	0.6	0.7	1.2	0.0
3516 D1TA / #16894 (gen 5)	0.0	1.0	1.0	0.0	1.0	0.0
3412C D1TA / #3FZ08267 (Litho)	0.0	2.0	1.0	1.0	1.0	0.0
F12 Litho Gen 1A 3516 - HD (Litho)	0.1	0.3	0.6	0.7	1.1	0.0
F12 Litho Gen 2A 3516 - HD (Litho)	0.0	0.0	1.0	0.7	1.1	0.0
F12 Litho Gen 3A 3516 - HD (Litho)	0.0	0.5	0.6	0.7	1.0	0.0
3516 D1TA / 24Z09816 (DPS gen 1)	0.6	0.4	0.7	0.1	0.4	0.5
3516 D1TA / 24Z09825 (CPS gen 2)	0.6	0.5	0.0	0.8	0.3	0.0
3516 D1TA / 24Z09820 (CPS gen 3)	0.4	2.3	0.4	0.4	0.4	0.9
3516 D1TA / 24Z09814 (CPS Gen 4)	0.4	0.4	0.0	0.8	0.4	0.5
DQKB / I000148784 (Gen 1 regular)	0.7	0.5	0.5	0.5	0.6	0.5
DQKB / I000148786 (Gen 2 regular)	1.0	0.0	1.0	0.0	1.0	0.0
DQKB / I000148785 (Gen 3 regular)	0.0	1.0	0.0	0.0	1.0	0.0
DQKB / I000146278 (Gen 4 regular)	0.3	0.1	0.0	0.0	0.3	0.7

INTEL CORPORATION, OCOTILLO CAMPUS: SEMI-ANNUAL MONITORING REPORT

REPORTING PERIOD July 1st 2020 to December 31st 2020

Emissions Unit	Hours of Operation in July 2020	Hours of Operation in Aug 2020	Hours of Operation in Sept 2020	Hours of Operation in Oct 2020	Hours of Operation in Nov 2020	Hours of Operation in Dec 2020
	hours	hours	hours	hours	hours	hours
DQKC / E060920878 (gen 1)	1.0	0.0	0.0	1.0	0.0	1.0
DQKC / E060920879 (gen 2)	0.0	0.0	1.0	0.0	0.0	1.0
DQKC / E060920877 (gen 3)	0.0	0.0	2.0	0.0	1.0	0.0
DQKAB / I080208703 (gen 4)	1.0	0.0	1.0	0.0	1.0	0.0
3516C D1TA / G5J00197	0.5	0.6	0.5	0.7	0.4	0.9
3516C D1TA / G5J00191	0.5	0.5	0.5	0.6	0.4	0.2
2000-XC6DT2 / New - Litho 3	0.9	0.3	0.6	0.3	1.0	0.6
2000-XC6DT2 / New - Litho 4	0.4	0.6	0.2	0.3	0.6	0.3
C15-D1TA BRW Tank	0.3	0.0	0.9	0.5	0.4	4.0
DQLE-1 (1A)	0.5	0.6	0.0	0.4	0.0	0.0
DQLE-2 (1B)	0.3	0.5	0.2	0.1	1.1	0.0
DQLE-3 (1C)	0.4	0.6	0.0	0.3	1.2	0.0
DQLE-4 (2A)	0.6	0.6	0.0	0.3	0.0	0.0
DQLE-5 (2B)	0.5	0.5	0.0	0.3	1.2	0.0
DQLE-6 (2C)	0.5	0.5	0.0	0.3	1.2	0.0
DQLE-7	0.5	0.5	0.0	0.0	0.2	0.0
DQLE-8	0.5	0.6	0.0	0.3	1.2	0.0
DQLE-9	0.5	0.5	0.0	0.0	1.5	0.0
DQLE-10	0.6	0.6	0.0	0.0	0.1	0.0
DQLE-11	0.5	0.6	0.0	0.0	1.4	0.0
DQLE-12	0.6	0.5	0.0	0.0	1.3	0.0
750 KVA CAP Water Engine	1.3	0.0	0.5	1.2	1.2	0.0
3000 EKW (WATR)	0.0	0.0	0.1	0.0	0.0	0.0
Fire Pump 1	1.4	1.1	0.8	1.3	2.9	1.7
Fire Pump 2	4.0	3.4	0.6	6.7	5.5	4.4
3000 EKW (WATR)	NA	NA	NA	NA	NA	NA
ASU Emergency Generator 1	NA	NA	NA	NA	NA	NA

B. SO_2 Emissions

Table 3. SO_2 Emission Factors for Emergency Generator Engines and Fire Pump Engines

Emissions Unit	Location of Emissions Unit	SO_2
		lb/hr
3516 D1TA / #11147-01 (gen 1)	Fab 12	0.03
3516 D1TA / #11147-02 (gen 2)	Fab 12	0.03
3516 D1TA / #11147-03 (gen 3)	Fab 12	0.03
3516 D1TA / #11976 (gen 4)	Fab 12	0.03

INTEL CORPORATION, OCOTILLO CAMPUS: SEMI-ANNUAL MONITORING REPORT

REPORTING PERIOD July 1st 2020 to December 31st 2020

Emissions Unit	Location of Emissions Unit	SO_2
		lb/hr
3516 D1TA / #16894 (gen 5)	Fab 12	0.03
3412C D1TA / #3FZ08267 (Litho)	Fab 12	0.01
F12 Litho Gen 1A 3516 - HD (Litho)	Fab 12	0.04
F12 Litho Gen 2A 3516 - HD (Litho)	Fab 12	0.04
F12 Litho Gen 3A 3516 - HD (Litho)	Fab 12	0.04
3516 D1TA / 24Z09816 (DPS gen 1)	Fab 32S	0.03
3516 D1TA / 24Z09825 (CPS gen 2)	Fab 32S	0.03
3516 D1TA / 24Z09820 (CPS gen 3)	Fab 32S	0.03
3516 D1TA / 24Z09814 (CPS Gen 4)	Fab 32S	0.03
DQKB / I000148784 (Gen 1 regular)	Fab 32S	0.04
DQKB / I000148786 (Gen 2 regular)	Fab 32S	0.04
DQKB / I000148785 (Gen 3 regular)	Fab 32S	0.04
DQKB / I000146278 (Gen 3 regular)	Fab 32S	0.04
DQKC / E060920878 (gen 1)	Fab 32	0.04
DQKC / E060920879 (gen 2)	Fab 32	0.04
DQKC / E060920877 (gen 3)	Fab 32	0.04
DQKAB / I080208703 (gen 4)	Fab 32	0.04
3516C D1TA / G5J00197	Fab 32	0.04
3516C D1TA / G5J00191	Fab 32	0.04
2000-XC6DT2 / New - Litho 3	Fab 32S	0.04
2000-XC6DT2 / New - Litho 4	Fab 32S	0.04
C15-D1TA BRW Tank	Whole Site	0.01
750 KVA CAP Water Engine	Whole Site (new)	0.01
DQLE-1 (1A)	Fab 42	0.04
DQLE-2 (1B)	Fab 42	0.04
DQLE-3 (1C)	Fab 42	0.04
DQLE-4 (2A)	Fab 42	0.04
DQLE-5 (2B)	Fab 42	0.04
DQLE-6 (2C)	Fab 42	0.04
DQLE-7	Fab 42	0.04
DQLE-8	Fab 42	0.04
DQLE-9	Fab 42	0.04
DQLE-10	Fab 42	0.04
DQLE-11	Fab 42	0.04
DQLE-12	Fab 42	0.04
3000 EKW	Fab 42/WATR	0.05
Fire Pump 1	Whole Site	0.56
Fire Pump 2	Whole Site	0.56

