

INSPECTION RECORD

Region III Inspection Report No. 030-17951/2007-001
Investigation Report No. 3-2007-013

License No. 24-20091-01
Docket No. 030-17951

Licensee (Name and Address):

R. M. Wester and Associates, Inc.
Indacom Drive
St. Peters, Missouri 63376

Licensee Contact: Robert Wester - RSO/President Telephone No. 636-928-9628

Priority: 5 Program Code: 3225


Date of Last Inspection: _____
Date of This Investigation: 3/12 - 8/28/07 with continuing review through 9/12/07

Type of Inspection: Initial Announced Unannounced
 Routine Special

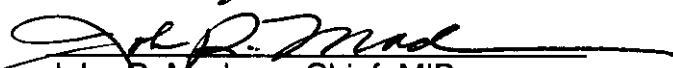
Next Inspection Date: Unchanged Normal Reduced
Justification for reducing the routine inspection interval:
NA

Summary of Findings and Actions:

- No violations cited, clear U.S. Nuclear Regulatory Commission (NRC) Form 591 or regional letter issued
- Non-cited violations (NCVs)
- Violation(s), Form 591 issued
- Violation(s), regional letter issued
- Followup on previous violations

Inspector(s) 
Michael LaFranzo - Materials Inspector

Date 10/26/07

Approved 
John R. Madera - Chief, MIB

(Signature)

Date 10/11/07

1. **ORGANIZATION AND SCOPE OF PROGRAM:**

(Management organizational structure; authorized locations of use, including field offices and temporary job sites; type, quantity, and frequency of material use; staff size; delegation of authority)

Robert Wester - President/RSO

The private consulting company employed approximately eight individuals at its St. Peters, Missouri facility. The licensee provided a variety of health physics services to its clients throughout the United States, included the University of Missouri - St. Louis facility (License No. 24-00513-38). Licensed activities included survey instrument calibrations, sealed source leaking testing, does calibrator QA checks, recovery and disposal of abandoned/orphaned sources, and fixed gauge services.

2. **SCOPE OF INSPECTION:**

Inspection Procedure(s) Used: NA

Focus Areas Evaluated: A review of the licensee's program was not part of a routine safety inspection but rather a review of selected portions of the licensee's program as part of an investigation.

3. **INDEPENDENT AND CONFIRMATORY MEASUREMENTS:**

None

4. **VIOLATIONS, NCVs, AND OTHER SAFETY ISSUES:**

10 CFR 30.34(c) requires, in part, that each licensee confine his possession and use of byproduct materials to the locations and purposes authorized by the license.

Condition 7.c of License No. 24-20091-01 limits the authorized use of licensed materials to environmental samples.

Contrary to the above, on or about June 22, 2004, October 26, 2004, March 3, 2005 and March 18, 2005, the licensee received and used licensed material that were not environmental samples. Rather, the licensed material was radioactive waste transferred from another licensee for the purposes of disposal. Specifically on the above dates, the licensee received packages of decayed radioactive waste generated from the University of Missouri - St. Louis' (License No. 24-00513-38) laboratories. The radioactive waste was received so that radiological surveys could be performed to determine whether the material could be disposed of in ordinary trash. The licensee received the radioactive waste and determined, through radiological surveys, that the material could be, and was, *disposed of in ordinary trash*.

During the investigation, the licensee stated that radioactive waste was characterized as environmental samples, for which the licensee is authorized to receive. However, as the radioactive waste was generated by laboratories, classified by the University of Missouri - St. Louis as radioactive waste and classified by R. M. Wester and Associates, Inc. as

receive. However, as the radioactive waste was generated by laboratories, classified by the University of Missouri - St. Louis as radioactive waste and classified by R. M. Wester and Associates, Inc. as radioactive waste, the NRC had concluded that the classification of "environmental samples" is not accurate and the classification of "radioactive waste" was more appropriate. During the investigation, the licensee did not provide corrective actions for the violation identified. A written response to the violation was required as stated in the Notice of Violation.

A copy of the shipping paper that was used to transfer the waste from R. M. Wester and Associates, Inc. (dated 10/26/04), an invoice from R. M. Wester and Associates, Inc. (dated 6/15/06) and a Waste Transfer document generated by the former Radiation Safety Officer (dated 12/6/04) is attached to this inspection record. The above documents are related to a single shipment of radioactive waste.

