

LLRW Disposal Update

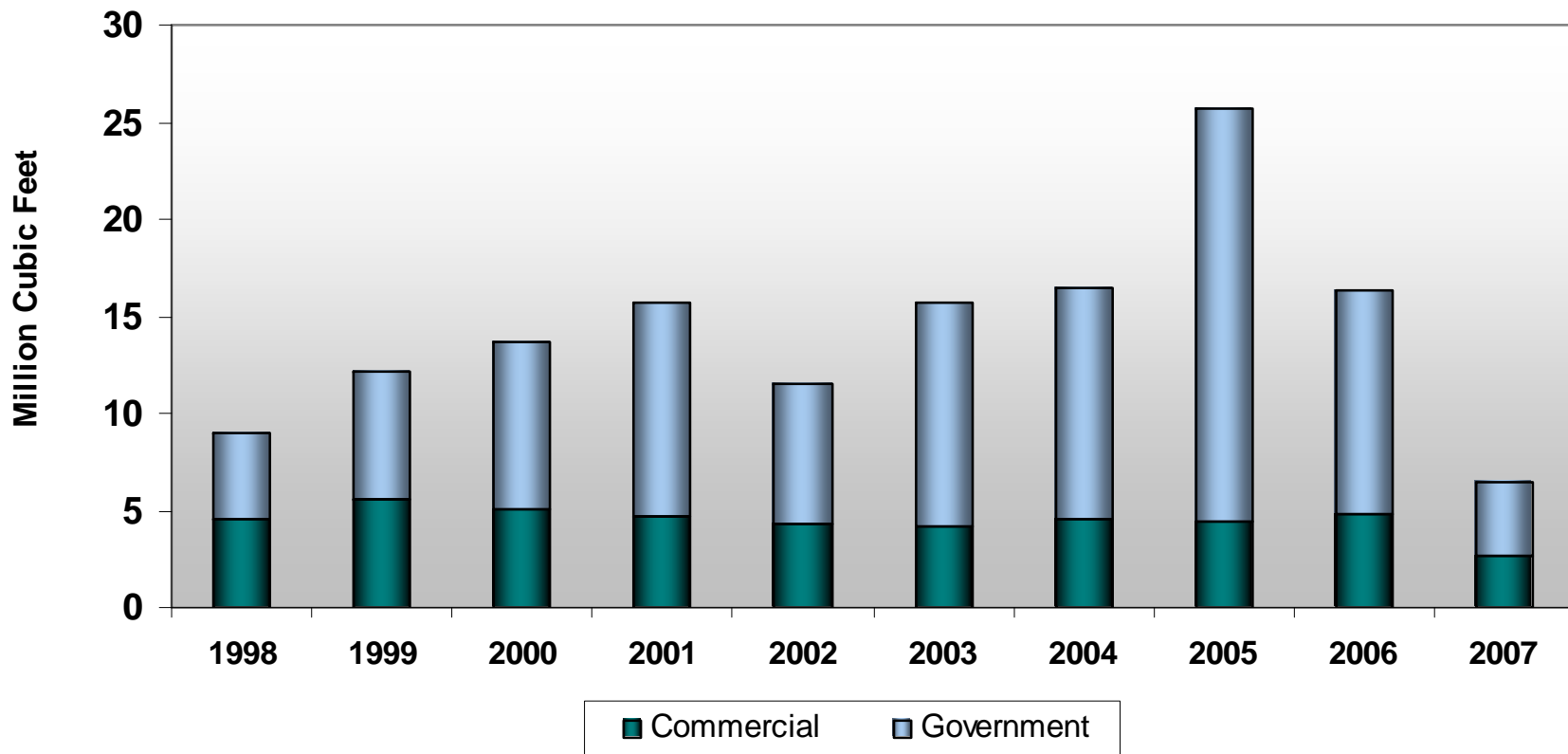
February 26, 2008

Dan Burns
Technical Services