Emissions Unit	Location of Emissions Unit	SO_2 lb/hr
3000 EKW	Fab 42 /WATR (new)	0.04
ASU Emergency Generator 1	ASU (new)	0.02

2.2 Monitoring System for Boilers

A. NO_X and CO Emissions

Table 4. NO_X and CO Emission Factors for Boilers

Boiler	Location of Emissions Unit	NO_X lb/mmscf	CO lb/mmscf
F12 Boiler 1	Fab 12	8.33	0.00
F12 Boiler 2	Fab 12	11.05	0.00
F12 Boiler 3	Fab 12	3.38	0.71
F12 Boiler 4	Fab 12	7.50	0.53
F32S Boiler 1	Fab 32S	5.88	0.43
F32S Boiler 2	Fab 32S	8.60	0.49
F32S Boiler 3	Fab 32S	7.90	0.57
F32S Boiler 4	Fab 32S	8.40	0.52
F32S Boiler 5	Fab 32S	6.50	0.20
F32S Boiler 6	Fab 32S (new)	4.22	4.62
F32S Boiler 7	Fab 32S (new)	11.00	4.90
F32 Boiler 2	Fab 32	11.00	4.90
F42 Boiler 1	Fab 42	12.46	0.06
F42 Boiler 2	Fab 42	8.87	0.07
F42 Boiler 3	Fab 42	8.87	0.07
F42 Boiler 4	Fab 42	8.87	0.07
Vaporizer Fired Heater 1	ASU	11.36	84.00
Vaporizer Fired Heater 2	ASU	11.36	84.00

The Quality Assurance/Quality Control (QA/QC) data for the boiler's emission factors are outlined in the compliance test reports submitted to MCAQD on the dates listed below; Since these reports were previously submitted to MCAQD Intel will not be resubmitting the QA/QC data in an effort to keep this semi-annual monitoring report concise.

- F12 and F32S (Boilers 1-4): February 8th, 2019
- F32S Boiler 5: April 7th, 2017
- F32 Boiler 2: January 16th, 2014; the boiler was decommissioned on January 30, 2019 as outlined in the decommissioning notice submitted to MCAQD on January 31, 2019
- F42 Boilers 1-2: January 26, 2018

- F42 Boiler 3: March 8, 2013
- F42 Boiler 4: April 7, 2017

Table 5. Natural Gas Usage for Boilers

Boiler	Natural Gas Usage in July 2020	Natural Gas Usage in Aug 2020	Natural Gas Usage in Sept 2020	Natural Gas Usage in Oct 2020	Natural Gas Usage in Nov 2020	Natural Gas Usage in Dec 2020
	mmscf	mmscf	mmscf	mmscf	mmscf	mmscf
F12 Boiler 1	19.746	21.090	0.433	0.276	15.347	4.613
F12 Boiler 2	0.626	3.995	12.951	17.328	26.419	27.183
F12 Boiler 3	4.880	0.017	4.829	21.721	7.718	3.658
F12 Boiler 4	0.199	0.255	11.937	0.108	0.417	28.024
F32S Boiler 1	4.886	5.215	5.806	7.649	9.264	9.978
F32S Boiler 2	5.697	5.690	6.498	8.602	9.585	9.943
F32S Boiler 3	0.000	0.000	0.000	0.000	0.000	0.000
F32S Boiler 4	0.017	0.067	0.155	1.309	4.043	9.432
F32S Boiler 5	0.000	0.000	0.000	0.000	0.000	0.000
F32S Boiler 6	0.000	0.000	0.000	0.000	0.000	0.000
F32S Boiler 7	0.000	0.000	0.000	0.000	0.000	0.000
F32 Boiler 2	0.000	0.000	0.000	0.000	0.000	0.000
F42 Boiler 1	0.014	0.008	0.008	0.008	0.009	0.008
F42 Boiler 2	0.020	0.149	0.149	1.749	0.888	0.176
F42 Boiler 3	4.110	2.902	2.902	1.182	0.972	1.446
F42 Boiler 4	0.007	0.431	0.431	0.418	1.040	1.173
Vaporizer Fired Heater 1	NA	NA	NA	NA	NA	NA
Vaporizer Fired Heater 2	NA	NA	NA	NA	NA	NA

B. PM, PM_{10}, $PM_{2.5}$, SO_2 and VOC Emissions

Table 6. Emission Factors for Boilers

Boiler	Location of Emissions Unit	PM/PM_{10} /$PM_{2.5}$	VOC	SO_2
		lb/mmscf	lb/mmscf	lb/mmscf
F12 Boiler 1	Fab 12	7.60	5.50	0.60
F12 Boiler 2	Fab 12	7.60	5.50	0.60
F12 Boiler 3	Fab 12	7.60	5.50	0.60
F12 Boiler 4	Fab 12	7.60	5.50	0.60
F32S Boiler 1	Fab 32S	7.60	5.50	0.60
F32S Boiler 2	Fab 32S	7.60	5.50	0.60
F32S Boiler 3	Fab 32S	7.60	5.50	0.60
F32S Boiler 4	Fab 32S	7.60	5.50	0.60

Boiler	Location of Emissions Unit	PM/PM_{10} /$PM_{2.5}$	VOC	SO_2
		lb/mmscf	lb/mmscf	lb/mmscf
F32S Boiler 5	Fab 32S	7.60	5.50	0.60
F32S Boiler 6	Fab 32S (new)	7.60	5.50	0.60
F32S Boiler 7	Fab 32S (new)	7.60	5.50	0.60
F32 Boiler 2	Fab 32	7.60	5.50	0.60
F42 Boiler 1	Fab 42	7.60	5.50	0.60
F42 Boiler 2	Fab 42	7.60	5.50	0.60
F42 Boiler 3	Fab 42	7.60	5.50	0.60
F42 Boiler 4	Fab 42	7.60	5.50	0.60
Vaporizer Fired Heater 1	ASU (new)	7.60	5.50	0.60
Vaporizer Fired Heater 2	ASU (new)	7.60	5.50	0.60

2.3 Monitoring System for Cooling Towers

A. PM, PM_{10}, and $PM_{2.5}$ Emissions

Table 7. TDS data for Cooling Towers

Cooling Tower	TDS in July 2020	TDS in Aug 2020	TDS in Sept 2020	TDS in Oct 2020	TDS in Nov 2020	TDS in Dec 2020
	ppm	ppm	ppm	ppm	ppm	ppm
F12	3109.85	3510.28	3580.86	3629.54	3654.94	3693.96
F32S	3221.81	3490.79	3453.66	3425.26	3530.31	3537.60
F32	2313.36	2296.68	2606.78	3006.07	3329.82	3476.55
F42	2993.49	3014.55	3302.52	3380.15	3480.23	3456.03
MSB	1484.57	1913.45	2130.51	1950.30	1346.70	1345.78
ASU	N/A	N/A	N/A	N/A	N/A	N/A

All cooling towers, except for the ASU cooling towers, operated 24 hours per day all days of the certification period, July 1, 2020 through December 30, 2020.

