United Launch Alliance

Enclosure A Responses

1) United Launch Alliance, LLC (ULA) is currently a manufacturing plant (focused factory) in Morgan County near Decatur, Alabama producing the Delta IV and the Delta II launch vehicles for the Air Force's Evolved Expendable Launch Vehicles (EELV) program. In calendar year 2009 manufacturing and final assembly of the former Lockheed-Martin Atlas V rocket is also expected to be integrated into the Decatur factory as a part of the Boeing – Lockheed-Martin joint venture "United Launch Alliance". The ULA – Decatur facility began manufacturing operations in 1999 producing the Delta IV rocket and then, in 2004 Delta II manufacturing operations were transferred from Pueblo, CO to Decatur; all Delta IV and Delta II manufacturing operations have remained constant. ULA – Decatur operations currently discharges waste water under State Indirect Discharge (SID) permit # IU 085200486.

2) SIC Code – 3761 / NAICS Code – 336414 (Guided Missile and Space Vehicle Manufacturing)

3) ULA manufacturing primarily involves milling and machining aluminum 2219 as plates and forgings for vehicle skins, tanks, rings, and tank domes. Finished parts are then sent through the chemical tank center using 'dip' processing to ensure surface integrity and, finally, sent to the factory for vehicle build up and integration.

Raw Materials

The following materials received into the plant are utilized in production operations and consequently affect final waste water discharge (see attached Material Safety Data Sheets (MSDSs) – Note: Some MSDSs represent concentrates – final chemical solution dilutions are detailed below):

- Aluminum Skins, rings, domes (2219 alloy)
- Machine Coolant – Full synthetic (Cimtech 310 – 5%)
- Maskant (AC818T)
- Alkaline Cleaner (Turco 6849 – ~10%)
- Alkaline Cleaner (Ardrox 157B)
- Alkaline Etch (Nova EC-202L – 5-10%)
- Desmut (Deoxalume 2310, 10% Nitric Acid)
- Dye Penetrant (Magnaflux ZL 60 B)
- Nitric Acid solutions (~10%)
- Sulfuric Acid solutions (~10%)
- Dilute Chromium Seal (Sodium Dichromate – 50 ppm)
- Sodium Metasilicate solution (50 ppm)

MSDSs will reflect any constituents that may be considered PFC compounds. Estimated discharged materials are discussed in section 5.

4) MSDSs provided represent materials that are utilized in production operations contributing to final waste water discharges.

5) The use of PFC compounds, as defined by the 'Enclosure A' – alcohols, amines, phosphates, etc., are represented in chemical concentrations that ultimately reach final waste water discharge in dilute concentrations. Process use dilutions of these chemicals are listed in section 3. Final waste water discharges resulting from production are the result of rinsing operations for the following materials after part dipping or manual coating:

- Maskant (AC818T) – spot application around bolt holes and connection points.
- Alkaline Cleaner (Turco 6849 – ~10%) – dip tank.
- Alkaline Cleaner (Ardrox 157B – 10:1 water-conc. mix) – wash booth cleaner.
- Alkaline Etch (Nova EC-202L – 5-10%) – dip tank.
- Desmut (Deoxalume 2310, 10% Nitric Acid) – dip tank.
- Dye Penetrant (Magnaflux ZL 60 B 10:1 water – conc. rinse mix)
- Nitric Acid solutions (~10%) – dip tank.
- Sulfuric Acid solutions (~10%) – dip tank.
- Dilute Chromium Seal (Sodium Dichromate – 50 ppm) – dip tank.

Dip tank solutions are introduced into final waste water collection as residues on manufactured parts such as aluminum skins, rings, and domes. Calculated volumes of tank solutions as drag out and residues on parts equal ~ 1.5 gallons on skins and < 1 gallon on rings and domes. Each part is then rinsed with city water through automatic spray rinse tanks at a rate of 110 gallons / minute. Typical rinse times range from 5 to 10 minutes resulting in 550 - 1100 gallons of waste water per part. Maskant to part application is limited to spot application to bolt holes and connection point on parts. This material is applied and allowed to cure prior to being introduced into the tank line treatment process. Alkaline wash booth cleaner (Ardrox 157B) is used as a concentrate connected to a water source for cleaning and rinsing coolant residues from parts prior to tank line chemical processing. The cleaner is used at an approximate 10:1 water mixture. One 55 gallon drum of concentrate typically lasts 3 to 4 months. Dye penetrant (Magnaflux) is applied to parts after tank line chemical process to reveal any part deficiencies. Application is achieved by manually spraying the penetrant directly to the part and then using black fluorescent lighting to identify imperfections. Approximately 2-3 gallons of dye penetrant are used for surface coating. The parts are then rinsed by automatic spray heads for 5 – 10 minutes resulting in a 10:1 water to pent mixture. All waste waters are collected with site RO system reject waters, wash booth rinsate, and air scrubber blow down waters to represent typical final waste water from the ULA – Decatur Operations site.

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Machine coolant solutions used since the beginning of production are full synthetic (water-based) and are typically discharged once each calendar year end for preventive maintenance activities during site holiday shut down. Prior to spent coolant discharge, Decatur Utilities is notified in writing with a copy of the MSDS, along with the specific discharge days and times as well as projected amounts.

6) Regarding the use of PFCs at the ULA – Decatur facility, only materials represented in this report have been utilized since the beginning of manufacturing operations in 1999.

7) The following data represents byproduct, waste, and emission source data from ULA – Decatur manufacturing operations:

- By-product / scrap:
  - Domestic trash, refuse to incinerator (Covanta – Huntsville, AL), and landfill.
  - Scrap metals, turnings: Tennessee Valley Recycling.

