

# VS GROUP

WASTE MANAGEMENT - MARCH 2015



# CAVANAUGH MIMS, PRESIDENT VISIONARY SOLUTIONS, LLC



- B.S., Nuclear Engineering, University of Tennessee
- 28 years experience in nuclear engineering, program management, logistics and transportation, and materials disposition
- 12 years experience with the U.S. Department of Energy as a senior program/project manager
- Formed Visionary Solutions, LLC in 2000 to provide high quality solutions to complex technical challenges:
  - Transportation and logistics
  - Materials disposition
  - Nuclear operations
  - Training and Technical services

*“Celebrating our 15<sup>th</sup> Year”*



# VS GROUP

- Visionary Solutions, LLC
- Interstate Ventures, Inc.
- Advanced Recycling and Reclamation Centers (ARRC)
- Visionary Fabrication and 3D Design, LLC (VFab3D)
- High Incident Safeguard Solutions (HISS)  
(SDVOSB Transportation Protégé)
- Aleut World Solutions (AWS)  
(ANC Joint Venture w/ Bering Sea Environmental (BSEn))

2000  
VS Formed

*From program management, logistics transportation, and technical services to alternative/renewable fuels & advanced manufacturing*

*2015 and Beyond  
Advanced Recycling,  
Reclamation & Manufacturing*



# VS BUSINESS UNIT *TRANSPORTATION AND LOGISTICS*

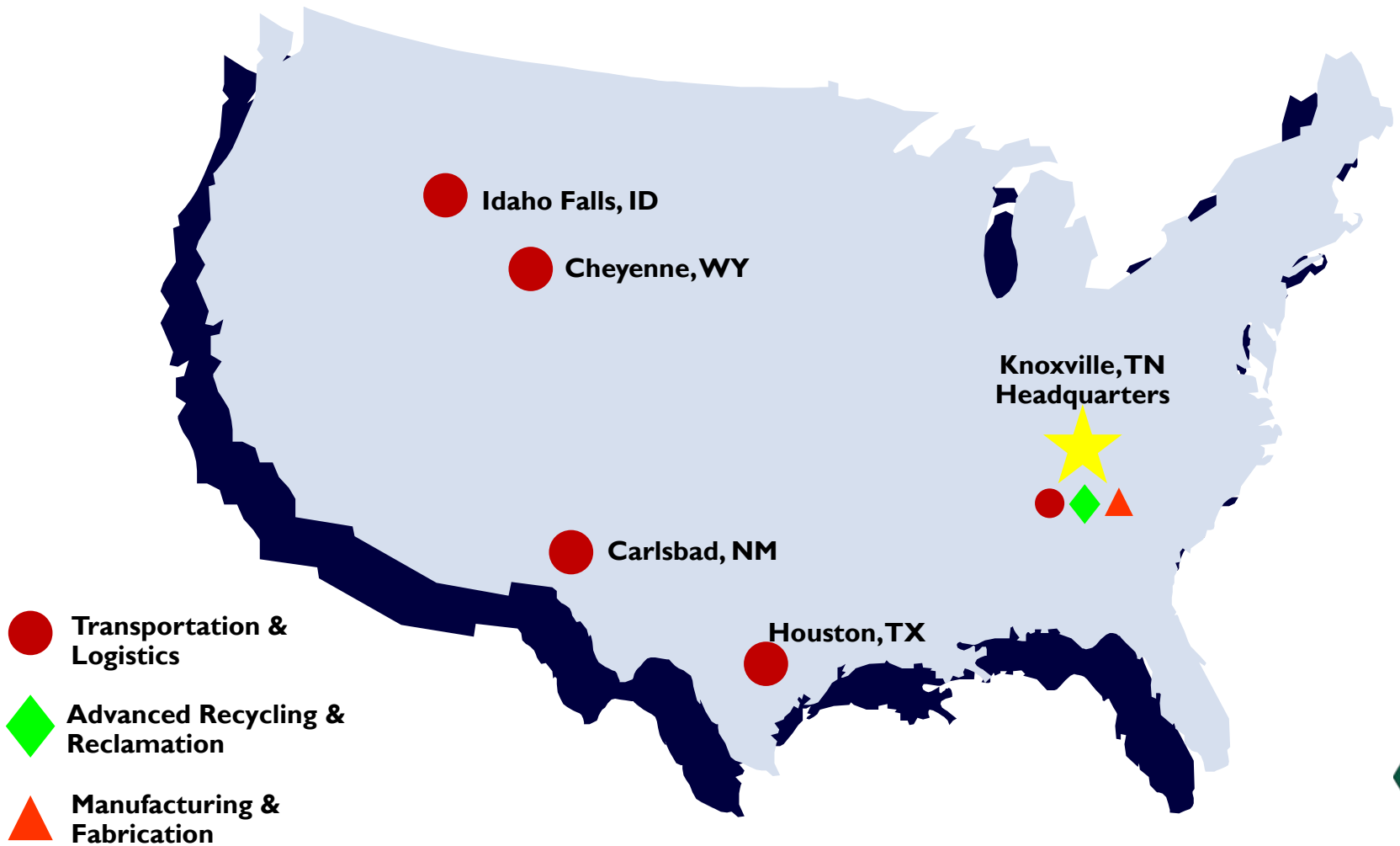


- Premier provider of transportation, logistics and technical services
- Waste management and Haz/Rad disposition support
- Two DOE-MCEP Approved Transportation Fleets
  - Small Business WIPP Transportation Contractor (VS)
  - DOE/Commercial Haz (Class 1, 7) Transporter (IV)
- DOE and NRC Classified Shipments
  - Type A, Type B, RAM/HRCQ, etc.
- Single/Team, Heavy Haul Operations
- Outstanding equipment maintenance record <1% downtime

