



F E N T O N

Handcrafted American Glass Artistry

Date: December 28, 2015

From: George Fenton

To: Dennis Lawyer, Health Physicist, US NRC

Re: Fenton Art Glass request for license termination - Mail Control No. 589275

J6

SUB-491

04003149

Dear Mr. Lawyer,

Please find attached an updated survey of the areas at Fenton Art Glass where Uranium 238 was used. This covers current conditions as well as a concise description of the restricted areas for the past 50 years which has been consistent through that period.

There are no records applicable for disposal of Uranium as all of the Uranium was used in the melting of glass with the exception of the Uranium remaining when operations ceased. The remaining Uranium was returned to our supplier, Nuclear Fuel Services, in October of 2014 as previously reported to the NRC. A copy of the manifest is attached.

Once you have reviewed this additional information and if you have more questions, I would suggest a joint call with our environmental consultants, MSES Consultants. We would be available the week of January 4th except I am not available on the 7th.

Best regards,

George W. Fenton

President

CC: Larry Rine, Dan Arnold

REC'D IN LAT 12-29-15

589275
NMSS/RGN1 MATERIALS-002

30G-14-0352

DOENRC F 741 U.S. DEPARTMENT OF ENERGY AND U.S. NUCLEAR REGULATORY COMMISSION Approved by OMB: No. 3150-0003 **SNM-03-01**

(5-2002) Previous editions are obsolete
 MANDATORY DATA COLLECTION
 AUTHORIZED BY 10 CFR 30, 40, 50, 70, 72, 74
 75, 150, Public Laws 85-703, 93-438, 95-91

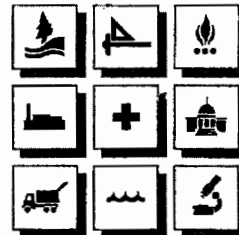
Estimated burden per response to comply with this mandatory collection request 45 minutes. This information is required for IAEA accounting reports that show changes in inventory of nuclear materials. Send comments regarding burden estimate to the Records Management Branch (1-6 85) U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001 or by Internet e-mail info@nrc.gov, and to the Desk Officer of Information and Regulatory Affairs (NED-1022) (5150-0002), Office of Management and Budget, Washington DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor and a person is not required to respond to the information collection.

NUCLEAR MATERIAL TRANSACTION REPORT

| 1 Shipper's RIS XJL | | 2 Receiver's RIS ZQM | | 3 Transaction No 2 | | 4 Correction No | | 5. Processing Code A Shipper: A B Receiver: A | | | 6 Action Code A Shipper: A B Receiver: B | | | 7. Documentation (Only if document is classified SECRET) Copy of Copies Series | | | | | | | |
|------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------|----------------------------------|--------------------|----------------------------------------------------------------|----------------|----------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------|--------------|-----------------------------------------------------------------------------------|----------------|-----------------------------|-----------------------------------------|----------------|----------------------------|----------------|--|
| 8. A Name and Address of Shipper Fenton Art Glass Company 420 Caroline Avenue Williamstown, WV 26187 | | B. License No. | | 9. A Name and Address of Receiver Nuclear Fuel Services, Inc. P.O. BOX 337 MS 123 Erwin, TN 37650 | | B. License No. | | 10 Number of Data Lines 1 | | | 11. Nature of Transaction A. Shipped For Acct Of: B. RIS | | | B. RIS | | | 13. A Shipped To Acct Of: B. RIS | | No. Distribution of Copies | | |
| C. Attention Mike Fenton | | D. Telephone 304-375-6122 | | C. Attention Clayton Brown | | D. Telephone 423-735-5535 | | 12. A. Shipped For Acct Of | | | 13. A. Shipped To Acct Of | | | 1 | | XJL | | 2 | | | |
| 14 Transfer Authority Contract, NM Draft, or Order Number | | 15 Export or Import Transfers a License No | | 3 | | 4 | | 5 | | | 6 | | | 7 | | 8 | | 9 | | | |
| 16 Material Type and Description Depleted Uranium Powder | | | | | | | | 17 Line Number | | 18 Country of Origin | | 19 Material Type | | 20 Obligated Element Weight | | 21 Obligated Isotope Weight | | 22 Action Date | | Month Day Year | |
| | | | | | | | | | | | | | | | | A. Shipmeat | | 10 13 2014 | | | |
| | | | | | | | | | | | | | | | | B. Shipper's Corr | | | | | |
| | | | | | | | | | | | | | | | | C. Receipt | | 10 15 2014 | | | |
| | | | | | | | | | | | | | | | | D. Receiver's Meas | | | | | |
| | | | | | | | | | | | | | | | | E. Receiver's Corr | | | | | |
| 23. A. Miscellaneous Sales Order 1566Y Bill of Lading P27952 Transfer # 41319 | | | | | | | | B Concise Note Attached | | Yes <input type="checkbox"/> No <input type="checkbox"/> | | | | | | | | | | | |
| | | | | | | | | 24 Total Gross Weight 10.9 | | | | 25 Total Volume (Waste Transfers Only) | | | | | | | | | |
| Back Reference Number | Line No | Type of Inv Chang | Identification (Item/Batch Name) | No. of Items | Project Number | Material Type | Comp Facility Code | Owner Code | Key Meas Point | Meas Ident | | | Gross Weight | Net Weight | Element Weight | Element Limit of Error | Weights % Isotope | Isotope Weight | Isotope Limit of Error | | |
| | | | | | | | | | | 1 | 2 | 3 | | | | | | | | | |
| | | | | | | | | | | Basis | OMP | Method | | | | | | | | | |
| A | B | C | D | E | F | G | H | I | J | | | | L | M | N | O | P | Q | R | | |
| | 1 | | | 1 | | 10 | 455 | J | | | | | | | | 7 | | 0.22 | | | |

