



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

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# Appendix B

## Atlas Railcar Inspection Documents



Orano Federal Services  
**Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

---

## TABLE OF CONTENTS

|   |     |
|---|-----|
| Appendix B.1 – Atlas Fabrication Inspection Documentation.....                            | 4   |
| Appendix B.1.1 – Atlas Railcar Travelers .....  | 5   |
| Appendix B.1.2 – Burning Table Inspection Reports, Forms 9Z and 9Z-A .....                | 13  |
| Appendix B.1.3 – Car Body – Heat Identification Form, Form 44B.....                       | 54  |
| Appendix B.1.4 – Span Bolster Heat Identification Form, Form 42 .....                     | 62  |
| Appendix B.1.5 – New Car Inspection Form, Form 5-12-B .....                               | 66  |
| Appendix B.1.6 – Supplier Nonconformance Report KAS-SNR-011.....                          | 73  |
| Appendix B.1.7 – Certificate of Conformance.....  | 139 |
| Appendix B.2 – Special Process Inspection Documentation .....                             | 142 |
| Appendix B.2.1 – Securing and Jacking Lug Proof Test Certification Form, Form 45 .....    | 143 |
| Appendix B.2.2 – Spring Test Requirements and Tolerances Procedure #12 .....              | 146 |
| Appendix B.2.3 – Brake Cylinder Piston Travel Adjustment Procedure #12 .....              | 155 |
| Appendix B.2.4 – Railcar Weighting Form, Form 46-A.....                                   | 166 |
| Appendix B.2.5 – Static Force Brake Test Data, Form 36-A .....                            | 169 |
| Appendix B.2.6 – Single Car Air Brake Test Report Form 6-A .....                          | 172 |
| Appendix B.2.7 – AAR Witness Letter for Single Car Brake Test Results .....               | 178 |
| Appendix B.2.8 – NDE & Weld Examination Results – Atlas Railcar Fabrication.....          | 182 |
| Appendix B.3 – Other Inspection Documentation .....                                       | 238 |
| Appendix B.3.1 – CMS Laser Dimensions Report .....  | 239 |
| Appendix B.3.3 – Atlas Cask Car Loaded Deck Height Document.....                          | 261 |
| Appendix B.3.4 – Spring Retention Bosses Replacement, Amsted Weld Inspection Report ..... | 264 |
| Appendix B.3.5 – Spring Retention Bosses Replacement, Kasgro Weld Inspection Report.....  | 279 |
| Appendix B.3.6 – AAR Nonconformance Reports.....  | 280 |
| Appendix B.3.7 – FRA Safety Appliance Compliance Letter .....                             | 284 |
| Appendix B.3.8 – Amsted / TTCI Supplier Certification Letters.....                        | 288 |
| Appendix B.4 – Common Inspection Documentation.....                                       | 292 |
| Appendix B.4.1 – Weld Procedure Qualification Records (PQR) .....                         | 293 |
| Appendix B.4.2 – Weld Procedure Specification (WPS) Records .....                         | 306 |
| Appendix B.4.3 – Kasgro Welder Qualifications Records .....                               | 321 |
| Appendix B.4.4 – Kasgro Personnel AAR S-486 Brake Test Certification .....                | 514 |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

---

**Appendix B.4.5 – AWS Weld Examination Inspector Certification ..... 528**  
**Appendix B.4.6 – Measuring and Test Equipment Calibration Record, Kasgro Form 14 for Track**  
**Scale..... 532**



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

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## APPENDIX B.1 – ATLAS FABRICATION INSPECTION DOCUMENTATION

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.1.1 – Atlas Railcar Travelers**

|  |  | Orano Federal Services   |  |                               |  |
|--|--|--|--|-------------------------------|--|
|  |  | DATA TRANSMITTAL FORM  |  |                               |  |
| Supplier:  | KASGRO RAIL CORP., INC.                      | DTF No:  | 052  | Page 1 of 1                   |  |
| P.O./SC No:  | 15C3011916                                   | KLEIN Slade  | <small>Date: 2019.03.19 10:04:08 -07'00'</small>   | Date:                         | 3/19/2019  |
| Type of Submittal:   | <input checked="" type="checkbox"/> First    | <input type="checkbox"/> Re-Submittal  | SDRL List Item No:   |                               | 15   |
| Submitted for:   | <input checked="" type="checkbox"/> Approval | <input checked="" type="checkbox"/> Review                                   | <input type="checkbox"/> Information   | Number of Copies Submitted: 1 |  |
| Submitted By:  | RICK FORD                                    | Rick Ford  | <small>Digitally signed by Rick Ford<br/>Date: 2019.03.19 07:48:01 -0700</small>   | PROJECT MANAGER               |  |
|  | <small>(Name)</small>                        | <small>(Signature)</small>   |  | <small>(Title)</small>        |  |
| ITEM NUMBER  | DOCUMENT NUMBER                              | REVISION NUMBER  | DOCUMENT DESCRIPTION   | FS DISPOSITION                |  |
| 1  | KAS 189                                      |  | ATLAS CASK CAR SHOP TRAVELERS  | <input type="checkbox"/> AP   | <input type="checkbox"/> AWC <input checked="" type="checkbox"/> REV |
|  |  |  |  | <input type="checkbox"/> RWC  | <input type="checkbox"/> DS <input type="checkbox"/> RSA             |
| 2  | KAS 190                                      |  | ATLAS BUFFER CAR 1 SHOP TRAVELER   | <input type="checkbox"/> AP   | <input type="checkbox"/> AWC <input checked="" type="checkbox"/> REV |
|  |  |  |  | <input type="checkbox"/> RWC  | <input type="checkbox"/> DS <input type="checkbox"/> RSA             |
| 3  | KAS 191                                      |  | ATLAS BUFFER CAR 2 SHOP TRAVELER   | <input type="checkbox"/> AP   | <input type="checkbox"/> AWC <input checked="" type="checkbox"/> REV |
|  |  |  |  | <input type="checkbox"/> RWC  | <input type="checkbox"/> DS <input type="checkbox"/> RSA             |
|  |  |  |  | <input type="checkbox"/> AP   | <input type="checkbox"/> AWC <input type="checkbox"/> REV            |
|  |  |  |  | <input type="checkbox"/> RWC  | <input type="checkbox"/> DS <input type="checkbox"/> RSA             |
|  |  |  |  | <input type="checkbox"/> AP   | <input type="checkbox"/> AWC <input type="checkbox"/> REV            |
|  |  |  |  | <input type="checkbox"/> RWC  | <input type="checkbox"/> DS <input type="checkbox"/> RSA             |
|  |  |  |  | <input type="checkbox"/> AP   | <input type="checkbox"/> AWC <input type="checkbox"/> REV            |
|  |  |  |  | <input type="checkbox"/> RWC  | <input type="checkbox"/> DS <input type="checkbox"/> RSA             |
|  |  |  |  | <input type="checkbox"/> AP   | <input type="checkbox"/> AWC <input type="checkbox"/> REV            |
|  |  |  |  | <input type="checkbox"/> RWC  | <input type="checkbox"/> DS <input type="checkbox"/> RSA             |
|  |  |  |  | <input type="checkbox"/> AP   | <input type="checkbox"/> AWC <input type="checkbox"/> REV            |
|  |  |  |  | <input type="checkbox"/> RWC  | <input type="checkbox"/> DS <input type="checkbox"/> RSA             |
| Comments:  |  |  | Technical Reviewer (i.e., RE, PTL, SME, QA, etc.)  |                               |  |
| No comments.   |  |  | KLEIN Slade  |                               |  |
|  |  |  | Date: 2019.03.19 08:36:22 -07'00'  |                               |  |
|  |  |  | Date 3/19/2019   |                               |  |
| FS DISPOSITION CODES AND DEFINITIONS   |  |  |  |                               |  |
| AP   | Approved                                     | Work may proceed.  | Resubmittal is not required  |                               |  |
| AWC  | Approved with Comment                        | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required  |                               |  |
| REV  | Reviewed                                     | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required  |                               |  |
| RWC  | Reviewed with Comment                        | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit   |                               |  |
| DS   | Disapproved                                  | Work may <u>not</u> proceed.   | Correct and resubmit   |                               |  |
| RSA  | Receipt Submittal Acknowledged               | No other action required.  |  |                               |  |
| <small>If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&amp;P Representative describing the change.</small> |  |  |  |                               |  |
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval   |  |  | <small>Digitally signed by Mark A. Denton<br/>DN: cn=Mark A. Denton, o=Orano Federal Services, email=mark.denton@orano-group.com, ou=Orano</small> | Date: 03/19/2019              |  |
|  |  |  | <small>Date: 2019.03.19 12:30:37 -0400</small>   |                               |  |

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |                                    |   |
|--|------------------------------------|---|
|  | Orano Federal Services             |   |
|  | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:   | KASGRO / 15C3011916                | DTF No. / Rev: 052  |
| Charge No:   | 00225.03.0050.02.00001             | Due Date: 4/2/2019  |
| Document(s):   | See DTF No.: 052                   |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)                  |                                    |   |
| PE   | Slade Klein                        |   |
| REVIEWERS  | Slade Klein, Bernie Counterman     |   |
| QA   | Bernie Counterman                  |   |
| <b>Technical Review</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No comments.   |                                    |   |
| Technical Reviewer(s) (Sign/Date):   |                                    | Date: 2019.03.19 08:18:55 -07'00'   |
| KLEIN Slade  |                                    |   |
| <b>Quality Assurance Review (As Applicable)</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No Comments  |                                    |   |
| QA Reviewer(s) (Sign/Date):  |                                    | Digitally signed by COUNTERMAN Bernard<br>Date: 2019.03.19 08:22:16 -07'00' |
|  |                                    |   |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary) |                                    |   |
|  |                                    |   |
|  |                                    |   |

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**Kasgro Specialty Railcar Solutions**  
**Form 84**  
**ATLAS Cask Car Assembly**

Quality Assurance  
 Body Bolster reporting form  
 Fit and Weld Body Bolster

**CUSTOMER WITNESS POINT:**

\* Material Inspection- Deck and/or Car Body Steel to occur on first available car on order.

Customer Signature *Benjamin C. ...* Date 3/24/18

Inspect fit-up OK

**CUSTOMER WITNESS POINT:**

\* Start of Welding Process to occur on first available car on order.

Customer Signature *B. C. ...* Date 4/9/18

Weld  
 Inspect all welds OK

Welders Clock # 819 Thomas R. ...  
811 ...  
804 ...

All repairs to be made and forms completed before moving assembly

Group leader or foreman's signature *Scott Neely* Date 3-29-18

Inspector's signature *Bill Baker* Date 29 APR 18

QA Form 84  
 Revision No. 0

ATLAS Cask Car Assembly

April 11, 2017



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**Kasgro Specialty Railcar Solutions**  
 Form 84  
**ATLAS Cask Car Assembly**

Quality Assurance  
 Railcar reporting form

Fit - Side sills, Centersill, Center plates, End sills, Body bolsters and Crossbearers to railcar deck plate

Check fit-up for proper application to drawings OK

Weld  
 Inspect all welds OK

Welders Clock # 821 T. PA  
840  
841  
824 R. PRICE

All repairs to be made and forms completed before moving assembly

Group leader or foreman's signature Scott Neely Date 7-2-18

Inspector's signature Pull Baker Date 2 JUL 18

QA Form 84  
 Revision No. 0

ATLAS Cask Car Assembly

April 11, 2017



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Kasgro Specialty Railcar Solutions**  
**Form 84**  
**ATLAS Cask Car Assembly**

Quality Assurance  
 Railcar reporting form

Fit – Bottom Cover Plate and Side Sill Gussets

Check fit-up for proper application to drawings OK

Weld

Inspect all welds OK

Welders Clock # 821 - T. Hoff  
843 - [unclear]  
841 - [unclear]  
874 - [unclear]

All repairs to be made and forms completed before moving assembly

Group leader or foreman's signature Scott Neely Date 7-2-18

Inspector's signature Bill Baker Date 2 JUL 18

**CUSTOMER WITNESS POINT:**

\* Start of NDE Process to occur on first available car on order.

Customer Signature [Signature] Date 6/19/18

\* Witness Jack Lug proof test.

Customer Signature [Signature] Date 7/24/18

\* Witness CAR BODY ULTRASONIC TESTING.

Customer Signature: [Signature] DATE 7/24/18

QA Form 84 ATLAS Cask Car Assembly April 11, 2017  
 Revision No. 0



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**Kasgro Specialty Railcar Solutions**  
**Form 84**  
**ATLAS Cask Car Assembly**

Quality Assurance  
 Reporting form

Position #7  
 Apply Airbrake, Piping

Inspection  
 Inspect all parts/sub-assemblies for proper application to drawings

Inspect all welds and fasteners OK.

Welders Clock # 892 [Signature]  
836 [Signature]

All repairs to be made and forms completed before moving assembly

Group leader or foreman's signature [Signature] Date 7-25-18

Inspector's signature [Signature] Date 25 Jul 18



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**Kasgro Specialty Railcar Solutions**  
**Form 84**  
**ATLAS Cask Car Assembly**

Quality Assurance  
 Reporting form

**Additional Customer Witness and/or Hold Points**

**\* CUSTOMER WITNESS POINTS:**

- + AAR Witness Brake Test; to occur on Cask Railcar.

Customer Signature *B. Covert* Date 1/17/19

- + Laser Layout of Pin Block Attachments on Cask Car Deck to occur near end of final assembly.

Customer Signature *B. Covert* Date 1/29/19

- \* Laser Check of Pin Block Attachments on Atlas Railcar Deck to occur near end of Cask railcar final assembly.

Customer Signature *B. Covert* Date 1/29/19

- \* Pin Block Attachment Weld NDR Test to occur near end of Cask railcar final assembly, after Laser check of welded pin blocks.

Customer Signature *B. Covert* Date 2/16/19

**\* CUSTOMER HOLD POINTS:**

- + Envelope & Deck Height Measurement Hold Point; to occur during Axle/Truck Load Test with load on railcar.

Customer Signature *B. Covert* Date 1/29/19

- + Final Acceptance Inspection Hold Point; to occur with each railcar.

Customer Signature *B. Covert* Date 2/19/19

QA Form 84  
 Revision No. 0

ATLAS Cask Car Assembly

April 11, 2017







**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

|  |                                    |   |
|--|------------------------------------|---|
|  | Orano Federal Services             |   |
|  | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:   | KASGRO / 15C3011916                | DTF No. / Rev: 041A   |
| Charge No:   | 00225.03.0050.02.00001             | Due Date: 4/15/2019   |
| Document(s):   | See DTF No.: 041A                  |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg, Codes, Stds, etc.)                  |                                    |   |
| PE   | Slade Klein                        |   |
| REVIEWERS  | Slade Klein, Bernie Counterman     |   |
| QA   | Bernie Counterman                  |   |
| <b>Technical Review</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No comments  |                                    |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b> Date: 2019.04.02 09:59:27 -07'00'                    |                                    |   |
| <b>Quality Assurance Review (As Applicable)</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No Comments  |                                    |   |
| QA Reviewer(s) (Sign/Date):  |                                    | Digitally signed by COUNTERMEN Bernard<br>Date: 2019.04.03 08:12:16 -07'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary) |                                    |   |
|  |                                    |   |
|  |                                    |   |

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**KASGRO RAIL CORP**  
 FORM 92-A  
 BURNING TABLE INSPECTION REPORT

DATE 7/21/10

P.O.# 15C3011916 CAR/JOB # ATLAS C

MATERIAL DESCRIPTION CENTER SILL FLANGE

DRAWING 1155-16 ITEM # 3-35

MILL REPORTS RECEIVED YES  NO  N/A  REPORTS CORRECT YES  NO  N/A

ACCEPTANCE PER SAMPLE SIZE WHEN SAMPLING LOTS OF MATERIAL

| LOT SIZE | SAMPLE SIZE   | REJECTION CRITERIA |
|----------|---------------|--------------------|
| 1-10     | 1             | 1                  |
| 11-20    | 2             | 2                  |
| 21-50    | 3             | 3                  |
| 51-100   | 4             | 4                  |
| 101-200  | 5             | 5                  |
| 201-500  | 6             | 6                  |
| 1-UP     | 7 PER 500 LOT | 7 PER 500 LOT      |

| DATE CUT Rec | QUANTITY | QUANTITY REMAINING | REMARKS |
|--------------|----------|--------------------|---------|
| 7/9/18       | 1        | 0                  |         |
|              |          |                    |         |
|              |          |                    |         |
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|              |          |                    |         |

To the best of my knowledge all information contained in this document is accurate.  
 Signed: B. Baker Kasgro Rail



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**KASGRO RAIL CORP**

FORM 92  
 RECEIVING INSPECTION REPORT

DATE 7-21-10

P.O.# 15C3011916 CAR/JOB # ATLAS C

MATERIAL DESCRIPTION CENTER SILL WEB

DRAWING D-1155-16 ITEM # 3-36 K17-0370

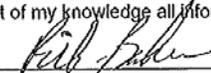
(IF FABRICATED PART) DRAWING # \_\_\_\_\_

MILL REPORTS RECEIVED YES  NO \_\_\_ N/A\_\_\_ REPORTS CORRECT YES  NO \_\_\_ N/A\_\_\_

ACCEPTANCE PER SAMPLE SIZE WHEN SAMPLING LOTS OF MATERIAL

| LOT SIZE | SAMPLE SIZE   | REJECTION CRITERIA |
|----------|---------------|--------------------|
| 1-10     | 1             | 1                  |
| 11-20    | 2             | 2                  |
| 21-50    | 3             | 3                  |
| 51-100   | 4             | 4                  |
| 101-200  | 5             | 5                  |
| 201-500  | 6             | 6                  |
| 500+ UP  | 7 PER 500 LOT | 7 PER 500 LOT      |

| DATE RECEIVED | QUANTITY | QUANTITY REMAINING | REMARKS     |
|---------------|----------|--------------------|-------------|
| 6/6/2018      | 2        | 0                  | BB OK D1431 |
|               |          |                    |             |
|               |          |                    |             |
|               |          |                    |             |
|               |          |                    |             |
|               |          |                    |             |
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|               |          |                    |             |
|               |          |                    |             |

To the best of my knowledge all information contained in this document is accurate.  
 Signed:  Kasgro Rail



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**KASGRO RAIL CORP**  
 FORM 9Z  
 RECEIVING INSPECTION REPORT

DATE 7-21-10

P.O.# 15C3011916 CAR/JOB # ATLAS C

MATERIAL DESCRIPTION CENTER SILL WEB

DRAWING D-1155-16 ITEM # 3-37 K17-0370

(IF FABRICATED PART) DRAWING # \_\_\_\_\_

MILL REPORTS RECEIVED YES X NO \_\_\_ N/A\_\_\_ REPORTS CORRECT YES X NO \_\_\_ N/A\_\_\_

ACCEPTANCE PER SAMPLE SIZE WHEN SAMPLING LOTS OF MATERIAL

| LOT SIZE | SAMPLE SIZE   | REJECTION CRITERIA |
|----------|---------------|--------------------|
| 1-10     | 1             | 1                  |
| 11-20    | 2             | 2                  |
| 21-50    | 3             | 3                  |
| 51-100   | 4             | 4                  |
| 101-200  | 5             | 5                  |
| 201-500  | 6             | 6                  |
| 501-UP   | 7 PER 500 LOT | 7 PER 500 LOT      |

| DATE RECEIVED | QUANTITY | QUANTITY REMAINING | REMARKS     |
|---------------|----------|--------------------|-------------|
| 6/6/2018      | 2        | 0                  | BB OK D1431 |
|               |          |                    |             |
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To the best of my knowledge all information contained in this document is accurate.  
 Signed: Bill Baker Kasgro Rail













































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**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.1.3 – Car Body – Heat Identification Form, Form 44B**

|   |  |
|---|--|
| Orano Federal Services  |  |
| <b>DATA TRANSMITTAL FORM</b>  |  |
| Supplier: <b>KASGRO RAIL CORP., INC.</b>  | DTF No: <b>39</b> <span style="float: right;">Page <b>1</b> of <b>1</b></span>   |
| P.O./SC No: <b>15C3011916</b>   | Date: <b>2/22/2019</b>   |
| Type of Submittal: <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal                    | SDRL List Item No: <b>24</b>   |
| Submitted for: <input type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted: <b>1</b>   |
| Submitted By: <b>RICK FORD</b>  | <b>Rick Ford</b> <small>Digitally signed by Rick Ford<br/>Date: 2019.02.22 09:16:40 -0500</small> <b>PROJECT MANAGER</b> |
| <small>(Name)</small>   | <small>(Signature)</small> <span style="float: right;"><small>(Title)</small></span>                                     |

| ITEM NUMBER | DOCUMENT NUMBER | REVISION NUMBER | DOCUMENT DESCRIPTION  | FS DISPOSITION  |
|-------------|-----------------|-----------------|---|---|
| 1           | KAS 138         |                 | ATLAS CASK/BUFFER CARS LATLON INSTALLATION AND TEST DATA                    | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 2           | KAS 139         |                 | ATLAS CASK BODY MATERIAL HEAT IDENTIFICATION, FORMS 42, 42A, 44B            | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 3           | KAS 140         |                 | ATLAS BUFFER IDOX 20001 BODY MATERIAL HEAT IDENTIFICATION, FORM 44B         | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 4           | KAS 141         |                 | ATLAS BUFFER IDOX 20002 BODY MATERIAL HEAT IDENTIFICATION, FORM             | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 5           | KAS 142         |                 | ATLAS CASK CAR FORM 36 STATIC FORCE BRAKE TEST                              | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 6           | KAS 143         |                 | ATLAS CASK CAR IDOX 10001, FORM 5-13-B NEW CAR INSPECTION                   | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 7           | KAS 144         |                 | ATLAS CASK IDOX 10001 SUPPLIER CERTIFICATION/ AMSTED RAIL SEDARSW / MICCABE | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |

|                          |   |
|--------------------------|---|
| Comments:<br>No comments | Technical Reviewer (I.e., RE, PTL, SME, QA, etc.)<br><b>KLEIN Slade</b> <small>Date: 2019.02.26<br/>07:33:08 -08'00'</small><br>Date <b>2/26/2019</b> |
|--------------------------|---|

| FS DISPOSITION CODES AND DEFINITIONS |                                |  |                             |
|--------------------------------------|--------------------------------|--|-----------------------------|
| AP                                   | Approved                       | Work may proceed.  | Resubmittal is not required |
| AWC                                  | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| REV                                  | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| RWC                                  | Reviewed with Comment          | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit        |
| DS                                   | Disapproved                    | Work may <u>not</u> proceed.   | Correct and resubmit        |
| RSA                                  | Receipt Submittal Acknowledged | No other action required.  |                             |

If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change.

|  |   |
|--|---|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval<br> | <small>Digitally signed by Mark A. Denton<br/>DN: cn=Mark A. Denton, o=Orano Federal Services, email=mark.denton@orano-group.com, ou=Orano</small><br>Date: <b>02/26/2019</b><br><small>Date: 2019.02.26 12:36:54 -0500</small> |
|--|---|

FS-EN-FRM-023 Rev 02 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |                                    |   |
|--|------------------------------------|---|
|  | Orano Federal Services             |   |
|  | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:   | <b>KASGRO / 15C3011916</b>         | DTF No. / Rev: <b>039</b>   |
| Charge No:   | <b>00225.03.0050.02.00001</b>      | Due Date: <b>3/8/2019</b>   |
| Document(s):   | <b>See DTF No.: 039</b>            |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)                  |                                    |   |
| PE   | Slade Klein                        |   |
| REVIEWERS  | Slade Klein, Bernie Counterman     |   |
| QA   | Bernie Counterman                  |   |
| <b>Technical Review</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No comments  |                                    |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b>  |                                    | Date: 2019.02.25 15:52:04 -08'00'   |
| <b>Quality Assurance Review (As Applicable)</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| KAS 142 Cask Car Form 36 Brake Test - Why is the Gross Shoe Force = 0                                      |                                    |   |
| QA Reviewer(s) (Sign/Date):  |                                    | Digitally signed by COUNTERMAN Bernard<br>Date: 2019.02.25 10:22:16 -08'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary) |                                    |   |
|  |                                    |   |
|  |                                    |   |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**12-AXLE ATLAS CASK CAR BODY - HEAT IDENTIFICATION**

Atlas

FORM 44B - 3/12/2010

| DATE : 11/14/18   |           | BODY NUMBER: IDOX 010001                              |               |             |             |                 |
|---|-----------|---|---------------|-------------|-------------|-----------------|
| TO THE BEST OF MY KNOWLEDGE ALL INFORMATION CONTAINED IS ACCURATE   |           |   |               |             |             |                 |
| SIGNED: <i>Bill Baker</i>   |           |   |               | KASGRO RAIL |             |                 |
| Use of ASTM D72 grade 60 material is acceptable for grade 80 material provided the mechanical properties for grade 60 material are achieved   |           |   |               |             |             |                 |
| Charpy impact testing, when required, will be in accordance with ASTM A973. The minimum average absorbed energy shall be 26 ft-lb at zero degrees F. Transverse impact test is required for plate widths over 24 inches |           |   |               |             |             |                 |
| PART NO.  | PRINT NO. | HEAT NUMBER   | MELTER        | QTY/CAR     | MATERIAL    | Special testing |
| 3-11  | D-1155-09 | D60297  | NUCOR         | 2           | A-36        | hardness        |
| 3-11  | D-1155-08 | D60297  | NUCOR         | 2           | A-36        | hardness        |
| 3-15  | D-1155-10 | D2569   | ARCELORMITTAL | 1           | A-572 GR60  |                 |
| 3-16  | D-1155-10 | R12Z36570   | ARCELORMITTAL | 4           | A-572 GR80* | charpy          |
| 3-16  | D-1155-10 | R12Z36570   | ARCELORMITTAL | 4           | A-572 GR80* | charpy          |
| 3-16  | D-1155-10 | R12Z36570   | ARCELORMITTAL | 4           | A-572 GR80* | charpy          |
| 3-16  | D-1155-10 | R12Z36570   | ARCELORMITTAL | 4           | A-572 GR80* | charpy          |
| 3-17  | D-1155-10 | R12Z36570   | ARCELORMITTAL | 2           | A-572 GR60  |                 |
| 3-17  | D-1155-10 | R12Z36570   | ARCELORMITTAL | 2           | A-572 GR60  |                 |
| 3-18  | D-1155-10 | R12Z36570   | ARCELORMITTAL | 2           | A-572 GR60  |                 |
| 3-18  | D-1155-10 | R12Z36570   | ARCELORMITTAL | 2           | A-572 GR60  |                 |
| 3-26  | D-1155-12 | R22Z36500   | ARCELORMITTAL | 2           | A-572 GR80* | charpy          |
| 3-26  | D-1155-12 | R22Z36500   | ARCELORMITTAL | 2           | A-572 GR80* | charpy          |
| 3-27  | D-1155-13 | R11A10680   | ARCELORMITTAL | 2           | A-572 GR60  |                 |
| 3-27  | D-1155-13 | R11A10680   | ARCELORMITTAL | 2           | A-572 GR60  |                 |
| 3-20  | D-1155-13 | R11A10680   | ARCELORMITTAL | 2           | A-572 GR60  |                 |
| 3-28  | D-1155-13 | R11A10680   | ARCELORMITTAL | 2           | A-572 GR60  |                 |
| 3-31  | D-1155-14 | D1431   | ARCELORMITTAL | 2           | A-572 GR60  |                 |
| 3-31  | D-1155-14 | D1431   | ARCELORMITTAL | 2           | A-572 GR60  |                 |
| 3-32  | D-1155-14 | D1431   | ARCELORMITTAL | 2           | A-572 GR60  |                 |
| 3-32  | D-1155-14 | D1431   | ARCELORMITTAL | 2           | A-572 GR60  |                 |
| 3-34  | D-1155-15 | D3081   | ARCELORMITTAL | 2           | A-572 GR80* | charpy          |
| 3-34  | D-1155-15 | D3081   | ARCELORMITTAL | 2           | A-572 GR80* | charpy          |
| 3-35  | D-1155-16 | R22Z36500   | ARCELORMITTAL | 1           | A-572 GR80* | charpy          |
| 3-36  | D-1155-16 | D1431   | ARCELORMITTAL | 2           | A-572 GR60  |                 |
| 3-36  | D-1155-16 | D1431   | ARCELORMITTAL | 2           | A-572 GR60  |                 |
| 3-37  | D-1155-16 | D1431   | ARCELORMITTAL | 2           | A-572 GR60  |                 |
| 3-37  | D-1155-16 | D1431   | ARCELORMITTAL | 2           | A-572 GR60  |                 |
| 3-139   | D-1155-38 | C4530   | ARCELORMITTAL | 4           | A-572 GR42  |                 |
| 3-139   | D-1155-38 | C4530   | ARCELORMITTAL | 4           | A-572 GR42  |                 |
| 3-139   | D-1155-38 | C4530   | ARCELORMITTAL | 4           | A-572 GR42  |                 |
| 3-139   | D-1155-38 | C4530   | ARCELORMITTAL | 4           | A-572 GR42  |                 |
| Bolster Assembly Applied  |           | A end 1   |               | B end 2     |             |                 |
| Welding Wire  |           | ORANO: HOBART 1/16" 7038A, 70 SERIES, 4081T 80 SERIES |               |             |             |                 |