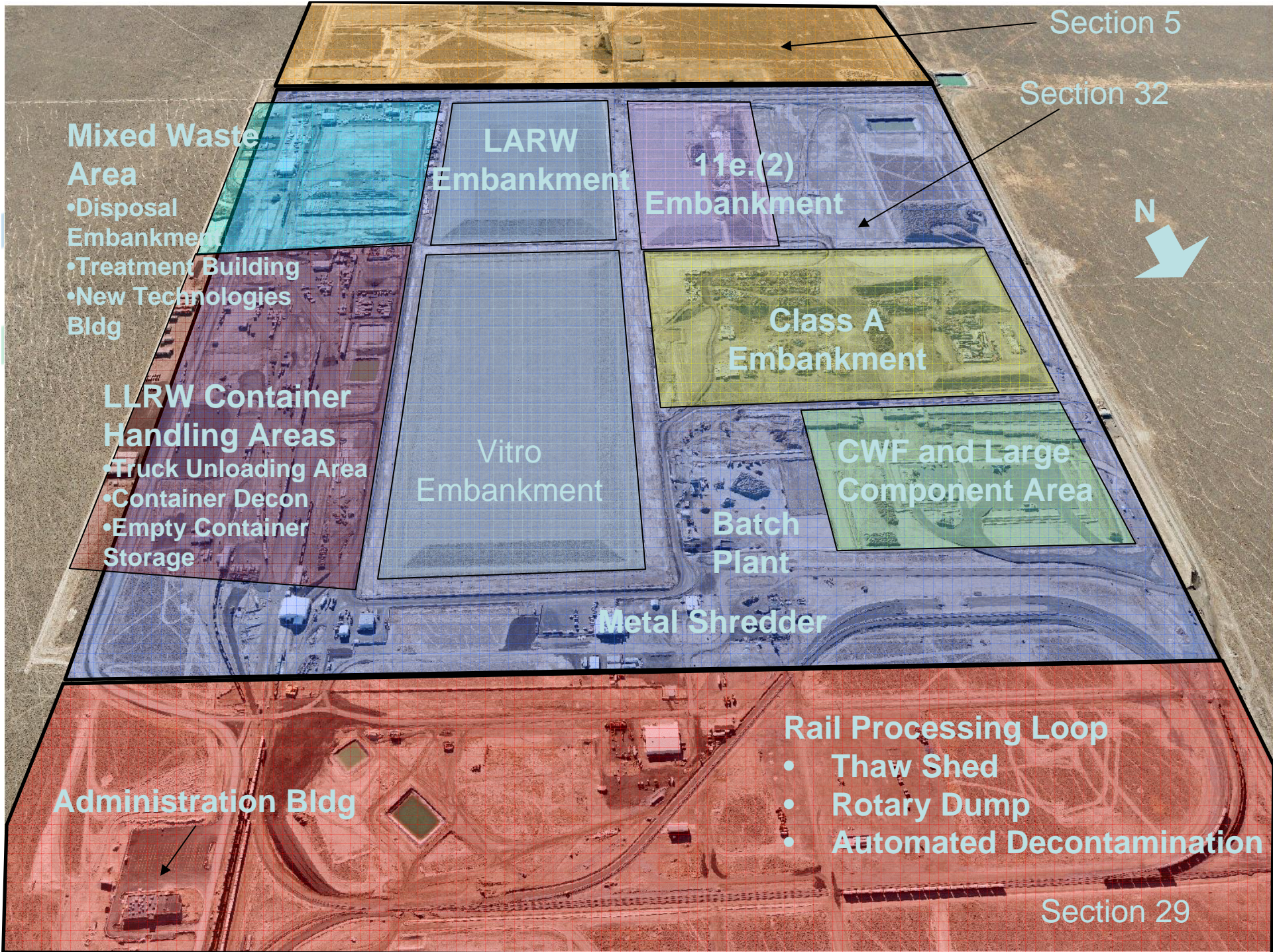
EnergySolutions Waste Volumes

Annual Waste Volume Received at EnergySolutions
(1998 to 2007)