| | | | | | | | | | | | | | | | | | | | |
|---------------------|--|--|--|--|--|--|--|--|--|-----------------------------------------------------|--|--|--|--|--|--|--|--|--|
| 26. Shipper's Data | | | | | | | | | | T. Signature of Authorized Official and Date Signed | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| 27. Receiver's Data | | | | | | | | | | T. Signature of Authorized Official and Date Signed | | | | | | | | | |
| | | | | | | | | | | <i>Clayton Brown</i> 10-20-14 | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

Warning: False statements in this certificate may be subject to civil and/or criminal penalties. NRC regulations require that submissions to the NRC be complete and accurate in all material respects. 518 U.S.C. Section 1001 makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.



December 18, 2015
Project No. 14-511

Mr. George Fenton
President
Fenton Art Glass Company
700 Elizabeth St.
Williamstown, WV 26187

LETTER REPORT
RADIOLOGICAL SCREENING SURVEY
RADIOACTIVE MATERIAL STORAGE AREA
AND SITE SURVEY OF THE FENTON ART GLASS FACILITY
WILLIAMSTOWN, WEST VIRGINIA

Dear Mr. Fenton:

INTRODUCTION

On December 1, 2015 Fenton Art Glass (Fenton) requested assistance from MSES consultants, inc. (MSES) with conduct of activities which would demonstrate radiation levels at the Fenton facility located at 700 Elizabeth Street, Williamstown, West Virginia.

Fenton used depleted Uranium Oxide in the manufacture of certain colored glass articles, commonly called "Vaseline glass". The manufacturing process was continuous for many decades, beginning in the early 1900's. Due to economic and market conditions, Fenton considerably curtailed manufacture in the period between 2007 and 2011. In November 2011 Fenton ceased production of glass which contained the depleted Uranium Oxide.

Over the last few decades, Fenton had employed a number of recommendations from the Nuclear Regulatory Commission and Applied Health Physics concerning storage and handling of the material. When manufacture using the depleted Uranium Oxide ceased, the material was being stored inside a locked cabinet, inside a restricted access room. The material was delivered to the Fenton facility in small plastic bags of specific weight. The small bags of material were packaged in a larger 'drum' which was placed inside the locked cabinet, inside the restricted room. When a batch of glass was to be produced using the depleted Uranium Oxide, a trained employee would enter the restricted access room, unlock the storage cabinet, place the desired number of bags of material needed for the batch into a rubber pail. The rubber pail was designated for this specific purpose. Once the material was placed in the rubber pail, the employee would, lock the cabinet, leave the restricted access room and travel a specific route to the factory floor where a screw charger was positioned to deliver all of the ingredients for the batch to the furnace where the

ingredients would be melted to produce the glass. The small bags of depleted Uranium Oxide would then be placed in the hopper of the screw charger and then delivered into the furnace in the same manner as the remaining ingredients.

The purpose of this survey is to measure exposure to radioactivity resulting from material previously used in the production of certain glass merchandise for sale to the public. The results of this survey may serve to determine whether criteria have been met to decommission the site and secure a termination of the current NRC License Number: SUB-491, Expired November 30, 2015.

MSES (Daniel Arnold) traveled to Fenton's facility on December 9, 2015 and conducted a radiological survey of the areas where any of the previously used material may be expected to persist.