5. PERSONNEL CONTACTED:

Robert Wester - President

-END-

INVOICE

18514

INVOICE NO.

R.M. Wester & Associates, Inc.

P.O. Box 494
 St. Charles, MO 63302
 (636) 928-9628

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University of Missouri St. Louis
 One University Blvd.
 St. Louis, MO. 63121-4499
 Att: Mr. Al Wirt

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| CUSTOMER'S ORDER | SALESMAN | TERMS Net 10 | DATE SHIPPED | SHIPPED VIA | F.O.B. | DATE 6/15/06 |
|---|----------|-----------------|--------------|-------------|--------|-----------------|
| Low Level Radioactive Waste Disposal as of October 26, 2004 42.0 Hours at \$85.00/hr. | | | | | | 3570.00 |
| Interest assessed on all unpaid balances at the rate of 1½% per month after 30 days. | | | | | | |

R. M. WESTER *and ASSOCIATES, INC.*

215 INDACOM DRIVE - ST. PETERS, MISSOURI 63376

(636) 928-9628 - FAX (636) 928-9857

December 6, 2004

MEMORANDUM FOR RECORD

SUBJECT: UMSL Waste Transfer, Pre-Transfer Survey, and Waste Clearance Survey,
October 26, 2004

1. UMSL WASTE TRANSFER AND PRE-TRANSFER SURVEY. On October 26, 2004 R. M. Wester & Associates, Inc. performed a transfer of 12 waste fiber drums from the University of Missouri at St. Louis Missouri (UMSL) Radioactive Waste Building to R. M. Wester & Associates, Inc., located in St. Peters Missouri for environmental sampling purposes. All of the waste lots contained within the drums had been decayed through at least 10 half lives from transfer date to waste storage. Prior to the transfer, the exterior of each of the waste drums was metered and found comparable to background readings. Insufficient work space at the UMSL Waste Storage Building (licensed area) precluded the possibility of performing radiation and contamination level surveys of contents and container interiors within the waste drums. All packages were inspected and found to have no visible leakages of interior contents prior to transfer. Waste drum survey results are contained below. The survey instrument used in the waste transfer survey was the Ludlum Model 3 Survey Meter having Serial Number 77734, Probe Serial Number 44-9 PR034447 and Calibration Date of October 13, 2004. The survey instrument was pre-checked prior to operation and found consistent to less than 5 percent precision error. The area background was measured at 0.01 mR/hr.

| Identification Drum Exterior | Date Transferred to Waste Bldg. | Researcher | Exp. Rate (mR/hr) |
|---------------------------------|------------------------------------|----------------|----------------------|
| Dupureur 1/5/04 (I+S) | 1/5/04 | Dupureur | 0.01 |
| Thiel, Dupureur 4/24/03 (I+S) | 4/24/03 | Thiel/Dupureur | 0.025 |
| Thiel 11/15/02 (I) | 11/15/02 | Thiel | 0.01 |
| Dupureur 1/24/03 (I) | 1/24/03 | Dupureur | 0.01 |
| Spingola 10/10/03 (I+S) | 10/10/03 | Spingola | 0.01 |
| Dupureur 5/19/03 (S) | 5/19/03 | Dupureur | 0.02 |
| Becker 6/27/03 | 6/27/03 | Becker | 0.01 |
| Tri Use 1/17/03 (I+S) | 1/17/03 | Misc. | 0.01 |
| Spingola 7/18/03 (I+S) | 7/18/03 | Spingola | 0.01 |
| Dupureur 8/22/03 (I+S) | 8/22/03 | Dupureur | 0.01 |
| Olivas 6/9/03 (I+S) | 6/9/03 | Olivas | 0.01 |
| Dupureur 6/17/03 (I+S) | 6/17/03 | Dupureur | 0.02 |

"SPECIALIZING IN YOUR RADIATION SAFETY NEEDS"