B. VOC Emissions (from chemicals used in cooling towers)

Table 8. VOC Chemical Usage data for Cooling Towers

Cooling Tower	Chem Usage in July 2020	Chem Usage in Aug 2020	Chem Usage in Sept 2020	Chem Usage in Oct 2020	Chem Usage in Nov 2020	Chem Usage in Dec 2020
	lbs	lbs	lbs	lbs	lbs	lbs
Site	3.23	4.55	4.70	2.23	4.82	4.82

2.4 Monitoring System for Lime Silos

A. PM, PM_{10} and $PM_{2.5}$ Emissions

Table 9. Emission Factors for Lime Silos

Lime Silo	Location of Emissions Unit	PM/PM_{10}/$PM_{2.5}$
		lb PM_{10}/ton of material
F12 Lime Silos	Fab 12	0.0049
F32S Lime Silos	Fab 32S	0.0049
F32 Lime Silos	Fab 32	0.0049
F42 Lime Silos	Fab 42	0.0049
IWW Sodium Bicarbonate Silo		0.0049

Table 10. Lime Silo Loading Frequency

Lime Silo	Loading Frequency in July 2020	Loading Frequency in Aug 2020	Loading Frequency in Sept 2020	Loading Frequency in Oct 2020	Loading Frequency in Nov 2020	Loading Frequency in Dec 2020
	loads	loads	loads	loads	loads	loads
F12 Lime Silos	1	1	2	3	3	2
F32S Lime Silos	5	4	6	2	7	5
F32 Lime Silos	6	5	5	4	4	8
F42 Lime Silos	2	1	2	2	3	3
IWW Sodium Bicarbonate Silo	NA	NA	NA	NA	NA	NA

2.5 Monitoring System for Control Devices (Natural Gas Combustion Emissions Only)

A. NOx and CO Emissions

Table 11. NO_X and CO Emission Factors for Control Devices

Control Device	Location of Emissions Unit	NO_X (Jul-Aug)	NO_X (Sept)	NO_X (Oct-Dec)	CO (Jul-Aug)	CO (Sept)	CO (Oct-Dec)
		lb/mmscf	lb/mmscf	lb/hr	lb/mmscf	lb/mmscf	lb/hr
RCTO 1	Fab 12	96.25	106.39	0.06	109.17	330.19	0.18
RCTO 2	Fab 12	100.26	105.49	0.08	492.35	533.83	0.42
RCTO 3	Fab 12	107.30	169.43	0.10	55.28	149.49	0.09
RCTO 4	Fab 12	136.22	763.13	0.12	17.31	162.63	0.03
LCE RCTO 1	Fab 12	181.40	126.41	0.16	18.73	22.54	0.03
LCE RCTO 2	Fab 12	126.96	99.60	0.17	13.80	18.97	0.03

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Control Device	Location of Emissions Unit	NO_X (Jul-Aug)	NO_X (Sept)	NO_X (Oct-Dec)	CO (Jul-Aug)	CO (Sept)	CO (Oct-Dec)
		lb/mmscf	lb/mmscf	lb/hr	lb/mmscf	lb/mmscf	lb/hr
RCTO 3	Fab 32S	253.59	125.46	0.15	226.75	1265.36	1.52
RCTO 4	Fab 32S	145.28	145.28	145.28 lb/mmscf	47.57	47.57	47.57 lb/mmscf
RCTO 5	Fab 32S	138.43	174.88	0.10	5.89	8.41	0.10
RCTO 1	Fab 32	75.82	66.87	0.08	369.72	194.45	0.22
RCTO 2	Fab 32	117.32	92.00	0.10	381.07	282.51	0.30
RCTO 3	Fab 32	81.96	65.32	0.08	442.26	240.39	0.28
Trimix A Catalytic Oxidizer	Fab 32S/32	0.14 lbs/hr	0.14 lbs/hr	0.14	0.27 lbs/hr	0.27 lbs/hr	0.27
Trimix B Catalytic Oxidizer	Fab 32S/32	0.00 lbs/hr	0.00 lbs/hr	0.00	0.01 lbs/hr	0.01 lbs/hr	0.01
RCTO 5	Fab 12	0.34 lbs/hr	0.34 lbs/hr	0.34	0.24 lbs/hr	0.24 lbs/hr	0.24
LCE RCTO 3	Fab 12	0.34 lbs/hr	0.34 lbs/hr	0.34	0.24 lbs/hr	0.24 lbs/hr	0.24
RCTO 6	Fab 32S	0.20 lbs/hr	0.20 lbs/hr	0.20	0.14 lbs/hr	0.14 lbs/hr	0.14
RCTO 7	Fab 32S	0.20 lbs/hr	0.20 lbs/hr	0.20	0.14 lbs/hr	0.14 lbs/hr	0.14
RCTO 4	Fab 32	0.78 lbs/hr	0.78 lbs/hr	0.78	0.54 lbs/hr	0.54 lbs/hr	0.54
RCTO 5	Fab 32	0.78 lbs/hr	0.78 lbs/hr	0.78	0.54 lbs/hr	0.54 lbs/hr	0.54
RCTO 6	Fab 32	0.78 lbs/hr	0.78 lbs/hr	0.78	0.54 lbs/hr	0.54 lbs/hr	0.54
FSB RCTO 1	Fab 42	126.92	138.70	0.06	32.69	38.03	0.02
FSB RCTO 2	Fab 42	102.09	88.82	0.06	83.81	107.75	0.07
RCTO 1	Fab 42	0.78 lbs/hr	0.78 lbs/hr	0.78	0.54 lbs/hr	0.54 lbs/hr	0.54
RCTO 2	Fab 42	0.78 lbs/hr	0.78 lbs/hr	0.78	0.54 lbs/hr	0.54 lbs/hr	0.54
RCTO 3	Fab 42	0.78 lbs/hr	0.78 lbs/hr	0.78	0.54 lbs/hr	0.54 lbs/hr	0.54
RCTO 4	Fab 42	0.78 lbs/hr	0.78 lbs/hr	0.78	0.54 lbs/hr	0.54 lbs/hr	0.54
RCTO 5	Fab 42	0.78 lbs/hr	0.78 lbs/hr	0.78	0.54 lbs/hr	0.54 lbs/hr	0.54
Trimix 1 Catalytic Oxidizer	Fab 42	0.34 lbs/hr	0.34 lbs/hr	0.34	0.27 lbs/hr	0.27 lbs/hr	0.27

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The Quality Assurance/Quality Control (QA/QC) data for the control equipment's emission factors are outlined in the compliance test reports submitted to MCAQD on the dates listed below. Since these reports were previously submitted to MCAQD Intel will not be resubmitting the QA/QC data in an effort to keep this semi-annual monitoring report concise.