IDENTIFIED AREAS

Fenton produced "Vaseline glass" or "uranium glass" for just over 100 years. In recent decades, (since about 1958) Fenton used depleted Uranium Oxide (U238) material in order to produce the desired merchandise. The U238 material was stored in a restricted access room inside a locked cabinet. The U238 material was carried by trained employees along a specified route and placed in a hopper, attached to a screw charger, at the furnace (also referred to as a tank) where ingredients were melted to produce the molten glass needed to manufacture merchandise for sale to the public. The process of introducing the U238 material was as follows: sand and other ingredients were added to the hopper of the screw charger; after an amount of the sand and other ingredients were moved by the screw charger into the furnace, the U238 material, bag and all, was placed in the screw charger; the remaining sand and other ingredients were added to the hopper and used to insure the U238 material was completely transferred to the furnace. The only merchandise Fenton produced using the U238 material was the "Vaseline glass". The "Vaseline glass" only comprised a portion of the merchandise produced by Fenton.

In October 2014, MSES conducted a screening survey of the facility to identify whether there were areas in the factory which exhibited elevated levels of radioactivity. Survey readings obtained during the October 2014 screening survey indicated there were some locations in the factory where radioactivity, above background, was detected. The screening survey was conducted by simply measuring radiation levels at the surface of machinery, implements, and various other surfaces within the factory. No wipe tests were conducted. No material samples were sent to off-site laboratories for analysis.

Also on October 13, 2014 Ms. Annette K. Reynolds, Nuclear Fuel Services, Inc. (NFS) packaged and prepared for shipment the last remnants of the depleted Uranium Oxide on the property. This remnant was simply feed material that had been purchased, but had not been used in the manufacture of glass products. Fenton has not used, purchased or stored any U238 material at the site since October 2014.

Subsequent to the October 2014 screening survey, housekeeping commensurate with decreasing manufacturing and production was conducted. Normal activities such as sweeping, consolidating and refurbishing equipment were conducted.

During the radiological survey of December 9, 2015, MSES conducted wipe tests and assessments of the wipes taken from twelve (12) locations which would reasonably have been expected to have exhibited surface contamination. *Table 3* lists the locations where the wipe tests were collected (SP). *Figure 1* is a floor plan of the entire factory. SP-11 was, in actuality, a background location. The wipe test for SP-11 was collected from the factory floor, approximately 100 feet from tank #8, the tank where the glass utilizing the depleted Uranium 238 was prepared. Areas of the plant surveyed on December 9, 2015 included: the locked storage cabinet (inside surface of the door and floor); floor of the restricted access room (color room), the wall adjacent to the path used to transport the material from the locked cabinet to the furnace; the floor immediately outside the restricted access room; approximately every 25 feet along the path used to transport the material from the locked cabinet to the furnace; the hopper on the screw charger used to feed the material to the furnace/tank; and the surface of the furnace/tank used to produce the glass used in manufacture.

RADIOLOGICAL SURVEY EQUIPMENT

MSES placed a Ludlum Measurements, Inc. Model 3 Survey Meter (S/N 305787) and Ludlum Model 44-9 (S/N PR333692) Alpha, Beta, Gamma Detector (GM) into operation in order to conduct the radiological survey of the areas of interest. This system was calibrated by the manufacturer on January 13, 2015. The calibration certificates are attached to this Letter Report. MSES conducted a reference check of the survey meter and detector prior to conducting any measurements at the site. A pre-survey and post survey reference checks were performed using a Cs-137 Check Source with Serial Number 1811. The results of the reference check are recorded in *Table 1*. According to the operating instructions, the detector should read within $\pm 20\%$ of the target readings for the Check Source. The Model 3 and GM system was demonstrated to be working correctly prior to the survey and at the conclusion of the survey.

TABLE 1

Reference Check Results (Cs-137 S/N 1811)

| Date | Time | GM(Target) | GM (Reading) |
|---------|------|------------|--------------|
| 12/9/15 | 1017 | ≈4200cpm | ≈4100cpm |
| 12/9/15 | 1405 | ≈4200cpm | ≈4300cpm |

cpm – counts per minute

Prior to conducting the survey of the areas of interest a background reading was established. The background reading was obtained by recording the observed meter readings at the counter in the laboratory which is located in the room next to the restricted access room. The background measurement was conducted as a direct reading from a sheet of lead measuring approximately 8 inches wide by 8 inches long by 0.05 inches thick was placed on the counter and used as a shield and measurement surface. The background reading obtained is recorded in *Table 2*.