2. UMSL WASTE CLEARANCE SURVEY. On November 5, November 15, November 16, November 22, 2004, the waste from the drums mentioned above was inventoried by Kenneth Bachmann, Health Physicist, and all remaining package portions [drum surface exteriors (DE), drum surface interiors (DI), waste bag exteriors (WE), waste bag interiors (WI), lot bag/container exteriors (LE), and waste lot package contents, including lot bag interior surface (LI)], was environmentally sampled for radioactive waste clearance purposes. Lots containing liquids were pipetted into liquid scintillation vials. Waste drum survey results and LSC output are contained below. The survey instruments used in the waste clearance survey were: Ludlum Model 3 Survey Meter having Serial Number 76362, Probe Serial Number 44-9PR102325 and Calibration Date of October 8, 2004; Ludlum Model 3 Survey Meter having Serial Number 92962, Probe Serial Number 44-3PR063814 and Calibration Date of October 13, 2004; Ludlum Model 3 Survey Meter having Serial Number 48612, Probe Serial Number 44-7PR029082 and Calibration Date of October 13, 2004; Packard Tri Carb Model 2100TR Liquid Scintillation Analyzer, having Serial Number 416174 and calibrated daily. Each of the portable survey instruments above were pre-checked prior to operation and found consistent to within 8 percent precision. The area background was measured at 0.015 mR/hr using the 44-9 probe, 0.02 mR/hr using the 44-7 probe and 0.12 mR/hr using the 44-3 probe. Because the background measured on the survey meter having the 44-3 probe was unusually high, that survey instrument was removed from the survey and replaced with the meter having the 44-7 end window detector. A background of 15.58 dpm was measured using the Tri Carb reference background. Statistics measured for LSC were as follows: LLD = 24.5 dpm; MDA = 1.10 Exp-05 dpm, Carbon-14 efficiency was measured at 75.1%. Survey results are contained below, with LSC data attached

| Form | Isotope | Lot Id. | Transfer Date to Waste Storage | Exp. Rate 44-9 | Exp. Rate 44-7 | Sample No(s). | dpm |
|--------|---------|---------|--------------------------------|----------------|----------------|--------------------|------|
| Liquid | P-32 | 0390 | Unknown, assumed | 0.01 | 0.02 | 1LE, 2WI, 3WE | 7.51 |
| Liquid | P-32 | 0390 | 6/27/03 | 0.01 | 0.02 | 4DI, 5DE | 2.18 |
| Solid | P-32 | 0390 | 6/27/03 | 0.015 | 0.03 | 6LI | 0.40 |
| Liquid | P-32 | 0391 | 6/27/03 | 0.01 | 0.02 | 1LE | 6.98 |
| Solid | P-32 | 0391 | 6/27/03 | 0.015 | 0.03 | 6LI | 3.52 |
| Liquid | P-32 | 0392 | 6/27/03 | 0.01 | 0.02 | 1LE | 0.00 |
| Solid | P-32 | 0392 | 6/27/03 | 0.015 | 0.03 | 6LI | 3.52 |
| Solid | P-32 | 0225 | 6/27/03 (Becker) | 0.01 | 0.02 | 7LE, 8WI, 9WE | 3.52 |
| Solid | P-32 | 0225 | 6/27/03 | 0.01 | 0.02 | 10DI, 11DE | 2.18 |
| Solid | P-32 | 0225 | 6/27/03 | 0.015 | 0.02 | (12, 13, 14, 15)LI | 4.85 |
| Solid | P-32 | 0227 | 6/27/03 | 0.015 | 0.03 | 16LE, 17WI, 18WE | 7.51 |
| Solid | P-32 | 0227 | 6/27/03 | 0.015 | 0.03 | 19DI, 20DE | 0.00 |
| Solid | P-32 | 0227 | 6/27/03 | 0.015 | 0.025 | (21, 22)LI | 0.00 |
| Solid | P-32 | Unk. | 7/18/03 (Spingola) | 0.02 | 0.02 | 23LE, 24WI, 25WE | 0.00 |