## Current Metrics

- ✓ **Tractors** – 40
- ✓ **People** – 88 employees
- ✓ **Revenue** – ~\$15M annually
- ✓ **Facilities** –
  - Knoxville, TN – 9.3 acres
  - Carlsbad, NM – 5 acres
  - Cheyenne, WY – 2 acres

# VS – WHERE WE ARE



# VS TRANSPORTATION

- Federal Haz/Rad Transport
  - DOE/CBFO WIPP TRU Transportation
  - ITG/AMWTP Support
  - Prime Contractor Support
  - DoD Arms, Ammunition & Explosives
- Commercial Haz/Rad Transport
  - HRCQ/Type B Transportation
  - Commercial Generator Support (Type A)
  - Commercial Nuclear Technology Support
  - Commercial Explosive Transportation Support (Class I)



# VS TRANSPORTATION - ACCOMPLISHMENTS

TRANSPORTATION CAMPAIGN	HAZ/RAD MATERIAL	PRIME/SUB	DISPOSAL DESTINATION	Year/Complete
DOE-Fernald	11e(2) soils	Sub (Fluor)	WCS	2004
DOE-ORO	DUF6 Cylinders	Prime	PORTS	2006
DOE-GTRI	SNF	Sub(P2S)	SRS	2009
DOE-SPRU	LLW	Sub(MHF)	NNSS	2009
DOE-SPRU	Contaminated H2O	Sub (URS)	Perma-Fix NW	2014
DOE-CBFO	TRU	Prime	WIPP	Current
DOE-AMWTP	LLW/MLLW	Sub (ITG)	Clive, NNSS	Current
DOE-TWPC	LLW/MLLW	Sub (WAI)	NNSS	Current
DOE-KAPL	TRU	Sub (MHF)	TWPC	Current
WCS	LLW-Type A/B	Prime	WCS	Current
Commercial	Sensitive Nuclear Technology	Prime	Eunice, NM	Current
Dyno-Nobel	Class 1 Exp	Prime	Cheyenne, WM	Current



15 Years of Critical HAZ/RAD Transportation Support



# VS TRANSPORTATION EQUIPMENT



Trailers	Qty
Conestogas	11
Transcraft Flatbeds	38
Lowboy Cask Trailers	4
Sprinter Van	1

Tractors	Qty
Peterbilt	36
Freightliner	2
Western Star	2

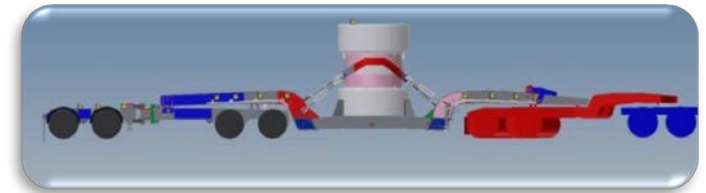
Qty	Equipment	Model	Owner
2	Type A Cask	14-212	TTS
1	Type A Cask	Super 200	TTS
3	Type B Cask	Robatel RT-100	WCS
9	Contaminated Liquid Tankers	Tanker	DTS