TABLE 2

Background Readings (GM detector)

| Location ID | Description | cpm |
|---------------------|------------------------------|-----|
| BM-1 ⁽¹⁾ | Lab counter in adjacent room | 50 |

cpm – counts per minute

BM – Background Measurement Location

⁽¹⁾ The background measurement was made as a direct reading of the lead sheet. SP-11 was a wipe test which could serve as a background sample point.**SCREENING SURVEY**

MSES conducted the survey by collecting wipe samples from surfaces at the locations indicated above. Using a paper template measuring 10 cm² and Whatman® 40 filter paper measuring 1 in², MSES collected the wipe samples and measured the radioactivity of the wipe using the Ludlum Model 3/44-9 GM measurement system. At each measurement location, a 10 cm² template was taped in place using clear tape equivalent to Scotch® tape. Using the 1 in² filter paper, the inside area of template was wiped from top to bottom moving in a horizontal direction and then the inside area of the template was wiped from left to right moving in a vertical direction. As each wipe was obtained, the wipe was carried to the facility's laboratory and placed on a nitrile exam glove which was placed on the lead sheet and then assessed for radioactivity by placing the 44-9 GM probe as close as possible to the wipe, without touching the wipe.

Glass products located in a room adjacent to the gift shop were also surveyed. All wipe test readings obtained during the performance of the survey are recorded in *Table 3*. An excerpt of *Figure 1* showing the location of each Site Survey Point (SP) is included as *Figure 2*.

TABLE 3

Survey Readings (GM detector)

| Location ID | Description | cpm/100 cm ² |
|-------------|---------------------------------------------------------------------|-------------------------|
| SP-1 | Inside surface of door of locked cabinet where U238 was stored | 50 |
| SP-2 | Floor of locked cabinet where U238 was stored | 300* |
| SP-3 | Floor of color room midway between the locked cabinet and the door | 50 |
| SP-4 | Wall on right side of path from color room to the furnace/tank #8 | 48 |
| SP-5 | Floor immediately outside of color room | 45 |
| SP-6 | Floor at end of hallway from lab/color room along path | 50 |
| SP-7 | 25' from SP-6 along path from color room to the furnace/tank #8 | 52 |
| SP-8 | 25' from SP-7 along path from color room to the furnace/tank #8 | 45 |
| SP-9 | Floor at furnace/tank #8 where U238 was placed in the screw charger | 50 |

TABLE 3 (cont.)
Survey Readings (GM detector)

| Location ID | Description | cpm/100 cm ² |
|-------------|--------------------------------------------------------------------|-------------------------|
| SP-10 | Door furnace/tank #8 where U238 was utilized | 50 |
| SP-11 | Floor slightly NE 100' from furnace/tank#8 | 51 |
| SP-12 | Silo – U238 was previously stored in the silo | 48 |
| SP-13 | Hopper on screw charger used to transfer U238 into furnace/tank #8 | 45 |
| SP-14 | Floor of locked cabinet where U238 was stored after cleaning | 58* |

cpm – counts per minute
SP – Site Survey Point

* The reading obtained at SP-2 was 300 cpm. This reading seemed out of line, compared to other areas surveyed. While MSES was conducting the survey of the remaining areas, Mr. Fenton used a Shop-Vac® with a HEPA filter to sweep the floor of the locked cabinet. SP-14 wipe test was then collected from exactly the same location as SP-2 and assessed, giving a reading of 58 cpm.

The waste receptacle where floor sweepings were deposited was screened using the GM detector. The meter reading obtained by passing the GM detector probe over the outside of the receptacle and inserting the probe into the receptacle was 50 cpm. Glass made using the U238 which remains for sale and is located adjacent to the show room floor at the facility was also screened by passing the GM detector probe over the merchandise. The reading obtained from the glass was 800-1800 cpm.

In order to show the readings in disintegrations per minute (dpm) the counts per minute (cpm) readings must be converted.

$$dpm = \frac{cpm - bkg}{efficiency}$$

dpm = disintegrations per minute
cpm = counts per minute
bkg = background reading
efficiency = probe efficiency for specific material (U238)

According to Ludlum, the Source Efficiency (4π), of the Model 3/44-9 GM detector system used to conduct this survey is 13.96% for U238. Based on the equation above, the wipe tests conducted at Fenton would represent the dpm values shown in *Table 4*.

TABLE 4
cpm to dpm conversion

| Location ID | cpm/100 cm ² | dpm/100 cm ² |
|-------------|-------------------------|-------------------------|
| SP-1 | 50 | <1 |
| SP-2 | 300* | 1790 |
| SP-3 | 50 | <1 |
| SP-4 | 48 | <1 |

TABLE 4 (cont.)

cpm to dpm conversion

| Location ID | cpm/100 cm ² | dpm/100 cm ² |
|-------------|-------------------------|-------------------------|
| SP-6 | 50 | <1 |
| SP-7 | 52 | 14.3 |
| SP-8 | 45 | <1 |
| SP-9 | 50 | <1 |
| SP-10 | 50 | <1 |
| SP-11 | 51 | 7.16 |
| SP-12 | 48 | <1 |
| SP-13 | 45 | <1 |
| SP-14 | 58* | 57.3 |

* The reading obtained at SP-2 was 300 cpm. This reading seemed out of line, compared to other areas surveyed. While MSES was conducting the survey of the remaining areas, Mr. Fenton used a Shop-Vac® with a HEPA filter to sweep the floor of the locked cabinet. SP-14 wipe test was then collected from exactly the same location as SP-2 and assessed, giving a reading of 58 cpm.