Utah's West Desert





Section 5

Section 32



Mixed Waste Area

- Disposal Embankment
- Treatment Building
- New Technologies Bldg

LARW Embankment

11e.(2) Embankment

Class A Embankment

LLRW Container Handling Areas

- Truck Unloading Area
- Container Decon
- Empty Container Storage

Vitro Embankment

Batch Plant

CWF and Large Component Area

Metal Shredder

Administration Bldg

Rail Processing Loop

- Thaw Shed
- Rotary Dump
- Automated Decontamination

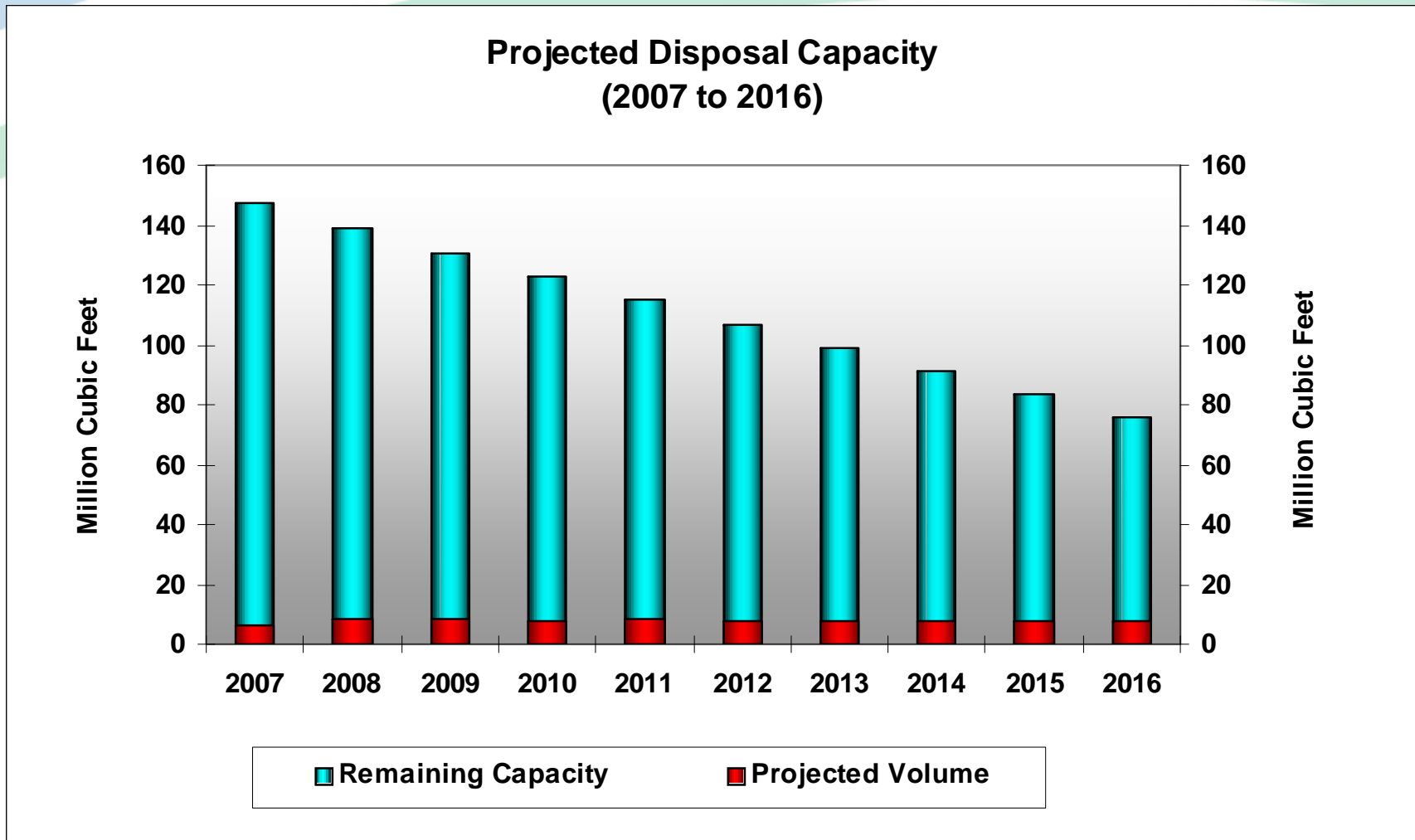
Section 29

Clive Disposal Capacity



Remaining Clive Capacity
LLRW - 154 Million ft³ MLLW – 9.5 Million ft³

Clive LLRW Disposal Capacity



Transfer Station Operations



- Commodity DAW and Metals “Commercially Certified” for Clive disposal replacing Incineration and Compaction
- Replaces the Alaron IRF
- Customer Benefit:
 - Speed of processing/disposition (less than 45 day average to disposal)
 - Reduced Price under “Easy Ship” Service Line
- Transfer Station Commissioned September 2006
 - 40’ long 12’ high Container Pit Installed in Metals Building