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Page 1 of 5





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**12-AXLE ATLAS CASK CAR BODY - HEAT IDENTIFICATION**

Atlas

FORM 44B - 3/12/2010

| DATE : 11/14/18  |           |             | BODY NUMBER: IDOX 010001 |         |            |                    |
|--|-----------|-------------|--------------------------|---------|------------|--------------------|
| TO THE BEST OF MY KNOWLEDGE ALL INFORMATION CONTAINED IS ACCURATE  |           |             |                          |         |            |                    |
| SIGNED: <i>Paul Baker</i>  |           |             | KASGRO RAIL              |         |            |                    |
| Use of ASTM A-572 grade 60 material is acceptable for grade 60 material provided the mechanical properties for grade 60 material are satisfied |           |             |                          |         |            |                    |
| Charpy impact testing, when required, will be in accordance with ASTM A571. The minimum average absorbed energy shall be 20 ft-lbs.            |           |             |                          |         |            |                    |
| At zero degrees F, Transverse impact test is required for plate widths over 24 inches  |           |             |                          |         |            |                    |
| PART NO.   | PRINT NO. | HEAT NUMBER | MELTER                   | QTY/CAR | MATERIAL   | Special<br>testing |
| 3-29   | D-1155-14 | 81226530    | ARCELORMITTAL            | 2       | A-572 GR60 |                    |
| 3-30   | D-1155-14 | 022218-001  | ARCELORMITTAL            | 2       | A-572 GR60 |                    |
| 3-30   | D-1155-14 | 022218-001  | ARCELORMITTAL            | 2       | A-572 GR60 |                    |
| 3-38   | D-1155-16 | 821Y01780   | ARCELORMITTAL            | 4       | A-38       |                    |
| 3-38   | D-1155-16 | 821Y01780   | ARCELORMITTAL            | 4       | A-38       |                    |
| 3-38   | D-1155-16 | 821Y01780   | ARCELORMITTAL            | 4       | A-38       |                    |
| 3-38   | D-1155-16 | 821Y01780   | ARCELORMITTAL            | 4       | A-38       |                    |
| 3-38   | D-1155-17 | 81226530    | ARCELORMITTAL            | 4       | A-572 GR60 |                    |
| 3-39   | D-1155-17 | 81226530    | ARCELORMITTAL            | 4       | A-572 GR60 |                    |
| 3-39   | D-1155-17 | 81226530    | ARCELORMITTAL            | 4       | A-572 GR60 |                    |
| 3-39   | D-1155-17 | 81226530    | ARCELORMITTAL            | 4       | A-572 GR60 |                    |
| 3-40   | D-1155-17 | 81226530    | ARCELORMITTAL            | 2       | A-572 GR60 |                    |
| 3-40   | D-1155-17 | 81226530    | ARCELORMITTAL            | 2       | A-572 GR60 |                    |
| 3-41   | D-1155-17 | 81226530    | ARCELORMITTAL            | 4       | A-572 GR60 |                    |
| 3-41   | D-1155-17 | 81226530    | ARCELORMITTAL            | 4       | A-572 GR60 |                    |
| 3-41   | D-1155-17 | 81226530    | ARCELORMITTAL            | 4       | A-572 GR60 |                    |
| 3-41   | D-1155-17 | 81226530    | ARCELORMITTAL            | 4       | A-572 GR60 |                    |
| 3-42   | D-1155-17 | 81226530    | ARCELORMITTAL            | 2       | A-572 GR60 |                    |
| 3-42   | D-1155-17 | 81226530    | ARCELORMITTAL            | 2       | A-572 GR60 |                    |
| 3-75   | D-1155-17 | N/A         |                          | 2       | A-500 B    |                    |
| 3-75   | D-1155-17 | N/A         |                          | 2       | A-500 B    |                    |
| 3-150  | D-1155-17 | 81226530    | ARCELORMITTAL            | 2       | A-572 GR60 |                    |
| 3-150  | D-1155-17 | 81226530    | ARCELORMITTAL            | 2       | A-572 GR60 |                    |
| 3-150  | D-1155-17 | 81226530    | ARCELORMITTAL            | 2       | A-572 GR60 |                    |
| 3-150  | D-1155-17 | 81226530    | ARCELORMITTAL            | 2       | A-572 GR60 |                    |
| 3-151  | D-1155-17 | 81226530    | ARCELORMITTAL            | 2       | A-572 GR60 |                    |
| 3-151  | D-1155-17 | 81226530    | ARCELORMITTAL            | 2       | A-572 GR60 |                    |
| 3-152  | D-1155-17 | 81226530    | ARCELORMITTAL            | 2       | A-572 GR60 |                    |
| 3-152  | D-1155-17 | 81226530    | ARCELORMITTAL            | 2       | A-572 GR60 |                    |
| 3-153  | D-1155-17 | 81226530    | ARCELORMITTAL            | 4       | A-572 GR60 |                    |
| 3-153  | D-1155-17 | 81226530    | ARCELORMITTAL            | 4       | A-572 GR60 |                    |
| 3-153  | D-1155-17 | 81226530    | ARCELORMITTAL            | 4       | A-572 GR60 |                    |
| 3-153  | D-1155-17 | 81226530    | ARCELORMITTAL            | 4       | A-572 GR60 |                    |
| 3-154  | D-1155-17 | 81226530    | ARCELORMITTAL            | 4       | A-572 GR60 |                    |
| 3-154  | D-1155-17 | 81226530    | ARCELORMITTAL            | 4       | A-572 GR60 |                    |
| 3-154  | D-1155-17 | 81226530    | ARCELORMITTAL            | 4       | A-572 GR60 |                    |
| 3-154  | D-1155-10 | 81226530    | ARCELORMITTAL            | 4       | A-572 GR60 |                    |
| 3-45   | D-1155-18 | 81226530    | ARCELORMITTAL            | 4       | A-572 GR60 |                    |
| 3-45   | D-1155-10 | 81226530    | ARCELORMITTAL            | 4       | A-572 GR60 |                    |

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**12-AXLE ATLAS CASK CAR BODY - HEAT IDENTIFICATION**  
**FORM 44B - 3/12/2010**

Atlas

| DATE: 11/14/18   |           | BODY NUMBER: IDOX 010001 |               |         |            |                 |
|--|-----------|--------------------------|---------------|---------|------------|-----------------|
| TO THE BEST OF MY KNOWLEDGE ALL INFORMATION CONTAINED IS ACCURATE  |           |                          |               |         |            |                 |
| SIGNED: <i>Bill Kahan</i>  |           |                          | KASGRO RAIL   |         |            |                 |
| <small>Use of ASTM 672 grade 60 material is acceptable for grade 60 steel provided the mechanical properties for grade 60 material are satisfied</small> |           |                          |               |         |            |                 |
| <small>Charpy Impact testing when required, will be in accordance with ASTM 5978. The minimum average absorbed energy shall be 20 ft-lb</small>          |           |                          |               |         |            |                 |
| <small>at zero degrees F. Transverse Impact test is required for plate widths over 24 inches</small>   |           |                          |               |         |            |                 |
| PART NO.   | PRINT NO. | HEAT NUMBER              | MELTER        | QTY/CAJ | MATERIAL   | special testing |
| 3-45   | D-1155-18 | 81276530                 | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-45   | D-1155-18 | 81276530                 | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-70   | D-1155-18 | 81276530                 | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-70   | D-1155-18 | 81276530                 | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-70   | D-1155-18 | 81276530                 | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-70   | D-1155-18 | 81276530                 | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-71   | D-1155-18 | 81226530                 | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-71   | D-1155-18 | 81226530                 | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-71   | D-1155-18 | 81226530                 | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-71   | D-1155-18 | 81226530                 | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-72   | D-1155-18 | 81226530                 | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-72   | D-1155-18 | 81226530                 | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-72   | D-1155-18 | 81226530                 | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-72   | D-1155-18 | 81226530                 | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-72   | D-1155-18 | 81226530                 | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-74   | D-1155-18 | 81226530                 | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-74   | D-1155-18 | 81226530                 | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-74   | D-1155-18 | 81226530                 | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-74   | D-1155-18 | 81226530                 | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-21   | D-1155-24 | 8703953                  | NUCOR         | 4       | A-568 GR60 | Charpy          |
| 3-21   | D-1155-24 | 8703953                  | NUCOR         | 4       | A-568 GR60 | Charpy          |
| 3-21   | D-1155-24 | 8703953                  | NUCOR         | 4       | A-568 GR60 | Charpy          |
| 3-21   | D-1155-24 | 8703953                  | NUCOR         | 4       | A-568 GR60 | Charpy          |
| 3-131  | D-1155-36 | 812236570                | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-131  | D-1155-36 | 812236570                | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-131  | D-1155-36 | 812236570                | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-131  | D-1155-36 | 812236570                | ARCELORMITTAL | 4       | A-572 GR60 |                 |
| 3-138  | D-1155-36 | 822736570                | ARCELORMITTAL | 8       | A-572 GR60 |                 |
| 3-138  | D-1155-36 | 822736570                | ARCELORMITTAL | 8       | A-572 GR60 |                 |
| 3-130  | D-1155-36 | 822736570                | ARCELORMITTAL | 8       | A-572 GR60 |                 |
| 3-138  | D-1155-36 | 822736570                | ARCELORMITTAL | 8       | A-572 GR60 |                 |
| 3-138  | D-1155-36 | 822736570                | ARCELORMITTAL | 8       | A-572 GR60 |                 |
| 3-138  | D-1155-36 | 822736570                | ARCELORMITTAL | 8       | A-572 GR60 |                 |
| 3-138  | D-1155-36 | 822736570                | ARCELORMITTAL | 8       | A-572 GR60 |                 |
| 3-138  | D-1155-36 | 822736570                | ARCELORMITTAL | 8       | A-572 GR60 |                 |
| 3-138  | D-1155-36 | 822736570                | ARCELORMITTAL | 8       | A-572 GR60 |                 |
| 3-141  | D-1155-36 | 812236570                | ARCELORMITTAL | 8       | A-572 GR60 |                 |
| 3-141  | D-1155-36 | 812236570                | ARCELORMITTAL | 8       | A-572 GR60 |                 |
| 3-141  | D-1155-36 | 812236570                | ARCELORMITTAL | 8       | A-572 GR60 |                 |
| 3-141  | D-1155-36 | 812236570                | ARCELORMITTAL | 8       | A-572 GR60 |                 |
| 3-110  | D-1155-37 | 822218-001               | ARCELORMITTAL | 4       | A-572 GR60 | Charpy          |

Note: The recording of false, fictitious or fraudulent statements or entries on this document may be punishable as a felony under Federal statutes.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**12-AXLE ATLAS CASK CAR BODY - HEAT IDENTIFICATION**  
**FORM 44B - 3/12/2010**

Atlas

| <b>DATE: 11/14/18</b>   |           | <b>BODY NUMBER: IDOX 010001</b> |               |                    |            |                 |
|---|-----------|---------------------------------|---------------|--------------------|------------|-----------------|
| TO THE BEST OF MY KNOWLEDGE ALL INFORMATION CONTAINED IS ACCURATE   |           |                                 |               |                    |            |                 |
| <b>SIGNED:</b> <i>Paul Baker</i>  |           |                                 |               | <b>KASGRO RAIL</b> |            |                 |
| <small>Use of ASTM 678 grade 60 material is acceptable for grade 80 - will provide the number of properties for grade 60 material as satisfied</small>    |           |                                 |               |                    |            |                 |
| <small>Charpy impact testing, when required, will be in accordance with ASTM A978. This number of tests does not include energy shift or 20 ft-lb</small> |           |                                 |               |                    |            |                 |
| <small>At zero degrees F. Transverse impact test is required for plate with a max 24 inches</small>   |           |                                 |               |                    |            |                 |
| PART NO.  | PRINT NO. | HEAT NUMBER                     | MELTER        | QTY/CAR            | MATERIAL   | Special testing |
| 3-119   | D-1155-37 | 81226530                        | ARCELORMITTAL | 4                  | A-572 GR60 | Charpy          |
| 3-119   | D-1155-37 | 81226530                        | ARCELORMITTAL | 4                  | A-572 GR60 | Charpy          |
| 3-119   | D-1155-37 | 81226530                        | ARCELORMITTAL | 4                  | A-572 GR60 | Charpy          |
| 3-137   | D-1155-37 | 81226530                        | ARCELORMITTAL | 2                  | A-572 GR60 | Charpy          |
| 3-137   | D-1155-37 | 81226530                        | ARCELORMITTAL | 2                  | A-572 GR60 | Charpy          |

Note: The recording of false, fictitious or fraudulent statements or entries on this document may be punishable as a felony under Federal statutes.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Atlas

**12-AXLE ATLAS CASK CAR BODY BOLSTER - HEAT IDENTIFICATION**  
**FORM 44B - 3/12/2010**

| DATE : 11/14/18   |           | Bolster Number: A:1 |               |             |             |                    |
|---|-----------|---------------------|---------------|-------------|-------------|--------------------|
| TO THE BEST OF MY KNOWLEDGE ALL INFORMATION CONTAINED IS ACCURATE |           |                     |               |             |             |                    |
| SIGNED: <i>Bill Baker</i>   |           |                     |               |             | KASGRO RAIL |                    |
| PART NO.  | PRINT NO. | HEAT NUMBER         | MELTER        | QTY/<br>CAR | MATERIAL    | special<br>testing |
| 3-10  | D-1155-08 | 822Z36560           | ARCELORMITTAL | 1           | A-572-60    |                    |
| 3-12  | D-1155-08 | 812Z36570           | ARCELORMITTAL | 2           | A-572-60    |                    |
| 3-12  | D-1155-08 | 812Z36570           | ARCELORMITTAL | 2           | A-572-60    |                    |
| 3-13  | D-1155-08 | 822Z36570           | ARCELORMITTAL | 2           | A-572-60    |                    |
| 3-13  | D-1155-08 | 822Z36570           | ARCELORMITTAL | 2           | A-572-60    |                    |
| 3-14  | D-1155-08 | 822Z36570           | ARCELORMITTAL | 2           | A-572-60    |                    |
| 3-14  | D-1155-08 | 822Z36570           | ARCELORMITTAL | 2           | A-572-60    |                    |

**12-AXLE ATLAS CASK CAR BODY BOLSTER - HEAT IDENTIFICATION**  
**FORM 44B - 3/12/2010**

| DATE : 11/14/18   |           | Bolster Number: B:2 |               |                 |             |                    |
|---|-----------|---------------------|---------------|-----------------|-------------|--------------------|
| TO THE BEST OF MY KNOWLEDGE ALL INFORMATION CONTAINED IS ACCURATE |           |                     |               |                 |             |                    |
| SIGNED: <i>Bill Baker</i>   |           |                     |               |                 | KASGRO RAIL |                    |
| PART NO.  | PRINT NO. | HEAT NUMBER         | MELTER        | QTY/<br>CA<br>R | MATERIAL    | special<br>testing |
| 3-10  | D-1155-08 | 822Z36560           | ARCELORMITTAL | 1               | A-572-60    |                    |
| 3-12  | D-1155-08 | 812Z36570           | ARCELORMITTAL | 2               | A-572-60    |                    |
| 3-12  | D-1155-08 | 812Z36570           | ARCELORMITTAL | 2               | A-572-60    |                    |
| 3-13  | D-1155-08 | 822Z36570           | ARCELORMITTAL | 2               | A-572-60    |                    |
| 3-13  | D-1155-08 | 822Z36570           | ARCELORMITTAL | 2               | A-572-60    |                    |
| 3-14  | D-1155-08 | 822Z36570           | ARCELORMITTAL | 2               | A-572-60    |                    |
| 3-14  | D-1155-08 | 822Z36570           | ARCELORMITTAL | 2               | A-572-60    |                    |

Note: The recording of false, fictitious, or fraudulent statements or entries on this document may be punishable as a felony under Federal statutes

Page 1 of 1



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.1.4 – Span Bolster Heat Identification Form, Form 42**

|   |  |
|---|--|
| Orano Federal Services  |  |
| <b>DATA TRANSMITTAL FORM</b>  |  |
| Supplier: <b>KASGRO RAIL CORP., INC.</b>  | DTF No: <b>39</b> <span style="float: right;">Page <b>1</b> of <b>1</b></span>   |
| P.O./SC No: <b>15C3011916</b>   | Date: <b>2/22/2019</b>   |
| Type of Submittal: <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal                    | SDRL List Item No: <b>24</b>   |
| Submitted for: <input type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted: <b>1</b>   |
| Submitted By: <b>RICK FORD</b>  | <b>Rick Ford</b> <small>Digitally signed by Rick Ford<br/>Date: 2019.02.22 09:16:40<br/>-05'00'</small> <b>PROJECT MANAGER</b> |
| (Name)  | (Signature) (Title)  |

| ITEM NUMBER | DOCUMENT NUMBER | REVISION NUMBER | DOCUMENT DESCRIPTION  | FS DISPOSITION  |
|-------------|-----------------|-----------------|---|---|
| 1           | KAS 138         |                 | ATLAS CASK/BUFFER CARB LAYDOWN INSTALLATION AND TEST DATA                   | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 2           | KAS 139         |                 | ATLAS CASK BODY MATERIAL HEAT IDENTIFICATION, FORMS 42, 40A, 44B            | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 3           | KAS 140         |                 | ATLAS BUFFER IDOX 20001 BODY MATERIAL HEAT IDENTIFICATION, FORM 44B         | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 4           | KAS 141         |                 | ATLAS BUFFER IDOX 20002 BODY MATERIAL HEAT IDENTIFICATION, FORM             | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 5           | KAS 142         |                 | ATLAS CASK CAR FORM 36 STATIC FORCE BRAKE TEST                              | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 6           | KAS 143         |                 | ATLAS CASK CAR IDOX 10001, FORM 5-13-B NEW CAR INSPECTION                   | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 7           | KAS 144         |                 | ATLAS CASK IDOX 10001 SUPPLIER CERTIFICATION/ AMSTED RAIL SEDARSHO / MCCABE | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |

|                          |   |
|--------------------------|---|
| Comments:<br>No comments | Technical Reviewer (I.e., RE, PTL, SME, QA, etc.)<br><b>KLEIN Slade</b> <small>Date: 2019.02.26<br/>07:33:08 -08'00'</small><br>Date <b>2/26/2019</b> |
|--------------------------|---|

| FS DISPOSITION CODES AND DEFINITIONS |                                |  |                             |
|--------------------------------------|--------------------------------|--|-----------------------------|
| AP                                   | Approved                       | Work may proceed.  | Resubmittal is not required |
| AWC                                  | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| REV                                  | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| RWC                                  | Reviewed with Comment          | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit        |
| DS                                   | Disapproved                    | Work may <u>not</u> proceed.   | Correct and resubmit        |
| RSA                                  | Receipt Submittal Acknowledged | No other action required.  |                             |

If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change.

|  |   |                         |
|--|---|-------------------------|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval<br> | <small>Digitally signed by Mark A. Denton<br/>DN: cn=Mark A. Denton, o=Orano Federal Services, email=mark.denton@orano.gov, ou=US<br/>Date: 2019.02.28 10:28:54 -05'00'</small> | Date: <b>02/26/2019</b> |
|--|---|-------------------------|

FS-EN-FRM-023 Rev 02 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |   |   |
|--|---|---|
| <br><b>orano</b>          | Orano Federal Services  |   |
| <b>SUPPLIER DOCUMENT SUBMITTAL REVIEW</b>  |   |   |
| Supplier / PO No.:   | <b>KASGRO / 15C3011916</b>  | DTF No. / Rev: <b>039</b>   |
| Charge No:   | <b>00225.03.0050.02.00001</b>   | Due Date: <b>3/8/2019</b>   |
| Document(s):   | <b>See DTF No.: 039</b>   |   |
| <small>REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)</small>   |   |   |
| PE   | <b>Slade Klein</b>  |   |
| REVIEWERS  | <b>Slade Klein, Bernie Counterman</b>   |   |
| QA   | <b>Bernie Counterman</b>  |   |
| <b>Technical Review</b>  |   |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |   |   |
| Technical Reviewer Comments:   |   |   |
| <b>No comments</b>   |   |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b>  |   | Date: 2019.02.25 15:52:04 -08'00'   |
| <b>Quality Assurance Review (As Applicable)</b>  |   |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |   |   |
| Technical Reviewer Comments:   |   |   |
| <b>KAS 142 Cask Car Form 36 Brake Test - Why is the Gross Shoe Force = 0</b>                               |   |   |
| QA Reviewer(s) (Sign/Date):  |  | Digitally signed by COUNTERMAN Bernard<br>Date: 2019.02.25 10:22:16 -08'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary) |   |   |
|  |   |   |
|  |   |   |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**12-AXLE ATLAS CASK CAR TRI-SPAN BOLSTER - HEAT IDENTIFICATION**  
**FORM 42A - 3/12/2010**

Atlas

| DATE: 11/14/18   |           | END SILL: 1 & 2                                  |                 |         |            |                 |
|--|-----------|--|-----------------|---------|------------|-----------------|
| TO THE BEST OF MY KNOWLEDGE ALL INFORMATION CONTAINED IS ACCURATE  |           |  |                 |         |            |                 |
| SIGNED: <i>Bill Baber</i>  |           | KASGRO RAIL                                      |                 |         |            |                 |
| Use of ASTM 572 grade 50 material is acceptable for grade 60 melt provided the mechanical properties for grade 50 material are achieved. |           |  |                 |         |            |                 |
| Charpy impact testing, when required, will be in accordance with ASTM 6078. The minimum coverage of at least energy level per 20 Ribs    |           |  |                 |         |            |                 |
| As per Figure 1, Transverse Impact test is required for plates with a max 24 inches.   |           |  |                 |         |            |                 |
| PART NO.   | PRINT NO. | HEAT NUMBER                                      | MELTER          | QTY/CAR | MATERIAL   | Special testing |
| 3-27   | D-1118-7  | 5-07265  | TOPY INDUSTRIES | 2       | A-572 GR50 |                 |
| 3-28   | D-1118-7  | 5-07265  | TOPY INDUSTRIES | 2       | A-572 GR50 |                 |
| 3-29   | D-1118-7  | 822Z36560  | ARCELORMITTAL   | 2       | A-572 GR50 |                 |
| 3-30   | D-1118-7  | 822Z36560  | ARCELORMITTAL   | 4       | A-572 GR50 |                 |
| 3-31   | D-1118-7  | 822Z36560  | ARCELORMITTAL   | 4       | A-572 GR50 |                 |
| 3-32   | D-1118-7  | 822Z36560  | ARCELORMITTAL   | 8       | A-572 GR50 |                 |
| 3-33   | D-1118-7  | 822Z36560  | ARCELORMITTAL   | 2       | A-572 GR50 |                 |
| WELDING WIRE   |           | HOBART 466TT, 80 SERIES, HOBART 6185A, 71 SERIES |                 |         |            |                 |

Note: The recording of false, factitious or fraudulent statements or entries on this document may be punishable as a felony under



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

12-AXLE ATLAS CASK CAR TRI-SPAN BOLSTER - HEAT IDENTIFICATION  
 FORM 42 - 3/12/2010

Atlas

| DATE: 11/14/18   |           | SPAN BOLSTER: A: 2     |                       | B: 1    |            |                 |
|--|-----------|------------------------|-----------------------|---------|------------|-----------------|
| TO THE BEST OF MY KNOWLEDGE ALL INFORMATION CONTAINED IS ACCURATE  |           |                        |                       |         |            |                 |
| SIGNED: <i>K. D. Baker</i>   |           |                        | KASGRO RAIL           |         |            |                 |
| <small>Use of ASTM 572 grade 60 material is acceptable for grade 60 material provided the mechanical properties for grade 60 material are satisfied.</small> |           |                        |                       |         |            |                 |
| <small>Charpy Impact testing, when required, will be in accordance with ASTM A572. The minimum average absorbed energy shall be 20 ft-lb.</small>            |           |                        |                       |         |            |                 |
| <small>At least one K<sub>1c</sub> Transverse Impact Test is required for plate with a thickness of 1/2 inches.</small>                                      |           |                        |                       |         |            |                 |
| PART NO.   | PRINT NO. | HEAT NUMBER            | MELTER                | QTY/CAR | MATERIAL   | Special testing |
| 3-1  | D-1118-2  | 81223650               | ARCELORMITTAL         | 4       | A-572 GR60 |                 |
| 3-2  | D-1118-2  | 81223650               | ARCELORMITTAL         | 2       | A-572 GR60 |                 |
| 3-3  | D-1118-2  | 81223650               | ARCELORMITTAL         | 4       | A-572 GR60 |                 |
| 3-4  | D-1118-2  | 81223650               | ARCELORMITTAL         | 6       | A-572 GR60 |                 |
| 3-5  | D-1118-2  | 81223650               | ARCELORMITTAL         | 6       | A-572 GR60 |                 |
| 3-6  | D-1118-2  | 81223650               | ARCELORMITTAL         | 6       | A-572 GR60 |                 |
| 3-7  | D-1118-2  | 81223650               | ARCELORMITTAL         | 6       | A-572 GR60 |                 |
| 3-8  | D-1118-2  | 81223650               | ARCELORMITTAL         | 2       | A-572 GR60 |                 |
| 3-9  | D-1118-2  | 81223650               | ARCELORMITTAL         | 4       | A-572 GR60 |                 |
| 3-10   | D-1118-2  | 81223650               | ARCELORMITTAL         | 6       | A-572 GR60 |                 |
| 3-11   | D-1118-2  | 81223650               | ARCELORMITTAL         | 6       | A-572 GR60 |                 |
| 3-12   | D-1118-2  | 81223650               | ARCELORMITTAL         | 4       | A-572 GR60 |                 |
| 3-14   | D-1118-3  | 822236560              | ARCELORMITTAL         | 2       | A-572 GR60 |                 |
| 3-15   | D-1118-3  | 822236560              | ARCELORMITTAL         | 2       | A-572 GR60 |                 |
| 3-16   | D-1118-3  | 822236560              | ARCELORMITTAL         | 2       | A-572 GR60 |                 |
| 3-17   | D-1118-4  | 812236530              | ARCELORMITTAL         | 2       | A-572 GR60 |                 |
| 3-18   | D-1118-4  | 812236530              | ARCELORMITTAL         | 2       | A-572 GR60 |                 |
| 3-19   | D-1118-4  | 812236530              | ARCELORMITTAL         | 2       | A-572 GR60 |                 |
| 3-20   | D-1118-4  | CC155                  | METNINIS ROLLER RINGS | 2       | A-572 GR60 |                 |
| 3-21   | D-1118-5  | 381223650              | ARCELORMITTAL         | 4       | A-572 GR60 |                 |
| 3-22   | D-1118-5  | 381223650              | ARCELORMITTAL         | 4       | A-572 GR60 |                 |
| 3-23   | D-1118-5  | 381223650              | ARCELORMITTAL         | 4       | A-572 GR60 |                 |
| 3-24   | D-1118-5  | 381223650              | ARCELORMITTAL         | 2       | A-572 GR60 |                 |
| 3-25   | D-1118-5  | 381223650              | ARCELORMITTAL         | 2       | A-572 GR60 |                 |
| 3-26   | D-1118-5  | 381223650              | ARCELORMITTAL         | 4       | A-572 GR60 |                 |
| END SILL APPLIED   |           | A: 2 B: 1              |                       |         |            |                 |
| WELDING WIRE   |           | HOBART 4661T 80 SERIES |                       |         |            |                 |

Note: The recording of false, fictitious or fraudulent statements or entries on this document may be punishable as a felony under federal statutes.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.1.5 – New Car Inspection Form, Form 5-12-B**

|   |  |
|---|--|
| Orano Federal Services  |  |
| <b>DATA TRANSMITTAL FORM</b>  |  |
| Supplier: <b>KASGRO RAIL CORP., INC.</b>  | DTF No: <b>39</b> <span style="float: right;">Page <u>1</u> of <u>1</u></span>   |
| P.O./SC No: <b>15C3011916</b>   | Date: <b>2/22/2019</b>   |
| Type of Submittal: <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal                    | SDRL List Item No: <b>24</b>   |
| Submitted for: <input type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted: <b>1</b>   |
| Submitted By: <b>RICK FORD</b>  | <b>Rick Ford</b> <small>Digitally signed by Rick Ford<br/>Date: 2019.02.22 09:16:40<br/>-08'00'</small> <b>PROJECT MANAGER</b> |
| (Name)  | (Signature) (Title)  |

| ITEM NUMBER | DOCUMENT NUMBER | REVISION NUMBER | DOCUMENT DESCRIPTION  | FS DISPOSITION  |
|-------------|-----------------|-----------------|---|---|
| 1           | KAS 138         |                 | ATLAS CASK/BUFFER CARB LAYON INSTALLATION AND TEST DATA                   | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 2           | KAS 139         |                 | ATLAS CASK BODY MATERIAL HEAT IDENTIFICATION, FORMS 42, 40A, 44B          | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 3           | KAS 140         |                 | ATLAS BUFFER IDOX 20001 BODY MATERIAL HEAT IDENTIFICATION, FORM 44B       | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 4           | KAS 141         |                 | ATLAS BUFFER IDOX 20002 BODY MATERIAL HEAT IDENTIFICATION, FORM           | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 5           | KAS 142         |                 | ATLAS CASK CAR FORM 35 STATIC FORCE BRAKE TEST                            | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 6           | KAS 143         |                 | ATLAS CASK CAR IDOX 10001, FORM 5-12-B NEW CAR INSPECTION                 | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 7           | KAS 144         |                 | ATLAS CASK IDOX 10001 SUPPLIER CERTIFICATION/AMSTED RAIL SEDARSW / MCCABE | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |

|                          |   |
|--------------------------|---|
| Comments:<br>No comments | Technical Reviewer (I.e., RE, PTL, SME, QA, etc.)<br><b>KLEIN Slade</b> <small>Date: 2019.02.26<br/>07:33:08 -08'00'</small><br>Date <b>2/26/2019</b> |
|--------------------------|---|

| FS DISPOSITION CODES AND DEFINITIONS |                                |  |                             |
|--------------------------------------|--------------------------------|--|-----------------------------|
| AP                                   | Approved                       | Work may proceed.  | Resubmittal is not required |
| AWC                                  | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| REV                                  | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| RWC                                  | Reviewed with Comment          | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit        |
| DS                                   | Disapproved                    | Work may <u>not</u> proceed.   | Correct and resubmit        |
| RSA                                  | Receipt Submittal Acknowledged | No other action required.  |                             |

If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change.

|  |   |                         |
|--|---|-------------------------|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval<br> | <small>Digitally signed by Mark A. Denton<br/>DN: cn=Mark A. Denton, o=Orano Federal Services, email=mark.denton@orano.gov, ou=US<br/>Date: 2019.02.28 10:26:54 -0500</small> | Date: <b>02/26/2019</b> |
|--|---|-------------------------|

FS-EN-FRM-023 Rev 02 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |                                    |   |
|--|------------------------------------|---|
|  | Orano Federal Services             |   |
|  | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:   | <b>KASGRO / 15C3011916</b>         | DTF No. / Rev: <b>039</b>   |
| Charge No:   | <b>00225.03.0050.02.00001</b>      | Due Date: <b>3/8/2019</b>   |
| Document(s):   | <b>See DTF No.: 039</b>            |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)                  |                                    |   |
| PE   | Slade Klein                        |   |
| REVIEWERS  | Slade Klein, Bernie Counterman     |   |
| QA   | Bernie Counterman                  |   |
| <b>Technical Review</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No comments  |                                    |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b>  |                                    | Date: 2019.02.25 15:52:04 -08'00'   |
| <b>Quality Assurance Review (As Applicable)</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| KAS 142 Cask Car Form 36 Brake Test - Why is the Gross Shoe Force = 0                                      |                                    |   |
| QA Reviewer(s) (Sign/Date):  |                                    | Digitally signed by COUNTERMAN Bernard<br>Date: 2019.02.25 10:22:16 -08'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary) |                                    |   |
|  |                                    |   |
|  |                                    |   |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



Orano Federal Services  
**Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|   |                                       |
|---|---------------------------------------|
| Page 2 of 6   |                                       |
| <b>KASGRO RAIL CORP</b>   |                                       |
| <b>FORM 5-12-B</b>  |                                       |
| <b>NEW CAR INSPECTION</b>   |                                       |
| Rev 1   | Date: 09/03/14                        |
| Car Number  | Job Number                            |
| <b>SPRINGS - PATTERN / TYPE</b>   |                                       |
| Outer Coil  | SPECIAL SPRINGS SEE DRAWING D-1155-32 |
| Inner Coil  |                                       |
| Inner Inner Coil  |                                       |
| STABILITY DEVICE (if used)  | Model Number                          |
| CLEARANCE OF SAFETY APPLIANCES - 2" Minimum — 1/2" Preferred  |                                       |
| <input type="checkbox"/> OK   |                                       |
| <b>AIR BRAKES</b>   |                                       |
| Brake Valve   | DB 10/ DB 20                          |
| <b>SLACK ADJUSTER</b>   |                                       |
| Model Number <b>ELLCON NAT. 7100-33</b>   |                                       |
| <b>BRAKE CYLINDER - TRUCK MOUNTED</b>   |                                       |
| Travel No. 1 Cylinder   | 2 7/8" Part # 343-L                   |
| Travel No. 2 Cylinder   | 2 15/16" Part # 343-L                 |
| Travel No. 3 Cylinder   | 2 13/16" Part # 343-L                 |
| Travel No. 4 Cylinder   | 2 7/8" Part # 343-L                   |
| Travel No. 5 Cylinder   | 2 7/8" Part # 343-L                   |
| Travel No. 6 Cylinder   | 2 7/8" Part # 343-L                   |
| Brake Pins & Cotter Keys  | <b>OK</b>                             |
| Brake Rigging Free & Clear  | <b>OK</b>                             |
| Brake Shoe 2"   |                                       |
| <b>CENTER WEAR PLATE LINERS</b>   |                                       |
| No. 1   | 1/4"                                  |
| No. 2   | 1/4"                                  |
| No. 3   | 1/4"                                  |
| No. 4   | 1/4"                                  |
| No. 5   | 1/4"                                  |
| No. 6   | 1/4"                                  |
| <b>INSPECTOR:</b>   | <b>Date:</b>                          |
| Cory J. Wagner  | 2/19/2019                             |
| Note: The recording of false, fictitious, or fraudulent statements on this document may be punishable as a felon under federal statutes |                                       |