| Form | Isotope | Lot Id. | Transfer Date to Waste Storage | Exp. Rate 44-9 | Exp. Rate 44-7 | Sample No(s). | dpm |
|--------|---------|---------|--------------------------------|----------------|----------------|------------------|-------|
| Solid | P-32 | Unk. | 7/18/03 | 0.02 | 0.02 | 26DI, 27DE | 7.51 |
| Solid | P-32 | Unk. | 7/18/03 | 0.015 | 0.02 | (28, 29)LI | 2.18 |
| Liquid | P-32 | Unk. | 7/18/03 | 0.02 | 0.02 | 30LE | 7.51 |
| Solid | P-32 | 0265 | 1/24/03 (Dupureur) | 0.015 | 0.025 | 31LE, 32WI, 33WE | 0.00 |
| Solid | P-32 | 0265 | 1/24/03 | 0.015 | 0.025 | 36LI | 2.18 |
| Solid | P-32 | 0265 | 1/24/03 | 0.015 | 0.02 | 37LE, 38LI | 7.06 |
| Liquid | P-32 | 0265 | 1/24/03 | 0.01 | 0.02 | 39LE | 0.00 |
| Liquid | P-32 | 0326 | 8/19/03 | 0.01 | 0.02 | 39LE, 40WI, 41WE | 4.85 |
| Liquid | P-32 | 0326 | 8/19/03 | 0.01 | 0.02 | 42DI, 43DE | 0.00 |
| Solid | P-32 | 0328 | 8/19/03 | 0.015 | 0.02 | 44LI, 45LE | 3.52 |
| Solid | P-32 | 0315 | 8/19/03 (Dupureur) | 0.01 | 0.02 | 46LI, 49WE | 4.43 |
| Solid | P-32 | 0320 | 8/19/03 | 0.015 | 0.02 | 47LI, 50LE | 0.85 |
| Solid | P-32 | 0311 | 8/19/03 | 0.015 | 0.02 | 48LI, 51LE | 6.18 |
| Solid | P-32 | 0302 | 8/19/03 | 0.015 | 0.02 | 48LI, 51LE | 2.18 |
| Solid | P-32 | 0321 | 8/19/03 | 0.015 | 0.02 | 52LI, 53LE | 10.17 |
| Solid | P-32 | 0316 | 8/19/03 | 0.025 | 0.03 | 54LI, 55LE | 3.52 |
| Liquid | P-32 | 0328 | 8/19/03 | 0.04 | 0.02 | 55LE, 56WI | 8.84 |
| Liquid | P-32 | 0260 | 8/19/03 | 0.04 | 0.02 | 55LE | 6.18 |
| Liquid | P-32 | 0315 | 8/19/03 | 0.02 | 0.02 | 55LE | 8.84 |
| Liquid | P-32 | 0316 | 8/19/03 | 0.05 | 0.02 | 55LE | 7.24 |
| Solid | P-32 | 0338 | 6/19/03 (Olivas) | 0.015 | 0.02 | 57LI, 58LE, 59WI | 4.85 |
| Solid | P-32 | 0338 | 6/19/03 | 0.015 | 0.02 | 60WE, 61DI, 62DE | 4.85 |
| Solid | P-32 | 0332 | 6/19/03 | 0.015 | 0.02 | 63LI, 63LE | 6.18 |
| Solid | P-32 | 0331 | 6/19/03 | 0.015 | 0.02 | 63LI, 63LE | 3.52 |
| Solid | P-32 | 0330 | 6/19/03 | 0.015 | 0.02 | 64LI, 64LE | 0.00 |
| Solid | P-32 | 0338 | 6/19/03 | 0.015 | 0.02 | 64LI, 64LE | 4.85 |
| Solid | P-32 | 0332 | 6/19/03 | 0.015 | 0.02 | 64LI, 64LE | 4.39 |
| Liquid | P-32 | 0338 | 6/19/03 | 0.02 | 0.04 | 65LE | 0.00 |
| Liquid | P-32 | 0332 | 6/19/03 | 0.02 | 0.04 | 65LE | 10.17 |
| Liquid | P-32 | 0331 | 6/19/03 | 0.02 | 0.04 | 65LE | 1.92 |
| Liquid | P-32 | 0330 | 6/19/03 | 0.02 | 0.04 | 65LE | 11.50 |