“Super Gons”



6,250 ft³ Capacity



“Super Gon” (Equivalent Volume)



One Super Gon shipment is equivalent to...



six truck shipments with Cargo Containers or...



nine intermodals



Waste Acceptance Documents



All documents available online at www.energysolutions.com

Radioactive Material License
#UT 2300249

Containerized Waste Facility –
Waste Acceptance Criteria, Rev 6
(Class A LLRW, > 200 mR/hr pkgs)

Bulk Waste Disposal
and Treatment Facilities –
Waste Acceptance Criteria, Rev 6
(Class A LLRW, < 200 mR/hr pkgs)

LICENSE AMENDMENT

**UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF RADIATION CONTROL
RADIOACTIVE MATERIAL LICENSE**

Pursuant to Utah Code Annotated, Title 19, Chapter 3 and the Radiation Control Rules, Utah Administrative Code (UAC) R315, and in reliance on statements and representations heretofore made by the Licensee designated below, a license is hereby issued authorizing the Licensee to transfer, receive, possess, and use the radioactive material designated below; and to use radioactive material for the purpose(s) and at the place(s) designated below. The license is subject to all applicable rules, and orders now or hereafter in effect and to all conditions specified below:

LICENSEE) 3. License Number UT 2300249
)) Amendment # 22C

1. Name EnergySolutions, LLC (Envirosure)))

2. Address 423 West 500 South) 4. Expiration Date
Suite 200) October 22, 2003 (Under Timely Renewal
Salt Lake City, UT 84101))



5. License Category 4-a

6. Radioactive Material (element and mass number)	7. Chemical and/or physical form	8. Maximum Radioactivity and/or quantity of material the licensee may possess at any one time.
A. Any Radioactive Material including Special Nuclear Material specified in License Condition 13.A through J.	A. and B. Notwithstanding Conditions 9 (Authorized User), 16 (Prohibitions and Waste Requirements), and 56 (contaminated waste), typically large volume, bulky or containerized, soil or debris. Debris can include both decommissioning (cleaning) and routinely generated operational waste including but not limited to radiologically contaminated paper, piping, rocks, glass, metal, concrete, wood, bricks, resins, sludge, tailings, slag, residues, personal protective equipment (PPE) that conforms to the size limitations in currently approved QA/QC Manual.	A. 20,000 Curies***
B. Special Nuclear Material		B. As specified in License Condition 13.A through J.

ENERGYSOLUTIONS

**ENERGYSOLUTIONS
Containerized Waste Facility
Waste Acceptance Criteria**

Revision 6

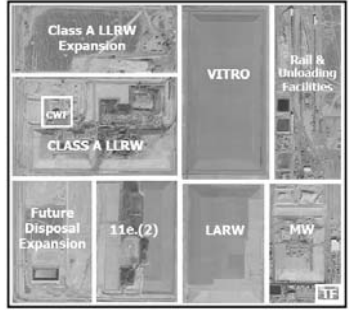
Corporate Offices
423 West 500 South, Suite 200
Salt Lake City, UT 84101
Phone: (801) 649-2000
Fax: (801) 537-7345

Containerized Waste Facility
Interstate 80, East 49
Clive, UT 84029
Phone: (801) 649-2010
Fax: (801) 413-5652

ENERGYSOLUTIONS

**Bulk Waste Disposal and Treatment Facilities
Waste Acceptance Criteria**

Revision 6
(Includes Class A LLRW, Mixed Waste, and 11e(2) Disposal Embankments)