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|   |                  |                        |                  |
|---|------------------|------------------------|------------------|
| Page 3 of 6   |                  |                        |                  |
| <b>KASGRO RAIL CORP</b>   |                  |                        |                  |
| <b>FORM 5-12-B</b>  |                  |                        |                  |
| <b>NEW CAR INSPECTION</b>   |                  |                        |                  |
| Rev 1   |                  | Date: 09/03/14         |                  |
| Car Number <b>IDOX 010001</b>   |                  | Job Number _____       |                  |
| <b>SIDE BEARING CLEARANCE</b>   |                  |                        |                  |
| BR  | 5"               | BL                     | 5 1/16"          |
| CR  | 5 1/16"          | CL                     | 5 1/16"          |
| DR  | 5 1/16"          | DL                     | 5 1/8"           |
| Span BR   | 1/8" 1/8 - 3/16" | Span BL                | 1/8" 1/8 - 3/16" |
| ER  | 5"               | EL                     | 5 1/8"           |
| FR  | 5 1/8"           | FL                     | 5 1/16"          |
| AR  | 5 1/16"          | AL                     | 5 1/16"          |
| Span AR   | 1/8" 1/8 - 3/16" | Span AL                | 1/8" 1/8 - 3/16" |
| UNDER CAR CLEARANCE - 2 3/4" Minimum <span style="float: right; border: 1px solid black; padding: 2px;">OK</span>                                       |                  |                        |                  |
| <b>DIMENSIONS</b>   |                  |                        |                  |
| Maximum Width   | 10' - 8"         |                        |                  |
| Working Deck Length   | 48'              |                        |                  |
| At "A" End Right Side   | 57"              | At "A" End Left Side   | 57 1/16"         |
| At Center Right Side  | 58 11/16"        | At Center Left Side    | 58 3/8"          |
| At "B" End Right Side   | 57 1/16"         | At "B" End Left Side   | 57 3/16"         |
| <b>TESTING</b>  |                  |                        |                  |
| Single Car Test   | YES              | Golden Shoe Test       | YES              |
| Brake Pipe Restriction Test   | YES              | Truck Curve Test       | YES              |
| Slack Adjuster Test   | YES              | Load Test              | N/A              |
| <b>Couplers</b>   | <b>Type</b>      | <b>Height</b>          |                  |
| A-End   | <b>SBE67CE</b>   | 35"                    |                  |
| B-End   | <b>SBE67CE</b>   | 34 1/2"                |                  |
| <b>INSPECTOR: Cory J. Wagner</b>  |                  | <b>Date: 19-Feb-19</b> |                  |
| <small>Note: The recording of false, fictitious, or fraudulent statements on this document may be punishable as a felony under federal statutes</small> |                  |                        |                  |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |
|--|
| <b>KASGRO RAIL CORP</b><br><b>FORM 5-12-B</b><br><br><b>NEW CAR INSPECTION</b> |
|--|

Rev 1

Date: 09/03/14

LOCKNUT SECURED AGAINST CONTROL ARM NUT ON SLACK ADJUSTER TRIGGER

| TRUCK LOCATION                           | INSPECTOR     | DATE               |
|--|---------------|--------------------|
| B      YES <u>  X  </u> NO <u>      </u> | <u>  BB  </u> | <u>  7/15/14  </u> |
| C      YES <u>  X  </u> NO <u>      </u> | <u>  BB  </u> | <u>  7/15/14  </u> |
| D      YES <u>  X  </u> NO <u>      </u> | <u>  BB  </u> | <u>  7/15/14  </u> |
| E      YES <u>  X  </u> NO <u>      </u> | <u>  BB  </u> | <u>  7/15/14  </u> |
| F      YES <u>  X  </u> NO <u>      </u> | <u>  BB  </u> | <u>  7/15/14  </u> |
| A      YES <u>  X  </u> NO <u>      </u> | <u>  BB  </u> | <u>  7/15/14  </u> |

| CROSS KEY RETAINER BOLT TORQUED TO 25 FOOT LBS. | INSPECTOR     | DATE              |
|---|---------------|-------------------|
| A      YES <u>  X  </u> NO <u>      </u>        | <u>  BB  </u> | <u>          </u> |
| B      YES <u>  X  </u> NO <u>      </u>        | <u>  BB  </u> | <u>          </u> |

| 3 TABS BENT OVER FLAT AGAINST BOLT HEAD  | INSPECTOR     | DATE              |
|--|---------------|-------------------|
| A      YES <u>  X  </u> NO <u>      </u> | <u>  BB  </u> | <u>          </u> |
| B      YES <u>  X  </u> NO <u>      </u> | <u>  BB  </u> | <u>          </u> |

| CHECK AND RECORD LOCKING CENTER PIN TRAVEL | INSPECTOR     | DATE              |
|--|---------------|-------------------|
| TRUCK LOCATION                             |               |                   |
| A-OUTBOARD <u>  X  </u>                    | <u>  BB  </u> | <u>          </u> |
| A-INBOARD <u>  X  </u>                     | <u>  BB  </u> | <u>          </u> |
| B-OUTBOARD <u>  X  </u>                    | <u>  BB  </u> | <u>          </u> |
| B-INBOARD <u>  X  </u>                     | <u>  BB  </u> | <u>          </u> |

| CENTER PIN AT CAR BODY | INSPECTOR     | DATE              |
|------------------------|---------------|-------------------|
| A <u>  X  </u>         | <u>  BB  </u> | <u>          </u> |
| B <u>  X  </u>         | <u>  BB  </u> | <u>          </u> |

CHECK AND RECORD LT. WT. STENCILED ON RAILCAR. MAKE SURE IT MATCHES LIGHTWEIGHT ON FORM 46

L 225700 \_\_\_\_\_ INSPECTOR   CW   \_\_\_\_\_ DATE   02/19/19  

R 225700 \_\_\_\_\_ INSPECTOR   CW   \_\_\_\_\_ DATE   02/19/19  

CHECK RAILCAR FOR 6 JACKING PADS 4 PCS. 3-42 2 PCS. 3-109

INSPECTOR   CW   \_\_\_\_\_ DATE   02/19/19  

Note: The recording of false, fictitious, or fraudulent statements on this document may be punishable as a felony under federal statutes





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

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Page 6 OF 6

|   |                       |
|---|-----------------------|
| <p><b>KASGRO RAIL CORP</b><br/> <b>FORM 5-12-B</b></p> <p><b>NEW CAR INSPECTION</b></p> |                       |
| <p>Rev 1</p>  | <p>Date: 09/03/14</p> |

CHECK SHEVE WHEEL CARRIER ASSEMBLY GAP ON SLIDING SHEVE WHEEL ASSEMBLY  
 TO SPAN BOLSTER  
 GAP SET TO 1/8" TO -1/16" BL AND AR

|    |       |
|----|-------|
| BL | 1/16" |
| AR | 1/16" |

INSPECTOR

DATE

\_\_\_\_\_ CW \_\_\_\_\_

\_\_\_\_\_ 2/19/2019 \_\_\_\_\_

Note: The recording of false, fictitious, or fraudulent statements on this document may be punishable as a felony under federal statutes



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**APPENDIX B.1.6 – SUPPLIER NONCONFORMANCE REPORT KAS-SNR-011**

|  |   |   |  |  |
|--|---|---|--|--|
|  | Orano Federal Services  |   |  |  |
| <b>SUPPLIER NONCONFORMANCE REPORT</b>                    |   |   |  |  |
| FS SNR Number:   | KAS-SNR-011   | FS SNR Revision No.:  | 0  |  |
| Client Name:   | DOE   | P.O./Contract No.:  | 15C3011916                                     |  |
| Supplier Name:   | Kasgro Rail   | Supplier NCR: #2-#5   | Supplier NCR Revision Number: 0                |  |
| <b>ORIGINATOR</b>  | NONCONFORMING CONDITION: (Attach Supplier NCR)<br>Several components of the DOE Atlas railcar (IDOX010001) as-built cradle attachments did not meet the requirements of DWG-3018956. See attached for specific non-conforming conditions. |   |  |  |
|  | FS Originator:<br>(Originator signature/Date)   |   | Date:  |  |
|  |   | <b>KLEIN Slade</b> 2019.03.27 10:43:05 -07'00'  |  |  |
| <b>DISPOSITION</b>                                       | Recommended Supplier Disposition:   | <input type="checkbox"/> Rework   | <input type="checkbox"/> Repair                |  |
|  |   | <input checked="" type="checkbox"/> Use-As-Is   | <input type="checkbox"/> Reject                |  |
|  | FS Disposition/Technical Review and Justification (Justification required for Repair or Use-as-Is):<br>See attached   |   |  |  |
|  | Disposition/Technical Review By:<br>(Signature/Date)  |   | Date:  |  |
|  |   |   | <b>KLEIN Slade</b> 2019.04.08 13:42:29 -07'00' |  |
|  | Licensing Review Required:  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Basis): <b>Not a licensed component</b>  |  |  |
|  | Licensing Review Results:<br>N/A  |   |  |  |
|  | Licensing Review By:<br>(Signature/Date)  |   | N/A  |  |
| Technical Check By:<br>(Signature)                       |   | Digitally signed by CONLEY Ethan<br>Date: 2019.04.08 14:26:13 -07'00'   |  |  |
| Approved By:<br>(EM signature)                           |   | Digitally signed by HILLSTROM Donald<br>DN: cn=AREVA GROUP, 2.5.4.45=5A26210B484657758, ou=HILLSTROM Donald<br>Date: 2019.04.08 14:45:51 -07'00'          |  |  |
| <b>SIGNIFICANCE EVALUATION</b>                           | Significant Issue Adverse to Quality?<br>(Yes = a CAR must be created)  | <input type="checkbox"/> Yes  | <input checked="" type="checkbox"/> No         |  |
|  | Condition Evaluated for Significance:<br>(QA signature/Date)  | CAR No.: N/A  |  |  |
|  |   | <i>Bernard Countermans</i> Digitally signed by COUNTERMAN Bernard<br>Date: 2019.04.08 15:48:44 -07'00'  |  |  |
| <b>APPROVAL</b>  | Customer Approval Required?   | <input type="checkbox"/> Yes  | <input checked="" type="checkbox"/> No         |  |
|  | Customer Approval Received:<br>(Date and method of approval –attach copy of letter, email, etc.)  |   |  |  |
| Condition Evaluated for Approval:<br>(PM signature/Date) |   | Digitally signed by COUNTERMAN Bernard<br>DN: cn=AREVA GROUP, 2.5.4.45=187AD7C12BC41DE002170D, ou=COUNTERMAN Bernard<br>Date: 2019.04.08 14:25:38 -04'00' |  |  |
|  |   | <i>Bernard Countermans</i>  |  |  |
| <b>CLOSURE</b>   | Actions Complete – SNR can be closed:<br>(EM signature/Date)  | Digitally signed by HILLSTROM Donald<br>DN: cn=AREVA GROUP, 2.5.4.45=5A26210B484657758, ou=HILLSTROM Donald<br>Date: 2019.04.17 08:31:48 -07'00'          |  |  |
|  | Actions Verified – SNR Closed:<br>(QA signature/Date)   | Digitally signed by COUNTERMAN Bernard<br>Date: 2019.04.15 12:32:30 -07'00'   |  |  |
|  |   | <i>Bernard Countermans</i>  |  |  |

FS-QA-FRM-15.11 Rev. 04 (Effective October 8, 2018)  
 Refer to FS-QA-PRC-15.1



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



Orano Federal Services

KAS-SNR-011

Page 1 of 4

**NONCONFORMING CONDITION**

Some components of the DOE Atlas railcar (IDOX010001) as-built cradle attachment components did not meet the requirements of DWG-3018956-000. The Atlas railcar was inspected by several different methods and at several different times following rework or repair. FS created the attached Atlas Railcar - As-Built Dimensional Inspection report spreadsheet (Attachment 1) to list all DWG-3018956 dimensions, their required tolerance, the inspected dimension/reference and the associated Kasgro nonconformance report (NCR) number where appropriate. Attachment 1, spreadsheet references are provided in Attachments 2-4. Specific nonconforming conditions are listed below.

**Nonconforming Condition 1**

DWG-3018956, Flag Note 8, requires that a stainless steel facing be applied to the inner pin blocks, Item 7 and Item 8, and outer pin blocks, Items 10-12. The fabricated inner and outer pin blocks do not have stainless steel cladding and the indicated surfaces are painted. Reference Kasgro NCR #2.

**Nonconforming Condition 2**

DWG-3018956, Sheet 8, Zone D8/D7 shows Item 15 extending thru Item 3 to provide clearance for Item 4. The fabricated pin loading weldment has the Item 15 flush with Item 3. Reference Kasgro NCR #3

**Nonconforming Condition 3**

DWG-3018956, Sheet 6, Detail Item 10 (Applied also to Items 11 and 12) nonconforming dimensions. Reference Kasgro NCR #4

| Drawing location  | Dimension                                 | Tolerance | Actual                      |
|-------------------|---|-----------|-----------------------------|
| Sheet 6/Detail 10 | 18.0                                      | ±.1       | 17.75-18.125                |
| Sheet 6/Detail 10 | 2X 16.0                                   | ±.1       | 16.1875 max                 |
| Sheet 6/Detail 10 | 11.0                                      | ±.1       | 11-11.25                    |
| Sheet 6/Detail 10 | 3.00                                      | ±.06      | 3.25                        |
| Sheet 6/Detail 10 | 1.50                                      | ±.06      | 1.625                       |
| Sheet 6/ Zone C-5 | 2X 4.37                                   | +06/-00   | 4.361 - 4.4001              |
| Sheet 6/ Zone C-5 | ⊕ 1/16 T S<br>(8.00 ±.03)                 | 1/16      | 7.875 - 8.075               |
| Sheet 6/Zone C-1  | 2X 4.37                                   | +06/-00   | 4.323-4.43                  |
| Sheet 6/Zone B-1  | ⊕ 1/16 R T<br>(8.00 ±.03)<br>(48.00 ±.03) | 1/16      | 7.875 - 8.0625<br>48-48.125 |
| Sheet 6/Detail 10 | ⊥ 1/32 S                                  | 1/32      | Not inspected               |
| Sheet 6/Detail 10 | 2X 5.37                                   | +06/-00   | 5.340-5.43                  |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

---



Orano Federal Services

KAS-SNR-011

Page 2 of 4

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**Nonconforming Condition 4**

DWG-3018956, Sheet 5, Detail Item 8 (applies also to Item 7) nonconforming dimensions. Reference Kasgro NCR #5

| Drawing location | Dimension | Tolerance   | Actual        |
|------------------|-----------|-------------|---------------|
| Sheet 5/Detail 8 | 5.37      | +0.06/-0.00 | 5.2987-5.3539 |
| Sheet 5/Detail 8 | 4.37      | +0.06/-0.00 | 4.3354-4.3643 |
| Sheet 5/Detail 8 | 16.0      | ±1          | 16.1875-16.75 |

**Nonconforming Condition 5**

DWG-3018956, Sheet 6, Detail Item 9 nonconforming dimensions. Reference Kasgro NCR #6. Note that Kasgro NCR #6 only lists 90.0 as out-of-tolerance, however the 21.0 dimension is also listed out-of-tolerance on the Kasgro provided inspection (Attachment 2).

| Drawing location | Dimension | Tolerance | Actual      |
|------------------|-----------|-----------|-------------|
| Sheet 6/Detail 9 | 90.0      | ±1        | 90.1875 max |
| Sheet 6/Detail 9 | 21.0      | ±1        | 21.125 max  |

**Atlas railcar attachment components Rework**

Some rework was performed on the Atlas railcar. This rework was not required to be documented on an NCR, but is listed here for reference.

1. From the results of the post-welding laser inspection it was noted that the 9.5 inch height between the inner pin block slot center and the cradle placement pads was too short due to weld shrinkage. Kasgro performed rework to reduce the thickness of the Item 6 and Item 5 pads to achieve the required height. This was rework, as an in-tolerance condition was achieved and documented with re-inspection. The final condition and inspection references are noted in Attachment 1.
2. The outer pin blocks were reworked to repair some surface imperfections and to adjust for machining errors. Not all dimensions were corrected to within tolerance and nonconforming dimensions are documented in Kasgro NCR #4 and NCR #5.



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

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Orano Federal Services

KAS-SNR-011

Page 3 of 4

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FS Disposition/Technical Review and Justification

The Atlas railcar cradle attachment components have multiple dimensions that do not meet their required tolerance. The cradle attachments provide an interface with the 17 different Atlas railcar payloads and the Atlas railcar must be able to interface with the conceptual cradle designs which will be provided to the final cradle designer and the test loads that have been designed and are being fabricated for testing.

Nonconforming Condition 1

The stainless steel facing was required to provide a corrosion resistant surface at the interface between the railcar and the cradles. Without facing, the wear due to use may remove paint at the interface surfaces and could lead to corrosion of the carbon steel inner and outer pin blocks. To combat this, the loading procedures were revised to add a requirement to grease the interface surfaces which will help mitigate corrosion and wear concerns.

Without the stainless steel facing, the nominal gap between the outer pin blocks is increased from 3.00 inches to 3.25 inches. This increases the bending on the outer pin blocks attachment pins. CALC-3015276 was revised to neglect the facing from the pin bending evaluation. Positive margins were maintained. See CALC-3015276-004.

The lack of stainless steel facing will not limit the cradle attachment components from performing their design function and a use-as-is disposition is approved.

Nonconforming Condition 2

The pin loading weldment was fabricated with Item 15 flush with Item 3 leaving no clearance for the Item 4 pin keeper. The pin loaded weldment was then modified by Kasgro to add six ¼ inch tabs to the back of the Item 3 plate to provide the necessary clearance for the pin keeper during installation. Although the pin keeper weldment does not meet the requirements of DWG-3018956-000, the modified assembly will meet its functional design requirements and a use-as-is disposition is approved.

Nonconforming Condition 3

The 18.0, 2X 16.0 and 11.0 out-of-tolerance dimensions do not affect the form fit or function of the Atlas railcar cradle attachments and are acceptable for use-as-is. The 3.00 and 1.50 dimensions are a result of the decision to not use stainless steel cladding and were evaluated in Nonconforming Condition 1 above. The outer pin block hole and slot locations and sizes are critical to the required cradle interface and are evaluated in Evaluation of Final Interface Condition (Attachment 5). The perpendicularity of the outer pin block slot to the back of the outer pin block was not inspected by Kasgro; however, this was not required based on the following: 1) The outer pin blocks were placed using laser inspection to verify alignment 2) The slot size provides additional clearance (for pin insertion) that would mitigate any out-of-perpendicular condition 3) Typical hole fabrication includes perpendicularity to backing surface 4) FS did not observe any gross out of perpendicularity of the slots. Therefore, a use-as-is disposition is approved.



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000

Project: 00225.03.0050 DOE Atlas Project

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Orano Federal Services

KAS-SNR-011

Page 4 of 4

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Nonconforming Condition 4

The 16.0 dimension controls the top block chamfer and an out-of-tolerance condition does not affect the form fit or function of the Atlas railcar cradle attachments and is acceptable for use-as-is. The inner pin block slot sizes are critical to the required cradle interface and are evaluated in Evaluation of Final Interface Condition (Attachment 5). Although not listed on a Kasgro NCR the 2X 11.0 ±.1 dimension is listed as roughly 10.9 in the Kasgro Cradle Attachment Inspection (Attachment 2). Based on the provided inspection wording "roughly" could mean the Item 7 or Item 8 pin blocks have an out-of-tolerance condition for the 2X 11.0 dimension. This dimension locates the block vertical taper and an out-of-tolerance condition would not affect the form fit or function of the Atlas railcar cradle attachments and is acceptable for use-as-is.

Nonconforming Condition 5

The 90.0 and 21.0 out-of-tolerance dimension does not affect the form fit or function of the Atlas railcar cradle attachments. The location of the interfacing edge of the shear block was confirmed by laser measurement to be acceptable and therefore these deviations are acceptable for use-as-is.

Nonconforming Condition 6

Although not listed on a Kasgro NCR, the load test required by DWG-3018956-000, general note 7 was not performed per the drawing requirement. The drawing dictated that two separate loads be placed on the railcar to verify two separate deck heights. The load test was performed with only one approximately 215,000 pound load. This was justified based on the evaluation documented in Attachment 6.

**Attachments**

1. Atlas Railcar - As-Built Dimensional Inspection report spreadsheet
2. Kasgro Cradle Attachment Inspection
3. DTF-038 KAS 127 CMS Laser Report
4. CMS Email 2/14/19 and CMS Email 3/7/2019
5. Evaluation of Final Interface Condition
6. Atlas Load Test Memo



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

Atlas Railcar - As-Built Dimensional Inspection report  
 Drawing: DWG-3018956-000 Atlas Railcar, Cradle Attachment

Page 1 of 8

KAS-SNR-011 Attachment 1

| Item/Description                 | Sheet/Zone or detail | Required Dimension | Tolerance | Actual Dimension | Accept | Reject | Inspection Reference                  | Comments   |
|----------------------------------|----------------------|--------------------|-----------|------------------|--------|--------|---------------------------------------|--|
| <b>A1</b>                        | -                    | -                  | -         | -                | -      | -      | -                                     |  |
| <b>outer pin blocks P13-P17</b>  | -                    | -                  | -         | -                | -      | -      | -                                     |  |
| Item 11                          | 3/D-7                | // 1/16 B          | 1/16      | -                | X      |        | DTF-038, KAS 127, Laser Tracker FN 1  |  |
| Item 11                          | 3/D-7                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTF-038, KAS 127, Laser Tracker FN 2  |  |
| Item 10                          | 3/D-7                | // 1/16 B          | 1/16      | -                | X      |        | DTF-038, KAS 127, Laser Tracker FN 9  |  |
| Item 10                          | 3/D-7                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTF-038, KAS 127, Laser Tracker FN 10 |  |
| Item 10                          | 3/C-7                | // 1/16 B          | 1/16      | -                | X      |        | DTF-038, KAS 127, Laser Tracker FN 15 |  |
| Item 10                          | 3/C-7                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTF-038, KAS 127, Laser Tracker FN 16 |  |
| Item 12                          | 3/C-7                | // 1/16 B          | 1/16      | -                | X      |        | DTF-038, KAS 127, Laser Tracker FN 7  |  |
| Item 12                          | 3/C-7                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTF-038, KAS 127, Laser Tracker FN 8  |  |
| <b>outer pin blocks P5-P12</b>   | -                    | -                  | -         | -                | -      | -      | -                                     |  |
| Item 12                          | 3/D-1                | // 1/16 B          | 1/16      | -                | X      |        | DTF-038, KAS 127, Laser Tracker FN 3  |  |
| Item 12                          | 3/D-1                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTF-038, KAS 127, Laser Tracker FN 4  |  |
| Item 10                          | 3/D-1                | // 1/16 B          | 1/16      | -                | X      |        | DTF-038, KAS 127, Laser Tracker FN 11 |  |
| Item 10                          | 3/D-1                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTF-038, KAS 127, Laser Tracker FN 12 |  |
| Item 10                          | 3/C-1                | // 1/16 B          | 1/16      | -                | X      |        | DTF-038, KAS 127, Laser Tracker FN 13 |  |
| Item 10                          | 3/C-1                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTF-038, KAS 127, Laser Tracker FN 14 |  |
| Item 11                          | 3/C-1                | // 1/16 B          | 1/16      | -                | X      |        | DTF-038, KAS 127, Laser Tracker FN 5  |  |
| Item 11                          | 3/C-1                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTF-038, KAS 127, Laser Tracker FN 6  |  |
| <b>Outer pin block location</b>  | -                    | -                  | -         | -                | -      | -      | -                                     |  |
| Item 10 face                     | 3/D-1                | 4X 18.05           | ±.03*     |                  | X      |        | DTF-038, KAS 127, Laser Tracker FN 40 |  |
| Item 11/12 face                  | 3/C-1                | 4X 25.20           | ±.03*     |                  | X      |        | DTF-038, KAS 127, Laser Tracker FN 41 |  |
| Item 10/11/12 edge               | 3/B-6                | 148.5              | ±.06      |                  | X      |        | DTF-038, KAS 127, Laser Tracker FN 37 |  |
| Item 10/11/12 edge               | 3/B-3                | 148.5              | ±.06      |                  | X      |        | DTF-038, KAS 127, Laser Tracker FN 38 |  |
| Item 10 (P11/P6)                 | 4/C-8                | ± 1/16 F G         | 1/16      |                  | X      |        | DTF-038, KAS 127, Laser Tracker FN 42 |  |
| Item 10 (P19-P14)                | 4/B-6                | ± 1/16 M J         | 1/16      |                  | X      |        | DTF-038, KAS 127, Laser Tracker FN 43 |  |
| Item 10 (P10-P7)                 | 4/A-4                | ± 1/16 N H         | 1/16      |                  | X      |        | DTF-038, KAS 127, Laser Tracker FN 44 |  |
| Item 10 (P18-P15)                | 4/A-3                | ± 1/16 L K         | 1/16      |                  | X      |        | DTF-038, KAS 127, Laser Tracker FN 45 |  |
| <b>center pin block location</b> | -                    | -                  | -         | -                | -      | -      | -                                     |  |
| width from centerline            | 3/D-6                | 2X 98*             |           |                  |        |        |                                       | CMS chose to measure from the railcar centerline (datum B). CMS chose a tolerance of ±.03 on the 46.50 dimension to meet the intent of the drawing. This 2(±.03) = ±.06 tolerance matches the conceptual attachment drawing. |
| width from centerline            | 3/C-6                | 2X 46.50           | ±.03*     |                  | X      |        | DTF-038, KAS 127, Laser Tracker FN 46 | CMS chose to inspect using a ±.03 tolerance. This meets the conceptual attachment drawing  |
| width between                    | 4/C-3                | 4X 11.75           | ±.03*     |                  | X      |        | DTF-038, KAS 127, Laser Tracker FN 47 |  |
| Item 7                           | 3/C-6                | ⊥ 1/16 A           | 1/16      |                  | X      |        | DTF-038, KAS 127, Laser Tracker 21    |  |
| Item 7                           | 3/C-6                | ⊥ 1/16 A           | 1/16      |                  | X      |        | DTF-038, KAS 127, Laser Tracker 22    |  |
| Item 7                           | 3/C-6                | ⊥ 1/16 A           | 1/16      |                  | X      |        | DTF-038, KAS 127, Laser Tracker 23    |  |
| Item 7                           | 3/C-6                | ⊥ 1/16 A           | 1/16      |                  | X      |        | DTF-038, KAS 127, Laser Tracker 24    |  |
| Item 8                           | 3/C-6                | ⊥ 1/16 A           | 1/16      |                  | X      |        | DTF-038, KAS 127, Laser Tracker 25    |  |
| Item 8                           | 3/C-6                | ⊥ 1/16 A           | 1/16      |                  | X      |        | DTF-038, KAS 127, Laser Tracker 26    |  |
| Item 8                           | 3/C-6                | ⊥ 1/16 A           | 1/16      |                  | X      |        | DTF-038, KAS 127, Laser Tracker 27    |  |
| Item 8                           | 3/C-6                | ⊥ 1/16 A           | 1/16      |                  | X      |        | DTF-038, KAS 127, Laser Tracker 28    |  |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Atlas Railcar - As-Built Dimensional Inspection report  
 Drawing: DWG-3018956-000 Atlas Railcar, Cradle Attachment

Page 2 of 8

KAS-SNR-011 Attachment 1

| Item/Description | Sheet/Zone or detail | Required Dimension | Tolerance    | Actual Dimension         | Accept | Reject | Inspection Reference  | Comments   |
|------------------|----------------------|--------------------|--------------|--------------------------|--------|--------|---|--|
| Item 7 (3/C-4)   | 3/B-5                | 1/16 A E B         | 1/16 (.0625) | .296<br>Reworked to .045 | X      |        | DTF-038, KAS 127, Laser Tracker 29 and CMS deviation report<br><br>and Kasgro Cradle Attachment Inspection, 5. Stainless Pad Dimensions | Slot 5 on CMS Deviation Report<br>longitudinal, (.0069)<br>Height, (-.1483)<br>Total Positional = .2961<br><br>Minimum Worst Case Condition<br>KAS inspected height = 7.311 min (any pad)<br>minimum slot height from CMS Deviation Report = 4.3354 (any slot)<br>Total = 4.3354/2 + 7.311 = 9.4787<br><br>Maximum Worst Case Condition<br>KAS inspected height = 7.342 max (any pad)<br>maximum slot height from CMS Deviation Report = 4.3643 (any slot)<br>Total = 4.3643/2 + 7.342 = 9.524<br><br>Final condition following rework:<br>max deviation = .024 (using worst case)<br>updated positional<br>longitudinal, (.0069)<br>Height, (.024)<br>Total Positional = .045 < .0625 OK        |
| Item 8 (3/C-4)   | 3/B-5                | 1/16 A E B         | 1/16 (.0625) | .275<br>Reworked to .056 | X      |        | DTF-038, KAS 127, Laser Tracker 30 and CMS deviation report<br><br>and Kasgro Cradle Attachment Inspection, 5. Stainless Pad Dimensions | Slot 4 on CMS Deviation Report<br>longitudinal, (-.0280)<br>Height, (-.1373)<br>Total Positional = .2750<br><br>Final condition following rework:<br>max deviation = .024 (using worst case)<br>updated positional<br>longitudinal, (-.0280)<br>Height, (.024)<br>Total Positional = .074 > .0625 NOT OK<br><br>Actual Reworked Condition<br>KAS inspected height = 7.329 min (A-end lower)<br>slot height from CMS Deviation Report<br>= 4.3476 (slot 5) = 4.3354 (slot 4)<br>Min total = 4.3354/2 + 7.329 = 9.4967<br>Max total = 4.3476/2 + 7.329 = 9.503<br><br>max deviation = .003<br>updated positional<br>longitudinal, (-.0280)<br>Height, (.003)<br>Total Positional = .056 < .0625 OK |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Atlas Railcar - As-Built Dimensional Inspection report  
 Drawing: DWG-3018956-000 Atlas Railcar, Cradle Attachment

| Item/Description | Sheet/Zone or detail | Required Dimension | Tolerance    | Actual Dimension          | Accept | Reject | Inspection Reference  | Comments  |
|------------------|----------------------|--------------------|--------------|---------------------------|--------|--------|---|---|
| Item 8 (3/D-4)   | 3/B-5                | 1/16 A E B         | 1/16 (.0625) | 0.435<br>Reworked to .061 | X      |        | DTF-038, KAS 127, Laser Tracker 31 and CMS deviation report<br><br>and Kasgro Cradle Attachment Inspection, 5. Stainless Pad Dimensions | Slot 7 on CMS Deviation Report<br>longitudinal, (-.0289)<br>Height, (-.2170)<br>Total Positional = .4346<br><br>Final condition following rework:<br>max deviation = .024<br>updated positional<br>longitudinal, (-.0289)<br>Height, (.024)<br>Total Positional = .075 > .0625 NOT OK<br><br><u>Actual Reworked Condition</u><br>KAS inspected height = 7.321 min (A-end upper)<br>slot height from CMS Deviation Report<br>= 4.338 (slot 7) = 4.3643 (slot 8)<br>Min total=4.338/2+7.321= 9.49<br>Max total = 4.3643/2+7.321 = 9.503<br><br>max deviation = .01<br>updated positional<br>longitudinal, (-.0289)<br>Height, (.01)<br>Total Positional = .061 < .0625 OK   |
| Item 7 (3/D-4)   | 3/B-5                | 1/16 A E B         | 1/16 (.0625) | 0.421<br>Reworked to .062 | X      |        | DTF-038, KAS 127, Laser Tracker 32 and CMS deviation report<br><br>and Kasgro Cradle Attachment Inspection, 5. Stainless Pad Dimensions | Slot 8 on CMS Deviation Report:<br>longitudinal, (-.0295)<br>Height, (-.2104)<br>Total Positional = .4208<br><br>Final condition following rework:<br>max deviation = .024<br>updated positional<br>longitudinal, (-.0295)<br>Height, (.024)<br>Total Positional = .076 > .0625 NOT OK<br><br><u>Actual Reworked Condition</u><br>KAS inspected height = 7.321 min (A-end upper)<br>slot height from CMS Deviation Report<br>= 4.338 (slot 7) = 4.3643 (slot 8)<br>Min total=4.338/2+7.321= 9.49<br>Max total = 4.3643/2+7.321 = 9.503<br><br>max deviation = .01<br>updated positional<br>longitudinal, (-.0295)<br>Height, (.01)<br>Total Positional = .0623 < .0625 OK |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Atlas Railcar - As-Built Dimensional Inspection report  
 Drawing: DWG-3018956-000 Atlas Railcar, Cradle Attachment