F12 RCTO 1-4 and F12 LCE RCTO 1-2: June 8, 2020

F32S RCTO 3-5: June 5, 2020

F32 RCTO 1-3: May 8, 2020

F32S/32 Trimix A: June 10, 2016

F32S/32 Trimix B: September 26, 2013

FSB RCTO 1-2: May 30, 2020

F42 RCTO testing completed late 2020, report submitted 1/14/2021. Emission factors will be updated 2021.

Table 12. Natural Gas Usage for Control Devices

Control Device	Location of Emissions Unit	Natural Gas Usage in July 2020	Natural Gas Usage in Aug 2020	Natural Gas Usage in Sept 2020	Natural Gas Usage in Oct 2020	Natural Gas Usage in Nov 2020	Natural Gas Usage in Dec 2020
		mmscf	mmscf	mmscf	mmscf	mmscf	mmscf
RCTO 1	Fab 12	0.513	0.467	0.432	0.704	0.734	0.740
RCTO 2	Fab 12	0.657	0.617	0.636	0.678	0.901	1.294
RCTO 3	Fab 12	0.666	0.647	0.632	0.620	0.678	0.822
RCTO 4	Fab 12	0.687	0.775	0.770	0.696	0.678	0.674
LCE RCTO 1	Fab 12	1.255	1.219	1.083	0.998	1.156	1.272
LCE RCTO 2	Fab 12	1.317	1.244	1.324	11.296	1.299	1.363
RCTO 3	Fab 32S	0.722	0.571	0.585	0.597	0.500	0.596
RCTO 4	Fab 32S	0.000	0.001	0.004	0.000	0.000	0.542
RCTO 5	Fab 32S	0.053	0.000	0.000	0.000	0.000	0.000
RCTO 1	Fab 32	0.799	0.809	0.796	0.675	0.463	0.900
RCTO 2	Fab 32	0.703	0.541	0.544	0.640	0.613	0.658
RCTO 3	Fab 32	1.339	1.338	1.294	1.180	0.458	0.435
Trimix A Catalytic Oxidizer	Fab 32S/32	0.559	0.567	0.574	0.600	0.574	0.582
Trimix B Catalytic Oxidizer	Fab 32S/32	0.573	0.573	0.573	0.597	0.565	0.575
RCTO 5	Fab 12	N/A	N/A	N/A	N/A	N/A	N/A
LCE RCTO 3	Fab 12	N/A	N/A	N/A	N/A	N/A	N/A
RCTO 6	Fab 32S	0.236	0.230	0.265	0.297	0.359	0.488
RCTO 7	Fab 32S	N/A	N/A	N/A	N/A	N/A	N/A
RCTO 4	Fab 32	N/A	N/A	N/A	0.720	0.948	0.809
RCTO 5	Fab 32	N/A	N/A	N/A	1.062	1.404	1.059
RCTO 6	Fab 32	N/A	N/A	N/A	N/A	N/A	N/A

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Control Device	Location of Emissions Unit	Natural Gas Usage in July 2020	Natural Gas Usage in Aug 2020	Natural Gas Usage in Sept 2020	Natural Gas Usage in Oct 2020	Natural Gas Usage in Nov 2020	Natural Gas Usage in Dec 2020
		mmscf	mmscf	mmscf	mmscf	mmscf	mmscf
FSB RCTO 1	Fab 42	0.313	0.028	0.036	0.045	0.055	0.067
FSB RCTO 2	Fab 42	0.496	0.339	0.345	0.359	0.362	0.374
RCTO 1	Fab 42	0.621	0.547	0.460	0.985	0.877	0.808
RCTO 2	Fab 42	0.465	0.470	0.457	0.840	0.845	0.845
RCTO 3	Fab 42	0.543	0.477	0.441	0.813	0.897	0.895
RCTO 4	Fab 42	N/A	N/A	N/A	N/A	N/A	N/A
RCTO 5	Fab 42	N/A	N/A	N/A	N/A	N/A	N/A
TriMix 1 Catalytic Oxidizer	Fab 42	N/A	N/A	N/A	N/A	N/A	N/A

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A. PM, PM_{10}, $PM_{2.5}$, SO_2 and VOC Emissions

Table 13. Emission Factors for Control Devices

Control Device	Location of Emissions Unit	PM/PM_{10}/$PM_{2.5}$	VOC	SO_2
		lb/mmscf	lb/mmscf	lb/mmscf
RCTO 1	Fab 12	7.60	5.50	0.60
RCTO 2	Fab 12	7.60	5.50	0.60
RCTO 3	Fab 12	7.60	5.50	0.60
RCTO 4	Fab 12	7.60	5.50	0.60
LCE RCTO 1	Fab 12	7.60	5.50	0.60
LCE RCTO 2	Fab 12	7.60	5.50	0.60
RCTO 3	Fab 32S	7.60	5.50	0.60
RCTO 4	Fab 32S	7.60	5.50	0.60
RCTO 5	Fab 32S	7.60	5.50	0.60
RCTO 1	Fab 32	7.60	5.50	0.60
RCTO 2	Fab 32	7.60	5.50	0.60
RCTO 3	Fab 32	7.60	5.50	0.60
Trimix A Catalytic Oxidizer	Fab 32S/32	7.60	5.50	0.60
Trimix B Catalytic Oxidizer	Fab 32S/32	7.60	5.50	0.60
RCTO 5	Fab 12 (new)	7.60	5.50	0.60
LCE RCTO 3	Fab 12 (new)	7.60	5.50	0.60
RCTO 6	Fab 32S (new)	7.60	5.50	0.60
RCTO 7	Fab 32S (new)	7.60	5.50	0.60
RCTO 4	Fab 32 (new)	7.60	5.50	0.60
RCTO 5	Fab 32 (new)	7.60	5.50	0.60
RCTO 6	Fab 32 (new)	7.60	5.50	0.60
FSB RCTO 1	Fab 42 (new)	7.60	5.50	0.60
FSB RCTO 2	Fab 42 (new)	7.60	5.50	0.60
RCTO 1	Fab 42 (new)	7.60	5.50	0.60
RCTO 2	Fab 42 (new)	7.60	5.50	0.60
RCTO 3	Fab 42 (new)	7.60	5.50	0.60
RCTO 4	Fab 42 (new)	7.60	5.50	0.60
RCTO 5	Fab 42 (new)	7.60	5.50	0.60
TriMix 1 Catalytic Oxidizer	Fab 42 (new)	7.60	5.50	0.60

2.6 Monitoring System for General Fab Natural Gas Combustion Units

A. NO_X,CO, PM, PM_{10}, $PM_{2.5}$,VOC and SO_2 Emissions

Table 14. Emission Factors for General Fab Natural Gas Combustion Units

Emission Units	Location of Emissions Unit	NO_X	CO	$PM/PM_{10}/PM_{2.5}$	VOC	SO_2
		lb/mmscf	lb/mmscf	lb/mmscf	lb/mmscf	lb/mmscf
General Fab Natural Gas Combustion Units	Site-Wide	100.00	84.00	7.60	5.50	0.60

*From Section 1.4 AP-42 EPA Emission Factor Reference

Table 15. General Fab Natural Gas Usage

Emission Units	July 2020	Aug 2020	Sept 2020	Oct 2020	Nov 2020	Dec 2020
	mmscf	mmscf	mmscf	mmscf	mmscf	mmscf
General Fab Natural Gas Combustion Units	37.892	39.313	37.485	33.877	52.813	60.382

2.7 Monitoring System for Fab Emission Units (Process Emissions Only)

A. Quality Assurance/Quality Control Data for Process Emission Factors

All Quality Assurance/Quality Control (QA/QC) data for the process emission factors that were determined via performance testing are located in the performance test reports submitted to MCAQD on the following dates. Since these reports were previously submitted to MCAQD Intel will not be resubmitting the QA/QC data in an effort to keep this semi-annual monitoring report concise.