# VS BUSINESS UNIT

## *TECHNICAL SERVICES*

- Subject Matter Expertise
  - Regulatory Support –
    - CONUS, OCONUS, NRC, DOT, DOE, DoD
  - Unknown Component Planning, Disposition
    - NEXUS for Disposal Assessments
  - Shipping Services
- Full Service Design Capability
  - Package Design and Fabrication
    - Design/Procurement - Type A and Type AF packages
  - Trailer Design and Fabrication
    - Design/Procurement - RT-100 Type B Cask Trailer



*“We Move the High Hanging Fruit”*

# VS TECHNICAL SERVICES - ACCOMPLISHMENTS

CLIENT	SCOPE	PRIME/ SUB	ORIGINATION	COMMENTS
DOE-ORO	SNF	Prime	Penn State	Planning, Execution
DOE-ORO	Irradiated Hardware	Prime	University of Nebraska	Planning, Execution, Disposal
DOE-ORO	DOT Exemption - Fissile Material	Prime	Oak Ridge	Planning, Execution, Approval
DOE-GTRI	Sealed Source	Sub (P2S)	Tufts, Boston	Planning, Execution, Disposal
Northrup-Grumann	Th Contaminated Equipment	Prime	Chicago, IL	Planning, Execution, Disposal
NASA-Glenn Research Center - Plumbrook	Contaminated Control Rods	Sub (WMG)	NNSS	Planning, Execution, Disposal
Loveless Labs - Kirtland AFB	Suspected UF6 Cylinder	Sub (Eberline)	ABQ, NM	Planning, Disposal Options



# VS BUSINESS UNIT

## ADVANCED RECYCLING AND RECLAMATION

### **Waste Accepted**

- Red Bag Medical
- Used Oils
- Tires
- Plastics
- Food and Organic Waste

### **ARRC Technologies**

- Plastic and medical waste sterilization and shredding
- Pyrolysis to convert petroleum based materials to diesel fuel or synthetic crude oil
- Anaerobic digestion to convert food waste and bio solids to Electricity, CNG and Compost

### **ARRC Products**

- Synthetic Oil or Low Sulfur Diesel
- Combined Heat and Power
- Compressed Natural Gas
- Compost and Fertilizer
- Carbon Char

# VS GROUP BUSINESS UNITS - VFAB

## ADVANCED MANUFACTURING & FABRICATION

- Services:
  - 3D scanning and design services
  - Fabrication using 3D printing
  - Access to advanced manufacturing services
- One-of-a-kind, unique component development, focus on complex geometries:
  - Prototypes
  - Molds
  - Parts and tooling
  - Medical devices
- Materials:
  - Ceramics
  - Metals (stainless steel, aluminum, titanium)
  - Polymers
  - Carbon Fiber
- Markets:
  - Firearms
  - Aerospace
  - Automotive
  - Medical



# WASTE MANAGEMENT - 2015



## TRANSPORTER CHALLENGES & ISSUES



# LESSONS LEARNED/URBAN MYTHS OR “WHAT YOUR CUSTOMER BELIEVES”

## ■ The Market

## ■ Politics

- Tighten the Requirements
- Drivers
  - Route Restrictions, Credentials
- Pricing
  - One Way vs Round Trip



## ■ Equipment Contamination

- DOT vs DOE Free Release Criteria
- DOE vs DOT Transportation Requirements\*
  - *Personal property* includes privately-owned transportation equipment
  - Property leaving a DOE radiological control area must comply with DOE Order 458.1 clearance requirements, whether DOE-owned or not
  - Residual radiological contamination on commercial trailers from DOE activities considered DOE property
  - DOE Order 458.1 does not contain exclusion language similar to that in 10 CFR 835 and other DOE Orders – No provision for contamination resulting from DOT-regulated activities

# RAD WASTE TRANSPORTER MARKET – IS IT SHRINKING?

- US – DOE – Large Transportation Projects
  - Declining but still viable
- US – DoD/ACE
  - Preference for Rail
- Other Federal/Commercial
  - Low Volume