Page 4 of 8

KAS-SNR-011 Attachment 1

| Item/Description     | Sheet/Zone or detail | Required Dimension | Tolerance    | Actual Dimension          | Accept | Reject | Inspection Reference  | Comments  |
|----------------------|----------------------|--------------------|--------------|---------------------------|--------|--------|---|---|
| Item 7 (3/C-5)       | 3/B-5                | 1/16 C-D           | 1/16 (.0625) | 0.414<br>Reworked to .049 | X      |        | DTF-038, KAS 127, Laser Tracker 33 and CMS deviation report<br><br>and Kasgro Cradle Attachment Inspection, 5. Stainless Pad Dimensions | Slot 3 on CMS Deviation Report<br>longitudinal, (-.0039)<br>Height, (-.2069)<br>Total Positional = .4135<br><br>Final condition following rework:<br>max deviation = .024 (using worst case)<br>updated positional<br>longitudinal, (-.0039)<br>Height, (.024)<br>Total Positional = .0486 < .0625 OK |
| Item 8 (3/C-5)       | 3/B-5                | 1/16 C-D           | 1/16 (.0625) | 0.334<br>Reworked to .049 | X      |        | DTF-038, KAS 127, Laser Tracker 34 and CMS deviation report<br><br>and Kasgro Cradle Attachment Inspection, 5. Stainless Pad Dimensions | Slot 2 on CMS Deviation Report<br>longitudinal, (-.0042)<br>Height, (-.1668)<br>Total Positional = .3335<br><br>Final condition following rework:<br>max deviation = .024 (using worst case)<br>updated positional<br>longitudinal, (-.0042)<br>Height, (.024)<br>Total Positional = .0487 < .0625 OK |
| Item 8 (3/D-5)       | 3/B-5                | 1/16 C-D           | 1/16 (.0625) | 0.511<br>Reworked to .048 | X      |        | DTF-038, KAS 127, Laser Tracker 35 and CMS deviation report<br><br>and Kasgro Cradle Attachment Inspection, 5. Stainless Pad Dimensions | Slot 1 on CMS Deviation Report<br>longitudinal, (.0028)<br>Height, (-.2554)<br>Total Positional = .5108<br><br>Final condition following rework:<br>max deviation = .024 (using worst case)<br>updated positional<br>longitudinal, (.0028)<br>Height, (.024)<br>Total Positional = .0483 < .0625 OK   |
| Item 7 (3/D-5)       | 3/B-5                | 1/16 C-D           | 1/16 (.0625) | 0.412<br>Reworked to .049 | X      |        | DTF-038, KAS 127, Laser Tracker 36 and CMS deviation report<br><br>and Kasgro Cradle Attachment Inspection, 5. Stainless Pad Dimensions | Slot 6 on CMS Deviation Report<br>longitudinal, (-.0059)<br>Height, (-.2061)<br>Total Positional = .4120<br><br>Final condition following rework:<br>max deviation = .024 (using worst case)<br>updated positional<br>longitudinal, (-.0059)<br>Height, (.024)<br>Total Positional = .0494 < .0625 OK |
| shear block location | -                    | -                  | -            | -                         | -      | -      | -   | -   |
| Item 9 edge to B     | 3/D-5                | 45.00              | ±1/2         |                           | X      |        | DTF-038, KAS 127, Laser Tracker FN 39   | Tracker and tape measure  |
|                      | 3/D-5                | 1/16 C-D           | 1/16         |                           | X      |        | DTF-038, KAS 127, Laser Tracker FN 17   |   |
|                      | 3/D-5                | 1 1/16 A           | 1/16         |                           | X      |        | DTF-038, KAS 127, Laser Tracker FN 18   |   |
|                      | 3/D-5                | 1/16 C-D           | 1/16         |                           | X      |        | DTF-038, KAS 127, Laser Tracker FN 19   |   |
|                      | 3/D-5                | 1 1/16 A           | 1/16         |                           | X      |        | DTF-038, KAS 127, Laser Tracker FN 20   |   |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

Atlas Railcar - As-Built Dimensional Inspection report  
 Drawing: DWG-3018956-000 Atlas Railcar, Cradle Attachment

Page 5 of 8

KAS-SNR-011 Attachment 1

| Item/Description       | Sheet/Zone or detail | Required Dimension    | Tolerance   | Actual Dimension | Accept | Reject | Inspection Reference   | Comments         |
|------------------------|----------------------|-----------------------|-------------|------------------|--------|--------|--|------------------|
| Item 6 size / location | -                    | -                     | -           | -                | -      | -      | -  |                  |
|                        | 3/C-4                | 4X 9.0                | ±.1         |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements        |                  |
|                        | 3/3-C                | 4X 12.0               | ±.1         |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements        |                  |
|                        | 3/4-C                | 6.00 TYP              | ±.06        |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements        |                  |
|                        | 3/4-C                | 4.50 TYP              | ±.06        |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements        |                  |
|                        | 3/4-C                | 1.38 TYP              | ±.06        |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements        |                  |
| Item 5 size / location | -                    | -                     | -           | -                | -      | -      | -  |                  |
|                        | 3/D-4                | 2X 12.0               | ±.1         |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements        |                  |
|                        | 3/D-4                | 6.00 TYP              | ±.06        |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements        |                  |
|                        | 3/C-4                | 2X 12.0               | ±.1         |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements        |                  |
|                        | 5/D-2                | 2X 1/8                | +0/-1/16    |                  | X      |        | Kasgro Cradle Attachment Inspection, 6. Kasgro Item 5 Email        |                  |
| Item 7 hole locations  | -                    | -                     | -           | -                | -      | -      | -  |                  |
|                        | 5/Detail 7           | 5.50                  | ±.06        |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements        |                  |
|                        | 5/Detail 7           | 6.50                  | ±.06        |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements        |                  |
|                        | 5/Detail 7           | 3.25                  | ±.06        |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements        |                  |
|                        | 5/Detail 7           | 2.60                  | ±.06        |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements        |                  |
|                        | 5/Detail 7           | 3X 5/8-11 UNC-2B ↓1.5 |             |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements        |                  |
| Item 7/8 size          | -                    | -                     | -           | -                | -      | -      | -  |                  |
|                        | 5/Detail 8           | 2X 10°                | 1°          |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements        |                  |
|                        | 5/Detail 8           | 8.00                  | ±.06        |                  | X      |        | Kasgro Cradle Attachment Inspection, 2. Inboard Attachment drawing |                  |
|                        | 5/Detail 8           | 2X 11.0               | ±.1         |                  | X      |        | Kasgro Cradle Attachment Inspection,                               |                  |
|                        | 5/Detail 8           | 2X R                  | ±.1         |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements        |                  |
|                        | 5/Detail 8           | 6.0                   | ±.1         |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements        |                  |
|                        | 5/Detail 8           | 12.0                  | ±.1         |                  | X      |        | Kasgro Cradle Attachment Inspection, 2. Inboard Attachment drawing |                  |
|                        | 5/Detail 8           | 5.37                  | +0.06/-0.00 | 5.2987-5.3539    |        | X      | DTF-038, KAS 127, CMS Deviation Report                             | See Kasgro NC #5 |
|                        | 5/Detail 8           | 4.37                  | +0.06/-0.00 | 4.3354-4.3643    |        | X      | DTF-038, KAS 127, CMS Deviation Report                             | See Kasgro NC #5 |
|                        | 5/Detail 8           | 2X R.5                | ±.1         |                  | X      |        | DTF-038, KAS 127, CMS Deviation Report                             |                  |
|                        | 5/Detail 8           | 3.75                  | ±.06        |                  | X      |        | Kasgro Cradle Attachment Inspection, 2. Inboard Attachment drawing |                  |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

Atlas Railcar - As-Built Dimensional Inspection report  
 Drawing: DWG-3018956-000 Atlas Railcar, Cradle Attachment

Page 6 of 8

KAS-SNR-011 Attachment 1

| Item/Description   | Sheet/Zone or detail | Required Dimension | Tolerance | Actual Dimension | Accept | Reject | Inspection Reference  | Comments                        |
|--------------------|----------------------|--------------------|-----------|------------------|--------|--------|---|---------------------------------|
|                    | 5/Detail 8           | 30°                | 1°        |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements         |                                 |
|                    | 5/Detail 8           | 18.0               | ±.1       |                  | X      |        | Kasgro Cradle Attachment Inspection, 2. Inboard Attachment drawing  |                                 |
|                    | 5/Detail 8           | 16.0               | ±.1       | 16.1875-16.75    |        | X      | Kasgro Cradle Attachment Inspection, 2. Inboard Attachment drawing  | See Kasgro NC #5                |
|                    | 5/Detail 8           | 4.0                | ±.1       |                  | X      |        | Kasgro Cradle Attachment Inspection, 2. Inboard Attachment drawing  |                                 |
|                    | 5/Detail 8           | 2.0                | ±.1       |                  | X      |        | Kasgro Cradle Attachment Inspection, 2. Inboard Attachment drawing  |                                 |
| Item 2 size        | -                    | -                  | -         | -                | -      | -      | -   |                                 |
|                    | 5/Detail 2           | 6.00               | ±.06      |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements         |                                 |
|                    | 5/Detail 2           | 1.50               | ±.06      |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements         |                                 |
|                    | 5/Detail 2           | 2X R.25            | ±.06      |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements         |                                 |
|                    | 5/Detail 2           | 1.50               | ±.06      |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements         |                                 |
| Item 13/14 size    | -                    | -                  | -         | -                | -      | -      | -   |                                 |
|                    | 5/Detail13/14        | 2X .50 x 45°       | ±.06 / 1° |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements         |                                 |
| Item 13            | 5/Detail13/14        | 20.70              | ±.06      |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements         |                                 |
| Item 14            | 5/Detail13/14        | 37.20              | ±.06      |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements         |                                 |
|                    | 5/Detail13/14        | Ø4.000             | ±.002     |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements         |                                 |
|                    | 5/Detail13/14        | 5/8-11 UNC-2B ↓2.0 |           |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements         |                                 |
| Item 15 size       | -                    | -                  | -         | -                | -      | -      | -   |                                 |
|                    | 5/Detail 15          | 5.56               | ±.06      | 5.5              | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements         |                                 |
|                    | 5/Detail 15          | 2X R1.00           | ±.06      |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements         |                                 |
|                    | 5/Detail 15          | 40.0               | ±.1       |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements         |                                 |
| Item 10/11/12 size | -                    | -                  | -         | -                | -      | -      | -   |                                 |
|                    | 6/Detail 10          | 18.0               | ±.1       | 17.75-18.125     |        | X      | Kasgro Cradle Attachment Inspection, 3a. Outboard Attachment, Rev A | dimension "D", See Kasgro NC #4 |
|                    | 6/Detail 10          | 2X 16.0            | ±.1       | 16.1875 max      |        | X      | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements         | See Kasgro NC #4                |
|                    | 6/Detail 10          | 5.5                | ±.1       |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements         |                                 |
|                    | 6/Detail 10          | 11.0               | ±.1       | 11-11.25         |        | X      | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements         | See Kasgro NC #4                |
|                    | 6/Detail 10          | 2.0                | ±.1       |                  | X      |        | Kasgro Cradle Attachment Inspection, 3a. Outboard Attachment, Rev A | dimension "F"                   |
|                    | 6/Detail 10          | 3.00               | ±.06      | 3.25             |        | X      | Kasgro Cradle Attachment Inspection, 3a. Outboard Attachment, Rev A | dimension "A", See Kasgro NC #4 |
|                    | 6/Detail 10          | 1.50               | ±.06      | 1.625            |        | X      | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements         | See Kasgro NC #4                |
|                    | 6/Detail 10          | 2X 30°             | 1°        |                  | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements         |                                 |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Atlas Railcar - As-Built Dimensional Inspection report  
 Drawing: DWG-3018956-000 Atlas Railcar, Cradle Attachment

Page 7 of 8

KAS-SNR-011 Attachment 1

| Item/Description      | Sheet/Zone or detail | Required Dimension                      | Tolerance   | Actual Dimension           | Accept | Reject | Inspection Reference  | Comments   |
|-----------------------|----------------------|---|-------------|----------------------------|--------|--------|---|--|
|                       | 6/Detail 10          | 4X 15°                                  | 1°          |                            | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements   |  |
|                       | 6/Detail 10          | 2X 8.0                                  | ±1          | 7.91-8.00                  | X      |        | Kasgro Cradle Attachment Inspection, 3b. Outboard Attachment Item 10  | dimensions ("J"/2)-"B"   |
|                       | 6/Detail 10          | 4X 11.0                                 | ±1          |                            | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements   |  |
|                       | 6/Detail 10          | 2X 64.00                                | ±.06        |                            | X      |        | Kasgro Cradle Attachment Inspection, 3b. Outboard Attachment Item 10  | dimension "J"  |
|                       | 6/C-5                | 2X 4.37                                 | +0.06/-0.00 | 4.361 -4.4001              |        | X      | CMS email 2/14/2019   | See Kasgro NC #4   |
| hole                  | 6/C-5                | 1/16 T S<br>(8.00 ±.03)                 | 1/16        | 7.875 - 8.075              |        | X      | Kasgro Cradle Attachment Inspection, 3b. Outboard Attachment Item 10, Rev B<br><br>DTF-03B, KAS 127, CMS Laser Report<br><br>CMS email 2/14/2019 and CMS email 3/7/2019 | OUTBOARD ATTACHMENT ITEM 10, Rev B drawing, See Kasgro NC #4<br><br>Additional measurements taken from top to edge of hole provided on Outboard Attachment Item 10, Rev B, Dimension "C" and "I" with a range of 5.6875 (part 8) to 5.875 without (part 8) the range is 5.75 to 5.875<br><br>From the CMS email the range for the hole height (all parts) is 4.323 to 4.4401<br><br>From the CMS email 2 the range for the hole height (part 8) is 4.375 to 4.4001 and (all others) 4.323 to 4.4401<br><br>The max and min for the additional measurements is:<br>5.875+4.4001/2 = 8.075 maximum<br>5.6875+4.375/2 = 7.875 minimum<br>5.75+4.323/2 = 7.912 minimum |
|                       | 6/Detail 10          | 4X R.5                                  | ±1          |                            | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements   |  |
|                       | 6/C-1                | 2X 4.37                                 | +0.06/-0.00 | 4.323-4.43                 |        | X      | CMS email 2/14/2019   | See Kasgro NC #4   |
| slot                  | 6/B-1                | 1/16 R T<br>(8.00 ±.03)<br>(48.00 ±.03) | 1/16        | 7.875 - 8.075<br>48-48.125 |        | X      | Kasgro Cradle Attachment Inspection, 3b. Outboard Attachment Item 10, Rev B<br><br>DTF-03B, KAS 127, CMS Laser Report<br><br>CMS email 2/14/2019 and CMS email 3/7/2019 | OUTBOARD ATTACHMENT ITEM 10, Rev B drawing, See Kasgro NC #4<br><br>Range for top of part to hole = 7.875-8.075  |
|                       | 6/Detail 10          | 1 1/32 S                                | 1/32        |                            |        |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements   | See Kasgro NC #4   |
| Item 9 size           | 6/Detail 10          | 2X 5.37                                 | +0.06/-0.00 | 5.340-5.43                 |        | X      | CMS 2/14/2019   | See Kasgro NC #4   |
|                       | 6/Detail 9           | 90.0                                    | ±1          | 90.1875 max                |        | X      | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements   | See Kasgro NC #6   |
|                       | 6/Detail 9           | 21.0                                    | ±1          | 21.125 max                 |        | X      | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements   | See Kasgro NC #6   |
|                       | 6/Detail 9           | 4X .5 x 45°                             | ±.1 / 1°    |                            | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements   |  |
| Item 11/12 hole sizes |                      |   |             |                            |        |        |   |  |
|                       | 7/Detail 11/12       | 2X 5.50                                 | ±.06        |                            | X      |        | Kasgro Cradle Attachment Inspection, 1. Kasgro Measurements   |  |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

Atlas Railcar - As-Built Dimensional Inspection report  
 Drawing: DWG-301 8956-000 Atlas Railcar, Cradle Attachment

Page 8 of 8

KAS-SNR-011 Attachment 1

| Item/Description | Sheet/Zone or detail | Required Dimension    | Tolerance | Actual Dimension | Accept | Reject | Inspection Reference   | Comments |
|------------------|----------------------|-----------------------|-----------|------------------|--------|--------|--|----------|
|                  | 7/Detail 11/12       | 2X 6.50               | ±.06      |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
|                  | 7/Detail 11/12       | 2X 3.25               | ±.06      |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
|                  | 7/Detail 11/12       | 2.60                  | ±.06      |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
|                  | 7/Detail 11/12       | 2X 8.0                | ±.1       |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
|                  | 7/Detail 11/12       | 6X 5/8-11 UNC-2B ↓1.5 |           |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
| Item 3 size      | -                    | -                     | -         | -                | -      | -      | -  |          |
|                  | 8/Detail 3           | 6.50                  | ±.06      |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
|                  |                      | 3.25                  | ±.06      |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
|                  |                      | ∅ 1.50                | ±.06      |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
|                  |                      | 2X ∅.69               | ±.03      |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
|                  |                      | ∅ 5.63                | ±.06      |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
|                  |                      | 8.00                  | ±.06      |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
|                  |                      | 4.00                  | ±.06      |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
|                  |                      | 4X .13 X 45°          | ±.06 / 1° |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
|                  |                      | 5.10                  | ±.06      |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
|                  |                      | 2.60                  | ±.06      |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
| Item 4 size      | -                    | -                     | -         | -                | -      | -      | -  |          |
|                  | 8/Detail 4           | 4X R.5                | ±.1       |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
|                  |                      | 2X 15°                | ± 1°      |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
|                  |                      | 2X 5.0                | ±.1       |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
|                  |                      | 4.0                   | ±.1       |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
|                  |                      | 2.0                   | ±.1       |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
|                  |                      | 10.0                  | ±.1       |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
|                  |                      | ∅.69                  | ±.03      |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |
|                  |                      | 2.13                  | ±.06      |                  | X      |        | Kasgro Cradle Attachment Inspection,<br>1. Kasgro Measurements |          |



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

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KAS-SNR-011 Attachment 2

Kasgro Rail Corporation  
121 Rundle Road • New Castle, PA 16102  
724-658-9061 • 724-658-7856 FAX • www.KASGRO.com



March 27, 2019

Kasgro Response sent via Email

Slade Klein  
ORANO Federal Services LLC  
505 S 336<sup>th</sup> Street Suite 400  
Federal Way, WA 98003

Subject: ATLAS Cask Car Cradle Attachment Dimensional Data  
Reference: ATLAS HLRM Railcar Project, AFS PO 15C3011916

Slade,

Find attached the supporting inspection documents listing all of the measurements taken for the cradle attachments for the Atlas Cask Car IDOX 10001.

These inspection attachments support Kasgro Non-Conformances Reports:

- NC#1
- NC#2
- NC#3
- NC#4
- NC#5
- NC#6

If there are any questions or if further clarification is needed regarding this information, please contact me to discuss.

Sincerely,

Rick Ford  
Project Manager

Cc: Mark Denton  
Bernie Counterman  
Mark Zeigler  
Nick Hinsch

Attachment: Kasgro Cradle Attachment Inspection (10 pages)

Specialty Rail Car Solutions



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

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KAS-SNR-011 Attachment 2

## Kasgro Cradle Attachment Inspection

1. Kasgro Measurements – general measurements shown in blue highlighted text on provided spreadsheet.
2. Inboard Attachment (DWG-3018956-000 Items 7-8) – Inboard attachment measurements provided on Kasgro Drawing "INBOARD ATTACHMENT". Note that slot sizes are provided by CMS separately.
3. Outboard Attachment (DWG-3018956-000 Items 10-12) – Outboard attachment measurements are provided on three separate Kasgro drawings listed below. Note that slot sizes are provided by CMS separately. Outboard attachment parts are listed as 1-8 with the orientation shown in 4.
  - a. Kasgro Outboard Attachment drawing, Rev A. Listing of selected measurements taken by Kasgro. Dimensions "A"-L"
  - b. Kasgro Outboard Attachment Item 10 drawing. Some re-inspection was performed with new values provided for dimension "B" and "J"
  - c. Kasgro Outboard Attachment Item 10 drawing, Rev B. Some re-inspection was performed with new values provided for dimensions "C" and "I"
4. Outboard Attachment Orientation – location of outboard attachment parts 1-8 as labeled by Kasgro provided in Kasgro drawing "Attachment Reference".
5. Stainless Pad Dimensions – Cradle pad (DWG-3018956-000 Items 5-6) dimensions are provided on the Kasgro sketch. Dimensions taken following rework. Dimensions are from the top of the pad (Datum A) to the bottom of Item 7/8 slot. Note that slot sizes are provided by CMS separately.
6. Kasgro Item 5 Email – Cradle center pad (DWG-3018956-000 Item 5) dimension verification provided in email. The provided email confirms the completion of rework on the Item 5 pads to within required drawing tolerance.
7. Kasgro notes that measurements not taken using Laser Measurement Equipment were performed using basic tape measures and straight edge rulers, at shop ambient temperatures and are as accurate as these methods allow.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

## KAS-SNR-011 Attachment 2

### 1. Kasgro Measurements

Atlas Railcar - Kasgro Provided Inspection

Drawing #: DWG-3018956-000  
 Drawing: Atlas Railcar, Cradle Attachment

| Item/Description                 | Sheet/Zone or detail | Required Dimension    | Tolerance | Kasgro Inspection    | Comments   |
|----------------------------------|----------------------|-----------------------|-----------|----------------------|--|
| <b>A1</b>                        | -                    | -                     | -         | -                    | -  |
| <b>outer pin blocks P13-P17</b>  | -                    | -                     | -         | -                    | -  |
| Item 11                          | 3/D-7                | // 1/16 B             | 1/16      | Laser Tracker FN 1   |  |
| Item 11                          | 3/D-7                | ⊥ 1/16 A              | 1/16      | Laser Tracker FN 2   |  |
| Item 10                          | 3/D-7                | // 1/16 B             | 1/16      | Laser Tracker FN 9   |  |
| Item 10                          | 3/D-7                | ⊥ 1/16 A              | 1/16      | Laser Tracker FN 10  |  |
| Item 10                          | 3/C-7                | // 1/16 B             | 1/16      | Laser Tracker FN 15  |  |
| Item 10                          | 3/C-7                | ⊥ 1/16 A              | 1/16      | Laser Tracker FN 16  |  |
| Item 12                          | 3/C-7                | // 1/16 B             | 1/16      | Laser Tracker FN 7   |  |
| Item 12                          | 3/C-7                | ⊥ 1/16 A              | 1/16      | Laser Tracker FN 8   |  |
| <b>outer pin blocks P5-P12</b>   | -                    | -                     | -         | -                    | -  |
| Item 12                          | 3/D-1                | // 1/16 B             | 1/16      | Laser Tracker FN 3   |  |
| Item 12                          | 3/D-1                | ⊥ 1/16 A              | 1/16      | Laser Tracker FN 4   |  |
| Item 10                          | 3/D-1                | // 1/16 B             | 1/16      | Laser Tracker FN 11  |  |
| Item 10                          | 3/D-1                | ⊥ 1/16 A              | 1/16      | Laser Tracker FN 12  |  |
| Item 10                          | 3/C-1                | // 1/16 B             | 1/16      | Laser Tracker FN 13  |  |
| Item 10                          | 3/C-1                | ⊥ 1/16 A              | 1/16      | Laser Tracker FN 14  |  |
| Item 11                          | 3/C-1                | // 1/16 B             | 1/16      | Laser Tracker FN 5   |  |
| Item 11                          | 3/C-1                | ⊥ 1/16 A              | 1/16      | Laser Tracker FN 6   |  |
| <b>Outer pin block location</b>  | -                    | -                     | -         | -                    | -  |
| Item 10 face                     | 3/D-1                | 4X 18.05              | ±.03*     | Laser Tracker FN 40  |  |
| Item 11/12 face                  | 3/C-1                | 4X 25.20              | ±.03*     | Laser Tracker FN 41  |  |
| Item 10/11/12 edge               | 3/B-6                | 148.5                 | ±.06      | Laser Tracker FN 37  |  |
| Item 10/11/12 edge               | 3/B-3                | 148.5                 | ±.06      | Laser Tracker FN 38  |  |
| Item 10 (P11/P6)                 | 4/C-8                | ⊕ 1/16 F G            | 1/16      | Laser Tracker FN 42  |  |
| Item 10 (P19-P14)                | 4/B-6                | ⊕ 1/16 M J            | 1/16      | Laser Tracker FN 43  |  |
| Item 10 (P10-P7)                 | 4/A-4                | ⊕ 1/16 N H            | 1/16      | Laser Tracker FN 44  |  |
| Item 10 (P18-P15)                | 4/A-3                | ⊕ 1/16 L K            | 1/16      | Laser Tracker FN 45  |  |
| <b>center pin block location</b> | -                    | -                     | -         | -                    | -  |
| width from centerline            | 3/D-6                | 2X 98*                | -         | -                    | *CMS measured from centerline                    |
| width from centerline            | 3/C-6                | 2X 46.50              | ±.03*     | Laser Tracker FN 46  |  |
| width between                    | 4/C-3                | 4X 11.75              | ±.03*     | Laser Tracker FN 47  |  |
| Item 7                           | 3/C-6                | ⊥ 1/16 A              | 1/16      | Laser Tracker 21     |  |
| Item 7                           | 3/C-6                | ⊥ 1/16 A              | 1/16      | Laser Tracker 22     |  |
| Item 7                           | 3/C-6                | ⊥ 1/16 A              | 1/16      | Laser Tracker 23     |  |
| Item 7                           | 3/C-6                | ⊥ 1/16 A              | 1/16      | Laser Tracker 24     |  |
| Item 8                           | 3/C-6                | ⊥ 1/16 A              | 1/16      | Laser Tracker 25     |  |
| Item 8                           | 3/C-6                | ⊥ 1/16 A              | 1/16      | Laser Tracker 26     |  |
| Item 8                           | 3/C-6                | ⊥ 1/16 A              | 1/16      | Laser Tracker 27     |  |
| Item 8                           | 3/C-6                | ⊥ 1/16 A              | 1/16      | Laser Tracker 28     |  |
| Item 7 (3/C-4)                   | 3/B-5                | ⊕ 1/16 A E B          | 1/16      | Laser Tracker 29     |  |
| Item 8 (3/C-4)                   | 3/B-5                | ⊕ 1/16 A E B          | 1/16      | Laser Tracker 30     |  |
| Item 8 (3/D-4)                   | 3/B-5                | ⊕ 1/16 A E B          | 1/16      | Laser Tracker 31     |  |
| Item 7 (3/D-4)                   | 3/B-5                | ⊕ 1/16 A E B          | 1/16      | Laser Tracker 32     |  |
| Item 7 (3/C-5)                   | 3/B-5                | ⊕ 1/16 C-D            | 1/16      | Laser Tracker 33     |  |
| Item 8 (3/C-5)                   | 3/B-5                | ⊕ 1/16 C-D            | 1/16      | Laser Tracker 34     |  |
| Item 8 (3/D-5)                   | 3/B-5                | ⊕ 1/16 C-D            | 1/16      | Laser Tracker 35     |  |
| Item 7 (3/D-5)                   | 3/B-5                | ⊕ 1/16 C-D            | 1/16      | Laser Tracker 36     |  |
| <b>shear block location</b>      | -                    | -                     | -         | -                    | -  |
| Item 9 edge to B                 | 3/D-5                | 45.00                 | ±1/2      | Laser Tracker FN 39  | Tracker and tape measure                         |
|                                  | 3/D-5                | ⊕ 1/16 C-D            | 1/16      | Laser Tracker FN 17  |  |
|                                  | 3/D-5                | ⊥ 1/16 A              | 1/16      | Laser Tracker FN 18  |  |
|                                  | 3/D-5                | ⊕ 1/16 C-D            | 1/16      | Laser Tracker FN 19  |  |
|                                  | 3/D-5                | ⊥ 1/16 A              | 1/16      | Laser Tracker FN 20  |  |
| <b>Item 6 size / location</b>    | -                    | -                     | -         | -                    | -  |
|                                  | 3/C-4                | 4X 9.0                | ±.1       | Kasgro measurement   | All within tolerance                             |
|                                  | 3/B-C                | 4X 12.0               | ±.1       | Kasgro measurement   | All within tolerance                             |
|                                  | 3/4-C                | 6.00 TYP              | ±.06      | Kasgro measurement   | All within tolerance                             |
|                                  | 3/4-C                | 4.50 TYP              | ±.06      | Kasgro measurement   | All within tolerance                             |
|                                  | 3/4-C                | 1.38 TYP              | ±.06      | Kasgro measurement   | All within tolerance                             |
| <b>Item 5 size / location</b>    | -                    | -                     | -         | -                    | -  |
|                                  | 3/D-4                | 2X 12.0               | ±.1       | Kasgro measurement   | All within tolerance                             |
|                                  | 3/D-4                | 6.00 TYP              | ±.06      | Kasgro measurement   | All within tolerance                             |
|                                  | 3/C-4                | 2X 12.0               | ±.1       | Kasgro measurement   | All within tolerance                             |
|                                  | 5/D-2                | 2X 1/8                | +0/-1/16  | Kasgro               | Kasgro Item 5 email                              |
| <b>Item 7 hole locations</b>     | -                    | -                     | -         | -                    | -  |
|                                  | 5/Detail 7           | 5.50                  | ±.06      | Kasgro measurement   | All within tolerance (Dimension to top of whole) |
|                                  | 5/Detail 7           | 6.50                  | ±.06      | Kasgro measurement   | All within tolerance                             |
|                                  | 5/Detail 7           | 3.25                  | ±.06      | Kasgro measurement   | All within tolerance                             |
|                                  | 5/Detail 7           | 2.60                  | ±.06      | Kasgro measurement   | All within tolerance                             |
|                                  | 5/Detail 7           | 3X 5/8-11 UNC-2B ↓1.5 | -         | Kasgro measurement   | All within tolerance                             |
| <b>Item 7/8 size</b>             | -                    | -                     | -         | -                    | -  |
|                                  | 5/Detail 8           | 2X 10°                | 1°        | Kasgro measurement   | All within tolerance                             |
|                                  | 5/Detail 8           | 8.00                  | ±.06      | KAS Inspection Sheet | INBOARD ATTACHMENT drawing                       |
|                                  | 5/Detail 8           | 2X 11.0               | ±.1       | Kasgro measurement   | All roughly 10.9                                 |
|                                  | 5/Detail 8           | 2X R                  | ±.1       | Kasgro measurement   | All within tolerance                             |
|                                  | 5/Detail 8           | 6.0                   | ±.1       | Kasgro measurement   | All within tolerance                             |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**KAS-SNR-011 Attachment 2**  
**1. Kasgro Measurements**