Wet Acid Scrubbers: May 19, 2020

RCTO VOC Abatement Units: June 8, 2020

B. VOC Emissions

Table 16. Site Wide VOC Stack Testing Results and Monthly Production Index (PI)

Stack Type	Testing Result VOC (July-Sept)	Testing Result VOC (Oct-Dec)	July 2020 PI	Aug 2020 PI	Sept 2020 PI	Oct 2020 PI	Nov 2020 PI	Dec 2020 PI
	lb/hr	lb/hr						
RCTO VOC Abatement Units	1.351	1.196	1.16	0.96	1.11	0.94	1.22	1.18
Wet Acid Scrubbers	1.532	1.57	1.16	0.96	1.12	0.94	1.22	1.18
Ammonia Scrubbers	TBD	TBD	NA	NA	NA	NA	NA	NA

C. CO, NO_x, PM, PM_{10}, and $PM_{2.5}$ Emissions

Table 17. Site Wide Stack Testing Results and Monthly Production Index (PI)

PAL Pollutant	Stack Type	Testing Result (July-Sept)	Testing Result (Oct-Dec)	July 2020 PI	Aug 2020 PI	Sept 2020 PI	Oct 2020 PI	Nov 2020 PI	Dec 2020 PI
		lb/hr	lb/hr						
CO	Wet Acid Scrubber	19.019	16.658	1.16	0.96	1.12	0.94	1.22	1.18
NOx	Wet Acid Scrubber	8.632	9.519	1.16	0.96	1.12	0.94	1.22	1.18
PM, PM10, PM2.5	Wet Acid Scrubber	3.948	4.004	1.16	0.96	1.12	0.94	1.22	1.18
PM, PM10, PM2.5	RCTO VOC Abatement	1.237	1.4593	1.16	0.96	1.11	0.94	1.22	1.18

D. SO2 Emissions

Table 18. Emission Factors and Weighting Factors for SO2 Process Emissions and Monthly Chemical Usage

Compound[1]	Tech A	Tech B	Tech C	Tech A	Tech B	Tech C	July 2020 Chem Usage	Aug 2020 Chem Usage	Sept 2020 Chem Usage	Oct 2020 Chem Usage	Nov 2020 Chem Usage	Dec 2020 Chem Usage
	Emission Factor			Weighting Factor								

	lb/lb			%			lb	lb	lb	lb	lb	lb
Chem 1	0.319	0.217	0.115	0.018	0.022	0.055	2945.00	3135.00	3800.00	3325.00	4085.00	4275.00
Chem 2	0.869	0.755	0.148	0.000	0.003	0.009	586.43	335.10	251.33	921.53	251.33	670.21

[1] These emission factors, by chemical, are based on actual tool testing from Intel's Research and Development facility in Oregon and would provide a competitor with specific trade secret recipe information to cause harm to Intel's competitive advantage if released to the public. The confidentiality claim meets the requirements of Arizona Revised Statute (ARS) §49-487 and Maricopa County Air Quality Department Rule 200 and Intel will submit a confidential list of these Emission Factors.

E. Fluoride Emissions

Table 19. Emission Factors and Weighting Factors for Fluoride Process Emissions and Monthly Chemical Usage

Compound[1, 2]	Tech A	Tech B	Tech C	Tech A	Tech B	Tech C	Jul 2020 Chem Usage	Aug 2020 Chem Usage	Sept 2020 Chem Usage	Oct 2020 Chem Usage	Nov 2020 Chem Usage	Dec 2020 Chem Usage
	Emission Factor			Weighting Factor								
	lb/lb			%			lb	lb	lb	lb	lb	lb
Chem 1	0.00122	0.00122	0.00122	0.00000	0.02470	0.03990	2730.00	2860.00	3510.00	2943.89	3417.79	2990.00
Chem 2	0.01280	0.01280	0.07620	0.01790	0.02160	0.05450	2945.00	3135.00	3800.00	3325.00	4085.00	4275.00
Chem 3	0.00837	0.00837	0.02430	0.25000	0.34300	0.55500	8800.00	35200.00	8800.00	0.00	17600.00	61600.00
Chem 4	0.01140	0.01140	0.00025	0.00101	0.00089	0.00172	168.00	192.00	156.00	204.00	216.00	168.00
Chem 5	0.01770	0.01770	0.18600	0.02920	0.04150	0.15400	4938.36	5643.83	4938.36	0.00	5643.83	7760.27
Chem 6	0.06320	0.06320	0.05310	0.00390	0.00967	0.01750	807.84	942.48	1346.40	942.48	1481.04	1346.40
Chem 7	0.00002	0.00002	0.01510	0.00065	0.00063	0.00729	50.00	100.00	150.00	250.00	250.00	50.00
Chem 8	0.02350	0.02350	0.02350	0.00000	0.00000	0.00001	73171.47	64340.43	54247.82	61817.28	63078.86	63078.86
Chem 9	0.02420	0.02420	0.10400	0.01080	0.02620	0.03100	2625.00	2325.00	2700.00	2550.00	2925.00	2700.00
Chem 10	0.00600	0.00600	0.20600	0.00089	0.00089	0.00877	629.00	525.00	675.00	450.00	575.00	550.00
Chem 11	1.00000	1.00000	0.00448	0.00000	0.00001	0.00182	85.93	94.23	86.33	0.00	148.65	192.78
Chem 12	NA	NA	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
Chem 19	0.00003	0.00003	0.00003	0.00000	0.02470	0.03990	2730.00	2860.00	3510.00	2943.89	3417.79	2990.00
Chem 20	0.73000	0.73000	0.36000	0.00000	0.00032	0.00040	0.64	0.07	0.00	0.14	0.56	0.76
Chem 21	0.29800	0.29800	0.14800	0.01790	0.02160	0.54500	2945.00	3135.00	3800.00	3325.00	4085.00	4275.00
Chem 22	0.00000	0.00000	0.00013	0.00000	0.00011	0.00806	670.21	599.66	634.93	423.29	529.11	529.11
Chem 23	0.00426	0.00426	0.00542	0.25000	0.34300	0.55500	8800.00	35200.00	8800.00	0.00	17600.00	61600.00
Chem 24	0.03570	0.03570	0.05410	0.01080	0.02620	0.03100	2625.00	2325.00	2700.00	2550.00	2925.00	2700.00
Chem 25	0.05700	0.05700	0.04320	0.00089	0.00089	0.00877	629.00	525.00	675.00	450.00	575.00	550.00
Chem 26	0.12800	0.12800	0.00984	0.00101	0.00089	0.00172	168.00	192.00	156.00	204.00	216.00	168.00