| Form | Isotope | Lot Id. | Transfer Date to Waste Storage | Exp. Rate 44-9 | Exp. Rate 44-7 | Sample No(s). | dpm |
|--------|---------|---------|--------------------------------|----------------|----------------|---------------------|-------|
| Liquid | P-32 | 0338 | 6/19/03 | 0.02 | 0.04 | 65 | 3.52 |
| Liquid | P-32 | 0332 | 6/19/03 | 0.02 | 0.04 | 65 | 0.40 |
| Solid | P-32 | 0342 | 6/17/03 (Dupureur) | 0.01 | 0.025 | 66LI, 67LE, 68WI | 0.00 |
| Solid | P-32 | 0342 | 6/17/03 | 0.01 | 0.025 | 69WE, 70DI, 71DE | 0.85 |
| Solid | P-32 | 0343 | 6/17/03 | 0.01 | 0.025 | 72LI | 15.50 |
| Solid | P-32 | 0344 | 6/17/03 | 0.01 | 0.025 | 73LI | 2.18 |
| Solid | P-32 | 0341 | 6/17/03 | 0.01 | 0.02 | 74LI | 2.18 |
| Solid | P-32 | 0228 | 11/15/02 (Thiel) | 0.015 | 0.02 | 76LI, 77LE, 78WI | 15.50 |
| Solid | P-32 | 0228 | 11/15/02 | 0.015 | 0.02 | 79WE, 80DI, 81DE | 27.48 |
| Solid | P-32 | 0288 | 11/15/02 | 0.015 | 0.02 | 76LI | 3.52 |
| Solid | P-32 | 0233 | 11/15/02 | 0.02 | 0.02 | 82LI, 83LE | 1.73 |
| Solid | P-32 | 0212 | 11/15/02 | 0.015 | 0.025 | 84LI, 85LE | 6.18 |
| Liquid | P-32 | 0228 | 11/15/02 | 0.015 | 0.02 | 86LE | 0.85 |
| Liquid | P-32 | 0219 | 11/15/02 | 0.015 | 0.025 | 87LE | 0.59 |
| Solid | Mo-99 | 0256 | 11/17/03 (Thiel) | 0.015 | 0.02 | 88LI, 89LE, 90WI | 2.18 |
| Solid | Mo-99 | 0256 | 11/17/03 | 0.015 | 0.02 | 91WE, 92DI, 93DE | 3.52 |
| Solid | Mo-99 | 0256 | 11/17/03 | 0.02 | 0.02 | 94LI | 1.73 |
| Solid | P-32 | 0248 | 11/17/03 | 0.01 | 0.02 | 95LI | 0.85 |
| Solid | P-32 | 0249 | 11/17/03 | 0.015 | 0.02 | 96LI | 1.73 |
| Liquid | P-32 | 0249 | 11/17/03 | 0.01 | 0.02 | 97LI | 4.58 |
| Solid | P-32 | 0233 | 11/17/03 | 0.015 | 0.025 | 98LI | 4.85 |
| Liquid | Mo-99 | 0256 | 11/17/03 | 0.01 | 0.02 | 99LI | 27.64 |
| Liquid | Mo-99 | 0256 | 11/17/03 | 0.01 | 0.02 | 100LE | 6.18 |
| Liquid | P-32 | 0233 | 11/17/03 | 0.01 | 0.02 | 101LE | 3.52 |
| Liquid | P-32 | 0250 | 11/17/03 | 0.015 | 0.02 | 102LE | 6.18 |
| Liquid | P-32 | 0276 | 11/17/03 (Kellogg) | 0.01 | 0.02 | 103LE | 0.40 |
| Liquid | P-32 | 0271 | 11/17/03 | 0.015 | 0.03 | 104LE | 15.23 |
| Solid | P-32 | 0365 | 8/22/03 (Dupureur) | 0.02 | 0.03 | 105LI, 106LE, 107WI | 8.84 |
| Solid | P-32 | 0365 | 8/22/03 | 0.02 | 0.03 | 108WE, 109DI, 110DE | 8.84 |
| Solid | P-32 | 0366 | 8/22/03 | 0.01 | 0.02 | 111LI, 112LE | 0.85 |
| Solid | P-32 | 0367 | 8/22/03 | 0.01 | 0.02 | 113LI, 114LE | 7.51 |