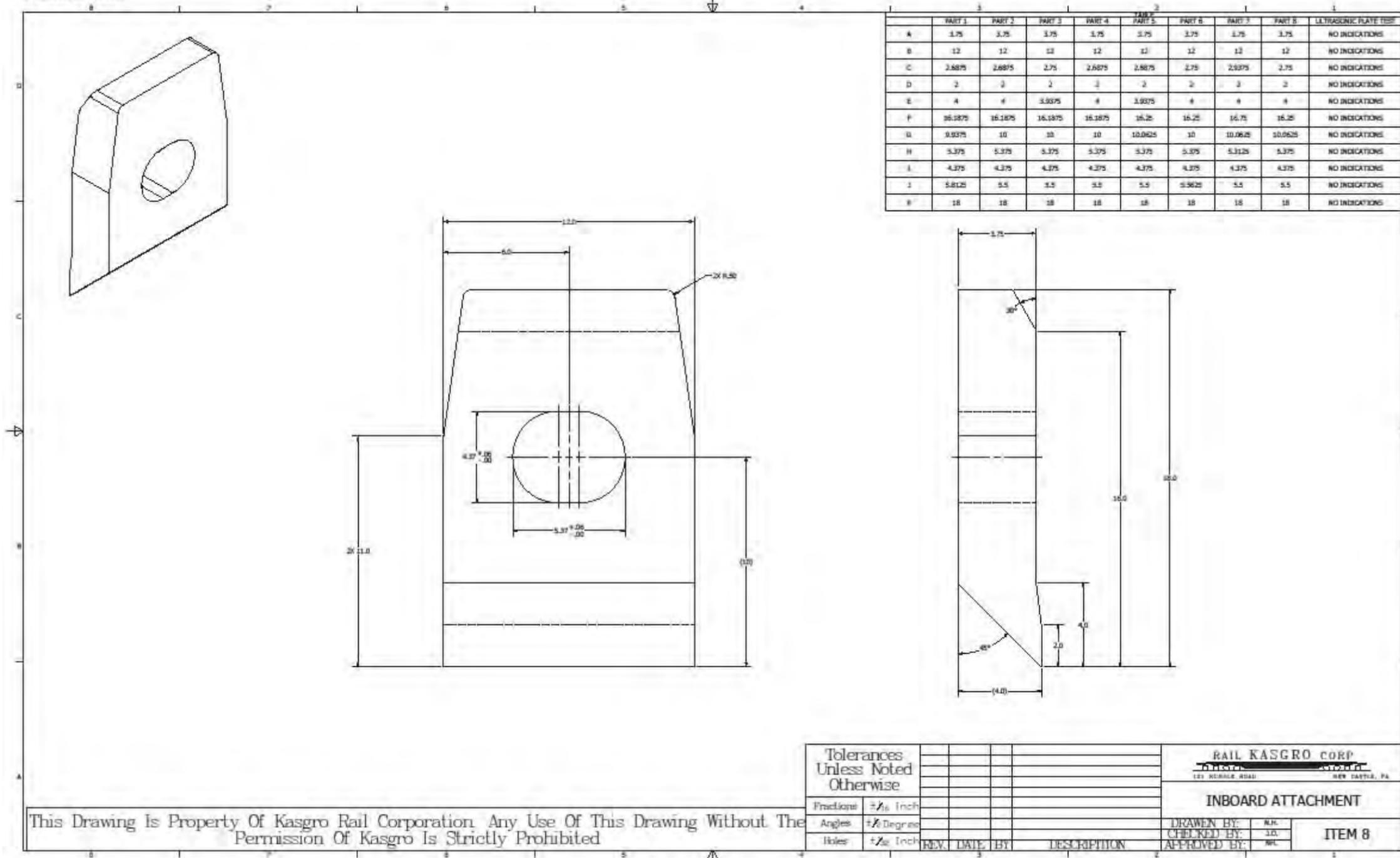
|                       |                |   |             |                      |   |
|-----------------------|----------------|---|-------------|----------------------|---|
|                       | 5/Detail 8     | 12.0                                    | ±.1         | KAS Inspection Sheet | INBOARD ATTACHMENT drawing                              |
|                       | 5/Detail 8     | 5.37                                    | +0.06/-0.00 | CMS Deviation Report |   |
|                       | 5/Detail 8     | 4.37                                    | +0.06/-0.00 | CMS Deviation Report |   |
|                       | 5/Detail 8     | 2X R.5                                  | ±.1         | CMS Deviation Report |   |
|                       | 5/Detail 8     | 3.75                                    | ±.06        | KAS Inspection Sheet | INBOARD ATTACHMENT drawing                              |
|                       | 5/Detail 8     | 30°                                     | 1°          | Kasgro measurement   | All within 1/2 deg.                                     |
|                       | 5/Detail 8     | 18.0                                    | ±.1         | KAS Inspection Sheet | INBOARD ATTACHMENT drawing                              |
|                       | 5/Detail 8     | 16.0                                    | ±.1         | KAS Inspection Sheet | INBOARD ATTACHMENT drawing                              |
|                       | 5/Detail 8     | 4.0                                     | ±.1         | KAS Inspection Sheet | INBOARD ATTACHMENT drawing                              |
|                       | 5/Detail 8     | 2.0                                     | ±.1         | KAS Inspection Sheet | INBOARD ATTACHMENT drawing                              |
| Item 2 size           | -              | -                                       | -           | -                    | -   |
|                       | 5/Detail 2     | 6.00                                    | ±.06        | Kasgro measurement   | All within tolerance                                    |
|                       | 5/Detail 2     | 1.50                                    | ±.06        | Kasgro measurement   | All within tolerance                                    |
|                       | 5/Detail 2     | 2X R.25                                 | ±.06        | Kasgro measurement   | All within tolerance                                    |
|                       | 5/Detail 2     | 1.50                                    | ±.06        | Kasgro measurement   | All within tolerance                                    |
| Item 13/14 size       | -              | -                                       | -           | -                    | -   |
|                       | 5/Detail 13/14 | 2X .50 x 45°                            | ±.06 / 1°   | Kasgro measurement   | All within tolerance (existing parts)                   |
| Item 13               | 5/Detail 13/14 | 20.70                                   | ±.06        | Kasgro measurement   | All within tolerance (existing parts)                   |
| Item 14               | 5/Detail 13/14 | 37.20                                   | ±.06        | Kasgro measurement   | All within tolerance (existing parts)                   |
|                       | 5/Detail 13/14 | ∅4.000                                  | ±.002       | Kasgro measurement   | All within tolerance (existing parts)                   |
|                       | 5/Detail 13/14 | 5/8-11 UNC-2B ↓2.0                      | -           | Kasgro measurement   | All within tolerance (existing parts)                   |
| Item 15 size          | -              | -                                       | -           | -                    | -   |
|                       | 5/Detail 15    | 5.56                                    | ±.06        | Kasgro measurement   | 5.5   |
|                       | 5/Detail 15    | 2X R1.00                                | ±.06        | Kasgro measurement   | Within tolerance  |
|                       | 5/Detail 15    | 40.0                                    | ±.1         | Kasgro measurement   | Within tolerance  |
| Item 10/11/12 size    | -              | -                                       | -           | -                    | -   |
|                       | 6/Detail 10    | 18.0                                    | ±.1         | KAS Inspection Sheet | OUTBOARD ATTACHMENT drawing                             |
|                       | 6/Detail 10    | 2X 16.0                                 | ±.1         | Kasgro measurement   | Parts 4 and 5 are 16.1875 (All other within tolerance)  |
|                       | 6/Detail 10    | 5.5                                     | ±.1         | Kasgro measurement   | All within tolerance (Dimension to top of whole)        |
|                       | 6/Detail 10    | 11.0                                    | ±.1         | Kasgro measurement   | All 11 at the base and 11.25 at the top                 |
|                       | 6/Detail 10    | 2.0                                     | ±.1         | KAS Inspection Sheet | OUTBOARD ATTACHMENT drawing                             |
|                       | 6/Detail 10    | 3.00                                    | ±.06        | KAS Inspection Sheet | OUTBOARD ATTACHMENT drawing                             |
|                       | 6/Detail 10    | 1.50                                    | ±.06        | Kasgro measurement   | All 1.625   |
|                       | 6/Detail 10    | 2X 30°                                  | 1°          | Kasgro measurement   | All within tolerance                                    |
|                       | 6/Detail 10    | 4X 15°                                  | 1°          | Kasgro measurement   | All within tolerance                                    |
|                       | 6/Detail 10    | 2X 8.0                                  | ±.1         | KAS Inspection Sheet | OUTBOARD ATTACHMENT drawing                             |
|                       | 6/Detail 10    | 4X 11.0                                 | ±.1         | Kasgro measurement   | All within tolerance                                    |
|                       | 6/Detail 10    | 2X 64.00                                | ±.06        | KAS Inspection Sheet | OUTBOARD ATTACHMENT ITEM 10 drawing                     |
|                       | 6/C-5          | 2X 4.37                                 | +0.06/-0.00 | CMS email            |   |
| hole                  | 6/C-5          | 1/16 T S<br>(8.00 ±.03)                 | 1/16        | KAS Inspection Sheet | OUTBOARD ATTACHMENT ITEM 10 drawing                     |
|                       | 6/Detail 10    | 4X R.5                                  | ±.1         | Kasgro measurement   | All within tolerance                                    |
|                       | 6/C-1          | 2X 4.37                                 | +0.06/-0.00 | CMS email            |   |
| slot                  | 6/B-1          | 1/16 R T<br>(8.00 ±.03)<br>(48.00 ±.03) | 1/16        | KAS Inspection Sheet | OUTBOARD ATTACHMENT ITEM 10 drawing                     |
|                       | 6/Detail 10    | 1 1/32 S                                | 1/32        | Kasgro measurement   | NA (cant get an accurate dimension)                     |
| Item 9 size           | 6/Detail 10    | 2X 5.37                                 | +0.06/-0.00 | CMS email            |   |
|                       | 6/Detail 9     | 90.0                                    | ±.1         | Kasgro measurement   | (B-END 90.1875) (A-END within tolerance)                |
|                       | 6/Detail 9     | 21.0                                    | ±.1         | Kasgro measurement   | Both A-END and B-END 21.125                             |
|                       | 6/Detail 9     | 4X .5 x 45°                             | ±.1 / 1°    | Kasgro measurement   | All within tolerance                                    |
| Item 11/12 hole sizes | -              | -                                       | -           | -                    | -   |
|                       | 7/Detail 11/12 | 2X 5.50                                 | ±.06        | Kasgro measurement   | All within tolerance (dimension to the top of the hole) |
|                       | 7/Detail 11/12 | 2X 6.50                                 | ±.06        | Kasgro measurement   | (All within tolerance)                                  |
|                       | 7/Detail 11/12 | 2X 3.25                                 | ±.06        | Kasgro measurement   | (All within tolerance)                                  |
|                       | 7/Detail 11/12 | 2.60                                    | ±.06        | Kasgro measurement   | (All within tolerance)                                  |
|                       | 7/Detail 11/12 | 2X 8.0                                  | ±.1         | Kasgro measurement   | (All within tolerance)                                  |
|                       | 7/Detail 11/12 | 6X 5/8-11 UNC-2B ↓1.5                   | -           | Kasgro measurement   | (All within tolerance)                                  |
| Item 3 size           | -              | -                                       | -           | -                    | -   |
|                       | 8/Detail 3     | 6.50                                    | ±.06        | Kasgro measurement   | (All within tolerance)                                  |
|                       |                | 3.25                                    | ±.06        | Kasgro measurement   | (All within tolerance)                                  |
|                       |                | ∅ 1.50                                  | ±.06        | Kasgro measurement   | (All within tolerance)                                  |
|                       |                | 2X ∅.69                                 | ±.03        | Kasgro measurement   | (All within tolerance)                                  |
|                       |                | ∅ 5.63                                  | -           | Kasgro measurement   | (All within tolerance)                                  |
|                       |                | 8.00                                    | -           | Kasgro measurement   | (All within tolerance)                                  |
|                       |                | 4.00                                    | -           | Kasgro measurement   | (All within tolerance)                                  |
|                       |                | 4X .13 X 45°                            | -           | Kasgro measurement   | (All within tolerance)                                  |
|                       |                | 5.10                                    | -           | Kasgro measurement   | (All within tolerance)                                  |
|                       |                | 2.60                                    | -           | Kasgro measurement   | (All within tolerance)                                  |
| Item 4 size           | -              | -                                       | -           | -                    | -   |
|                       | 8/Detail 4     | 4X R.5                                  | -           | Kasgro measurement   | (All within tolerance)                                  |
|                       |                | 2X 15°                                  | -           | Kasgro measurement   | (All within tolerance)                                  |
|                       |                | 2X 5.0                                  | -           | Kasgro measurement   | (All within tolerance)                                  |
|                       |                | 4.0                                     | -           | Kasgro measurement   | (All within tolerance)                                  |
|                       |                | 2.0                                     | -           | Kasgro measurement   | (All within tolerance)                                  |
|                       |                | 10.0                                    | -           | Kasgro measurement   | (All within tolerance)                                  |
|                       |                | ∅.69                                    | ±.03        | Kasgro measurement   | (All within tolerance)                                  |
|                       |                | 2.13                                    | -           | Kasgro measurement   | (All within tolerance)                                  |



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

KAS-SNR-011 Attachment 2  
 2. Inboard attachment



This Drawing Is Property Of Kasgro Rail Corporation. Any Use Of This Drawing Without The Permission Of Kasgro Is Strictly Prohibited

|                                   |            |  |              |
|-----------------------------------|------------|--|--------------|
| Tolerances Unless Noted Otherwise |            | RAIL KASGRO CORP<br>121 KERRICK ROAD<br>NEW CASTLE, PA |              |
| Fractions                         | ±.005 Inch | INBOARD ATTACHMENT                                     |              |
| Angles                            | ±.2 Degree | DRAWN BY:  | ML           |
| Holes                             | ±.005 Inch | CHECKED BY:  | ML           |
| REV.                              | DATE       | BY   | DESCRIPTION  |
|                                   |            |  | APPROVED BY: |
|                                   |            |  | ITEM 8       |



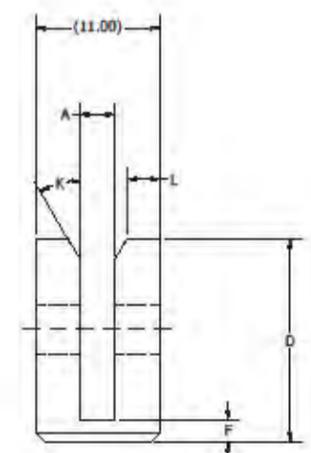
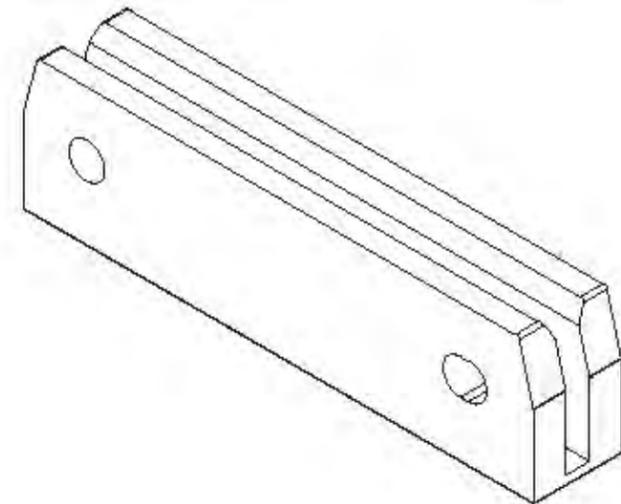
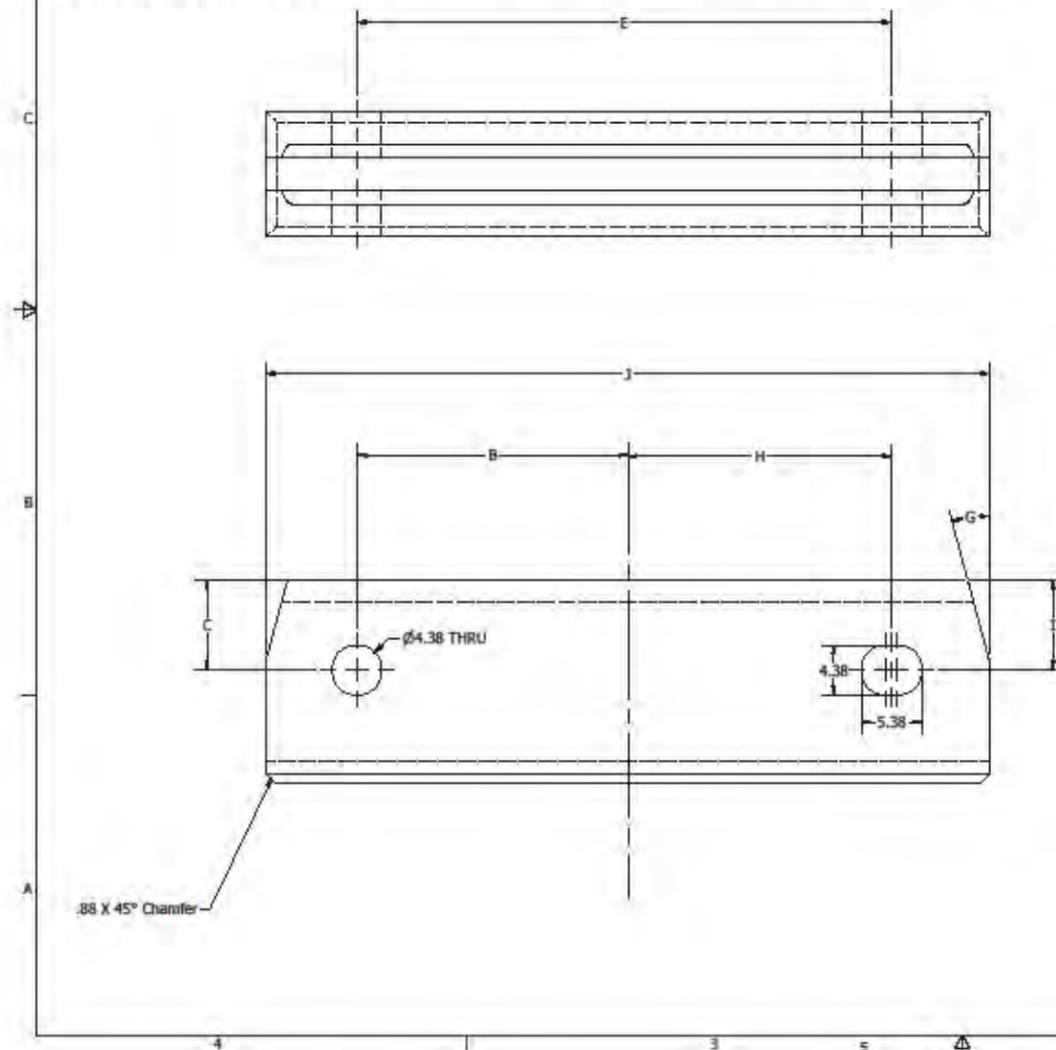
Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

KAS-SNR-011 Attachment 2  
 3b. Outboard Attachment Item 10

|   | Part 1  | Parts 2 | Part 3  | Part 4  | Parts 5 | Parts 6 | Parts 7 | Parts 8 |
|---|---------|---------|---------|---------|---------|---------|---------|---------|
| A | 3.25    | 3.25    | 3.25    | 3.25    | 3.25    | 3.25    | 3.25    | 3.25    |
| B | 23.875  | 23.9375 | 24      | 24.0625 | 24.0625 | 23.9375 | 23.8125 | 24.0625 |
| C | 7.8125  | 8.125   | 8       | 8       | 8.125   | 8       | 8       | 8.0625  |
| D | 17.75   | 18.125  | 17.9375 | 17.9375 | 18.0625 | 18      | 18      | 18      |
| E | 48      | 48.0625 | 48      | 48.0625 | 48.0625 | 48.125  | 47.9375 | 48      |
| F | 2       | 2       | 2.0625  | 2.0625  | 2.0625  | 2       | 2       | 2       |
| G | N.A.    |
| H | 24.1875 | 24.125  | 24      | 24      | 24      | 24.1875 | 24.125  | 23.9375 |
| I | 7.8125  | 8.1875  | 8       | 7.9375  | 8.125   | 8       | 8       | 8.0625  |
| J | 63.875  | 64      | 64      | 63.875  | 64      | 63.875  | 64      | 64      |
| K | N.A.    |
| L | 3       | 3       | 2.8125  | 3       | 2.875   | 3       | 2.875   | 3.125   |

NOTE: ALL DIMENSIONS ARE IN INCHES.



|                      |           |                            |                   |
|----------------------|-----------|----------------------------|-------------------|
| DRAWN<br>NICK HENSCH | 9/27/2018 | KASGR0 RAIL CORPORATION    |                   |
| CHECKED<br>JON ODDEN |           | TITLE                      |                   |
| QA                   |           | <b>OUTBOARD ATTACHMENT</b> |                   |
| MFG                  |           | SIZE<br>C                  | DWG NO<br>ITEM 10 |
| APPROVED             |           | SCALE                      | REV<br>A          |
|                      |           | SHEET 1 OF 1               |                   |



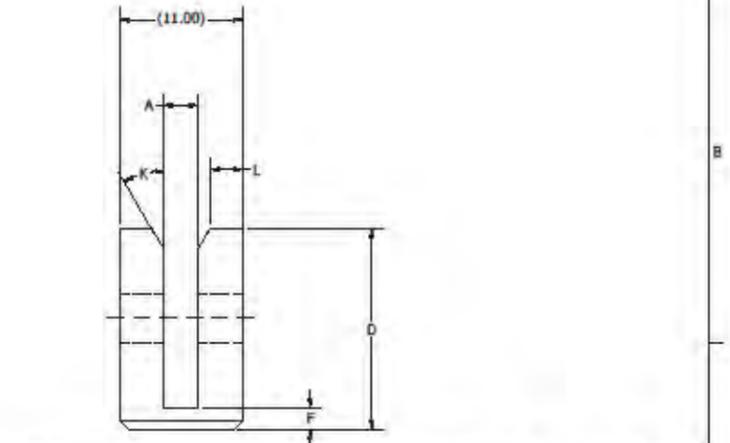
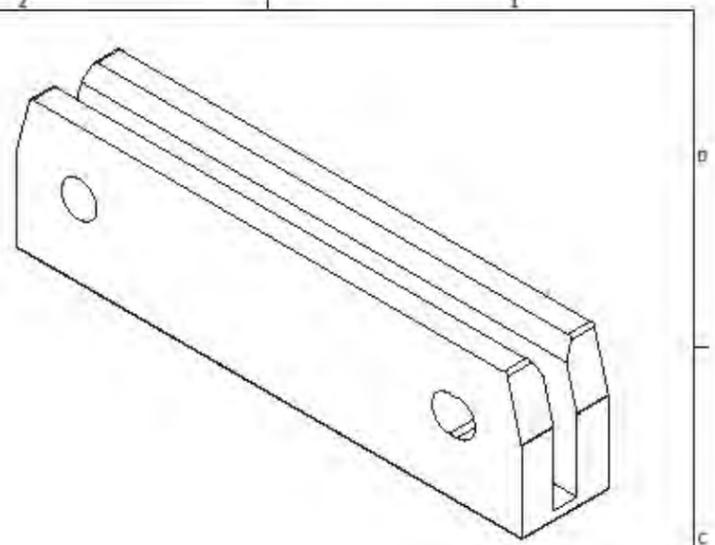
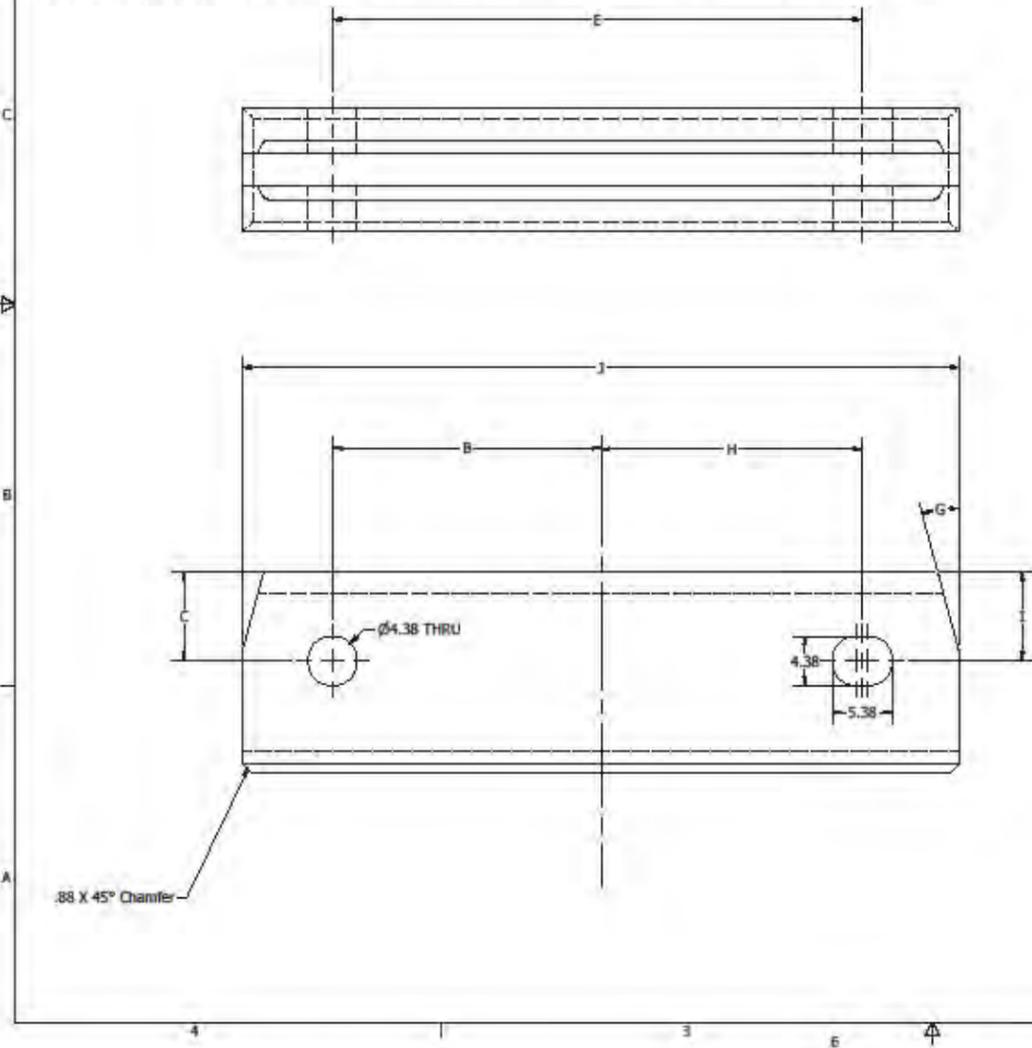
Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

KAS-SNR-011 Attachment 2  
 3a. Outboard Attachment, Rev A

|   | Part 1  | Parts 2 | Part 3 | Part 4 | Parts 5 | Parts 6  | Parts 7 | Parts 8 |
|---|---------|---------|--------|--------|---------|----------|---------|---------|
| A | 3.1875  | 3.25    | 3.25   | 3.25   | 3.25    | 3.25     | 3.25    | 3.25    |
| B | 24.0625 | 24      | 24     | 24     | 24      | 24.03125 | 24.0625 | 24.0625 |
| C | 8       | 8       | 8      | 8      | 7.9375  | 7.875    | 7.9375  | 8.0625  |
| D | NA      | NA      | NA     | NA     | NA      | NA       | NA      | NA      |
| E | 48.125  | 48      | 48     | 48     | 48      | 48.0625  | 48.125  | 48.125  |
| F | NA      | NA      | NA     | NA     | NA      | NA       | NA      | NA      |
| G | NA      | NA      | NA     | NA     | NA      | NA       | NA      | NA      |
| H | 24.0625 | 24      | 24     | 24     | 24      | 24.03125 | 24.0625 | 24.0625 |
| I | 8       | 7.9375  | 8      | 8      | 7.9375  | 7.875    | 8       | 8.0625  |
| J | 63.9375 | 64      | 64     | 64     | 64      | 64       | 64      | 63.9375 |
| K | NA      | NA      | NA     | NA     | NA      | NA       | NA      | NA      |
| L | 2.75    | 2.75    | 2.75   | 2.8125 | 2.8125  | 2.8125   | 2.8125  | 2.8125  |

NOTE: ALL DIMENSIONS ARE IN INCHES.



|                      |           |                                    |              |
|----------------------|-----------|------------------------------------|--------------|
| DRAWN<br>NICK HINSCH | 9/27/2018 | <b>KASGRO RAIL CORP.</b>           |              |
| CHECKED              |           |                                    |              |
| QA                   |           | <b>OUTBOARD ATTACHMENT ITEM 10</b> |              |
| MFG                  |           |                                    |              |
| APPROVED             |           | SIZE<br>C                          | DWG NO<br>10 |
|                      |           | SCALE                              | REV          |
|                      |           |                                    | SHEET 1 OF 1 |

Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

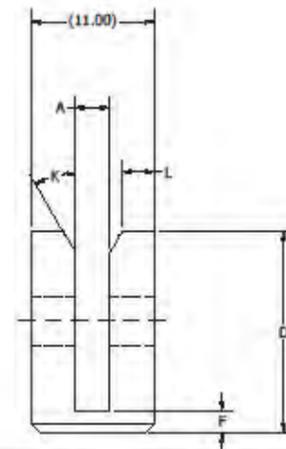
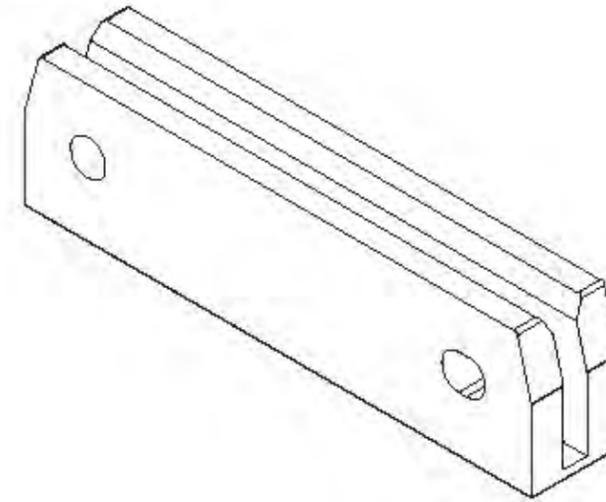
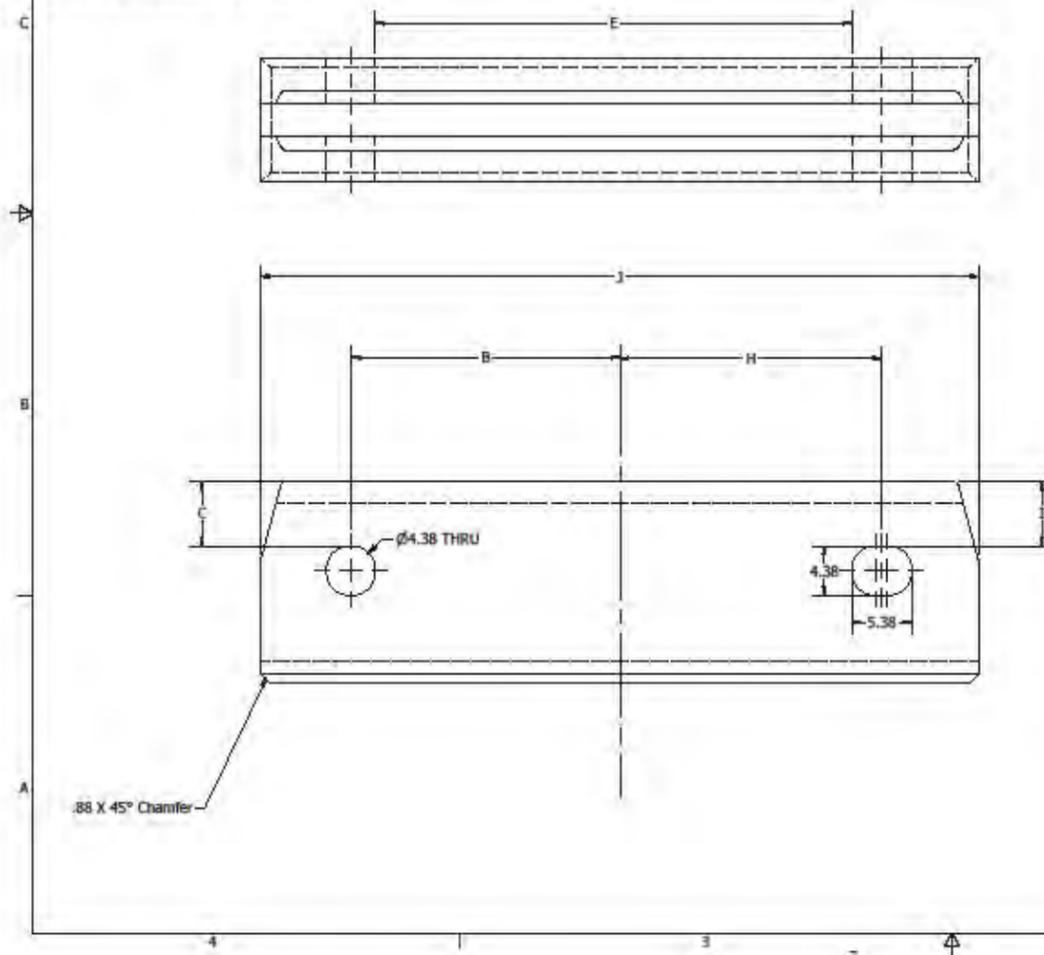
Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

KAS-SNR-011 Attachment 2  
 3c. Outboard Attachment Item 10, Rev B

|   | Part 1  | Part 2 | Part 3 | Part 4 | Part 5 | Part 6  | Part 7 | Part 8  |
|---|---------|--------|--------|--------|--------|---------|--------|---------|
| A | 3.25    | 3.25   | 3.25   | 3.25   | 3.25   | 3.25    | 3.25   | 3.25    |
| B | NA      | NA     | NA     | NA     | NA     | NA      | NA     | NA      |
| C | 5.8125  | 5.8125 | 5.8125 | 5.8125 | 5.75   | 5.6875  | 5.75   | 5.875   |
| D | NA      | NA     | NA     | NA     | NA     | NA      | NA     | NA      |
| E | 43.25   | 43.125 | 43.125 | 43.125 | 43.125 | 43.1875 | 43.25  | 43.25   |
| F | NA      | NA     | NA     | NA     | NA     | NA      | NA     | NA      |
| G | NA      | NA     | NA     | NA     | NA     | NA      | NA     | NA      |
| H | NA      | NA     | NA     | NA     | NA     | NA      | NA     | NA      |
| I | 5.8125  | 5.75   | 5.8125 | 5.8125 | 5.75   | 5.6875  | 5.8125 | 5.875   |
| J | 63.9375 | 64     | 64     | 64     | 64     | 64      | 64     | 63.9375 |
| K | NA      | NA     | NA     | NA     | NA     | NA      | NA     | NA      |
| L | 2.75    | 2.75   | 2.75   | 2.8125 | 2.8125 | 2.8125  | 2.8125 | 2.8125  |

NOTE: DIMENSION (A) MEASURED AT THE BOTTOM

NOTE: ALL DIMENSIONS ARE IN INCHES.



