| | B | C |
|---|---|---|
| 1 | **Source Description** | |
| 2 | | |
| 3 | Phase I ID No. | 342 |
| 4 | EPA ID No. | MID000820381 |
| 5 | Facility Name | UPJOHN CO. |
| 6 | Facility Location | |
| 7 | City | KALAMAZOO |
| 8 | State | MI |
| 9 | Unit ID Name/No. | |
| 10 | Other Sister Facilities | |
| 11 | Number of Sister Facilities | 0 |
| 12 | Combustor Class | Onsite incinerator |
| 13 | Combustor Type | Rotary kiln |
| 14 | Combustor Characteristics | Rotary kiln, afterburner. Kiln: 5.5' diameter, 12' long. Made by C&H Combustion. |
| 15 | Capacity (MMBtu/hr) | |
| 16 | Soot Blowing | |
| 17 | APCS Detailed Acronym | WHB/QC/S/VS/DM |
| 18 | APCS General Class | WHB, WQ, HEWS, LEWS |
| 19 | APCS Characteristics | Waste heat boiler, quench, scrubber, venturi scrubber, demister. Ceilcote packed tower, 16' height, 2" Tellerette packing |
| 20 | Hazardous Wastes | Liq, sludge |
| 21 | Haz Waste Description | |
| 22 | Supplemental Fuel | ? |
| 23 | | |
| 24 | Stack Characteristics | |
| 25 | Diameter (ft) | 1.8 |
| 26 | Height (ft) | 56.0 |
| 27 | Gas Velocity (ft/sec) | 11.0 |
| 28 | Gas Temperature (°F) | 115.0 |
| 29 | | |
| 30 | Permitting Status | |
| 31 | HWC Burn Status (Date if Terminated) | |

| | B | C |
|---|---|---|
| 1 | **Condition Description** | |
| 2 | | |
| 3 | **342C1** | |
| 4 | | |
| 5 | Report Name/Date | Hazardous Waste Trial Burn Performed for the Upjohn Company, Kalamazoo, MI, December 4-6, 1990, report dated March 3, 1992 |
| 6 | Report Prepare | WW Engineering Science |
| 7 | Testing Firm | |
| 8 | Cond Descr | Trial burn, PART./METALS TESTING, HIGH SOLID FEED |
| 9 | Testing Dates | December 4-6, 1990 |
| 10 | Cond Dates | Dec-90 |
| 11 | | |
| 12 | **342C2** | |
| 13 | | |
| 14 | Report Name/Date | Hazardous Waste Trial Burn Performed for the Upjohn Company, Kalamazoo, MI, December 4-6, 1990, report dated March 3, 1992 |
| 15 | Report Prepare | WW Engineering Science |
| 16 | Testing Firm | |
| 17 | Cond Descr | Trial burn, POHC TESTING, HIGH LIQUID HW FEED |
| 18 | Testing Dates | December 4-6, 1990 |
| 19 | Cond Dates | Dec-90 |

| | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Stack Gas Emissions 2** | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | **342C1** | | | | | R1 | | R2 | | R3 | | Cond Avg |
| 5 | | | | | | | | | | | | |
| 6 | PM | E1 | gr/dscf | y | | 0.0036 | | 0.0056 | | 0.0022 | | 0.0038 |
| 7 | Arsenic | E1 | ug/dscm | y | | 0.5 | | 0.3 | | 0.4 | | 0.4 |
| 8 | Cadmium | E1 | ug/dscm | y | | 1.0 | | 0.6 | | 0.8 | | 0.8 |
| 9 | Chromium | E1 | ug/dscm | y | | 5.9 | | 1.2 | | 1.4 | | 2.8 |
| 10 | Lead | E1 | ug/dscm | y | | 29.1 | | 18.8 | | 11.8 | | 19.9 |
| 11 | Mercury | E1 | ug/dscm | y | | 6.7 | | 4.4 | | 7.7 | | 6.2 |
| 12 | SVM | E1 | ug/dscm | y | | 30.1 | | 19.3 | | 12.6 | | 20.7 |
| 13 | LVM | E1 | ug/dscm | y | | 6.4 | | 1.5 | | 1.8 | | 3.2 |
| 14 | | | | | | | | | | | | |
| 15 | Sampling Train | Particu | E1 | | | | | | | | | |
| 16 | Stack Gas Flowrate | | dscfm | | | 4604.0 | | 5056.0 | | 4980.0 | | |