| Form | Isotope | Lot Id. | Transfer Date to Waste Storage | Exp. Rate 44-9 | Exp. Rate 44-7 | Sample No(s). | dpm |
|--------|---------|---------|--------------------------------|-------------------|----------------|---------------------|-------|
| Liquid | P-32 | 0366 | 8/22/03 | 0.015 | 0.03 | 115LE | 2.18 |
| Liquid | P-32 | 0367 | 8/22/03 | 0.015 | 0.02 | 116LE | 0.85 |
| Liquid | P-32 | 0365 | 8/22/03 | 0.01 | 0.02 | 117LE | 27.48 |
| Liquid | P-32 | 0327 | 10/10/03 (Parker) | 0.01 | 0.02 | 118LE, 133WI, 134WE | 2.18 |
| Liquid | P-32 | 0327 | 10/10/03 | 0.01 | 0.02 | 135DI, 136DE | 2.18 |
| Liquid | P-32 | 0325 | 10/10/03 | 0.01 | 0.02 | 119LE | 4.85 |
| Liquid | P-32 | 0369 | 10/10/03 (Thiel) | 0.02 | 0.04 | 120LE | 6.18 |
| Liquid | P-32 | 0360 | 10/10/03 (Parker) | 0.015 | 0.03 | 121LE | 0.85 |
| Liquid | P-32 | 0348 | 10/10/03 | 0.015 | 0.02 | 122LE | 4.85 |
| Liquid | P-32 | 0380 | 10/10/03 | 0.02 | 0.03 | 123LE | 8.84 |
| Solid | P-32 | 0327 | 10/10/03 | 0.02 | 0.03 | 124LI | 6.18 |
| Solid | P-32 | 0325 | 10/10/03 (Thiel) | 0.02 | 0.04 | 125LI, 130LE | 10.17 |
| Solid | P-32 | 0325 | 10/10/03 (Kellogg) | 0.02 | 0.04 | 126LI, 131LE | 3.52 |
| Solid | P-32 | 0370 | 10/10/03 (Thiel) | 0.01 | 0.02 | 127LI, 132LE | 0.74 |
| Solid | P-32 | 0360 | 10/10/03 (Parker) | 0.02 | 0.02 | 127LI, 132LE | 103.1 |
| Solid | P-32 | 0348 | 10/10/03 | 0.01 | 0.01 | 128LI, 133LE | 3.52 |
| Solid | P-32 | 0380 | 10/10/03 | 0.015 | 0.02 | 128LI, 133LE | 3.52 |
| Solid | P-32 | 0369 | 10/10/03 | 0.015 | 0.02 | 129LI, LE | 0.00 |
| Solid | P-32 | 0330 | 10/10/03 | 0.01 | 0.02 | 129LI, LE | 0.85 |
| Solid | P-32 | 0320 | 10/10/03 | 0.01 | 0.02 | 137LI, LE | 6.17 |
| Solid | P-32 | 0357 | 10/10/03 (Spingola) | 0.01 | 0.02 | 138LI, LE | 8.84 |
| Solid | P-32 | 0311 | 10/10/03 (Kellogg) | 0.01 | 0.02 | 139LI, LE | 0.85 |
| Solid | P-32 | 0311 | 10/10/03 <i>Pelletized</i> | 0.01 | 0.02 | 140LI | 65.83 |
| | | | <i>material containing</i> | <i>above lots</i> | | 141LI, LE | 6.18 |
| Solid | P-32 | 0326 | 1/19/03 (Dupureur) | 0.01 | 0.02 | 142LI, 144LE, 145WI | 0.00 |
| Solid | P-32 | 0326 | 1/19/03 | 0.01 | 0.02 | 146WE, 147DI, 148DE | 11.05 |
| Solid | P-32 | 0326 | 1/19/03 | 0.01 | 0.02 | 143LI | 4.85 |
| Solid | P-32 | 0326 | 1/19/03 | 0.015 | 0.025 | 149LI, 146LE | 6.18 |
| Solid | P-32 | 0326 | 1/19/03 | 0.015 | 0.025 | 150LI | 8.84 |
| Solid | P-32 | 0326 | 1/19/03 | 0.015 | 0.025 | (151, 152)LI, 153LE | 3.52 |
| | | | | | | | |