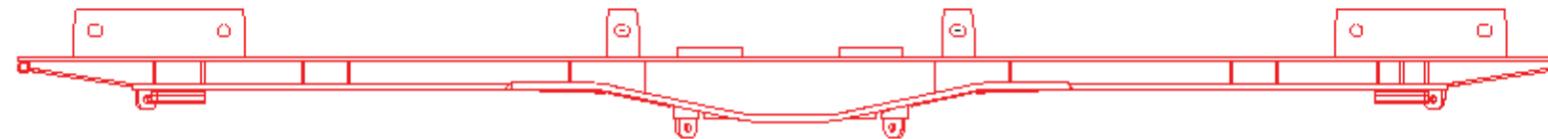
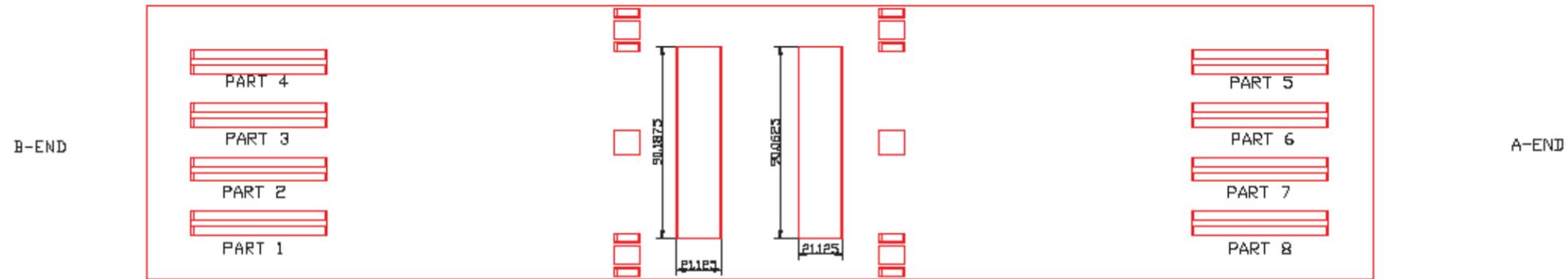
|          |             |           |                             |              |
|----------|-------------|-----------|-----------------------------|--------------|
| DRAWN    | NEOK HINSCH | 9/27/2018 | <b>KASGRO RAIL CORP.</b>    |              |
| CHECKED  |             |           | OUTBOARD ATTACHMENT ITEM 10 |              |
| QA       |             |           | SIZE                        | DWG NO       |
| MFG      |             |           | C                           | 10           |
| APPROVED |             |           | SCALE                       | REV          |
|          |             |           |                             | B            |
|          |             |           |                             | SHEET 1 OF 1 |



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

KAS-SNR-011 Attachment 2  
 4. Outboard Attachment Orientation



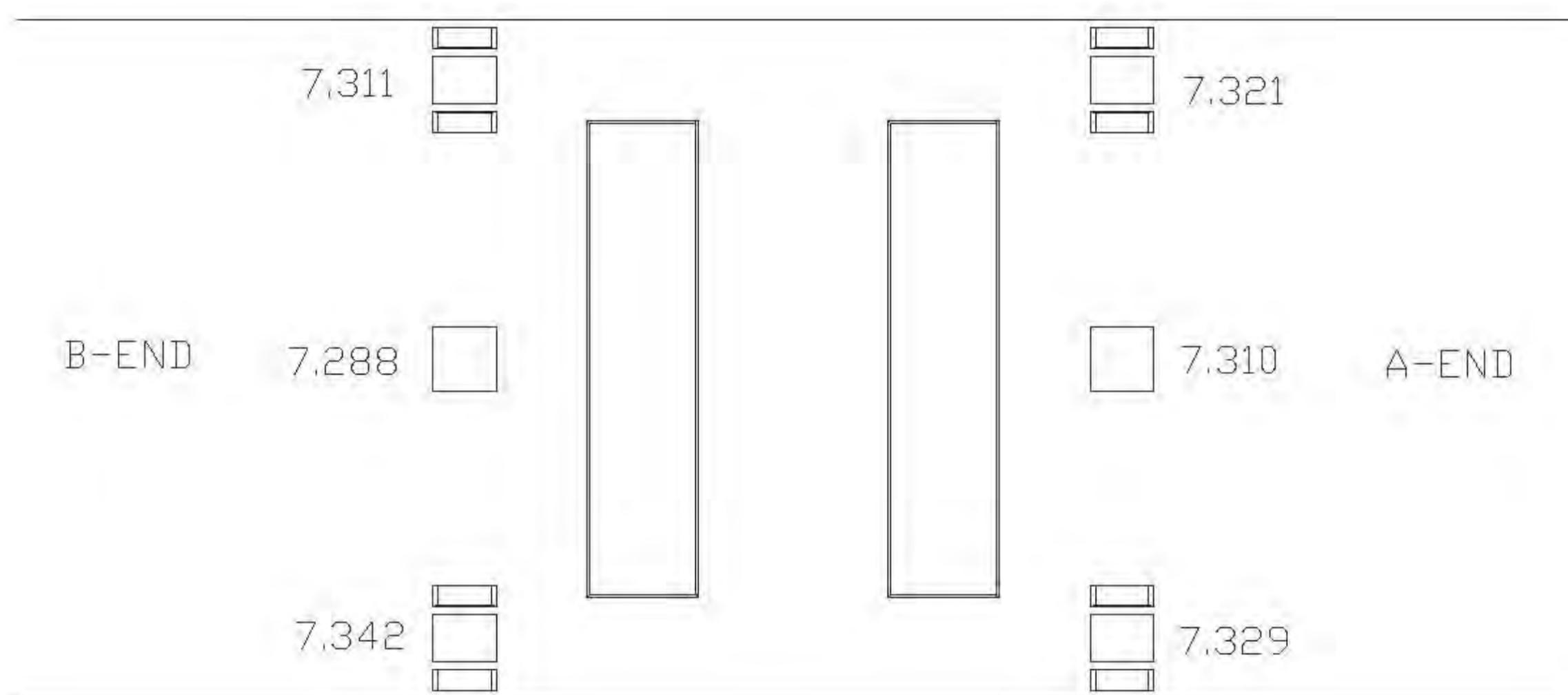
|                               |      |
|-------------------------------|------|
| <b>RAIL KASGRO CORP</b>       |      |
| 121 BUNNIE RD. NEW CASTLE, PA |      |
| ATTACHMENT REFERENCE          |      |
| DRG: NH                       | 8/16 |
| CHK: JD                       | 8/16 |
| APP'D:                        |      |



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

KAS-SNR-011 Attachment 2  
5. Stainless pad dimensions





Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

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KAS-SNR-011 Attachment 2  
6. Kasgro Item 5 Email

**KLEIN Slade (ORN-RE)**

---

**From:** Nick Hinsch <nick@kasgro.com>  
**Sent:** Tuesday, March 05, 2019 8:58 AM  
**To:** KLEIN Slade (ORN-RE); 'Rick Ford'  
**Cc:** DENTON Mark (ORN-RE); COUNTERMAN Bernie (ORN-RE)  
**Subject:** RE: TTCI Questions

**Security Notice: Please be aware that this email was sent by an external sender.**

Slade,

Both Item 5 parts are now within tolerance to the item 6 parts.

Nick

---

**From:** KLEIN Slade (ORANO) <slade.klein@orano.group>  
**Sent:** Monday, March 04, 2019 2:07 PM  
**To:** Rick Ford (rick@kasgrorail.com) <rick@kasgrorail.com>  
**Cc:** Nick Hinsch <nick@kasgro.com>; DENTON Mark (ORANO) <mark.denton@orano.group>; COUNTERMAN Bernie (ORANO) <bernard.counteraman@orano.group>  
**Subject:** RE: TTCI Questions

Rick,

The two center item 5 pads need to be 1/16 to 1/8 inch lower than the Item 6 pads. Based on the attached dimensions, the center pads need to be lowered.



Slade W. Klein  
Engineering Supervisor  
Orano Federal Services LLC  
505 S. 336<sup>th</sup> Street, Suite 400  
Federal Way, WA 98003  
253-552-1338  
[slade.klein@orano.group](mailto:slade.klein@orano.group)

---

**From:** Nick Hinsch [<mailto:nick@kasgro.com>]  
**Sent:** Tuesday, February 26, 2019 11:05 AM  
**To:** KLEIN Slade (ORN-RE)  
**Subject:** RE: TTCI Questions

**Security Notice: Please be aware that this email was sent by an external sender.**

Yes, I have the measurements from the bottom of the slot to the top of the pad right now. I did this by placing a machined bar across the slots and used a mechanical depth micrometer.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Page 1 of 15

KAS-SNR-011 Attachment 3

|   |   |  |   |
|---|---|--|---|
|   |   | Orano Federal Services   |   |
| DATA TRANSMITTAL FORM   |   |  |   |
| Supplier:   | KASGRO RAIL CORP., INC.   | DTF No:  | 038   |
| P.O./SC No:   | 15C3011916  | Date:  | 2/19/2019   |
| Type of Submittal:  | <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal                                   | SDRL List Item No:   | 24  |
| Submitted for:  | <input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted:  | 1   |
| Submitted By:   | <b>RICK FORD</b><br><small>(Name)</small>   | <i>Rick Ford</i><br><small>Digitally signed by Rick Ford<br/>Date: 2019.02.27 13:31:27<br/>+08'00'</small><br><small>(Signature)</small>   | PROJECT MANAGER<br><small>(Title)</small>                           |
| <b>ITEM NUMBER</b>  | <b>DOCUMENT NUMBER</b>  | <b>REVISION NUMBER</b>   | <b>DOCUMENT DESCRIPTION</b>   |
| 1   | KAS 127   |  | ATLAS CASK CAR OMS LASER DIMENSIONS FOR PIN BLOCK ATTACHMENT BLOCKS |
| 2   | KAS 128   |  | FRA S-2044 INPSECTION FOR BUFFER CARS                               |
| 3   | KAS 129   |  | AAR S-488 BRAKE TEST CERTIFICATION                                  |
| 4   | KAS 130   |  | TRACK SCALE CALIBRATION RECORDS                                     |
| 5   | KAS 131   |  | TUV UT NDE REPORT CASK CAR  |
| 6   | KAS 132   |  | TUV PT NDE REPORT CASK CAR  |
| 7   | KAS 133   |  | TUV MT NDE REPORT CASK CAR  |
| 8   | KAS 143 <b>134</b>  |  | TUV VT NDE REPORT CASK CAR  |
| Comments:   |   | Technical Reviewer (i.e., RE, PTL, SME, QA, etc.)  |   |
| 1) NOTE: KAS 127 provides as-built railcar dimensions. Kasgro rework modified some of these. Kasgro to submit final dimensions separately.<br>2) KAS 133 does not include the shear block or outer pin block weld MT.<br>3) KAS 134 does not include VT of the shear block welds. |   | <b>KLEIN Slade</b><br>Date: 2019.02.27 13:47:33 -08'00'  |   |
|   |   | Date: 2/27/2019  |   |
| <b>FS DISPOSITION CODES AND DEFINITIONS</b>   |   |  |   |
| AP  | Approved  | Work may proceed.  | Resubmittal is not required   |
| AWC   | Approved with Comment   | Work may proceed; comments provided for Supplier's consideration only.   | Resubmittal is not required   |
| REV   | Reviewed  | Work may proceed; comments provided for Supplier's consideration only.   | Resubmittal is not required   |
| RWC   | Reviewed with Comment   | Work may proceed; subject to incorporation and compliance w/ Buyer comments.   | Correct and resubmit  |
| DS  | Disapproved   | Work may <u>not</u> proceed.   | Correct and resubmit  |
| RSA   | Receipt Submittal Acknowledged  | No other action required.  |   |
| If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change.             |   |  |   |
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval  |   | <i>Mark A. Denton</i><br><small>Digitally signed by Mark A. Denton<br/>DN: cn=Mark A. Denton, o=Orano Federal Services, email=mark.denton@orano-group.com<br/>c=US<br/>Date: 2019.02.27 17:04:03 -0800</small> | Date: 02/27/2019  |

FS-EN-FRM-023 Rev 02 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Page 2 of 15

KAS-SNR-011 Attachment 3

|   |   |   |
|---|---|---|
|   | Orano Federal Services                    |   |
|   | <b>SUPPLIER DOCUMENT SUBMITTAL REVIEW</b> |   |
| Supplier / PO No.:  | <b>KASGRO / 15C3011916</b>                | DTF No. / Rev: <b>038</b>   |
| Charge No:  | <b>00225.03.0050.02.00001</b>             | Due Date: <b>3/8/2019</b>   |
| Document(s):  | <b>See DTF No.: 038</b>                   |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg, Codes, Stds, etc.)   |   |   |
| PE  | Slade Klein                               |   |
| REVIEWERS   | Slade Klein, Bernie Counterman            |   |
| QA  | Bernie Counterman                         |   |
| <b>Technical Review</b>   |   |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |   |   |
| Technical Reviewer Comments:  |   |   |
| KAS 133 does not include the required MT inspection of the shear blocks and outer pin blocks. This was required by Kasgro drawing 1155-41.  |   |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b>   |   | Date: 2019.02.26 07:23:43 -08'00'   |
| <b>Quality Assurance Review (As Applicable)</b>   |   |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |   |   |
| Technical Reviewer Comments:  |   |   |
| Only potential question was regarding missing signature by the technician on the UT report. Discussed with TUV Rheinland Level III (Randy @ 616-818-8188). The technician signature is not required provided the report is signed by his supervisor. This report is signed by the individuals supervisor. |   |   |
| QA Reviewer(s) (Sign/Date):   |   | Digitally signed by COUNTERMAN Bernard<br>Date: 2019.02.25 09:29:24 -08'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary)  |   |   |
|   |   |   |
|   |   |   |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

| Railcar # 1DOX010001 |              |   | Kasgro PO<br>15C3011916 |      | Notes:                             | Traveler |
|----------------------|--------------|---|-------------------------|------|------------------------------------|----------|
| Drawing: 3018956     |              |   | Sheet: 3                |      | Revision:                          | 0        |
| Feature Number       | Drawing Zone | Drawing Requirements<br>OUTER 4 ITEMS 11 & 12 | Insp. Freq.             | Code | Inspection Method<br>(If Required) |          |
| 1                    | D-7 IT 11    | // 1/16" B                                    | 100%                    | A-1  | LASER TRACKER                      |          |
| 2                    | D-7 IT 11    | ⊥ 1/16" A                                     | 100%                    | A-1  | LASER TRACKER                      |          |
| 3                    | D-1 IT 12    | // 1/16" B                                    | 100%                    | A-1  | LASER TRACKER                      |          |
| 4                    | D-1 IT 12    | ⊥ 1/16" A                                     | 100%                    | A-1  | LASER TRACKER                      |          |
| 5                    | C-1 IT 11    | // 1/16" B                                    | 100%                    | A-1  | LASER TRACKER                      |          |
| 6                    | C-1 IT 11    | ⊥ 1/16" A                                     | 100%                    | A-1  | LASER TRACKER                      |          |
| 7                    | C-7 IT 12    | // 1/16" B                                    | 100%                    | A-1  | LASER TRACKER                      |          |
| 8                    | C-7 IT 12    | ⊥ 1/16" A                                     | 100%                    | A-1  | LASER TRACKER                      |          |

| Feature Number | Tool Number | Actual Results | OOT Conditions | Deficiency Number | Inspector/Date             | Temperature (F) |
|----------------|-------------|----------------|----------------|-------------------|----------------------------|-----------------|
| 1              | 4674        | .025           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 2              | 4674        | .009           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 3              | 4674        | .015           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 4              | 4674        | .042           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 5              | 4674        | .042           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 6              | 4674        | .062           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 7              | 4674        | .014           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 8              | 4674        | .059           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |

\* 4674 IS THE LAST FOUR DIGITS OF THE S/N OF THE LASER TRACKER

CODES: A-1 = Actual Recorded dimension(s) for each occurrence: A-2 = Actual recorded range (high/low) for each occurrence:  
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 "OK to gage" (for go/no go functional gauging): Out of Tolerance dimensions-Record actual dimension and the applicable NCR #  
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

| Railcar # 1DOX010001 |              |   | Kasgro PO<br>15C3011916 |      | Notes:                             | Traveler |
|----------------------|--------------|---|-------------------------|------|------------------------------------|----------|
| Drawing: 3018956     |              |   | Sheet: 3                |      | Revision:                          | 0        |
| Feature Number       | Drawing Zone | Drawing Requirements<br>INNER 4 ITEM 10 | Insp. Freq.             | Code | Inspection Method<br>(If Required) |          |
| 9                    | D-7 IT 10    | // 1/16" B                              | 100%                    | A-1  | LASER TRACKER                      |          |
| 10                   | D-7 IT 10    | ⊥ 1/16" A                               | 100%                    | A-1  | LASER TRACKER                      |          |
| 11                   | D-1 IT 10    | // 1/16" B                              | 100%                    | A-1  | LASER TRACKER                      |          |
| 12                   | D-1 IT 10    | ⊥ 1/16" A                               | 100%                    | A-1  | LASER TRACKER                      |          |
| 13                   | C-1 IT 10    | // 1/16" B                              | 100%                    | A-1  | LASER TRACKER                      |          |
| 14                   | C-1 IT 10    | ⊥ 1/16" A                               | 100%                    | A-1  | LASER TRACKER                      |          |
| 15                   | C-7 IT 10    | // 1/16" B                              | 100%                    | A-1  | LASER TRACKER                      |          |
| 16                   | C-7 IT 10    | ⊥ 1/16" A                               | 100%                    | A-1  | LASER TRACKER                      |          |

| Feature Number | Tool Number | Actual Results | OOT Conditions | Deficiency Number | Inspector/Date             | Temperature (F) |
|----------------|-------------|----------------|----------------|-------------------|----------------------------|-----------------|
| 9              | 4674        | .015           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 10             | 4674        | .047           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 11             | 4674        | .010           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 12             | 4674        | .027           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 13             | 4674        | .027           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 14             | 4674        | .029           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 15             | 4674        | .006           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 16             | 4674        | .027           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

| Railcar # 1DOX010001 |              |                      | Kasgro PO<br>15C3011916 |      | Notes:                          | Traveler |
|----------------------|--------------|----------------------|-------------------------|------|---------------------------------|----------|
| Drawing: 3018956     |              |                      | Sheet: 3                |      | Revision:                       | 0        |
| Feature Number       | Drawing Zone | Drawing Requirements | Insp. Freq.             | Code | Inspection Method (If Required) |          |
| 17                   | D-5 IT 9     | $\oplus 1/16''$ C-D  | 100%                    | A-1  | LASER TRACKER                   |          |
| 18                   | D-5 IT 9     | $\perp 1/16''$ A     | 100%                    | A-1  | LASER TRACKER                   |          |
| 19                   | D-5 IT 9     | $\oplus 1/16''$ C-D  | 100%                    | A-1  | LASER TRACKER                   |          |
| 20                   | D-5 IT 9     | $\perp 1/16''$ A     | 100%                    | A-1  | LASER TRACKER                   |          |
| 21                   | C-6 IT 7     | $\perp 1/16''$ A     | 100%                    | A-1  | LASER TRACKER                   |          |
| 22                   | C-6 IT 7     | $\perp 1/16''$ A     | 100%                    | A-1  | LASER TRACKER                   |          |
| 23                   | C-6 IT 7     | $\perp 1/16''$ A     | 100%                    | A-1  | LASER TRACKER                   |          |
| 24                   | C-6 IT 7     | $\perp 1/16''$ A     | 100%                    | A-1  | LASER TRACKER                   |          |

| Feature Number | Tool Number | Actual Results | OOT Conditions | Deficiency Number | Inspector/Date             | Temperature (F) |
|----------------|-------------|----------------|----------------|-------------------|----------------------------|-----------------|
| 17             | 4674        | .051           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 18             | 4674        | .018           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 19             | 4674        | .004           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 20             | 4674        | .014           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 21             | 4674        | .007           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 22             | 4674        | .007           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 23             | 4674        | .016           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 24             | 4674        | .004           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

| Railcar # 1DOX010001 |              |                      | Kasgro PO<br>15C3011916 |      | Notes:                          | Traveler |
|----------------------|--------------|----------------------|-------------------------|------|---------------------------------|----------|
| Drawing: 3018956     |              |                      | Sheet: 3                |      | Revision:                       | 0        |
| Feature Number       | Drawing Zone | Drawing Requirements | Insp. Freq.             | Code | Inspection Method (If Required) |          |
| 25                   | C-6 IT 8     | $\perp$ 1/16" A      | 100%                    | A-1  | LASER TRACKER                   |          |
| 26                   | C-6 IT 8     | $\perp$ 1/16" A      | 100%                    | A-1  | LASER TRACKER                   |          |
| 27                   | C-6 IT 8     | $\perp$ 1/16" A      | 100%                    | A-1  | LASER TRACKER                   |          |
| 28                   | C-6 IT 8     | $\perp$ 1/16" A      | 100%                    | A-1  | LASER TRACKER                   |          |
| 29                   | B-5 IT 7     | $\oplus$ 1/16" A E B | 100%                    | A-1  | LASER TRACKER                   |          |
| 30                   | B-5 IT 8     | $\oplus$ 1/16" A E B | 100%                    | A-1  | LASER TRACKER                   |          |
| 31                   | B-5 IT 8     | $\oplus$ 1/16" A E B | 100%                    | A-1  | LASER TRACKER                   |          |
| 32                   | B-5 IT 7     | $\oplus$ 1/16" A E B | 100%                    | A-1  | LASER TRACKER                   |          |

| Feature Number | Tool Number | Actual Results | OOT Conditions | Deficiency Number | Inspector/Date             | Temperature (F) |
|----------------|-------------|----------------|----------------|-------------------|----------------------------|-----------------|
| 25             | 4674        | .012           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 26             | 4674        | .002           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 27             | 4674        | .008           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 28             | 4674        | .002           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 29             | 4674        | .296           | .234           | 1                 | <i>[Signature]</i> 1/17/19 | 47              |
| 30             | 4674        | .275           | .213           | 2                 | <i>[Signature]</i> 1/17/19 | 47              |
| 31             | 4674        | .435           | .372           | 3                 | <i>[Signature]</i> 1/17/19 | 47              |
| 32             | 4674        | .421           | .358           | 4                 | <i>[Signature]</i> 1/17/19 | 47              |

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Deficiency numbers added by FS for traceability to deviation report



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
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**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

| Railcar # 1DOX010001 |              |                                | Kasgro PO<br>15C3011916 |      | Notes:                          | Traveler |
|----------------------|--------------|--------------------------------|-------------------------|------|---------------------------------|----------|
| Drawing: 3018956     |              |                                | Sheet: 3                |      | Revision:                       | 0        |
| Feature Number       | Drawing Zone | Drawing Requirements           | Insp. Freq.             | Code | Inspection Method (If Required) |          |
| 33                   | B-6 IT 7     | $\oplus 1/16" \text{ (M)} C-D$ | 100%                    | A-1  | LASER TRACKER                   |          |
| 34                   | B-6 IT 8     | $\oplus 1/16" \text{ (M)} C-D$ | 100%                    | A-1  | LASER TRACKER                   |          |
| 35                   | B-6 IT 8     | $\oplus 1/16" \text{ (M)} C-D$ | 100%                    | A-1  | LASER TRACKER                   |          |
| 36                   | B-6 IT 7     | $\oplus 1/16" \text{ (M)} C-D$ | 100%                    | A-1  | LASER TRACKER                   |          |
| 37                   | B-6          | 148.5" $\pm$ .06"              | 100%                    | A-1  | LASER TRACKER                   |          |
| 38                   | B-3          | 148.5" $\pm$ .06"              | 100%                    | A-1  | LASER TRACKER                   |          |
| 39                   | D-5          | 45.0" $\pm$ .50" TYP           | 100%                    | A-2  | LASER / TAPE MEASURE            |          |
| 40                   | D-1          | 4X 18.05                       | 100%                    | A-2  | LASER TRACKER                   |          |
| 41                   | C-1          | 4X 25.20                       | 100%                    | A-2  | LASER TRACKER                   |          |

| Feature Number | Tool Number | Actual Results | OOT Conditions | Deficiency Number | Inspector/Date             | Temperature (F) |
|----------------|-------------|----------------|----------------|-------------------|----------------------------|-----------------|
| 33             | 4674        | .414           | .351           | 5                 | <i>[Signature]</i> 1/17/19 | 47              |
| 34             | 4674        | .334           | .271           | 6                 | <i>[Signature]</i> 1/17/19 | 47              |
| 35             | 4674        | .511           | .448           | 7                 | <i>[Signature]</i> 1/17/19 | 47              |
| 36             | 4674        | .412           | .350           | 8                 | <i>[Signature]</i> 1/17/19 | 47              |
| 37             | 4674        | 148.441        | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 38             | 4674        | 148.445        | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 39             | TAPE        | 45.00          | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 40             | 4674        | 18.062-18.029  | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 41             | 4674        | 25.214-25.182  | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |

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**Orano Federal Services**  
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**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

| Railcar #        |              |                      | Kasgro PO   | Notes:    | Traveler                        |
|------------------|--------------|----------------------|-------------|-----------|---------------------------------|
| Drawing: 3018956 |              |                      | 15C3011916  |           |                                 |
|                  |              |                      | Sheet: 4    | Revision: | 0                               |
| Feature Number   | Drawing Zone | Drawing Requirements | Insp. Freq. | Code      | Inspection Method (If Required) |
| 42               | C-8          | $\oplus 1/16''$ F G  | 100%        | A-1       | LASER TRACKER                   |
| 43               | B-6          | $\oplus 1/16''$ M J  | 100%        | A-1       | LASER TRACKER                   |
| 44               | A-4          | $\oplus 1/16''$ N H  | 100%        | A-1       | LASER TRACKER                   |
| 45               | A-3          | $\oplus 1/16''$ L K  | 100%        | A-1       | LASER TRACKER                   |
|                  |              |                      |             |           |                                 |
|                  |              |                      |             |           |                                 |
|                  |              |                      |             |           |                                 |
|                  |              |                      |             |           |                                 |
|                  |              |                      |             |           |                                 |

| Feature Number | Tool Number | Actual Results | OOT Conditions | Deficiency Number | Inspector/Date             | Temperature (F) |
|----------------|-------------|----------------|----------------|-------------------|----------------------------|-----------------|
| 42             | 4674        | .002           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 43             | 4674        | .057           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 44             | 4674        | .034           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 45             | 4674        | .059           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
|                |             |                |                |                   |                            |                 |
|                |             |                |                |                   |                            |                 |
|                |             |                |                |                   |                            |                 |
|                |             |                |                |                   |                            |                 |
|                |             |                |                |                   |                            |                 |

\* 4674 IS THE LAST FOUR DIGITS OF THE S/N OF THE LASER TRACKER

CODES: A-1 = Actual Recorded dimension(s) for each occurrence: A-2 = Actual recorded range (high/low) for each occurrence:  
 Δ = Actual recorded range (high/low) for each occurrence to be submitted to customer: B = Record as "accept": C= Record as  
 "OK to gage" (for go/no go functional gauging): Out of Tolerance dimensions-Record actual dimension and the applicable NCR #  
 in the deficiency No. box.