Chem 27	0.04120	0.04120	0.08330	0.02920	0.04150	0.15400	4938.36	5643.83	4938.36	0.00	5643.83	7760.27
Chem 28	0.00536	0.00536	0.18100	0.00390	0.00967	0.01750	807.84	942.48	1346.40	942.48	1481.04	1346.40
Chem 29	0.01060	0.01060	0.03820	0.00065	0.00063	0.00729	50.00	100.00	150.00	250.00	250.00	50.00
Chem 31	NA	NA	0.00009	0.01790	0.02160	0.05450	2945.00	3135.00	3800.00	3325.00	4085.00	4275.00
Chem 32	0.00170	0.00170	0.00168	0.00000	0.02470	0.03990	2730.00	2860.00	3510.00	2943.89	3417.79	2990.00
Chem 33	0.00004	0.00004	0.00001	0.25000	0.34300	0.55500	8800.00	35200.00	8800.00	0.00	17600.00	61600.00

[1] These emission factors, by chemical, are based on actual tool testing from Intel's Research and Development facility in Oregon and would provide a competitor with specific trade secret recipe information to cause harm to Intel's competitive advantage if released to the public. The confidentiality claim meets the requirements of Arizona. Revised Statute (ARS) §49-487 and Maricopa County Air Quality Department Rule 200 and Intel will submit a confidential list of these Emission Factors.

[2] Revised data has indicated CAS numbers for Chems 13 through 18, and Chem 30 are no longer applicable at the OC site. These chems have been removed. To keep consistency with previous naming conventions the chem numbers have remained unchanged.

2.8 Monitoring System for Fab Emission Units (Uncontrolled Evaporative Processes)

A. VOC Emissions (from tanks)

Table 20. Tank Throughput Data

Tank ID	July 2020 Throughput	Aug 2020 Throughput	Sept 2020 Throughput	Oct 2020 Throughput	Nov 2020 Throughput	Dec 2020 Throughput
	Gal	Gal	Gal	Gal	Gal	Gal
F12-TK-266-1-00	5832000	5832000	5832000	5832000	5832000	5832000
F12-TK-266-1-01	10800000	10800000	10800000	10800000	10800000	10800000
F12-TK-266-1-15	5832000	5832000	5832000	5832000	5832000	5832000
F12-TK-266-1-60	2592000	2592000	2592000	2592000	2592000	2592000
F12-TK-266-1-75	5832000	5832000	5832000	5832000	5832000	5832000
F12-TK-266-1-90	5832000	5832000	5832000	5832000	5832000	5832000
F12-TK-266-2-00	10800000	10800000	10800000	10800000	10800000	10800000
F12-TK-266-2-15	5832000	5832000	5832000	5832000	5832000	5832000
F12-TK-266-2-60	2592000	2592000	2592000	2592000	2592000	2592000
F12-TK-266-2-75	6480000	6480000	6480000	6480000	6480000	6480000
F12-TK-76-GH1-1	35390	37116	35627	38617	38663	38978
F12-TK-76-GH1-2	35390	37116	35627	38617	38663	38978
F12-TK-76-GH4-1	35390	37116	35627	38617	38663	38978
F12-TK-76-GH4-2	35390	37116	35627	38617	38663	38978
F12-TK-76-GH6-1	146136	149756	143383	159264	150642	155671
F12-TK-79-GH10-1	73068	74878	71691	79632	75321	77835
F12-TK-79-GH10-2	73068	74878	71691	79632	75321	77835
F12-TK-79-GH10-3	146136	149756	143383	159264	150642	155671
F12-TK-79-GH1-1	0	1286	0	1028	394	0
F12-TK-79-GH1-2	0	1286	0	1028	394	0

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Tank ID	July 2020 Throughput	Aug 2020 Throughput	Sept 2020 Throughput	Oct 2020 Throughput	Nov 2020 Throughput	Dec 2020 Throughput
	Gal	Gal	Gal	Gal	Gal	Gal
F12-TK-79-GH4-1	0	1286	0	1028	394	0
F12-TK-79-GH4-2	0	1286	0	1028	394	0
F12-TK-79-GH7-1	73068	74878	71691	79632	75321	77835
F12-TK-79-GH7-2	73068	74878	71691	79632	75321	77835
F12-TK-80-GH1-1	655	713	1237	919	295	617
F12-TK-80-GH1-2	0	0	0	0	0	0
F22-OCB2A-TK-269-1-00	70780	74232	71255	77234	77326	77957
F22-OCB2A-TK-269-1-30	70780	74232	71255	77234	77326	77957
F22-OCB2A-TK-270-1-00	146136	149756	143383	159264	150642	155671
F22-OCB2-TK-293-1-00	1806836	1900895	1804373	1882634	1904796	1875956
F22-OCB2-TK-293-2-00	1806836	1900895	1804373	1882634	1904796	1875956
F22-PWB2-TK-293-0-92	902394	941302	900621	930640	973754	932707
F22-PWB2-TK-293-1-15	870966	909902	863574	894050	926515	891633
F22-PWB2-TK-293-2-15	870966	909902	863574	894050	926515	891633
F22-PWB2-TK-293-3-15	870966	909902	863574	894050	926515	891633
F22-TK-251-1-200	978	1867	930	1246	726	1243
F22-TK-296-1-05	949	0	985	0	0	1017
F22-TK-296-1-15	2467	0	2560	0	0	2644
F22-TK-296-2-05	949	0	985	0	0	1017
F32-OCB2B-TK-269-1-00	70780	74232	71255	77234	77326	77957
F32-OCB2B-TK-270-1-00	146136	149756	143383	159264	150642	155671
F32-OCB2B-TK-286-1-50A	0	2572	0	2056	789	0
F32-PWB2B-TK-293-0-92	902394	941302	900621	930640	973754	932707
OC11-TK-266-1-00	6480000	6480000	6480000	6480000	6480000	6480000
OC11-TK-266-2-00	10800000	10800000	10800000	10800000	10800000	10800000
OC9-TK-266-1-15	4320000	4320000	4320000	4320000	4320000	4320000
OC9-TK-266-1-60	2592000	2592000	2592000	2592000	2592000	2592000
OC9-TK-266-1-75	4320000	4320000	4320000	4320000	4320000	4320000
OC9-TK-266-1-90	10800000	10800000	10800000	10800000	10800000	10800000
OC9-TK-266-2-15	4320000	4320000	4320000	4320000	4320000	4320000
OC9-TK-266-2-60	2592000	2592000	2592000	2592000	2592000	2592000
OC9-TK-266-2-75	10800000	10800000	10800000	10800000	10800000	10800000
OC9-TK-266-3-15	10800000	10800000	10800000	10800000	10800000	10800000
OC9-TK-266-4-15	4320000	4320000	4320000	4320000	4320000	4320000
OCPB1A-TK251-1-00	1459	2287	1424	1687	1195	0
PWB2-TK-266-1-60	2592000	2592000	2592000	2592000	2592000	2592000
PWB2-TK-266-1-75	4320000	4320000	4320000	4320000	4320000	4320000
PWB2-TK-266-1-90	4320000	4320000	4320000	4320000	4320000	4320000
PWB2-TK-266-2-60	2592000	2592000	2592000	2592000	2592000	2592000
PWB2-TK-266-2-75	2592000	2592000	2592000	2592000	2592000	2592000

INTEL CORPORATION, OCOTILLO CAMPUS: SEMI-ANNUAL MONITORING REPORT

REPORTING PERIOD July 1st 2020 to December 31st 2020

Throughput of some tanks is conservatively determined using maximum pump flowrate and all hours of the month when flowmeter data is unavailable.