Corporate Office
423 West 500 South, Suite 200
Salt Lake City, UT 84101
Phone: (801) 649-2000
Fax: (801) 537-7345

Disposal and Treatment Facility
Interstate 80, East 49
Clive, UT 84029
Phone: (435) 884-0155
Fax: (435) 984-3549

Large Component Management



Containerized Waste Facility



Mixed Waste Stabilization



- **Stabilization of RCRA metals by mixing reagents with waste**
- **Shredder used for debris prior to stabilization**
- **Desire soil-like treated waste stream for disposal**
- **Treatability study performed during approval of waste profile**

Macroencapsulation

- **Radioactive Lead Solids**
- **Alternative Treatment Standard for Hazardous Debris (40 CFR 268.45)**
 - > 60 mm particle size (tennis ball)
 - “Primarily” debris in the package
- **MACRO Vaults – Large Components**



Mercury Treatment

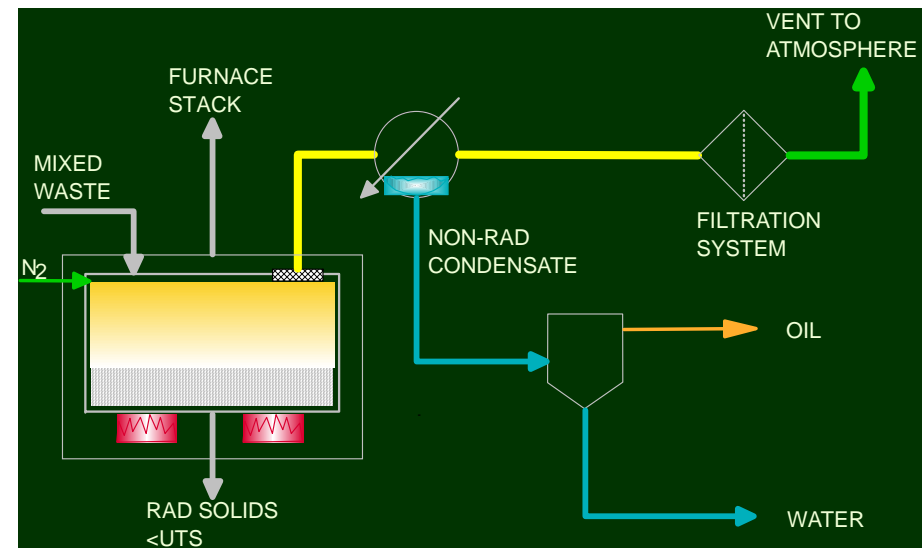


- **Low Subcategory Mercury (< 260 ppm)**
 - **Stabilization to meet concentration based treatment standard of 0.025 mg/L TCLP**
- **High Subcategory Mercury (\geq 260 ppm)**
 - **Utah DSHW granted site-specific Treatment Variance**
- **Elemental Mercury Contaminated with Radioactive Materials**
 - **Radioactive Material License and RCRA Part B Permit have been amended to receive and treat elemental Hg via AMLGM**
 - **Permitted new mixer at Treatment Facility for elemental Hg**
- **Alternative Treatment Standard for Hazardous Debris - MACRO**
 - **Elemental mercury should be removed to the extent practical such as draining pumps, hoses, pipes, etc. and wiping excessive mercury from external surfaces**
 - **Mercury contaminated “debris” may be macroencapsulated**



Vacuum-Assisted Thermal Desorption

- Separation of organics for further treatment
- Incineration of condensate (organic liquid)
- Verification of residue for LDR compliance and final disposal
- Currently operating under Interim Operation Status until final permit is issued by the Utah DSHW



Liquid Solidification

- **Utah Administrative Code (UAC R313-15-1008)**
 - “Solid waste containing liquid shall contain as little free-standing and non-corrosive liquid as is reasonably achievable, but in no case shall the liquid exceed one percent of the volume”
 - Liquid waste is greater than 1% free standing liquid by waste volume

- **Solidification and/or treatability study performed on liquid waste streams**

- **Process tanker trucks up to 20,000 gallons per day**



Exit 49 - Clive Services



Exit 49 – Clive Services Treatment & Disposal





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