Note: THE PERSON DESIGNATED TO SIGN FOR SUCH AN ACTION VERIFIES BASED ON PERSONAL OBSERVATION OR CERTIFIED RECORDS, AND CERTIFIES BY THIS SIGNATURE THAT THE ACTION HAS ACTUALLY BEEN PERFORMED IN ACCORDANCE WITH THE SPECIFIED REQUIREMENT.

THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES, INCLUDING TITLE 18, CHAPTER 47.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

| Railcar # 1DOX010001 |              |                      | Kasgro PO<br>15C3011916 |      | Notes:                          | Traveler |
|----------------------|--------------|----------------------|-------------------------|------|---------------------------------|----------|
| Drawing: 3018956     |              |                      | Sheet: 3&4              |      | Revision:                       | 0        |
| Feature Number       | Drawing Zone | Drawing Requirements | Insp. Freq.             | Code | Inspection Method (If Required) |          |
| 46                   | C-6          | 46.50"               | 100%                    | A-2  | LASER TRACKER                   |          |
| 47                   | C-3          | 11.75"               | 100%                    | A-2  | LASER TRACKER                   |          |
|                      |              |                      |                         |      |                                 |          |
|                      |              |                      |                         |      |                                 |          |
|                      |              |                      |                         |      |                                 |          |
|                      |              |                      |                         |      |                                 |          |
|                      |              |                      |                         |      |                                 |          |
|                      |              |                      |                         |      |                                 |          |
|                      |              |                      |                         |      |                                 |          |
|                      |              |                      |                         |      |                                 |          |

| Feature Number | Tool Number | Actual Results  | OOT Conditions | Deficiency Number | Inspector/Date             | Temperature (F) |
|----------------|-------------|-----------------|----------------|-------------------|----------------------------|-----------------|
| 46             | 4674        | 46.482"-46.520" | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 47             | 4674        | 11.720"-11.729" | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
|                |             |                 |                |                   |                            |                 |
|                |             |                 |                |                   |                            |                 |
|                |             |                 |                |                   |                            |                 |
|                |             |                 |                |                   |                            |                 |
|                |             |                 |                |                   |                            |                 |
|                |             |                 |                |                   |                            |                 |
|                |             |                 |                |                   |                            |                 |

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Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

Page 10 of 15 KAS-SNR-011 Attachment 3



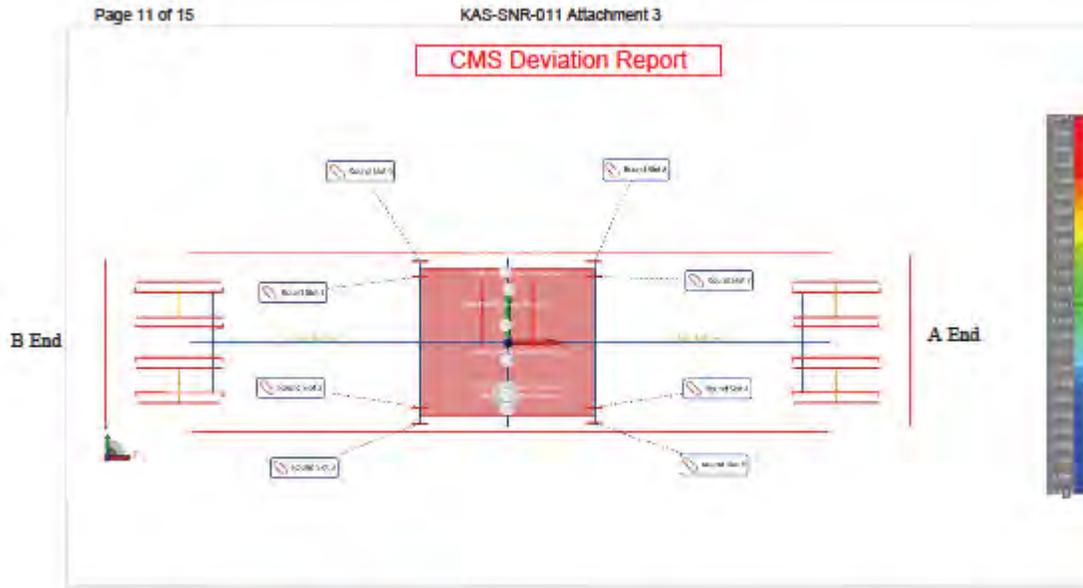
P.O. Box 540784  
Grand Prairie, TX 75054  
972-322-3615

jason@cmsllc1.com  
<http://www.cmsllc1.com>  
17 Jan 2019 08:51 PM

| Session Information                            |                         |
|--|-------------------------|
| File Name of FCD                               | Areva Atlas Railcar.fcd |
| Operator                                       | MATTHEW DILLE           |
| Company Name                                   | KASGRO                  |
| Date   | 1/17/2019               |
| Time   | 8:51 PM                 |
| Ambient Temperature                            | 47°F                    |
| Active Alignment Error                         |                         |
| Active Device                                  | V01001304674            |
| P08-05-11-09017 Current Device Error           |                         |
| V01001304674 -> Device Position 1 Device Error |                         |
| V01001304674 -> Device Position 2 Device Error |                         |
| V01001304674 -> Device Position 3 Device Error |                         |
| V01001304674 -> Device Position 4 Device Error |                         |
| V01001304674 -> Device Position 5 Device Error |                         |
| V01001304674 -> Device Position 6 Device Error | 0.0017h                 |

Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



| Round Slot 2 |            | Deficiency #6 |           |           |          |           | Readings: 0 |
|--------------|------------|---------------|-----------|-----------|----------|-----------|-------------|
|              | actual     | nominal       | dev       | -tol      | +tol     | oot       |             |
| Center.x     | -62.5042in | -62.5000in    | -0.0042in | -0.0300in | 0.0300in | 0.0000in  |             |
| Center.z     | 9.3332in   | 9.5000in      | -0.1668in | -0.0300in | 0.0300in | -0.1368in |             |
| Length       | 5.2987in   | 5.3700in      | -0.0713in | 0.0000in  | 0.0600in | -0.0713in |             |
| Width        | 4.3452in   | 4.3700in      | -0.0248in | 0.0000in  | 0.0600in | -0.0248in |             |
| Form         | 0.0202in   |               | 0.0202in  | 0.0000in  | 0.0204in | 0.0000in  |             |
| ↕ Position   | 0.3335in   |               | 0.3335in  | 0.0000in  | 0.0625in | 0.2710in  |             |

| Round Slot 3 |            | Deficiency #5 |           |           |          |           | Readings: 8 |
|--------------|------------|---------------|-----------|-----------|----------|-----------|-------------|
|              | actual     | nominal       | dev       | -tol      | +tol     | oot       |             |
| Center.x     | -62.5039in | -62.5000in    | -0.0039in | -0.0300in | 0.0300in | 0.0000in  |             |
| Center.z     | 9.2931in   | 9.5000in      | -0.2069in | -0.0300in | 0.0300in | -0.1769in |             |
| Length       | 5.3243in   | 5.3700in      | -0.0457in | 0.0000in  | 0.0600in | -0.0457in |             |
| Width        | 4.3531in   | 4.3700in      | -0.0169in | 0.0000in  | 0.0600in | -0.0169in |             |
| Form         | 0.0134in   |               | 0.0134in  | 0.0000in  | 0.0204in | 0.0000in  |             |
| ↕ Position   | 0.4135in   |               | 0.4135in  | 0.0000in  | 0.0625in | 0.3510in  |             |

Deficiency numbers added by FS for  
traceability to Laser Data Sheets



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
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**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Page 12 of 15

KAS-SNR-011 Attachment 3

| Round Slot 4 | Deficiency #2 |           | Readings:0. |           |          |           |
|--------------|---------------|-----------|-------------|-----------|----------|-----------|
|              | actual        | nominal   | dev         | - tol     | +tol     | oot       |
| Center.x     | 62.4720in     | 62.5000in | -0.0280in   | -0.0300in | 0.0300in | 0.0000in  |
| Center.z     | 9.3627in      | 9.5000in  | -0.1373in   | -0.0300in | 0.0300in | -0.1073in |
| Length       | 5.3442in      | 5.3700in  | -0.0258in   | 0.0000in  | 0.0600in | -0.0258in |
| Width        | 4.3354in      | 4.3700in  | -0.0346in   | 0.0000in  | 0.0600in | -0.0346in |
| Form         | 0.0167in      |           | 0.0167in    | 0.0000in  | 0.0204in | 0.0000in  |
| ⚡ Position   | 0.2750in      |           | 0.2750in    | 0.0000in  | 0.0625in | 0.2125in  |

| Round Slot 5 | Deficiency #1 |           | Readings:8. |           |          |           |
|--------------|---------------|-----------|-------------|-----------|----------|-----------|
|              | actual        | nominal   | dev         | - tol     | +tol     | oot       |
| Center.x     | 62.5069in     | 62.5000in | 0.0069in    | -0.0300in | 0.0300in | 0.0000in  |
| Center.z     | 9.3517in      | 9.5000in  | -0.1483in   | -0.0300in | 0.0300in | -0.1183in |
| Length       | 5.3301in      | 5.3700in  | -0.0399in   | 0.0000in  | 0.0600in | -0.0399in |
| Width        | 4.3476in      | 4.3700in  | -0.0224in   | 0.0000in  | 0.0600in | -0.0224in |
| Form         | 0.0118in      |           | 0.0118in    | 0.0000in  | 0.0204in | 0.0000in  |
| ⚡ Position   | 0.2961in      |           | 0.2961in    | 0.0000in  | 0.0625in | 0.2336in  |

| Round Slot 1 | Deficiency #7 |            | Readings:8. |           |          |           |
|--------------|---------------|------------|-------------|-----------|----------|-----------|
|              | actual        | nominal    | dev         | - tol     | +tol     | oot       |
| Center.x     | -62.4972in    | -62.5000in | 0.0028in    | -0.0300in | 0.0300in | 0.0000in  |
| Center.z     | 9.2446in      | 9.5000in   | -0.2554in   | -0.0300in | 0.0300in | -0.2254in |
| Length       | 5.3350in      | 5.3700in   | -0.0350in   | 0.0000in  | 0.0600in | -0.0350in |
| Width        | 4.3376in      | 4.3700in   | -0.0324in   | 0.0000in  | 0.0600in | -0.0324in |
| Form         | 0.0067in      |            | 0.0067in    | 0.0000in  | 0.0204in | 0.0000in  |
| ⚡ Position   | 0.5108in      |            | 0.5108in    | 0.0000in  | 0.0625in | 0.4483in  |

| Round Slot 6 | Deficiency #8 |            | Readings:8. |           |          |           |
|--------------|---------------|------------|-------------|-----------|----------|-----------|
|              | actual        | nominal    | dev         | - tol     | +tol     | oot       |
| Center.x     | -62.5059in    | -62.5000in | -0.0059in   | -0.0300in | 0.0300in | 0.0000in  |
| Center.z     | 9.2939in      | 9.5000in   | -0.2061in   | -0.0300in | 0.0300in | -0.1761in |
| Length       | 5.3539in      | 5.3700in   | -0.0161in   | 0.0000in  | 0.0600in | -0.0161in |
| Width        | 4.3576in      | 4.3700in   | -0.0124in   | 0.0000in  | 0.0600in | -0.0124in |
| Form         | 0.0091in      |            | 0.0091in    | 0.0000in  | 0.0204in | 0.0000in  |
| ⚡ Position   | 0.4120in      |            | 0.4120in    | 0.0000in  | 0.0625in | 0.3496in  |

| Round Slot 7 | Deficiency #3 |           | Readings:7. |           |          |           |
|--------------|---------------|-----------|-------------|-----------|----------|-----------|
|              | actual        | nominal   | dev         | - tol     | +tol     | oot       |
| Center.x     | 62.4711in     | 62.5000in | -0.0289in   | -0.0300in | 0.0300in | 0.0000in  |
| Center.z     | 9.2830in      | 9.5000in  | -0.2170in   | -0.0300in | 0.0300in | -0.1870in |
| Length       | 5.3304in      | 5.3700in  | -0.0396in   | 0.0000in  | 0.0600in | -0.0396in |
| Width        | 4.3380in      | 4.3700in  | -0.0320in   | 0.0000in  | 0.0600in | -0.0320in |
| Form         | 0.0014in      |           | 0.0014in    | 0.0000in  | 0.0204in | 0.0000in  |
| ⚡ Position   | 0.4346in      |           | 0.4346in    | 0.0000in  | 0.0625in | 0.3721in  |

Deficiency numbers added by FS for traceability to Laser Data Sheets



Orano Federal Services  
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High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

Page 13 of 15 KAS-SNR-011 Attachment 3

| Round Slot 8 | Deficiency #4 | Readings:8 |           |           |          |           |
|--------------|---------------|------------|-----------|-----------|----------|-----------|
|              | actual        | nominal    | dev       | -tol      | +tol     | root      |
| Center.x     | 62.4706in     | 62.5000in  | -0.0294in | -0.0300in | 0.0300in | 0.0000in  |
| Center.z     | 9.2896in      | 9.5000in   | -0.2104in | -0.0300in | 0.0300in | -0.1804in |
| Length       | 5.3402in      | 5.3700in   | -0.0298in | 0.0000in  | 0.0600in | -0.0298in |
| Width        | 4.3643in      | 4.3700in   | -0.0057in | 0.0000in  | 0.0600in | -0.0057in |
| Form         | 0.0109in      |            | 0.0109in  | 0.0000in  | 0.0204in | 0.0000in  |
| ψ Position   | 0.4208in      |            | 0.4208in  | 0.0000in  | 0.0625in | 0.3583in  |

Deficiency numbers added by FS for traceability to Laser Data Sheets



Orano Federal Services  
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Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

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Page 14 of 15

KAS-SNR-011 Attachment 3

**KLEIN Slade (ORN-RE)**

---

**From:** matt <matt@cmsllc1.com>  
**Sent:** Thursday, February 14, 2019 1:52 PM  
**To:** KLEIN Slade (ORN-RE)  
**Subject:** RE: Atlas Project - Outboard Pin Blocks

**Security Notice: Please be aware that this email was sent by an external sender.**

Slade  
I have reviewed the numbers you have listed that i gave you via phone call are correct and match what i have  
Thank You  
Matthew Dille

---

**From:** KLEIN Slade (ORANO) [<mailto:slade.klein@orano.group>]  
**Sent:** Thursday, February 14, 2019 4:42 PM  
**To:** matt  
**Subject:** RE: Atlas Project - Outboard Pin Blocks

Matt,

Thanks for taking the time to talk to me. Please confirm the numbers you provided to me.

For the outer pin blocks:

The round hole diameters (4.37 +.06/-0) range from 4.361 to 4.4001 inches

The slot length and width (5.37 +.06/-0, 4.37 +.06/-0) meet the upper tolerance, but have some undersize with the a minimum length of 5.340 inches and a minimum width of 4.323 inches



Slade W. Klein  
Engineering Supervisor  
Orano Federal Services LLC  
505 S. 336<sup>th</sup> Street, Suite 400  
Federal Way, WA 98003  
253-552-1338  
[slade.klein@orano.group](mailto:slade.klein@orano.group)

---

**From:** matt [<mailto:matt@cmsllc1.com>]  
**Sent:** Wednesday, February 13, 2019 6:25 PM  
**To:** KLEIN Slade (ORN-RE)  
**Subject:** RE: Atlas Project - Outboard Pin Blocks

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Slade,  
Sorry for the late reply as i do not check this email often i was expecting a call from you if you can call around 4 est tomorrow i will try to answer any questions you have



Orano Federal Services  
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High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

---

Page 15 of 15

KAS-SNR-011 Attachment 3

---

**From:** KLEIN Slade (ORANO) [<mailto:slade.klein@orano.orano>]  
**Sent:** Monday, February 11, 2019 8:52 AM  
**To:** Rick Ford; [matt@cmsllc1.com](mailto:matt@cmsllc1.com)  
**Cc:** Mark; DENTON Mark (ORANO)  
**Subject:** RE: Atlas Project - Outboard Pin Blocks

Matt! Do you have time to talk later on today or tomorrow? I am flying this morning but need to set up a time for a quick chat. I am looking to add a few things to your report if possible:

1. Outer Pin Blocks, the 8" hole or slot center to the top of the block. This may be covered already by the positional results. Please confirm.
2. Outer Pin Blocks, the 48" between hole and slot centers. This may be covered already by the positional results. Please confirm.
3. Outer Pin Blocks, the actual hole and slot sizes (4.37/5.37). Need actuals or range added to report if you have them.
4. Outer Pin Blocks, 3.25 (3.00 on drawing) slot widths. Need actuals or range added to report if you have them.

Thanks,



Slade W. Klein  
Engineering Supervisor  
Orano Federal Services LLC  
505 S. 336<sup>th</sup> Street, Suite 400  
Federal Way, WA 98003  
253-552-1338  
[slade.klein@orano.orano](mailto:slade.klein@orano.orano)

---

**From:** Rick Ford [<mailto:rick@kasgorail.com>]  
**Sent:** Friday, February 08, 2019 4:57 AM  
**To:** KLEIN Slade (ORN-RE)  
**Cc:** [matt@cmsllc1.com](mailto:matt@cmsllc1.com); Mark  
**Subject:** Atlas Project - Outboard Pin Blocks

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Hi Slade,

Have you had a chance to talk with Matt of CMS laser about your request for the dimensions for the outboard pin block hole alignment?

Sincerely,

Rick Ford  
Kasgro Rail



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Page 1 of 9

KAS-SNR-011 Attachment 4

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[slade.klein@orano.group](mailto:slade.klein@orano.group)

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**To:** KLEIN Slade (ORN-RE)  
**Subject:** RE: Atlas Project - Outboard Pin Blocks

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Slade,  
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High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
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Page 2 of 9

KAS-SNR-011 Attachment 4

From: KLEIN Slade (ORANO) [<mailto:slade.klein@orano.orano>]  
Sent: Monday, February 11, 2019 8:52 AM  
To: Rick Ford; [matt@cmsllc1.com](mailto:matt@cmsllc1.com)  
Cc: Mark; DENTON Mark (ORANO)  
Subject: RE: Atlas Project - Outboard Pin Blocks

Matt! Do you have time to talk later on today or tomorrow? I am flying this morning but need to set up a time for a quick chat. I am looking to add a few things to your report if possible:

1. Outer Pin Blocks, the 8" hole or slot center to the top of the block. This may be covered already by the positional results. Please confirm.
2. Outer Pin Blocks, the 48" between hole and slot centers. This may be covered already by the positional results. Please confirm.
3. Outer Pin Blocks, the actual hole and slot sizes (4.37/5.37). Need actuals or range added to report if you have them.
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Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

---

Page 3 of 9

KAS-SNR-011 Attachment 4

**KLEIN Slade (ORN-RE)**

---

**From:** matt <matt@cmsllc1.com>  
**Sent:** Thursday, March 07, 2019 7:38 AM  
**To:** KLEIN Slade (ORN-RE)  
**Subject:** RE: Atlas Project - Outboard Pin Blocks

**Security Notice: Please be aware that this email was sent by an external sender.**

yes

---

**From:** KLEIN Slade (ORANO) [mailto:slade.klein@orano.group]  
**Sent:** Wednesday, March 06, 2019 7:04 PM  
**To:** matt  
**Subject:** RE: Atlas Project - Outboard Pin Blocks

Same A end and B end orientation as before? Right?



Slade W. Klein  
Engineering Supervisor  
Orano Federal Services LLC  
505 S. 336<sup>th</sup> Street, Suite 400  
Federal Way, WA 98003  
253-552-1338  
[slade.klein@orano.group](mailto:slade.klein@orano.group)

---

**From:** matt [mailto:matt@cmsllc1.com]  
**Sent:** Wednesday, March 06, 2019 3:39 PM  
**To:** KLEIN Slade (ORN-RE)  
**Subject:** RE: Atlas Project - Outboard Pin Blocks

**Security Notice: Please be aware that this email was sent by an external sender.**

Slade  
Sorry i got called out today and just got home to get this to you

---

**From:** KLEIN Slade (ORANO) [mailto:slade.klein@orano.group]  
**Sent:** Tuesday, March 05, 2019 5:32 PM  
**To:** matt  
**Subject:** RE: Atlas Project - Outboard Pin Blocks

Matt,

Can you please let me know which of the outer attachment blocks (items 10/11/12) parts labeled part 1- part 8 on the attachment have the holes/slot heights that are less than 4.375.



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Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

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Page 4 of 9

KAS-SNR-011 Attachment 4

Slade W. Klein  
Engineering Supervisor  
Orano Federal Services LLC  
505 S. 336<sup>th</sup> Street, Suite 400  
Federal Way, WA 98003  
253-552-1338  
[slade.klein@orano.group](mailto:slade.klein@orano.group)

---

From: matt [<mailto:matt@cmsllc1.com>]  
Sent: Thursday, February 14, 2019 1:52 PM  
To: KLEIN Slade (ORN-RE)  
Subject: RE: Atlas Project - Outboard Pin Blocks

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Slade  
I have reviewed the numbers you have listed that i gave you via phone call are correct and match what i have  
Thank You  
Matthew Dille

---

From: KLEIN Slade (ORANO) [<mailto:slade.klein@orano.group>]  
Sent: Thursday, February 14, 2019 4:42 PM  
To: matt  
Subject: RE: Atlas Project - Outboard Pin Blocks

Matt,

Thanks for taking the time to talk to me. Please confirm the numbers you provided to me.

For the outer pin blocks:

The round hole diameters (4.37 +.06/-0) range from 4.361 to 4.4001 inches

The slot length and width (5.37 +.06/-0, 4.37 +.06/-0) meet the upper tolerance, but have some undersize with the a minimum length of 5.340 inches and a minimum width of 4.323 inches



Slade W. Klein  
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---

From: matt [<mailto:matt@cmsllc1.com>]  
Sent: Wednesday, February 13, 2019 6:25 PM  
To: KLEIN Slade (ORN-RE)  
Subject: RE: Atlas Project - Outboard Pin Blocks



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Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

---

Page 5 of 9

KAS-SNR-011 Attachment 4

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Slade,

Sorry for the late reply as i do not check this email often i was expecting a call from you if you can call around 4 est tomorrow i will try to answer any questions you have

---

**From:** KLEIN Slade (ORANO) [<mailto:slade.klein@orano.orano>]  
**Sent:** Monday, February 11, 2019 8:52 AM  
**To:** Rick Ford; [matt@cmsllc1.com](mailto:matt@cmsllc1.com)  
**Cc:** Mark; DENTON Mark (ORANO)  
**Subject:** RE: Atlas Project - Outboard Pin Blocks

Matt! Do you have time to talk later on today or tomorrow? I am flying this morning but need to set up a time for a quick chat. I am looking to add a few things to your report if possible:

1. Outer Pin Blocks, the 8" hole or slot center to the top of the block. This may be covered already by the positional results. Please confirm.
2. Outer Pin Blocks, the 48" between hole and slot centers. This may be covered already by the positional results. Please confirm.
3. Outer Pin Blocks, the actual hole and slot sizes (4.37/5.37). Need actuals or range added to report if you have them.
4. Outer Pin Blocks, 3.25 (3.00 on drawing) slot widths. Need actuals or range added to report if you have them.

Thanks,



Slade W. Klein  
Engineering Supervisor  
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Federal Way, WA 98003  
253-552-1338  
[slade.klein@orano.group](mailto:slade.klein@orano.group)

---

**From:** Rick Ford [<mailto:rick@kasnorail.com>]  
**Sent:** Friday, February 08, 2019 4:57 AM  
**To:** KLEIN Slade (ORN-RE)  
**Cc:** [matt@cmsllc1.com](mailto:matt@cmsllc1.com); Mark  
**Subject:** Atlas Project - Outboard Pin Blocks

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Hi Slade,

Have you had a chance to talk with Matt of CMS laser about your request for the dimensions for the outboard pin block hole alignment?

Sincerely,



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**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

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Page 6 of 9  
*Rick Ford*  
*Kasgro Rail*

KAS-SNR-011 Attachment 4



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

Page 7 of 9 KAS-SNR-011 Attachment 4



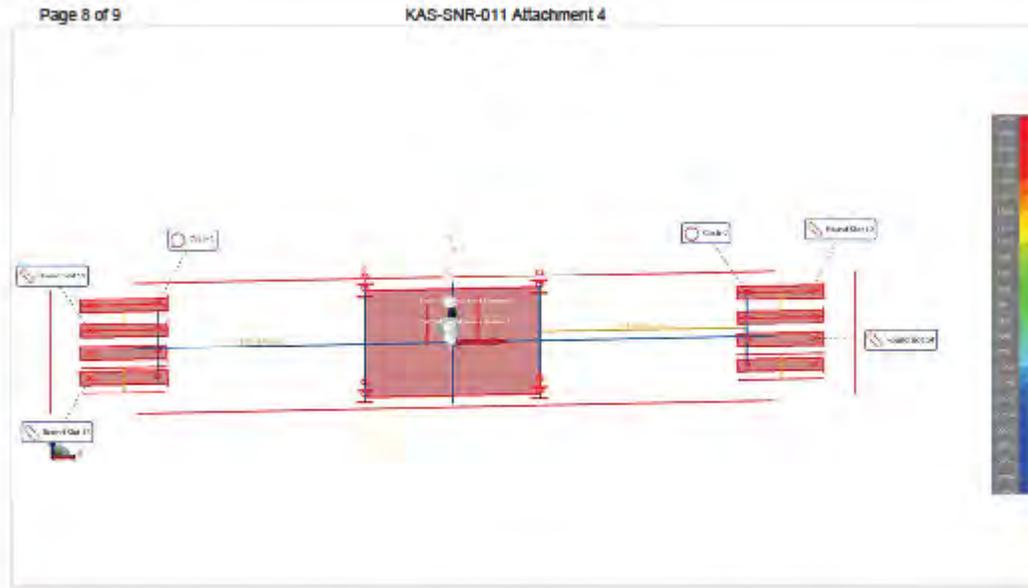
contract  
measurement  
services

|                         |                        |
|-------------------------|------------------------|
| P.O. Box 540784         | jason@cmsllc1.com      |
| Grand Prairie, TX 75054 | http://www.cmsllc1.com |
| 972-322-3615            | 06 Mar 2019 06:35 PM   |

| Session Information                            |                         |
|--|-------------------------|
| File Name of FCD                               | Areva Atlas Railcar.fcd |
| Operator                                       | MATTHEW DILLE           |
| Company Name                                   | KASGRO                  |
| Date   | 1/17/2019               |
| Time   | 6:35 PM                 |
| Ambient Temperature                            | 47°F                    |
| Active Alignment Error                         |                         |
| Active Device                                  | V01001304674            |
| P08-05-11-09017 Current Device Error           |                         |
| V01001304674 -> Device Position 1 Device Error |                         |
| V01001304674 -> Device Position 2 Device Error |                         |
| V01001304674 -> Device Position 3 Device Error |                         |
| V01001304674 -> Device Position 4 Device Error |                         |
| V01001304674 -> Device Position 5 Device Error |                         |
| V01001304674 -> Device Position 6 Device Error | 0.0017h                 |

Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



| Circle 1      |             |          |           |           |          | Readings: 0. |
|---------------|-------------|----------|-----------|-----------|----------|--------------|
|               | actual      | nominal  | dev       | - tol     | +tol     | oot          |
| Center.x      | -210.962fin |          |           | -0.0020in | 0.0020in |              |
| Center.z      | 8.6179in    |          |           | -0.0020in | 0.0020in |              |
| Diameter      | 4.3608in    | 4.3700in | -0.0092in | 0.0000in  | 0.0600in | -0.0092in    |
| ○ Circularity | 0.0225in    |          | 0.0225in  | 0.0000in  | 0.0100in | 0.0125in     |

| Circle 2      |            |          |           |           |          | Readings: 7. |
|---------------|------------|----------|-----------|-----------|----------|--------------|
|               | actual     | nominal  | dev       | - tol     | +tol     | oot          |
| Center.x      | 210.8819in |          |           | -0.0020in | 0.0020in |              |
| Center.z      | 8.3793in   |          |           | -0.0020in | 0.0020in |              |
| Diameter      | 4.3660in   | 4.3700in | -0.0040in | 0.0000in  | 0.0600in | -0.0040in    |
| ○ Circularity | 0.0092in   |          | 0.0092in  | 0.0000in  | 0.0100in | 0.0000in     |

| Round Slot 10 |            |          |           |           |          | Readings: 0. |
|---------------|------------|----------|-----------|-----------|----------|--------------|
|               | actual     | nominal  | dev       | - tol     | +tol     | oot          |
| Center.x      | 258.8630in |          |           | -0.0020in | 0.0020in |              |
| Center.z      | 7.7647in   |          |           | -0.0020in | 0.0020in |              |
| Length        | 5.3402in   | 5.3700in | -0.0298in | 0.0000in  | 0.0600in | -0.0298in    |
| Width         | 4.3526in   | 4.3700in | -0.0174in | 0.0000in  | 0.0600in | -0.0174in    |
| Form          | 0.0001in   |          | 0.0001in  | 0.0000in  | 0.0020in | 0.0000in     |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Page 9 of 9                      KAS-SNR-011 Attachment 4

| Round Slot 11 |             |          |           |           |          | Readings:8 |
|---------------|-------------|----------|-----------|-----------|----------|------------|
|               | actual      | nominal  | dev       | -tol      | +tol     | oot        |
| Center.x      | -258.9630in |          |           | -0.0020in | 0.0020in |            |
| Center.z      | 7.5654in    |          |           | -0.0020in | 0.0020in |            |
| Length        | 5.3965in    | 5.3700in | 0.0265in  | 0.0000in  | 0.0600in | 0.0000in   |
| Width         | 4.3663in    | 4.3700in | -0.0037in | 0.0000in  | 0.0600in | -0.0037in  |
| Form          | 0.0200in    |          | 0.0200in  | 0.0000in  | 0.0100in | 0.0100in   |

| Round Slot 14 |            |          |           |           |          | Readings:9 |
|---------------|------------|----------|-----------|-----------|----------|------------|
|               | actual     | nominal  | dev       | -tol      | +tol     | oot        |
| Center.x      | 258.9345in |          |           | -0.0020in | 0.0020in |            |
| Center.z      | 7.8087in   |          |           | -0.0020in | 0.0020in |            |
| Length        | 5.3833in   | 5.3700in | 0.0133in  | 0.0000in  | 0.0600in | 0.0000in   |
| Width         | 4.3626in   | 4.3700in | -0.0074in | 0.0000in  | 0.0600in | -0.0074in  |
| Form          | 0.0100in   |          | 0.0100in  | 0.0000in  | 0.0101in | 0.0000in   |

| Round Slot 15 |             |          |           |           |          | Readings:8 |
|---------------|-------------|----------|-----------|-----------|----------|------------|
|               | actual      | nominal  | dev       | -tol      | +tol     | oot        |
| Center.x      | -258.9184in |          |           | -0.0020in | 0.0020in |            |
| Center.z      | 7.6236in    |          |           | -0.0020in | 0.0020in |            |
| Length        | 5.3730in    | 5.3700in | 0.0030in  | 0.0000in  | 0.0600in | 0.0000in   |
| Width         | 4.3227in    | 4.3700in | -0.0473in | 0.0000in  | 0.0600in | -0.0473in  |
| Form          | 0.0236in    |          | 0.0236in  | 0.0000in  | 0.0100in | 0.0136in   |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

---



Orano Federal Services  
KAS-SNR-011 Attachment 5

Page 1 of 5

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## Evaluation of Final Interface Condition

Evaluation of the nonconforming Atlas railcar cradle attachment dimensions is performed below using values documented in [1].