| 17 | O2 | | % | | | 14.1 | | 11.7 | | 13.5 | | |
| 18 | Moisture | | % | | | 4.7 | | 4.8 | | 3.1 | | |
| 19 | Temperature | | °F | | | 116.0 | | 119.0 | | 118.0 | | |
| 20 | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | |
| 22 | **342C2** | | | | | R1 | | R2 | | R3 | | Cond Avg |
| 23 | | | | | | | | | | | | |
| 24 | HCl | E1 | ppmv | y | | 0.2 | | 0.2 | | 0.3 | | 0.3 |
| 25 | Total Chlorine | E1 | ppmv | y | | 0.2 | | 0.2 | | 0.3 | | 0.3 |
| 26 | | | | | | | | | | | | |
| 27 | Sampling Train | Haloge | E1 | | | | | | | | | |
| 28 | Stack Gas Flowrate | | dscfm | | | 4937.0 | | 5079.0 | | 5235.0 | | |
| 29 | O2 | | % | | | 11.4 | | 11.6 | | 13.5 | | |
| 30 | Moisture | | % | | | 3.4 | | 2.8 | | 3.1 | | |
| 31 | Temperature | | °F | | | 117.0 | | 118.0 | | 110.0 | | |
| 32 | | | | | | | | | | | | |
| 33 | Carbon Tetrachloride | E1 | % | | | 99.999 | | 99.999 | | 99.999 | | |
| 34 | Toluene | E1 | % | | | 99.999 | | 99.99 | | 99.999 | | |

| | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | AA | AB | AC | AD | AE | AF | AG | AH | AI | AJ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Feedstream 2** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | **342C1** | | | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | Cond Avg | | R1 | | R2 | | R3 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Feedstream Number | | | | F1 | | F1 | | F1 | | F2 | | F2 | | F2 | | F3 | | F3 | | F3 | | F4 | | F4 | | F4 | | F4 | | | | | | |
| 7 | Feed Class | | | | Solid HW | | Solid HW | | Solid HW | | Liq HW | | Liq HW | | Liq HW | | Liq HW | | Liq HW | | Liq HW | | Total | | Total | | Total | | Total | | | | | | |
| 8 | Feed Class 2 | | | | | | | | | | | | | | | | | | | | | | Total | | Total | | Total | | Total | | HW | | HW | | HW |
| 9 | Feedstream Description | | | | Rad waste sc | | Rad waste | | Rad waste sc | | Solvent prin | | Solvent prim | | Solvent prim | | Solvent secc | | Solvent secc | | Solvent sec | | Total | | Total | | Total | | Total | | | | | | |
| 10 | Feedrate | | lb/hr | | 151 | | 142 | | 142 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | Feedrate | | gpm | | | | | | | | 0.65 | | 0.75 | | 0.77 | | 1.13 | | 1.01 | | 0.95 | | | | | | | | | | | | | | |
| 12 | Heating value | | Btu/lb | | | | | | | | 12402 | | 12203 | | 12244 | | 12402 | | 12203 | | 12244 | | | | | | | | | | | | | | |
| 13 | Ash | | lb/hr | | 1.54 | | 1.85 | | 0.60 | | 0.11 | | 0.12 | | 0.13 | | 0.18 | | 0.16 | | 0.15 | | | | | | | | | | | | | | |
| 14 | Chlorine | | lb/hr | | 0.0002 | | 0.0017 | | 0.0017 | | 18.19 | | 20.97 | | 21.54 | | 31.43 | | 28.02 | | 26.44 | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | Stack Gas Flowrate | | dscfm | | 4604 | | 5056 | | 4980 | | 4604 | | 5056 | | 4980 | | 4604 | | 5056 | | 4980 | | | | | | | | | | | | | | |
| 17 | Oxygen | | % | | 14.1 | | 11.7 | | 13.5 | | 14.1 | | 11.7 | | 13.5 | | 14.1 | | 11.7 | | 13.5 | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | Ash | | mg/dscm | | 180.9 | | 147.1 | | 59.7 | | 12.6 | | 9.8 | | 12.7 | | 21.7 | | 13.1 | | 15.5 | | 215.2 | | 169.9 | | 87.9 | | 157.7 | | 215.2 | | 169.9 | | 87.9 |