| Form | Isotope | Lot Id. | Transfer Date to Waste Storage | Exp. Rate 44-9 | Exp. Rate 44-7 | Sample No(s). | dpm |
|--------------------------------------|---------|---------|--------------------------------|----------------|----------------|---------------|-------|
| <i>Post Survey:</i> | | | | | | | |
| Floor drop cloth | | | | 0.01 | 0.02 | 154-159 | 10.17 |
| Bottles drop cloth | | | | 0.01 | 0.02 | 158-161 | 1.73 |
| Recording area surface | | | | 0.01 | 0.02 | 167 | 6.17 |
| Meters area surface | | | | 0.01 | 0.02 | 168 | 5.91 |
| Knife | | | | 0.01 | 0.02 | 169 | 2.18 |
| Rad sign labels, removed | | | | 0.01 | 0.02 | 170 | 0.85 |
| Leaded rad vial containers | | | | 0.01 | 0.02 | 171 | 8.31 |
| Shipping paperwork, box, pen, gloves | | | | 0.01 | 0.02 | 172 | 4.84 |
| Misc. | | | | 0.01 | 0.02 | 172 | 5.73 |
| Pipette | | | | 0.01 | 0.02 | 162 | 10.17 |
| Meters | | | | 0.01 | 0.02 | 163 | 2.18 |
| Tray1 | | | | 0.01 | 0.02 | 164 | 6.18 |
| Tray2 | | | | 0.01 | 0.02 | 165 | 0.00 |
| Scissors, cutters, tablet | | | | 0.01 | 0.02 | 166 | 14.17 |
| <i>Liquids:</i> | | | | | | | |
| Liquid | P-32 | 0390 | See above | N/A | N/A | 167 LI | 14.17 |
| Liquid | P-32 | 0391 | See above | N/A | N/A | 168 LI | 7.06 |
| Liquid | P-32 | 0392 | See above | N/A | N/A | 169 LI | 7.24 |
| Liquid | P-32 | Unk | See above | N/A | N/A | 170 LI | 3.06 |
| Liquid | P-32 | 0265 | See above | N/A | N/A | 171 LI | 8.84 |
| Liquid | P-32 | 0265 | See above | N/A | N/A | 172 LI | 10.17 |
| Liquid | P-32 | 0326 | See above | N/A | N/A | 173 LI | 3.52 |
| Liquid | P-32 | 0328 | See above | N/A | N/A | 174 LI | 8.58 |
| Liquid | P-32 | 0260 | See above | N/A | N/A | 175 LI | 27.48 |
| Liquid | P-32 | 0315 | See above | N/A | N/A | 176 LI | 1.73 |
| Liquid | P-32 | 0316 | See above | N/A | N/A | 177 LI | 3.06 |
| Liquid | P-32 | 0338 | See above | N/A | N/A | 178 LI | 4.85 |
| Liquid | P-32 | 0338 | See above | N/A | N/A | 179 LI | 12.84 |
| Liquid | P-32 | 0338 | See above | N/A | N/A | 180 LI | 8.84 |


| Form | Isotope | Lot Id. | Transfer Date to Waste Storage | Exp. Rate 44-9 | Exp. Rate 44-7 | Sample No(s). | dpm |
|--------|---------|---------|--------------------------------|----------------|----------------|---------------|-------|
| Liquid | P-32 | 0332 | See above | N/A | N/A | 181 LI | 4.85 |
| Liquid | P-32 | 0331 | See above | N/A | N/A | 182 LI | 7.51 |
| Liquid | P-32 | 0330 | See above | N/A | N/A | 183 LI | 7.51 |
| Liquid | P-32 | 0338 | See above | N/A | N/A | 184 LI | 4.85 |
| Liquid | P-32 | 0332 | See above | N/A | N/A | 185 LI | 7.06 |
| Liquid | P-32 | 0228 | See above | N/A | N/A | 186 LI | 3.51 |
| Liquid | P-32 | 0219 | See above | N/A | N/A | 187 LI | 11.50 |
| Liquid | P-32 | 0219 | See above | N/A | N/A | 188 LI | 2.18 |
| Liquid | P-32 | 0219 | See above | N/A | N/A | 189 LI | 2.18 |
| Liquid | P-32 | 0219 | See above | N/A | N/A | 190 LI | 7.51 |
| Liquid | P-32 | 0249 | See above | N/A | N/A | 191 LI | 2.18 |
| Liquid | Mo-99 | 0256 | See above | N/A | N/A | 192 LI | 6.18 |
| Liquid | P-32 | 0233 | See above | N/A | N/A | 193 LI | 6.18 |
| Liquid | P-32 | 0250 | See above | N/A | N/A | 194 LI | 7.51 |
| Liquid | P-32 | 0276 | See above | N/A | N/A | 195 LI | 6.18 |
| Liquid | P-32 | 0271 | See above | N/A | N/A | 196 LI | 0.00 |
| Liquid | P-32 | 0366 | See above | N/A | N/A | 197 LI | 3.51 |
| Liquid | P-32 | 0367 | See above | N/A | N/A | 198 LI | 5.72 |
| Liquid | P-32 | 0365 | See above | N/A | N/A | 199 LI | 13.24 |
| Liquid | P-32 | 0365 | See above | N/A | N/A | 200 LI | 3.52 |
| Liquid | P-32 | 0327 | See above | N/A | N/A | 201 LI | 2.18 |
| Liquid | P-32 | 0325 | See above | N/A | N/A | 202 LI | 7.51 |
| Liquid | P-32 | 0369 | See above | N/A | N/A | 203 LI | 10.17 |
| Liquid | P-32 | 0360 | See above | N/A | N/A | 204 LI | 10.17 |
| Liquid | P-32 | 0360 | See above | N/A | N/A | 205 LI | 0.00 |
| Liquid | P-32 | 0360 | See above | N/A | N/A | 206 LI | 6.18 |
| Liquid | P-32 | 0348 | See above | N/A | N/A | 207 LI | 0.00 |
| Liquid | P-32 | 0380 | See above | N/A | N/A | 208 LI | 1.73 |