- Waste Program (EPA ID# ALR000009365)
  - Hazardous waste solids – solid paint, coating, solvent wiping debris
  - Hazardous waste solids – flammable lab pack items
  - Waste paint / solvent mixtures
  - Waste batteries
  - Waste aerosol cans
  - Waste caustic / acidic filters
  - Used Oils
  - Universal Wastes

- Air Emission Sources (ADEM Permit # 712-071 [X011 – X019])
  - Primer coating booths
  - Spray on foam coating booths
  - Adhesive resin coating booths
  - Final coating paint booths

Current core production operations remain unchanged since initial production began in 1999.

8) Disposal methods for by products and waste materials are as follows:

- Scrap metals, including aluminum, steel, copper, etc. are consolidated and removed from the ULA – Decatur site to Tennessee Valley Recycling of Decatur.
- Hazardous and Regulated waste materials are provided to our current site waste contractor Rineco based in Benton, AR.

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- Universal waste bulbs and ballasts are provided to Veolia based in Tallahassee, FL.
- Domestic trash and refuse is collected and provided to Covanta of Huntsville, AL for incineration. The Morgan County landfill is also utilized as a domestic trash disposal site.

9) In 2006, ULA – Decatur operations began to employ the use of a clay-flocculent batch waste water treatment system for metals removal from tank line solutions that are decanted to refresh each bath. Tanks decanted are the 10% Nitric Acid tank (Desmut), 10% Sulfuric Acid tank (Anodize), and the dilute Chromium seal tank (50 ppm hexavalent chromium in solution). The treatment system has a 4,000 gallon capacity and currently engages in infrequent treatment; average treatment decants sent to this system are approximately 500 – 1,000 gallons per month.

10) Please see the attached Total Toxic Organics (TTO) analytical results for review.

11) Please see the attached, current State Indirect Discharge (SID) permit (# IU085200486) as issued by the Alabama Department of Environmental Management (ADEM).

12) To date, ULA – Decatur operations (formerly The Boeing Company – Delta Manufacturing Operations) has not performed any monitoring for PFC compounds in ambient air, surface water, groundwater, or soil.

ENCLOSURE A

For purposes of this Clean Water Act Section 308 Information Request, the term "perfluorinated compounds (PFCs)" shall mean fluorinated or perfluorinated chemicals including, but not limited to, fluoropolymers or fluoropolymer dispersions and any of the following compounds with perfluorochain lengths between 4 and 16 carbons: carboxylates (such as perfluorooctanic acid (PFOA)), amines, ethers, iodides, phosphonic/phosphinic compounds, alcohols, esters, phosphates, sulfonates (such as perfluorooctyl sulfonate (PFOS)), siloxanes, thioethers, urethanes, and acrylates.

1. Provide a narrative description of the products manufactured or services provided by the Company's primary and secondary business at its Decatur, Alabama location for each calendar year beginning with calendar year 1996 to the present.

2. Provide the Standard Industrial Classification and North American Industry Classification System codes for the Company's business(es) at its Decatur, Alabama location for each calendar year beginning with calendar year 1996 to the present.

3. Provide a list and a general estimate of the amounts of raw and finished materials that may have contained PFCs which were used in the Company's operations to manufacture products or provide services at its Decatur, Alabama location for each calendar year beginning with calendar year 1996 to the present.

4. Provide a copy of the Material Safety Data Sheets for the raw materials used in the Company's operations to manufacture products or provide services at its Decatur, Alabama location for each calendar year beginning with calendar year 1996 to the present.

5. Has the Company ever used PFCs in its operations to manufacture products or provide services at its Decatur, Alabama location? If so, provide the name of the PFC and a general estimate of the amounts used for each calendar year beginning with calendar year 1996 to the present.

6. Has the Company ever used telomers or fluoropolymers in its operations to manufacture products or provide services at its Decatur, Alabama location? If so, provide the name of the telemoer or fluoropolymer and a general estimate of the amounts used for each calendar year beginning with calendar year 1996 to the present.

7. Provide a narrative description of the byproducts, waste streams and emissions from the Company's operations to manufacture products or provide services at its Decatur, Alabama location for each calendar year from calendar year 1996 to the present.

8. Provide a narrative description of the disposal methods and disposal locations of the byproducts, waste streams and emissions from the Company's operations to manufacture products or provide services at its Decatur, Alabama location for each calendar year from calendar year 1996 to the present.

9. Provide a narrative description of any pollution abatement equipment and/or pretreatment process that has been applied to the byproducts and waste streams from the Company's operations to manufacture products or provide services at its Decatur, Alabama location prior to their discharge into the Decatur Utilities sewer system for each calendar year beginning with calendar year 1996 to the present.

10. Provide any analytical data or monitoring results indicating the presence of PFCs or fluoride in the byproducts and waste streams from the Company's operations to manufacture products or provide services at its Decatur, Alabama location that were discharged into the Decatur Utilities sewer system for each calendar year beginning with calendar year 1996 to the present.

11. Provide a copy of any permit, contract or agreement that the Company may have or have had relating to the discharge of byproducts and waste streams into the Decatur Utilities sewer system (include with this information copies of any permit applications) for each calendar year beginning with calendar year 1996 to the present.

12. Has the Company performed any monitoring or sampling of ambient air, surface water, groundwater or soil for PFCs at and around the Company's Decatur, Alabama location? If so, provide the resulting analytical data or monitoring results.