# DOE-EM DISPOSAL PROJECTIONS\*

Generator Site	FY 2014 (k ft3)	FY 2015 Preliminary Forecast
Portsmouth GDP (OH)	551,130	592,250
Oak Ridge Reservation (TN)	178,870	318,300
Oak Ridge NNSA/Y-12 (TN)	197,800	125,400
Los Alamos National Lab (NM)	7,800	193,800
Idaho Site (ID)	93,920	149,400
Livermore National Lab (CA)	41,870	26,600
Paducah GDP (KY)	20,120	11,100
NNSA/Nuclear Fuel Services (TN)	82,140	7,400
Onsite NNS (NV)	4,130	19,000
Savannah River (SC)	4,180	9,200
Berkeley (CA)	xxxxxx	177,930
West Valley (NY)	5,210	20,100
All other sites	<u>82,530</u>	<u>60,900</u>
<b>Total</b>	<b>1,269,320</b>	<b>1,711,350</b>

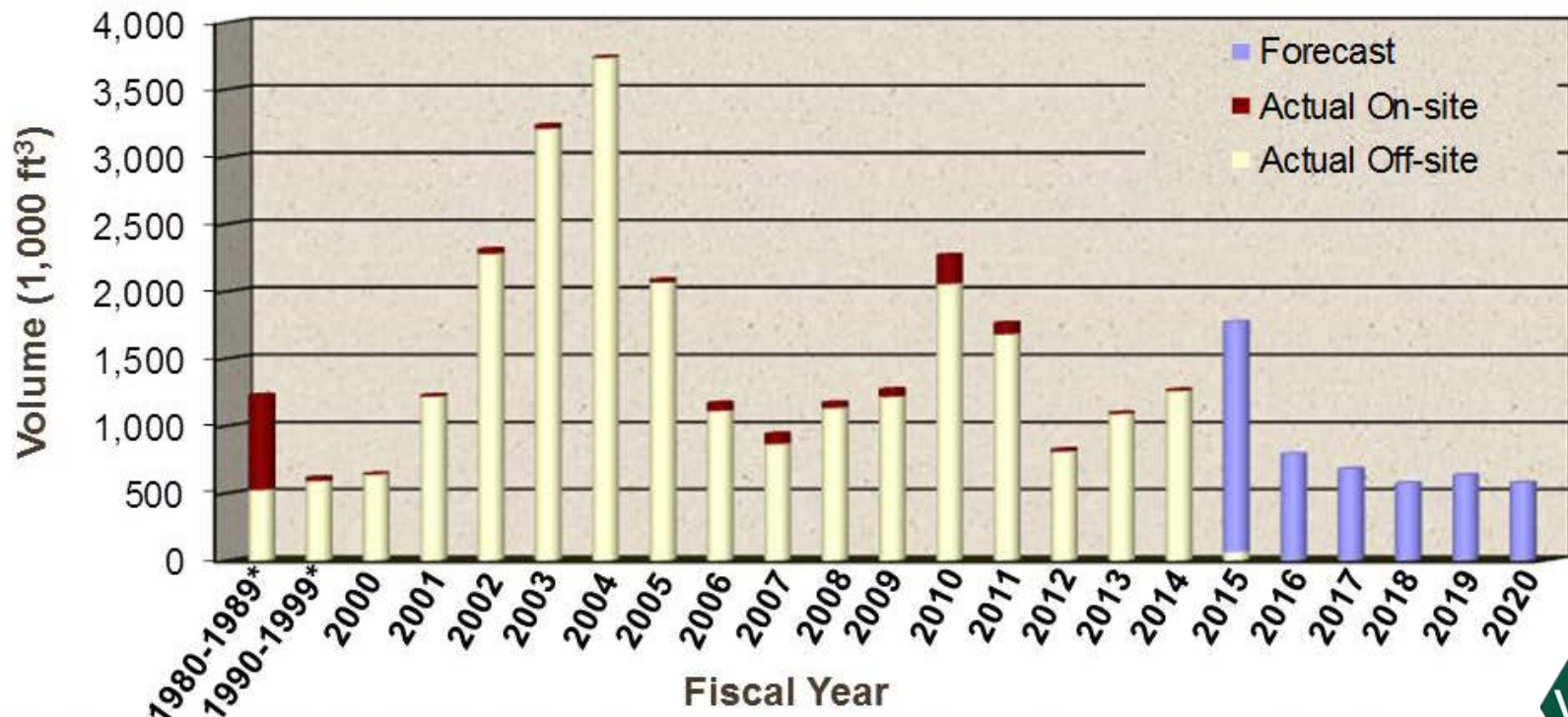
\*Source: NSTec EFCOG Waste Generator Workshop