The Photographic Log contains representative photographs of the sample collection locations. The photographs depict the restricted access room, the cabinet that was kept locked when U238 material was present, examples of the template used to conduct the wipe tests and some of the actual wipe test sample locations.


SUMMARY

The procedures and practices employed by MSES during the conduct of this survey are commensurate with the procedures and practices recognized by governmental and other agencies. MSES generally followed the guidance contained in: NUREG-1575, Rev. 1; EPA 402-R-97-016, Rev.1; DOE/EH-0624, Rev. 1; NUREG- 1757, Vol.1, Rev. 2; and NUREG-1757, Vol. 2, Rev. 1.

All dpm/100cm² values observed during this radiological screening survey were <100dpm/100cm².

In your review of this Letter Report, should you have questions or need additional information, please do not hesitate to contact us.

Sincerely,



Daniel T. Arnold, CES, MLS
Senior Environmental Scientist



Lawrence M. Rine, MSEE, RSO
Senior Project Manager

Enclosed:

Certificate of Calibration
Figures
Photographic Log



CERTIFICATE OF CALIBRATION

Ludlum Measurements, Inc.





Designer and Manufacturer
of
Scientific and Industrial
Instruments

CERTIFICATE OF CALIBRATION

LUDLUM MEASUREMENTS, INC.

501 Oak Street
325-235-5494
Sweetwater, TX 79556, U.S.A.

10744 Dutchtown Road
865-392-4601
Knoxville, TN 37932, U.S.A.

CUSTOMER MSES CONSULTANTS INC ORDER NO. 20260086/415886

Mfg. Ludlum Measurements, Inc. Model 3 Serial No. 305787

Mfg. Ludlum Measurements, Inc. Model 44-2 Serial No. PR335157

Cal. Date 13-Jan-15 Cal Due Date 13-Jan-16 Cal. Interval 1 Year Meterface 202-654

Check mark applies to applicable instr. and/or detector IAW mfg. spec. T. 72 °F RH 20 % Alt 709.8 mm Hg

New Instrument Instrument Received Within Toler. +10% 10-20% Out of Tol. Requiring Repair Other-See comments

Mechanical ck. Meter Zeroed Background Subtract Input Sens. Linearity

F/S Resp. ck. Reset ck. Window Operation Geotropism

Audio ck. Alarm Setting ck. Batt. ck. (Min. Volt) 2.2 VDC

Calibrated in accordance with LMI SOP 14.8 rev 12/05/89. Calibrated in accordance with LMI SOP 14.9 rev 02/07/97.

Instrument Volt Set 900 V Input Sens. 29 mV Det. Oper. 900 V at 29 mV Threshold Dial Ratio = _____ mV

HV Readout (2 points) Ref./Inst. _____ / _____ V Ref./Inst. _____ / _____ V

COMMENTS:

Calibrated using 39" C-cable.

Cs-137 ≈ 1 µCi check source SN 1811 reads ≈ 6.5 µR/hr @ x100 (650 µR/hr) with check source label against 44-2 crystal end and ≈ 4.2 kcpm @ x1 (4.2 kcpm) with check source label against 44-9 screen.

Gamma Calibration: GM detectors positioned perpendicular to source except for M 44-9 in which the front of probe faces source.

| RANGE/MULTIPLIER | REFERENCE CAL. POINT | INSTRUMENT REC'D "AS FOUND READING" | INSTRUMENT METER READING* |
|------------------|-----------------------|-------------------------------------|---------------------------|
| x100 | 4000 µR/hr | 40.5 | 40 |
| x100 | 1000 µR/hr | 10 | 10 |
| x10 | 400 µR/hr = 72400 cpm | 40.5 | 40 |
| x10 | 100 µR/hr | 10 | 10 |
| x1 | 7240 cpm | 40.5 | 40 |
| x1 | 1810 cpm | 10 | 10 |
| x0.1 | 724 cpm | 40.5 | 40 |
| x0.1 | 181 cpm | 10 | 10 |