| Sample Number | Activity, Run 1 (dpm) | Activity, Run 2 (dpm) |
|------------------------------------|-----------------------|-----------------------|
| <i>Re-run of elevated samples:</i> | | |
| 79 | 6.58 | 1.61 |
| 99 | 14.63 | 1.75 |
| 132 | 0.00 | 0.40 |
| 185 | 9.26 | 7.11 |

3. FINDINGS AND DISCUSSION. None of the waste materials surveyed by meter were found to have exposure rates greater than natural statistical fluctuation in background. Conservatively, the highest activity obtained from the upper energy windows was reported as sample activity in the tables, above. Surface samples identified as numbers 79, 99, 132, 185 initially exceeded a conservative unrestricted release criteria chosen as 20 dpm during the first LSC run. The affected samples were segregated, double checked for proper sequence number, and rerun twice using the same LSC. However, neither of the secondary runs of the affected samples produced a verification of the original elevated readings. Note, that activity spikes sometimes occurs with LSC counters, particularly during the cold season when dry air allows electrostatic build-up on the plastic scintillation vials. This can yield a discharge which will yield an erroneous measurement of radiological activity. Therefore, it is reasonable to conclude that the above samples actually do not exceed the unrestricted release criteria. Moreover, none of the waste samples assayed, from bulk materials and liquids, were found to have measured activities beyond the conservative unrestricted release criteria chosen as 20 dpm.

4. CONCLUSIONS. The above waste materials are free of significant radioactivity and contamination associated with radioactive material waste storage and are cleared for unrestricted release into ordinary waste. All radioactive insignia associated with the above materials was removed and/or completely defaced prior to release dated December 13, 2004.


Kenneth Bachmann
Health Physicist
R. M. Wester & Associates, Inc.


Robert M. Wester
UMSL Radiation Safety Officer

THIS MEMORANDUM

Shipper's No. 12252

(Carrier) R M Wester & Associates Inc SCAC

Carrier's No.

at One University Boulevard St Louis MO date 10/26/04 from University of Missouri-STL

TO: Missouri Dept of Health for purposes of health monitoring

FROM:

Consignee R M Wester & Associates Inc

Shipper University of Missouri-St Louis

Street 215 Inlacon Drive

Street One University Boulevard

Destination St Peters MO Zip 63376

Origin St Louis MO Zip 63121

Route Major Roads & Highways

Delivering Carrier

Trailer Initial Number

U.S. DOT Hazard Reg. Number

| | | | | | | | |
|---|---|---|---|--------|--|--|------|
| 4 | X | Radioactive material, excepted package-limited quantity of material | 7 | UN2910 | | | none |
|---|---|---|---|--------|--|--|------|

NOTE: Environmental samples for analysis

Remit C.O.D. to:
Address:
City:

State: Zip:

COD AMT:
\$ Charges Advanced \$

C. O. D. FEE:

Prepaid
Collect

FREIGHT CHARGES

Prepaid Collect

NONE

none

YES NO

YES NO FURNISHED BY CARRIER
DRIVER'S SIGNATURE

SPECIAL INSTRUCTIONS

SHIPPER: University of Missouri-St Louis
PER: One University Boulevard
St Louis Missouri 63121

CARRIER: R M Wester & Associates Inc

PER: R M Wester

DATE: 10/26/04

EMERGENCY RESPONSE TELEPHONE NUMBER: (636) 928-9628