# DOE-EM Disposal Projections\*

## NNSS Radioactive Waste Management Sites Disposal Volumes (as of 10-27-2014)



\*Source: NSTec EFCOG Waste Generator Workshop

# TRANSPORTATION ISSUES – POLITICS

## DOE

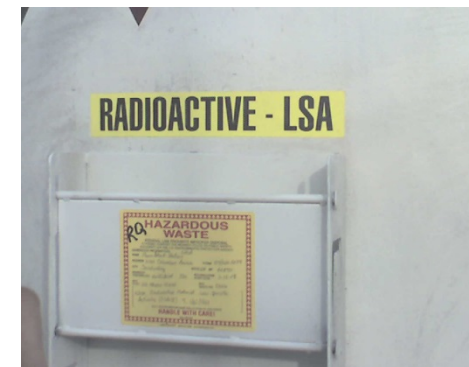
- *“Our facility/mission is unique so we have to have our own limits/restrictions.”*
  - *Competent Authority - DOE ORDERS vs DOT/FMCSA*
  - *State, Local, CVSA, WGA*
- *Access/Transit Restrictions – (Las Vegas)*
- *“How do we ensure this never happens again?”*

## M&O CONTRACTORS

- *“We’ll worry about transportation costs later, a truck will always be available.”*
- *“We’re only going one-way!”*
- *“We’re not paying detention, we got that truck out by the end of the day.”*
- *“We meet the DOE requirements, not concerned about DOT.”*
- *“We want to pick the route.”*

# TRANSPORTATION ISSUES – REGULATIONS - PERMITS

- **US Bridge Laws**
  - Over Length - 75' US Max
  - Over Height - 13'6" US Max
  - Over Weight - 80,000lbs US Max
- Day/Night, Metropolitan Restrictions
- RAM (LLW, MLLW), HRCQ (Type B)
- **CONUS vs OCONUS Regulations**
  - EU max weight vs US max weight
  - Permits/Exemptions
    - State vs DOE vs DOT vs NRC
  - Legal Weight
    - Divisible Loads



# TRANSPORTATION ISSUES – DOE SITES

## ■ Drivers

### ■ Ingress/Egress

- No Weapons, Riders, Animals, Alcohol/Drugs
- Badging/REAL ID
- Restricted Lanes (Las Vegas, MO, CA)