*Uncertainty within ± 10% C.F. within ± 20%

X1, 0.1 Range(s) Calibrated Electronically

| Digital Readout | REFERENCE CAL. POINT | INSTRUMENT RECEIVED | INSTRUMENT METER READING* | Log Scale | REFERENCE CAL. POINT | INSTRUMENT RECEIVED | INSTRUMENT METER READING* |
|-----------------|----------------------|---------------------|---------------------------|-----------|----------------------|---------------------|---------------------------|
| | _____ | _____ | _____ | | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

Ludlum Measurements, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards Organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANSI/NCCL Z540-1-1994 and ANSI N323-1978. State of Texas Calibration License No. LO-1963

Reference Instruments and/or Sources: Cs-137 S/N: 059 2171CP 2261CP 720 734 781 1131 1616 1696 1909 1916CP 5105 5717CO 5719CO 60646 70897 73410 E552 G112 M565 S-394 S-1054 T10081 T10082 Neutron Am-241 Be S/N: T-304 Ra-226 S/N: Y982

Alpha S/N _____ Beta S/N _____ Other _____

m 500 S/N 247891 Oscilloscope S/N _____ Multimeter S/N 17500076

Calibrated By: Scott Ball Date 13 JAN 15

Reviewed By: Devin Acker Date 13 JAN 15

AC Inst. Passed Dielectric (Hi-Pot) and Continuity Test Only Failed: _____



Designer and Manufacturer
of
Scientific and Industrial
Instruments

LUDLUM MEASUREMENTS, INC.

501 Oak Street 10744 Dutchtown Road
325-235-5494 865-392-4601
Sweetwater, TX 79556, U.S.A. Knoxville, TN 37932, U.S.A.

CONVERSION CHART

Customer MSES CONSULTANTS INC Date 13-Jan-15 Order #. 20260086/415886

Model 3 Serial No. 305787 Detector Model 44-9 Serial No. PR333692

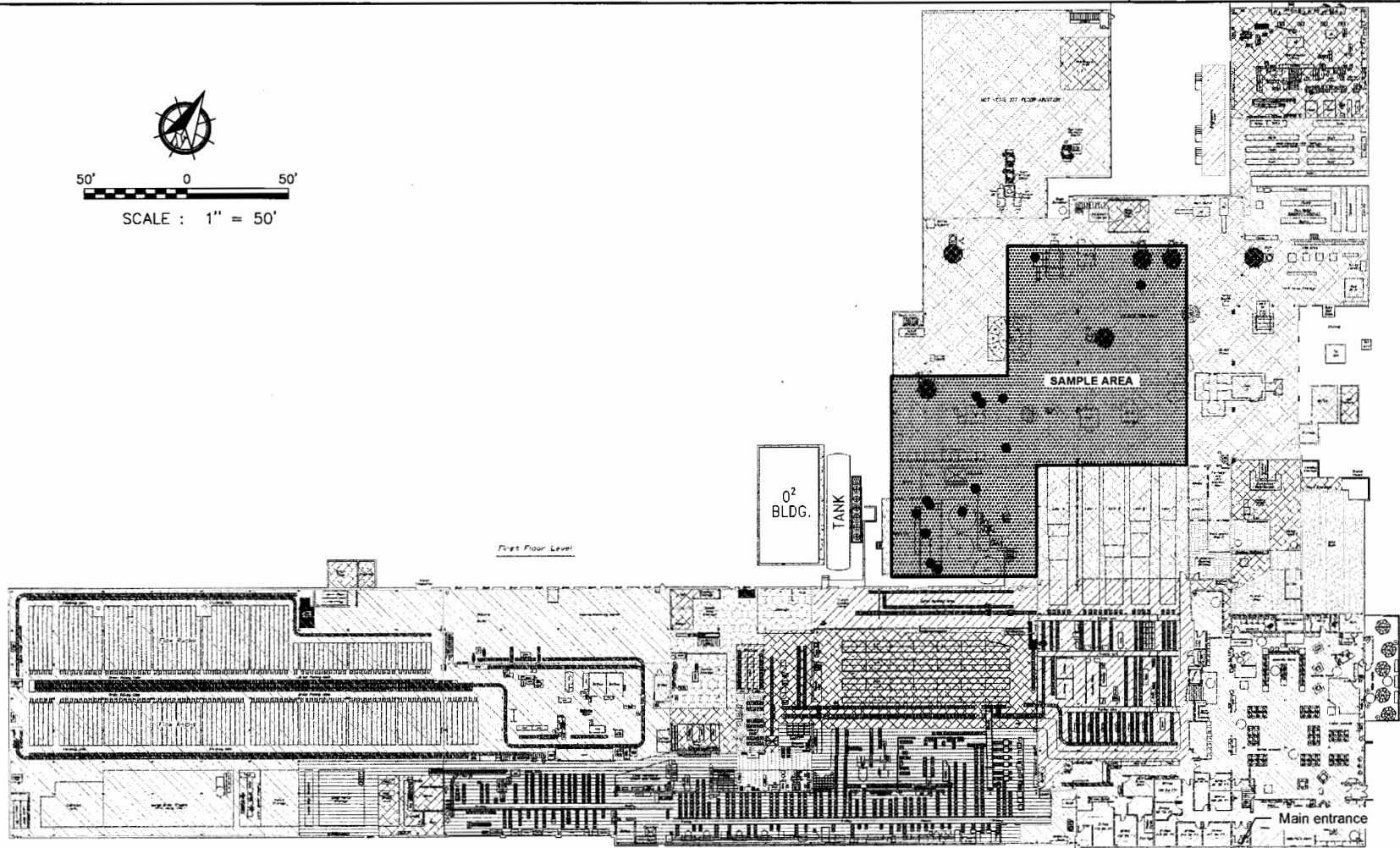
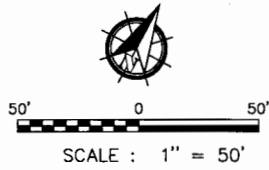
Source Cs-137 194.6 mCi Cs137 1.9mCi High Voltage 900 V