B. VOC Emissions (from wipers, sinks, and bottles)

Table 21. Solvent usage for wipers, sinks, and bottles

Evaporative Process Emission Source	July 2020 Usage	Aug 2020 Usage	Sept 2020 Usage	Oct 2020 Usage	Nov 2020 Usage	Dec 2020 Usage
	lbs	lbs	lbs	lbs	lbs	lbs
Bottles	507.90	223.64	252.08	326.63	223.64	475.79
Sinks	1986.30	1245.59	1212.04	1236.78	1298.98	1138.91
Wipers	3599.38	3028.04	3978.28	3298.26	2630.98	2797.35

2.9 Monitoring System for Fugitive Dust Emissions from Vehicular Traffic

A. PM, PM_{10} and $PM_{2.5}$

Table 22. Emission Factors for Vehicular Traffic

Vehicular Traffic Area	$PM_{2.5}$ Emission Factor	PM_{10} Emission Factor	PM Emission Factor	July 2020	Aug 2020	Sept 2020	Oct 2020	Nov 2020	Dec 2020
	lb/Vehicle Miles Travelled (VMT)			Vehicle Miles Traveled (VMT)					
Industrial Unpaved Roads	0.046	0.460	1.598	2149.850	2149.850	2080.500	2149.850	2080.500	2149.850
Paved Roads and Parking Lot Areas	0.00005	0.00020	0.00099	116039.200	116039.200	112296.000	116039.200	32256.000	33331.200
Paved Roads in Manufacturing Areas	0.00005	0.00020	0.00099	24250.812	24250.808	20392.725	20392.728	20392.728	20392.728

Annual Compliance Certification Report

Identification of Permittee	Intel Corporation, 4500 South Dobson Road, Chandler, Arizona 85248 Permit # V15002 Rev. 0.3.0.0 / #P0006213, Facility ID F000701

The identification of each term or condition of the permit that is the basis of certification			**Compliance Status**	**Compliance: Continuous or Intermittent?**	**The method(s) used for determining the compliance status of the source, currently and over the reporting period**
Section	**Condition Number**	**Description**			**Task**
Specific Conditions	1	Allowable Source-Wide HAP Emissions Limitations	Compliant	Continuous	12 month rolling emissions calculations
	2	Plantwide Applicability Limits (PALs)	Compliant	Continuous	12 month rolling emissions calculations
	3	PAL General Requirements	Compliant	Continuous	Site Record Retention Program; Site PAL Monitoring Plan; Submitted Semi Annual Monitoring Report.
Semiconductor Manufacturing	4	Solvent Cleaning Stations	Compliant	Continuous	Site inspections; ESO (Equipment Sign Off) Program; Ventilation Program
	5	Solvent Storage and Disposal	Compliant	Continuous	Site inspections; Site waste disposal specifications; Site Hazardous Waste Program
	6	Semiconductor Systems (BSSW Thermal Oxidizer)	Compliant	Continuous	SCADA Data documentation of BSSW TO Function
	7	Control Requirements	Compliant	Continuous	Performance Testing; 12 month rolling emissions calculations; SCADA Data documentation of BSSW TO temperature and RCTO main header Negative Pressure; Maintain Site O&Ms; Daily rounds and readings to check RCTO oxidizer temperature;
	8	Operations and Maintenance Plans	Compliant	Continuous	Follow site system specifications; Document completion of PMs in Maximo database; Training Program; Maintain and submit site O&M Plans; Daily rounds and readings to check RCTO oxidizer temperature; Daily rounds and readings to check Scrubber recirculation flow, pH, and differential pressure; SCADA Data documentation of BSSW TO temperature.
Emergency Generators	9	Operational Limitations - All Engines	Compliant	Continuous	Maintain Engine Run Hours; Corporate Self Assessment Program implemented by site
	10	Fuel Limitations - All Engines	Compliant	Continuous	Maintain Fuel certification; Corporate Self Assessment Program implemented by site
	11	Emissions Limitations/Standards - IIII	Compliant	Continuous	Maintain Fuel certification; Corporate Self Assessment Program implemented by site
	12	Operating Requirements - IIII	Compliant	Continuous	Maintain engine manufacturer specifications; Maintain engine EPA certifications Maintain engine manufacturer O&M Manuals; Maintain PM Procedures based on Manufacturer's O&Ms Document completion of PMs in Maximo database Audit PM PAS (Performance Against Schedule) Corporate Self Assessment Program implemented by site
	13	Fuel Limitations - IIII	Compliant	Continuous	Maintain Fuel certification from supplier; Corporate Self Assessment Program implemented by site
	14	Monitoring - IIII	Compliant	Continuous	Maintain Non resettable meters; Corporate Self Assessment Program implemented by site
	15	General Compliance Requirements - ZZZZ	Compliant	Continuous	Maintain PM Procedures based on Manufacturer's O&Ms; Document completion of PMs in Maximo database; Corporate Self Assessment Program implemented by site
	16	Operating Requirements - ZZZZ	Compliant	Intermittent	Maintain PM Procedures based on Manufacturer's O&Ms; Document completion of PMs in Maximo database; Audit PM PAS (Performance Against Schedule); Corporate Self Assessment Program implemented by site; Deviation reporting for duration of intermitent compliance completed through the H2 2020 semi annual monitoring report.
	17	Work and Management Practices - ZZZZ	Compliant	Continuous	Maintain PM Procedures based on Manufacturer's O&Ms; Document completion of PMs in Maximo database; Corporate Self Assessment Program implemented by site
External Combustion Sources	18	Operational Limitations	Compliant	Continuous	Ensure Natural Gas Meters are installed on boilers, RCTOs, and TRMX systems; Corporate Self Assessment Program implemented by site
	19	BACT Limitations – Nitrogen Oxides and Carbon Monoxide	Compliant	Continuous	Performance Testing; Corporate Self Assessment Program implemented by site
	20	New Source Performance Standard (NSPS)	Not applicable	Not applicable	No new boilers started up during this certification period
Cooling Tower Operations	21	Operating Limitations	Compliant	Continuous	12 month rolling emissions calculations; Maintain Drift Eliminator Manufacturer Specifications; Review monthly TDS limits
Architectural Coating Operations	22	Operational Limitations / Standards	Compliant	Continuous	Site inspections; Site Contractor Chemical Approval Program Corporate MREP Chemical Approval Program
Surface Coating Operations	23	Rule 336 Applicability	Compliant	Continuous	Site inspections; Site Contractor Chemical Approval Program
	24	40 CFR 63 Subpart HHHHHH Applicability	Not applicable	Not applicable	No 40 CFR 63 Subpart HHHHHH applicability during this certification period