### ■ Hours of Service (HOS)

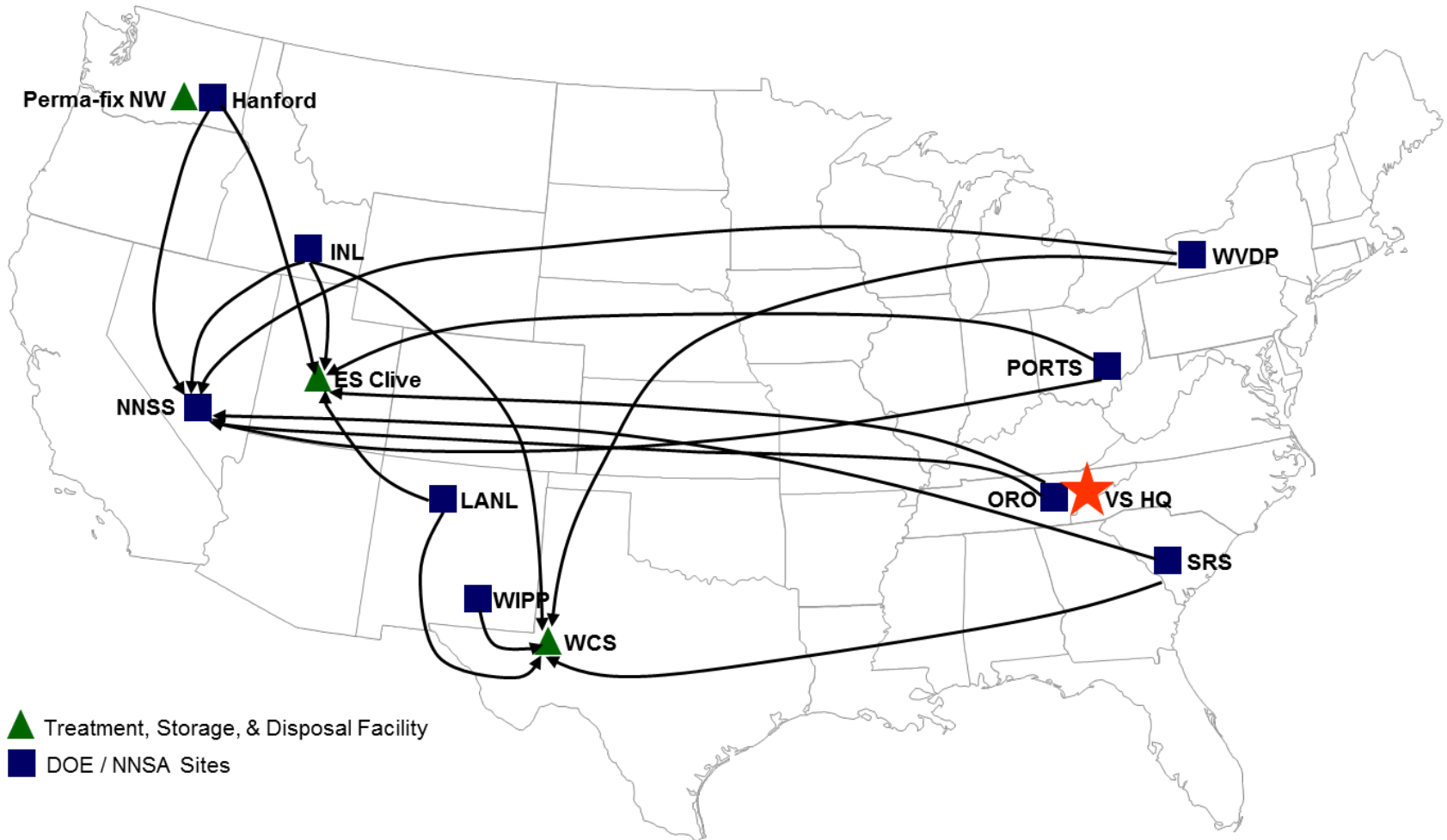
- Electronic Logs
- Start Times

### ■ TSDF Compliance

- Routes
- Schedules



# DOE/NNSA TRANSPORT FOR DISPOSAL



# CARRIER ISSUES – PRICING



## LTL/Commercial

- Cargo
  - Commodities, Fruit, Foodstuffs, etc.
- Insurance ~ \$1M
- Drivers
  - No Background Investigation
  - CDL
  - Weapons, Riders, Animals, Alcohol/Drugs?
  - HOS Violations
  - Schedule Driven
- Equipment
  - Old, OOS Violations
- **\$1.50 - 1.90/Mile\***

## DOE-MCEP

- Cargo
  - Haz/Rad, LLW, MLLW, SNF
- Insurance ~ \$5M
- Drivers
  - Background Investigation, Clearances
  - CDL/HAZMAT Endorsements, Marking/Labeling
  - NO Weapons, Riders, Animals, Alcohol/Drugs
  - HOS, Electronic Logs
  - Schedule Neutral
- Equipment
  - Highly Maintained, No/Minimum OOS
- **\$2.90 - 3.20/Mile\***

\* Illustrative Pricing



# WASTE MANAGEMENT - 2015

DOE SITES - CONTAMINATION



# TRANSPORTER ISSUES – CONTAMINATION

- Consistent application of realistic “return to service” contamination limits for commercial transporter equipment being released from a DOE site (develop consistent use of DOT, DOE 835, DOE 458.1 limits) – DOE-EM/AU w/EFCOG assistance
- Develop overall performance standards which must be met by any DOE or contractor organization that is conducting radiological release surveys for external contamination on commercial transporter equipment – EFCOG Waste Management Working Group





# TRANSPORTER ISSUES – DOE SITES



- DOE 10 CFR 835 is more conservative than the DOT 49 CFR 173 – 178 and can impact offsite / onsite operations significantly
- Resulted in the retention of commercial motor carrier equipment (e.g., trailers) for the purpose of achieving the DOE release levels specified in 10 CFR 835, Appendix D and/or DOE Order 458.1
  - Nevada National Security Site held 13 trailers from a commercial motor carrier for several months to perform decontamination services (to achieve 10 CFR 835, Appendix D release levels) before releasing the commercial motor carrier's equipment
  - Carrier subsequently negotiated with the DOE generator and its subcontractors to recover “out-of-service” cost



# CONCLUSION – HAZ/RAD CARRIER CONCERNS

- **WE ARE PARTNERS!**
- Transportation Unit = Driver(s), Tractor, Trailer
  - Revenue Generator
  - Equipment Availability
    - Trailers are Expensive
- DOT/FMCSA/States, Routes
  - We Know Where We Can Go, What We Can Do!
- Teaming
  - Compete After Award?



# VS Group, LLC

## For More Information

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