Input Sensitivity 29 mV

| Reference Point | "As Found" Readings (CPM): | | After Adjustment Readings (CPM): | |
|-----------------|----------------------------|-------------|----------------------------------|-------------|
| | Meter Reading | Range/Scale | Meter Reading | Range/Scale |
| 150 mR/hr | 3.0 k | x 100 | 3.0 k | x 100 |
| 50 mR/hr | 1.25 k | x 100 | 1.25 k | x 100 |
| 15 mR/hr | 4.5 k | x 10 | 4.5 k | x 10 |
| 5 mR/hr | 1.5 k | x 10 | 1.5 k | x 10 |
| 1.5 mR/hr | 4.8 k | x 1 | 4.8 k | x 1 |
| 1.0 mR/hr | 3.3 k | x 1 | 3.3 k | x 1 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Signature: *Scott D. All* Date 13 JAN 15

FIGURES



FENTON ART GLASS

SCREENING SURVEY
AREA OF SURVEY

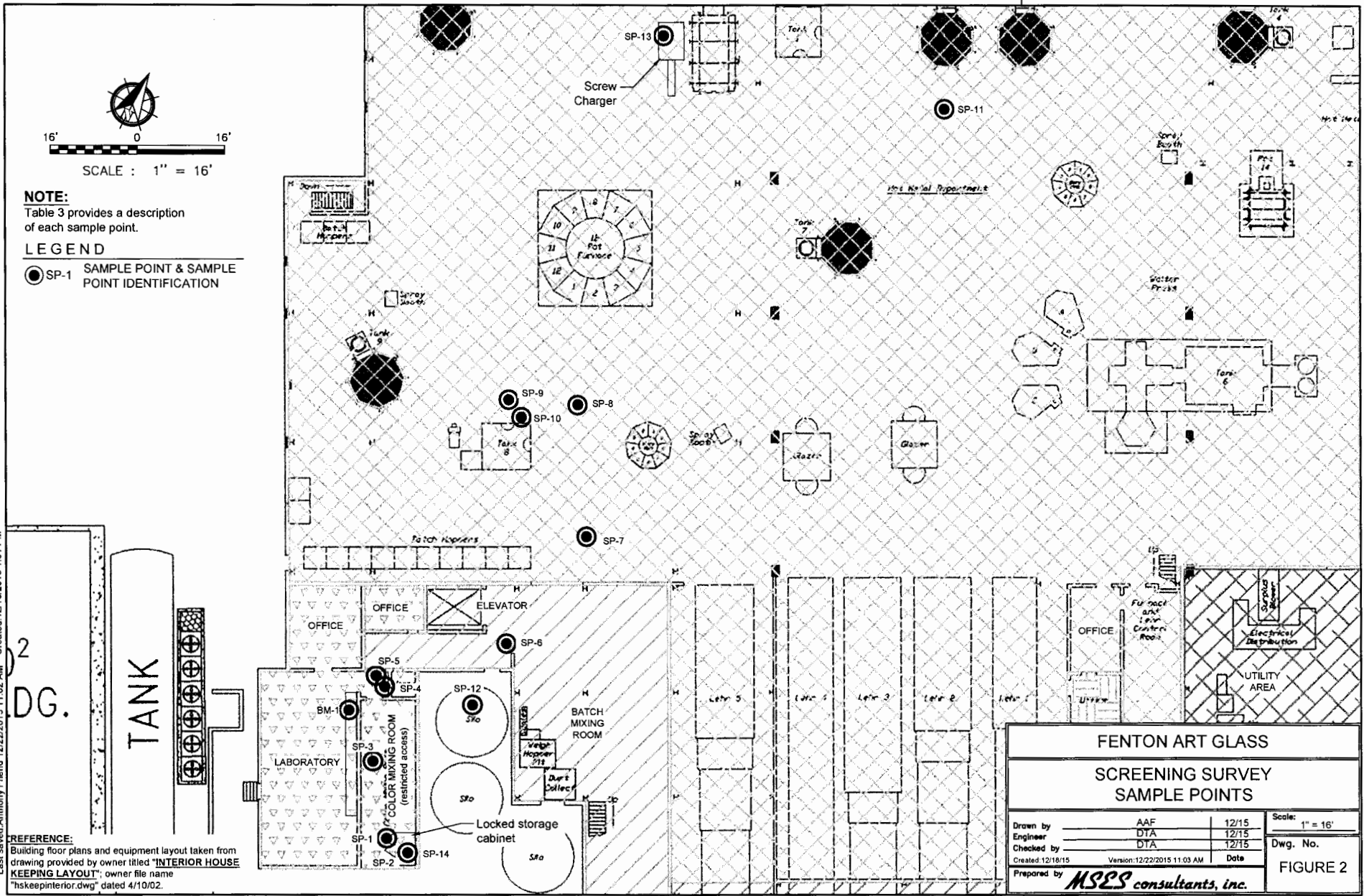
| | | | |
|-------------------|------------------------------|-------|--------------------|
| Drawn by | AAF | 12/15 | Scale: 1" = 50' |
| Engineer | DTA | 12/15 | |
| Checked by | DTA | 12/15 | Dwg. No. |
| Created: 12/18/15 | Version: 12/22/2015 11:03 AM | Date | |
| Prepared by | MSES consultants, inc. | | |