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The identification of each term or condition of the permit that is the basis of certification			Compliance Status	Compliance: Continuous or Intermittent?	The method(s) used for determining the compliance status of the source, currently and over the reporting period
Section	**Condition Number**	**Description**			**Task**
Storage Silos	25	Process Emissions Limitations and Controls	Compliant	Continuous	Operational overflow warning system designed to alert and allow operator to stop loading operation installed on all lime silos; Properly sized baghouse designed to meet maximum outlet grain loading of 0.01 gr/dscf installed on all lime silos; Maintain maintenance records for baghouses
Industrial Wastewater (IWW) Plant	26	Standards	Compliant	Continuous	Odor Log; Site inspections; Site waste disposal specifications; Site Hazardous Waste Program.
	27	Limitation - Hydrogen Sulfide (H_2S)	Compliant	Continuous	Odor Log; No applicable events occurred during reporting period that would trigger completing a compliance demonstration.
Fugitive Dust	28	General Requirements	Compliant	Intermittent	Multiple EHS employees maintain Rule 310 Comprehensive Certification; Daily Dust Inspections; Annual review site Dust Control Plan; Ad-hoc review and revision (if needed) of site Dust Control Plan prior to commencing new routine dust-generating operations Deviation reporting for duration of intermitent compliance completed through the H2 2020 semi annual monitoring report.
	29	Exemptions	Compliant	Continuous	Daily Dust Inspection
	30	Dust Control Plan Requirements	Compliant	Intermittent	Site Dust Control Plan is kept onsite at all times; Annual review of site Dust Control Plan; Ad-hoc review and revision (if needed) of site Dust Control Plan prior to commencing new routine dust-generating operations; Daily Dust Inspections Deviation reporting for duration of continuous compliance completed through the H1 2020 semi annual monitoring report.
	31	Visible Emission Requirements for Dust-Generating Operations	Compliant	Continuous	Daily Dust Inspection; Multiple EHS employees maintain EPA Method 9 certification; Review of EPA Method 22
	32	Exemptions from Dust-Generating Operation Opacity Limitation Requirement	Compliant	Continuous	Daily Dust Inspection and corresponding Logs
	33	Stabilization Requirements for Dust-Generating Operations	Compliant	Continuous	Stablization methods employed for each area are outlined in site Dust Control Plan; Daily Dust Inspection
	34	Soil Moisture	Compliant	Continuous	Daily Dust Inspection
	35	Dust Control Training Classes for Dust-Generating Operations	Compliant	Continuous	Maintain Dust Control training records for EHS and Drivers; Multiple EHS employees maintain Rule 310 Comprehensive Certification
	36	Dust Control Plan Revisions	Compliant	Continuous	Dust Control Plan revision submitted September 2020
	37	Records Retention	Compliant	Continuous	Daily Dust Inspection Logs
Site Wide Requirements	38	Opacity	Compliant	Continuous	Site inspections; Multiple EHS employees maintain EPA Method 9 certification
	39	Record Keeping	Compliant	Continuous	Maintain the following onsite: Monthly Purchase Inventory Review; Annual Emission Factor Report submission to MCAQD; 12 month rolling emissions calculations; Maintain and follow site system specifications; Document completion of PMs in Maximo database; Training Program; Site O&M Plans maintenance and submission records; Maintain Site Rounds and Readings; Maintain Engine Run Hours; Maintain Engine Manufacturer Specifications; Maintain Engine Manufacturer O&M Manuals; Maintain PM Procedures based on Engine Manufacturer's O&Ms; Audit PM PAS (Performance Against Schedule); Monthly review of site Natural Gas Usage; Maintain site Odor Log; Maintain site BSSW TO temperature and RCTO Negative Pressure performance date from SCADA portal; Maintain daily dust inspection records; Maintain maintenance records for storage silo baghouses; Corporate Self Assessment Program implemented by site Results.
	40	Reporting	Compliant	Continuous	Submitted Quaterly Emissions Reports; Submitted Semi Annual Monitoring Report; Corporate Self Assessment Program implemented by site
	41	Performance Testing	Compliant	Continuous	Site Performance Testing Program; Site Self Assessment; Site Peer Review of documents submitted to MCAQD; Maintain MCAQD protocol and report approval letters
	42	Air Pollution Prohibited	Compliant	Continuous	Compliance to site Title V Air Permit allowable emissions conditions
	43	Circumvention	Compliant	Continuous	Annual Applicability Review; Site Technology Transfer Process; Site ESO (Equipment Sign Off) Program; Title V Compliance Certification Process; Corporate Self Assessment Program implemented by site; Corporate Audit Program

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The identification of each term or condition of the permit that is the basis of certification			**Compliance Status**	**Compliance: Continuous or Intermittent?**	**The method(s) used for determining the compliance status of the source, currently and over the reporting period**
Section	**Condition Number**	**Description**			**Task**
	44	Certification of Truth, Accuracy, and Completeness	Compliant	Continuous	Include certification in Semi-annual monitoring report and Annual Certification report
	45	Compliance	Compliant	Continuous	Annual Applicability Review; Title V Compliance Certification Process; Corporate Self Assessment Program implemented by site; Site inspections
	46	Confidentiality Claims	Compliant	Continuous	Specify as needed in reports submitted to MCAQD
Site Wide Requirements (continued)	47	Contingent Requirements (Asbestos)	Compliant	Intermittent	EHS employee is certified AHERA Building Inspector; Site Disturbance of Material Form process; SIPP (Site Incident Prevention Process); Submitted demolition notifications to MCAQD; Corporate Self Assessment Program implemented by site; Corporate Audit Program; Site inspections; Deviation reporting for duration of intermitent compliance completed through the H1 2020 semi annual monitoring report .
		Contingent Requirements (RMP)	Compliant	Continuous	RMP submissions on file; Corporate Self Assessment Program implemented by site; Corporate Audit Program; Site inspections
		Contingent Requirements (Refrigerant)	Compliant	Continuous	Site Refrigerant Program; Site refrigerant specifications; Corporate Self Assessment Program implemented by site; Corporate Audit Program; Site inspections
	48	Duty to Supplement or Correct Application	Compliant	Continuous	Follow documented peer review process for permit applications
	49	Emergency Episodes	Not applicable	Not applicable	No Emergency Episodes occurred during this certification period
	50	Emergency Provisions	Not applicable	Not applicable	No emergency occurred during this certification period resulting in exceedence of emission limits under this permit
	51	Excess Emissions	Not applicable	Not applicable	No excess emissions during this certification period
	52	Fees	Compliant	Continuous	MCAQD verified check was submitted and received for fees.
	53	Modeling	Not applicable	Not applicable	No modeling required or performed during the reporting period
	54	Monitoring and Testing	Compliant	Continuous	12 month rolling emissions calculations; Site Performance Testing Program
	55	Permits	Compliant	Continuous	Administrative permit revision completed successfully during this certification period; Site Self Assessment Programs; Title V Compliance Certification Process; Permit continuously posted onsite in bulletin board
	56	Recordkeeping	Compliant	Continuous	Site Record Retention Program
	57	Reporting	Compliant	Continuous	Annual Emissions Inventory submitted to MCAQD; Logged any deviations identified; Site Peer Review of documents that were submitted to MCAQD; Site Self Assessment Programs; Title V Compliance Certification Process
	58	Right to Entry and Inspection of Premises	Compliant	Continuous	MCAQD Annual Inspection occurred December 2020