| 20 | Chlorine | | ug/dscm | | 18 | | 136 | | 171 | | 2143742 | | 1669104 | | 2158418 | | 3703419 | | 2230969 | | 2649767 | | 5847179 | | 3900208 | | 4808356 | | 4851914 | | 5847179 | | 3900208 | | 4808356 |
| 21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | **342C2** | | | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | Cond Avg | | R1 | | R2 | | R3 |
| 23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | Feedstream Number | | | | F1 | | F1 | | F1 | | F2 | | F2 | | F2 | | F3 | | F3 | | F3 | | F4 | | F4 | | F4 | | F4 | | | | | | |
| 25 | Feed Class | | | | Solid HW | | Solid HW | | Solid HW | | Liq HW | | Liq HW | | Liq HW | | Liq HW | | Liq HW | | Liq HW | | Total | | Total | | Total | | Total | | | | | | |
| 26 | Feed Class 2 | | | | | | | | | | | | | | | | | | | | | | Total | | Total | | Total | | Total | | HW | | HW | | HW |
| 27 | Feedstream Description | | | | Rad waste sc | | Rad waste | | Rad waste sc | | Solvent prin | | Solvent prim | | Solvent prim | | Solvent secc | | Solvent secc | | Solvent sec | | Total | | Total | | Total | | Total | | | | | | |
| 28 | Feedrate | | lb/hr | | 130.8 | | 87.9 | | 49.6 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | Feedrate | | gpm | | | | | | | | 0.88 | | 1.68 | | 1.72 | | 0.97 | | 0.70 | | 0.64 | | | | | | | | | | | | | | |
| 30 | Heating value | | Btu/lb | | | | | | | | 12217 | | 12710 | | 12215 | | | | | | | | | | | | | | | | | | | | |
| 31 | Ash | | lb/hr | | 0.05 | | 0.38 | | 0.43 | | 0.164 | | 0.314 | | 0.321 | | 0.182 | | 0.131 | | 0.119 | | | | | | | | | | | | | | |
| 32 | Chlorine | | lb/hr | | 0.223 | | 0.002 | | 4.96E-05 | | 24.6 | | 47.1 | | 48.1 | | 27.2 | | 19.6 | | 17.8 | | | | | | | | | | | | | | |
| 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 34 | Stack Gas Flowrate | | dscfm | | 4937 | | 5079 | | 5235 | | 4937 | | 5079 | | 5235 | | 4937 | | 5079 | | 5235 | | | | | | | | | | | | | | |
| 35 | Oxygen | | % | | 11.4 | | 11.6 | | 13.5 | | 11.4 | | 11.6 | | 13.5 | | 11.4 | | 11.6 | | 13.5 | | | | | | | | | | | | | | |
| 36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 37 | Ash | | mg/dscm | | 4.1 | | 29.6 | | 41.1 | | 13.0 | | 24.6 | | 30.6 | | 14.4 | | 10.3 | | 11.3 | | 31.5 | | 64.6 | | 83.1 | | 59.7 | | 31.5 | | 64.6 | | 83.1 |
| 38 | Chlorine | | ug/dscm | | 17591 | | 193 | | 5 | | 1945298 | | 3690474 | | 4584129 | | 2151212 | | 1538481 | | 1697056 | | 4114101 | | 5229148 | | 6281189 | | 5208146 | | 4114101 | | 5229148 | | 6281189 |

| | C | D | E | F | G |
|---|---|---|---|---|---|
| 1 | **Process Information 2** | | | | |
| 2 | | | | | |
| 3 | **342C1** | | R1 | R2 | R3 |
| 4 | | | | | |
| 5 | Kiln Temperature | F | 1265 | 1470 | 1405 |
| 6 | Afterburner Temperature | F | 1990 | 2030 | 2001 |
| 7 | | | | | |
| 8 | **342C2** | | | | |
| 9 | | | | | |
| 10 | Kiln Temperature | F | 1405 | 1890 | 1900 |
| 11 | Afterburner Temperature | F | 1970 | 2075 | 2055 |