FIGURE 1

REFERENCE:
Building floor plans and equipment layout taken from drawing provided by owner titled "INTERIOR HOUSE KEEPING LAYOUT", owner file name "hskeepinterior.dwg" dated 4/10/02.

Last saved: Anthony Friend 12/22/2015 11:02 AM Created: 12/18/2015 1:01 PM

Last saved: Anthony Friend 12/22/2015 11:02 AM Created: 12/18/2015 1:01 PM



| | | |
|-------------------------|-------------------------------|------------------------------|
| FENTON ART GLASS | | |
| SCREENING SURVEY | | |
| SAMPLE POINTS | | |
| Drawn by | AAF | 12/15 |
| Engineer | DTA | 12/15 |
| Checked by | DTA | 12/15 |
| Created | 12/18/15 | Version: 12/22/2015 11:03 AM |
| Prepared by | MSPS consultants, inc. | |
| Scale: 1" = 16' | | Dwg. No. |
| | | FIGURE 2 |

PHOTOGRAPHIC LOG





PHOTOGRAPHIC LOG

| | | |
|-----------------------------------------|-------------------------------------------------------------------|-------------------------------|
| Client Name: Fenton Art Glass | Site Location: 700 Elizabeth Street Williamstown, WV | Project No.: 14-511 |
|-----------------------------------------|-------------------------------------------------------------------|-------------------------------|

| | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--|
| Photo No.: 1 | Date: 12/9/15 | |
| Direction Photo Taken: North | | |
| Description of Photo: Locked storage cabinet in the restricted access room/color room. SP-1 shown on the door. SP-2/SP-14 was located on the floor inside the cabinet. (Figure 2) | | |

| | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--|
| Photo No.: 2 | Date: 12/9/15 | |
| Direction Photo Taken: East | | |
| Description of Photo: Hallway immediately outside restricted access room/color room. SP-4 was located on the wall at the approximate height of the transport pail while being carried. (Figure 2) | | |



PHOTOGRAPHIC LOG

| | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------|--|-------------------------------|--|
| Client Name: Fenton Art Glass | | Site Location: 700 Elizabeth Street Williamstown, WV | | Project No.: 14-511 | |
| Photo No.: 3 | Date: 12/9/15 | | | | |
| Direction Photo Taken: Southeast | | | | | |
| Description of Photo: Furnace/tank #8. SP-8 is on the floor just out of frame. SP-9 is on the floor where U238 was placed in the screw charger. SP-10 was on the door of the furnace/tank #8. (Figure 2) | | | | | |

| | | | | | |
|------------------------------------------------------------------|-------------------------|--|--|--|--|
| Photo No.: 4 | Date: 12/9/15 | | | | |
| Direction Photo Taken: East | | | | | |
| Description of Photo: Screw charger. SP-13. (Figure 2) | | | | | |