The purpose of this evaluation is to demonstrate that the as-built dimensions of the Atlas railcar cradle attachment components meet the interface design requirements of the conceptual cradle designs. The acceptance criterion for this evaluation is positive clearance between the interface of the Atlas railcar attachment components and the conceptual cradle designs listed below:

The conceptual attachment design is provided in:  
DWG-3015278-002 [3]  
CALC-3015276-004 [4]

The conceptual cradle designs and associated interface dimensions are contained in the following drawings:  
DWG-3015137-002 [5]  
DWG-3015138-001 [6]  
DWG-3015277-000 [7]  
DWG-3015139-000 [8]  
DWG-3015140-001 [9]

The as-built DOE Atlas Railcar is documented in:  
DWG-3018956-000 [16] and Kasgro NCR #2-6

The conceptual cradle to conceptual railcar attachment interface was previously evaluated in:  
CALC-3015934-002 [10]

### 1.0 CALCULATIONS

The following evaluations are performed to verify that the dimensions of the as-built Atlas railcar will satisfy the interface between the Atlas railcar and the conceptual cradle designs. Variations of this interface calculation were performed using the design dimensions provided by the conceptual attachment design.

#### 1.1 Central Cradle – Longitudinal Clearance

The conceptual cradle designs for Families 2-4 are supported longitudinally by the shear blocks welded to the railcar. The conceptual cradle designs for Family 1 are supported longitudinally by the end stop assemblies which are shimmed to remove any gap. Therefore, there are no clearance concerns in the longitudinal direction for the Family 1 conceptual cradle designs.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



For the cradles in Families 2-4, the longitudinal interface is evaluated in the table below:

**Table 1-1: Cradle to Rail Longitudinal Clearance**

| Atlas Railcar As-Built dimensions [1]        | DWG-3015278-002<br>(Cradle Attachment Components) | DWG-3015138-001, DWG-3015139-000,<br>DWG-3015140-001, DWG-3015277-000<br>(Conceptual Cradle Families 2-4 Drawings)   |
|--|---|--|
| Distance between shear blocks<br>= 36 ± 1/16 | Distance between shear blocks<br>= 36.00±.12      | Distance between shear blocks<br>$= (80.25 \pm .12) - (44.75 \pm .12) = 35.5 \pm .24$ DWG-3015138-001<br>$= 35.5 \pm .12$ DWG-3015139-000<br>$= 35.5 \pm .125$ DWG-3015140-001<br>$= (80.25 \pm .12) - (44.75 \pm .12) = 35.5 \pm .24$ DWG-3015277-000 |

Using the as-built dimensions:

The minimum gap is:

$$\text{min clearance} = (36.00 - .0625) - (35.5 + .24) = .20 \text{ inches}$$

The maximum gap is

$$\text{max clearance} = (36.00 + .0625) - (35.5 - .24) = .80 \text{ inches}$$

The family 2-4 longitudinal loading must be supported by the shear blocks. To ensure this, the clearance between the shear blocks and cradle must be less than the available slot length at the center four pin locations. The minimum Item 7 / Item 8 slot length is 5.299 inches from [1]. The maximum pin diameter is 4.002 inches. The minimum gap is 5.299 - 4.002 = 1.297 inches. This is less than the shear block gap and therefore contact will first occur at the shear blocks and the longitudinal gap is acceptable.

**1.2 Central Cradle – Longitudinal Interface**

The as-built distance between the center of the pin slot locations is dimensioned as 62.50±.03 inches from the railcar center line or 125±.06 between slot centers (Positional tolerance met as shown on [1]). The conceptual cradle is dimensioned as 125±.12. There is a .06 maximum off-set between the as-built railcar and conceptual cradle design. This is accommodated by the slot provided in the center pin attachment block. The as-built slot length is a minimum of 5.299 inches [1]. The maximum pin diameter is 4.002 inches [16]. The available clearance is 5.299 - 4.002 = 1.297 inches which is adequate to cover the .06 maximum off-set.

**1.3 Central Cradle – Lateral Clearance**

All of the conceptual cradle designs are supported laterally by the center pin attachment blocks. The structural evaluation of the attachment components is performed in CALC-3015276 [4]. From Section 5.2.7 of [4], the conceptual cradle I-beam width is 11.265 inches. The lateral interface is evaluated in the table below:



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



**Table 1-2: Cradle to Railcar Lateral Clearance**

| Atlas Railcar As-Build dimensions [1]   | DWG-3015278-002<br>(Cradle Attachment Components)                     | DWG-3015137-001, DWG-3015138-000, DWG-3015139-000,<br>DWG-3015140-001, DWG-3015277-000<br>(Conceptual Cradle Drawings)  |
|---|---|---|
| Edge of inboard center pin attachment blocks dimension<br>2(46.5±.03)<br>= 93.00±.06    | Edge of inboard center pin attachment blocks dimension<br>= 93.00±.06 | Inside edges of cradle I-beams<br>=93.50±.25    DWG-3015137-001<br>=93.50±.25    DWG-3015138-000<br>=93.50±.12    DWG-3015139-000<br>=93.50±.25    DWG-3015140-001<br>=93.50±.25    DWG-3015277-000 |
| Edge of outboard center pin attachment blocks<br>2(46.5±.03 + 11.75±.03)<br>=116.50±.12 | Edge of outboard center pin attachment blocks<br>= 116.50±.06         | Outside of cradle I-beams<br>=93.50±.25+2(11.265) = 116.03±.25  |

Using the as-built dimensions:

At the inboard center pin attachment to cradle I-beam interface:

The minimum gap is:

$$\text{min clearance} = (93.50 - .25) - (93.00 + .06) = .19 \text{ inches}$$

The maximum gap is

$$\text{max clearance} = (93.50 + .25) - (93.00 - .06) = .81 \text{ inches}$$

At the outboard center pin attachment to cradle I-beam interface:

The minimum gap is:

$$\text{min clearance} = (116.50 - .12) - (116.03 + .25) = .10 \text{ inches}$$

The maximum gap is

$$\text{max clearance} = (116.50 + .12) - (116.03 - .25) = .84 \text{ inches}$$

A minimum clearance exists and therefore the lateral clearance is acceptable.

#### 1.4 Central Cradle – Vertical Interface

All of the conceptual central cradle designs are supported vertically by the center pin attachment blocks. A pinned connection is used with an  $\varnothing 4.000 \pm .002$  pin [2]. The  $\varnothing 4.13 \pm .06$  hole on the cradle is round while the cradle connection is a slotted hole with a  $4.370 + .060 / -.035$  height [1].

The maximum clearance can be calculated using the minimum of the slot and hole maximum conditions and the smallest pin diameter. This assumes the hole/slot size is not reduced from misalignment which would reduce the clearance.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

---



Orano Federal Services  
KAS-SNR-011 Attachment 5

Page 4 of 5

The maximum vertical clearance is

$$\text{max clearance} = (4.370 + .060) - (4.000 - .002) = .432 \text{ inches}$$

The minimum vertical clearance can be calculated using the minimum condition hole and slot sizes, with the maximum sized pin, and the maximum misalignment per the hole locations.

The minimum cradle hole size is:  $4.13 - .06 = 4.07$

The minimum center pin attachment block slot height is:  $4.370 - .035 = 4.335$

The maximum misalignment comes from the tolerance on the cradle and pin block hole/slot vertical locations.

The center pin attachment block tolerance height from base plate is (from the positional tolerance on [16] and confirmed on [1]) =  $9.50 \pm .03$

The cradle hole height from base plate (bottom of cradle) =  $9.50 \pm .06$

The maximum misalignment =  $.03 + .06 = .09$

This half difference in slot height – cradle hole =  $(4.335 - 4.07) / 2 = .1325$

The minimum through hole due to misalignment =  $4.07 - (.09 - .1325) = 4.11$  inches

The maximum pin diameter is 4.002 inches.

$$\text{min clearance} = 4.11 - 4.002 = .108 \text{ inches}$$

#### 1.5 Cradle End Stops – Vertical Clearance

The conceptual cradle end stop holes are dimensioned as  $8.00 \pm .06$  from the top shelf [5]. The as-built outer attachment block holes are  $7.875 - 8.075$  ( $8.000 + .075 / - .125$ ) from the top of the block [1]. The outer pin attachment block holes are very closely aligned with less than 1/16 positional difference in hole centers.

The minimum cradle end stop hole size is:  $4.13 - .06 = 4.07$

The minimum outer pin attachment block hole diameter is (from [1]):  $4.370 - .047 = 4.323$

The maximum misalignment comes from the tolerance on the cradle and pin block hole vertical locations.

The outer pin attachment block tolerance height from base plate =  $8.000 + .075 / - .125$

The cradle hole height from base plate (bottom of cradle) =  $8.00 \pm .06$

The maximum misalignment =  $.125 + .06 = .185$

This half difference in attachment hole – cradle hole =  $(4.323 - 4.07) / 2 = .1265$

The minimum through hole due to misalignment =  $4.07 - (.185 - .1265) = 4.012$  inches

The maximum pin diameter is 4.002 inches.

$$\text{min clearance} = 4.012 - 4.002 = .010 \text{ inches}$$

#### 1.6 Ballast and Test Loads

The ballast and test loads listed in [11] through [15] were designed to match the conceptual cradle interface and therefore are still acceptable for the as-built Atlas railcar.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

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Orano Federal Services

KAS-SNR-011 Attachment 5

Page 5 of 5

## 2.0 RESULTS AND SNR DISPOSITION

### 2.1 Design Change Summary

The fabricated Atlas railcar did not meet the requirements of DWG-3018956-000. The documented changes resulted from difficulty in fabricating the first of a kind railcar and from the manufacturing techniques used by the fabricator.

### 2.2 SNR Disposition

As shown in the calculations above, the final condition of the railcar still meets the interface design of the conceptual cradle and ballast designs that will be provided to the final cradle designers. Therefore, the Atlas railcar, as fabricated, meets its design and contract requirements and a us-as-is disposition is approved.

## 3.0 REFERENCES

1. KAS-SNR-011 Attachment 1, *Orano Federal Services Atlas Railcar - As-Built Dimensional Inspection report spreadsheet.*
2. Orano Federal Services Drawing, DWG-3015934, *Atlas Railcar Cradle Attachment*, Rev. 000
3. Orano Federal Services Drawing, DWG-3015278, *Atlas Railcar Cradle Attachment Components*, Rev. 002.
4. Orano Federal Services Calculation, CALC-3015276, *Atlas Railcar Cradle Attachment and Combined Center of Gravity Calculation*, Rev. 004
5. Orano Federal Services Drawing, DWG-3015137, *Atlas Railcar Cradle Family 1 Conceptual Drawing*, Rev. 002
6. Orano Federal Services Drawing, DWG-3015138, *Atlas Railcar, Cradle Family 2 (NAC), Conceptual Drawing*, Rev. 001
7. Orano Federal Services Drawing, DWG-3015277, *Atlas Railcar, Cradle Family 2 (TN-68), Conceptual Drawing*, Rev. 0.
8. Orano Federal Services Drawing, DWG-3015139, *Atlas Railcar Cradle Family 3 Conceptual Drawing*, Rev. 000
9. Orano Federal Services Drawing, DWG-3015140, *Atlas Railcar, Cradle Family 4, Conceptual Drawing*, Rev. 1
10. Orano Federal Services Calculation, CALC-3015934-002, *Atlas Railcar Cask and Cradle Dynamic Modeling Inputs*, Rev. 002
11. Orano Federal Services Drawing, DWG-3018955, *Atlas Railcar Ballast Load Assembly Conceptual Drawing*, Rev. 000
12. Orano Federal Services Drawing, DWG-3020457, *Ballast Test Load, Atlas Railcar Test Loads*, Rev. 001
13. Orano Federal Services Drawing, DWG-3020459, *Minimum Test Load Cradle, Atlas Railcar Test Loads*, Rev. 001
14. Orano Federal Services Drawing, DWG-3020461, *Maximum Test Load Cradle, Atlas Railcar Test Loads*, Rev. 001
15. Orano Federal Services Drawing, DWG-3020458, *Minimum Test Load, Atlas Railcar Test Loads*, Rev. 001
16. Orano Federal Services Drawing, DWG-3018956, *Atlas Railcar, Cradle Attachment*, Rev. 000



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

---



KAS-SNR-011 Attachment 6

Orano Federal Services

**DOE Atlas Railcar Engineering Oversight Report**

Orano FS Project No.: 00225.03.0050

Date: 1/29/2019

Orano FS witnessed the load testing of the Atlas railcar on 1/29/2019. This memo documents the results of the load test and checks the results of the load test to the deck height acceptance criteria.

Atlas Railcar Load Test:

The Atlas railcar is required to be load tested with a partial load to determine acceptability of the deck height. The deck height must be at a sufficient height from the rails such that all Atlas Railcar payloads will meet the Plate E height requirements. The Plate E height requirement is 189 inches from the rail. (Separately, the combined center of gravity S-2043 98 inch height requirement is confirmed in CALC-3015276-004 for all payloads using a conservative unloaded deck height). The Atlas railcar was evaluated by Kasgro to determine the partial loaded deck height and testing was selected from these analytical results to verify the most limiting case. The following loaded deck heights were provided by Kasgro and documented in AFS-IN-17-0008 which is attached. Note that only casks with impact limiters less than 128 inches are evaluated for Plate E height. Casks with impact limiters greater than 128 inches will not meet Plate E width or height limits.

Table 1 – Family 2-4 Loaded Deck Height Inputs

| Cask        | Family | Cask Weight (empty), lb | Cradle Weight (min), lb | Total Empty/light weight, lb. | Loaded Deck Height for 12-axle Atlas, in |
|-------------|--------|-------------------------|-------------------------|-------------------------------|--|
| NAC-STC     | 2      | 188,767                 | 37,800                  | 226,567                       | 57.00                                    |
| NAC-UMS UTC | 2      | 178,798                 | 37,800                  | 216,598                       | 57.06                                    |
| MAGNATRAM   | 2      | 208,000                 | 37,800                  | 245,800                       | 56.875                                   |
| MP187       | 4      | 190,200                 | 29,250                  | 219,450                       | 57.00                                    |
| MP197       | 3      | 176,710                 | 23,400                  | 200,110                       | 57.125                                   |
| MP197HB     | 3      | 179,000                 | 23,400                  | 202,400                       | 57.125                                   |
| TN-68       | 2      | -                       | -                       | -                             | Don't Need                               |
| TS125       | 3      | -                       | -                       | -                             | Don't Need                               |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

KAS-SNR-011 Attachment 6



**Orano Federal Services**  
**DOE Atlas Railcar Engineering Oversight Report**

Table 2 – Family 1 Loaded Deck Height Inputs

| Cask           | Family | Cask Weight (empty), lb. | Central Cradle Weight (min), lb.           | End Stop weight, lb.                       | Loaded Deck Height for 12-axle Atlas |
|----------------|--------|--------------------------|--|--|--------------------------------------|
| HI-STAR 100    | 1      | 179,710                  | 18,491                                     | 10,473                                     | 57.00                                |
| HI-STAR HB     | 1      | 187,200                  | 13,500                                     | 13,091                                     | 57.00                                |
| HI-STAR 180    | 1      | 262,400                  | 8,264                                      | 11,045                                     | 56.625                               |
| HI-STAR 60     | 1      | 142,530                  | <del>12,827</del><br>14,482 <sup>(1)</sup> | <del>15,382</del><br>10,800 <sup>(1)</sup> | 57.375 <sup>(1)</sup>                |
| HI-STAR 190 SL | 1      | 282,746                  | 12,027                                     | 9,573                                      | 56.50                                |
| HI-STAR 190 XL | 1      | 304,369                  | 12,273                                     | 9,000                                      | 56.375                               |
| TN-32B         | 1      | -                        | -  | -  | Don't Need                           |
| TN-40          | 1      | -                        | -  | -  | Don't Need                           |
| TN4OHT         | 1      | -                        | -  | -  | Don't Need                           |

Notes:

- The HI-STAR 60 conceptual cradle weight was revised per FS CAR 2018-6804. This change reduced the end stop weight and increased the weight located at the center of the car – based on inspection this would decrease the deck height and the Kasgro provided deck height is conservative.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

KAS-SNR-011 Attachment 6



**Orano Federal Services**  
**DOE Atlas Railcar Engineering Oversight Report**

With the exception of the MP187, all other Atlas railcar payloads have circular impact limiters, and the maximum payload height can be calculated by adding the deck height (from Table 1 and Table 2 above), the center of impact limiter/cask cg off the deck (from Table 4-3 of CALC-301526-004) and the impact limiter radius (from Appendix A of EIR-3014611-009). The maximum payload heights are calculated and listed in Table 3 below.

**Table 3 – Max Payload Heights**

| Cask           | Family | Cask IL Diameter, in | Cask cg, in (from deck) | Empty Cask Deck Height (From KASGRO, for 12-axle Atlas) | Max Height (with empty cask deck heights, for 12 axle) |
|----------------|--------|----------------------|-------------------------|---|--|
| NAC-STC        | 2      | 128                  | 68.00                   | 57.00   | 189.00   |
| NAC-UMS UTC    | 2      | 124                  | 68.00                   | 57.00   | 187  |
| MAGNATRAN      | 2      | 128                  | 68.00                   | 56.875  | 188.875  |
| HI-STAR 100    | 1      | 128                  | 66.50                   | 57.00   | 187.5  |
| HI-STAR HB     | 1      | 128                  | 66.50                   | 57.00   | 187.50   |
| HI-STAR 180    | 1      | 128                  | 65.00                   | 56.625  | 185.625  |
| HI-STAR 60     | 1      | 128                  | 60.13                   | 57.375  | 181.505  |
| MP187          | 4      | 126.75               | 65.00                   | 57.00   | 185.375 <sup>(2)</sup>                                 |
| MP197          | 3      | 122                  | 62.50                   | 57.125  | 180.625  |
| MP197HB        | 3      | 126                  | 64.50                   | 57.125  | 184.625  |
| TN-32B         | 1      | 144                  | -                       | -   | -  |
| TN-40          | 1      | 144                  | -                       | -   | -  |
| TN4DHT         | 1      | 144                  | -                       | -   | -  |
| TN-68          | 2      | 144                  | -                       | -   | -  |
| TS125          | 3      | 143.5                | -                       | -   | -  |
| HI-STAR 190 SL | 1      | 128                  | 65.00                   | 56.50   | 185.50   |
| HI-STAR 190 XL | 1      | 128                  | 65.00                   | 56.38   | 185.38   |

**Notes:**

1. Only casks with impact limiters less than 128 inches are evaluated for Plate E height. Casks with impact limiters greater than 128 inches will not meet Plate E width or height limits.
2. The MP187 cask has a square impact limiter and needs to have a deck height of 57.00 inches to meet Plate E. See Figure 1.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

KAS-SNR-011 Attachment 6  
**Orano Federal Services**  
**DOE Atlas Railcar Engineering Oversight Report**

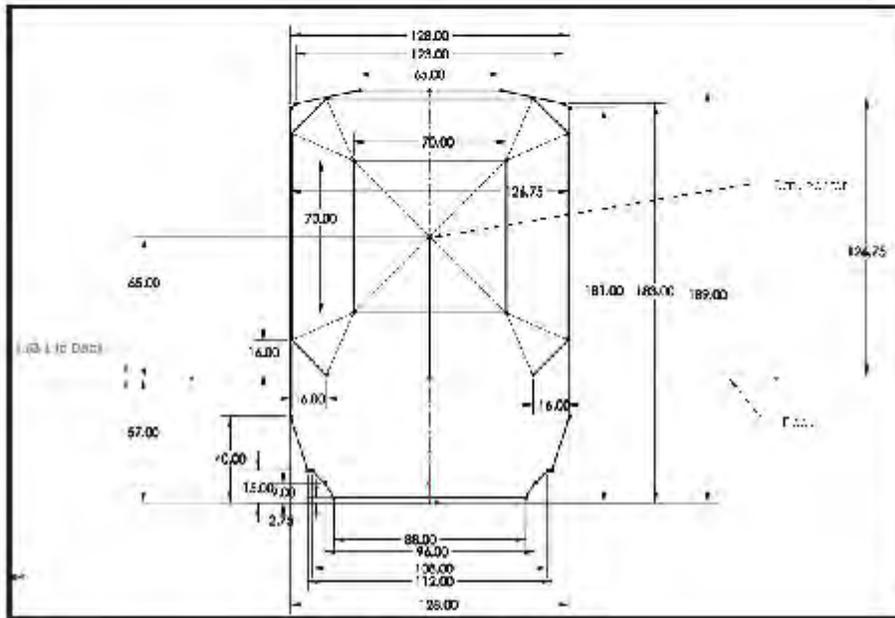


Figure 1 – MP187 for Plate E

Deck Height Acceptance Criteria

From the table above, it can be seen that there are three payloads critical to meeting the Plate E height requirement (189 inches from the rail). All of the critical payloads apply loads at the center four pin locations. Weights are taken from Table 1, deck heights are taken from Table 3.

Table 4 – Critical Deck Heights

| Payload  | Weight         | Deck height required |
|----------|----------------|----------------------|
| NAC-STC  | 226,567 pounds | 57.00                |
| MANATRAN | 245,800 pounds | 56.875               |
| MP187    | 219,450 pounds | 57.00                |



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

---



KAS-SNR-011 Attachment 6

Orano Federal Services  
DOE Atlas Railcar Engineering Oversight Report

Load Test Results

On 1/29/2019 FS witness the railcar deck loaded to approximately 215,240 ±1000 pounds. Weights for each component of the load used are listed below:

Frame: 850 pounds  
Plate: 15,000 pounds  
Stack 1: 107,100 pounds  
Stack 2: 43,250 pounds  
Stack 3: 43,250 pounds  
Stack 4: 5790 pounds

The weights were added sequentially and placed on a frame that distributed the weight to the center four pin locations. See the attached load test figures. The deck height at the location of the cradle support pad was measured to the shop floor using a straight edge and tape measure. This measurement method is typical for Kasgro deck height measurements and is considered the official deck height to rail verification. The results of the deck height measurements taken by Kasgro are listed below.

Right, B end: 56 3/4 inches  
Right, A end: 56 7/8 inches  
Left, B end: 56 9/16 inches  
Left, A end: 56 5/8 inches

FS engineering took some additional unofficial measurements to verify that the shop floor was equivalent to measuring to the rail. All equipment used was not calibrated and results are for only for information. A self-leveling laser was used to determine a datum from the top of the rail. The datum was then used to measure to the top of the cradle support pads. The ground was not level, and in some cases, the ground was slightly less than the top of the rails. However, a maximum deck height of 56 7/8 inches was confirmed to be bounding.

The DOE Atlas load test confirmed that the Atlas railcar deck height meets the design requirements. The deck was loaded to a weight of 215,000 pounds and met the deck height requirements of Table 4.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

---

KAS-SNR-011 Attachment 6



**Orano Federal Services**

**DOE Atlas Railcar Engineering Oversight Report**

Load Test Pictures

Load test frame being lowered onto railcar





Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

---

KAS-SNR-011 Attachment 6



Orano Federal Services

DOE Atlas Railcar Engineering Oversight Report

Test load frame on seated on pin location





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

---

KAS-SNR-011 Attachment 6



**Orano Federal Services**  
**DOE Atlas Railcar Engineering Oversight Report**

Assembled test load:





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

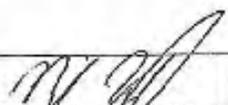
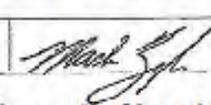
|   |  |                              |
|---|--|------------------------------|
| FORM 1  | KASGRO RAIL CORP   | 3-21-17                      |
| <b>Non-Conformance/Corrective/Preventative Action Form</b>  |  |                              |
| Distribute To: ORANO Engineering, Kasgro Project Manager  |  | NC# 2                        |
| Audit General:  | Item Number: 10,11,12  | PO#: 15C3011916              |
| Location: Car Shop  | Date: 3-13-2019  | Quantity: 8                  |
| <b>Non-Conformance:</b>   |  |                              |
| The inner and outer pin blocks were not fabricated with the required stainless-steel cladding.  |  |                              |
| <b>Reference Requirements:</b>  |  |                              |
| Drawing: 3018956 Sheet 1 Note 8 calls for a stainless-steel cladding to be applied to the inner and outer pin blocks.                                       |  |                              |
| <b>Corrective/Preventative Action</b>   |  |                              |
| Assignee: Nick Hirsch   | Date Requested: 3-13-2019  | Date Due: 3-27-2019          |
| <b>1.) Determination of Root Cause:</b>   |  |                              |
| It was determined that it would be very difficult to apply the stainless-steel cladding to the inner and outer pin blocks and maintain required dimensions. |  |                              |
| <b>2.) Corrective Action / Preventative Action Taken:</b>   |  |                              |
| N/A   |  |                              |
| <b>4.) Verification Method/Action:</b>  |  |                              |
| Kasgro held a meeting with ORANO and both parties were in agreement to use the inner and outer pin blocks without the stainless-steel cladding applied.     |  |                              |
| ORANO Engineering Department to evaluate.<br>ORANO Engineering Department approved to use as is.  |  |                              |
| 5.) To be completed by<br>Action Acceptable: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  | 3.) Assignee Signature:  | Date: 4-15-2019              |
| 6.) Verification Required? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  | Follow-up Audit Required? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> TBD |                              |
| 7.) Quality Assurance:  |  | Date NCCAF Closed: 4-15-2019 |

Note: Sections 1-3 to be completed by assignee. Sections 4-7 to be completed by Plant QA Department.



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|   |   |   |
|---|---|---|
| FORM 1  | KASGRO RAIL CORP  | 3-21-17   |
| <b>Non-Conformance/Corrective/Preventative Action Form</b>  |   |   |
| Distribute To: Kasgro Engineering Department, Shop, Project Manager   |   | NC# 3   |
| <b>Audit General:</b>   | Item Number: A-2  | PO#:  |
| Location :Car Shop  | Date: 3-13-2019   | Quantity: 1   |
| <b>Non-Conformance:</b>   |   |   |
| Pin tray A2, item 3 to item 15 assembly was fabricated per Drawing 3018956, sheet 8.  |   |   |
| <b>Reference Requirements:</b>  |   |   |
| Drawing 3018956 Sheet 8 does not show a ¼ inch extension of item 15 beyond the back side of item 3 nor a spacer plate to be welded to the back side of the pin tray item 3.   |   |   |
| <b>Corrective/Preventative Action</b>   |   |   |
| Assignee: Nick Hirsch   | Date Requested: 3-13-2019   | Date Due: 3-13-2019   |
| <b>1.) Determination of Root Cause:</b>   |   |   |
| The required ¼ inch offset dimension is not illustrated on drawing 3018956 sheet 8. When pin tray assembly A2 was inspected by ORANO Engineering and QA it was noted the item 15 was supposed to extend past the back side of item 3 by ¼ inch. |   |   |
| This issue was discussed with ORANO Engineering and it was determined that spacer tabs could be added to back of item 3 mounting plate to obtain the proper clearance for correct installation.   |   |   |
| <b>2.) Corrective Action / Preventative Action Taken:</b>   |   |   |
| Six ¼ inch spacer tabs have been welded on the back side of item 3 of the pin tray.   |   |   |
| <b>4.) Verification Method/Action:</b>  |   |   |
| Use modified pin tray A2. Kasgro QC has verified the six ¼ inch spacer tabs are properly welded in place.   |   |   |
| <b>5.) To be completed by</b>   | <b>3.) Assignee Signature:</b>  | Date: 04-09-2019  |
| <b>Action Acceptable:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No   | <b>6.) Verification Required?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No               | <b>Follow-up Audit Required?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> TBD |
| <b>7.) Quality Assurance:</b>    | <b>Date NCCAF Closed:</b> 04-09-2019  |   |

**Note: Sections 1-3 to be completed by assignee. Sections 4-7 to be completed by Plant QA Department.**



Orano Federal Services  
**Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

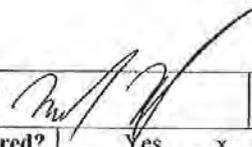
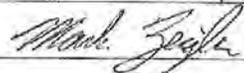
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| FORM 1   | KASGRO RAIL CORP  | 3-21-17                      |
| <b>Non-Conformance/Corrective/Preventative Action Form</b>   |   |                              |
| Distribute To: ORANO Engineering, Kasgro Project Manager   |   | NC# 4                        |
| Audit General:   | Item Number: 10   | PO#: 15C3011916              |
| Location: Car Shop   | Date: 3-13-2019   | Quantity: 8                  |
| <b>Non-Conformance:</b>  |   |                              |
| Item 10 Outboard attachment on drawing 3018956 sheet 6 of 8 some of the final inspection dimensions are out of tolerance.  |   |                              |
| <b>Reference Requirements:</b>   |   |                              |
| NA   |   |                              |
| <b>Corrective/Preventative Action</b>  |   |                              |
| Assignee: Nick Hinsch  | Date Requested: 3-13-2019   | Date Due: 3-13-2019          |
| <b>1.) Determination of Root Cause:</b>  |   |                              |
| The Machine shop did not hold the tolerance.   |   |                              |
| <b>2.) Corrective Action / Preventative Action Taken:</b>  |   |                              |
| Continue to inspect incoming material from the machine shop.   |   |                              |
| <b>4.) Verification Method/Action:</b>   |   |                              |
| The outboard attachment item 10 that are out of tolerance are dimension E on part numbers 2,3,4,5, and 6 and dimension I on part number 6. These dimensions are shown on Kasgro Rail Corp. Outboard Attachment drawing item 10 revision B. |   |                              |
| ORANO Engineering Department to evaluate dimensions.<br>ORANO Engineering Department approved to use as is.  |   |                              |
| 5.) To be completed by<br>Action Acceptable: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No   | 3.) Assignee Signature:   | Date: 4-15-2019              |
| 6.) Verification Required? <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No  | Follow-up Audit<br>Required? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> TBD |                              |
| 7.) Quality Assurance:   |   | Date NCCAF Closed: 4-15-2019 |

Note: Sections 1-3 to be completed by assignee. Sections 4-7 to be completed by Plant QA Department.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

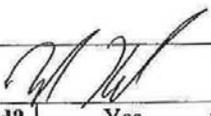
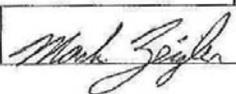
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|--|--|------------------------------|
| FORM 1   | KASGRO RAIL CORP   | 3-21-17                      |
| Non-Conformance/Corrective/Preventative Action Form  |  |                              |
| Distribute To: ORANO Engineering, Kasgro Project Manager   |  | NC# 5                        |
| Audit General:   | Item Number: 8   | PO#: 15C3011916              |
| Location: Car Shop   | Date: 3-13-2019  | Quantity: 8                  |
| Non-Conformance:   |  |                              |
| Inboard attachment Item #8 on Drawing 30108956 sheet 5 of 8 some of the final inspection dimensions are out of tolerance.  |  |                              |
| Reference Requirements: NA   |  |                              |
| Corrective/Preventative Action   |  |                              |
| Assignee: Nick Hinsch  | Date Requested: 3-13-2019  | Date Due: 3-13-2019          |
| 1.) Determination of Root Cause:   |  |                              |
| The machine shop did not hold the tolerance.   |  |                              |
| 2.) Corrective Action / Preventative Action Taken:   |  |                              |
| Continue to inspect incoming material from the machine shop.   |  |                              |
| 4.) Verification Method/Action:  |  |                              |
| The inboard attachments item #8 that are out of tolerance are dimension F on all the inboard attachments are shown on Kasgro Rail Drawing for the inboard attachments. |  |                              |
| ORANO Engineering Department to evaluate dimensions.<br>ORANO Engineering Department approved to use as is   |  |                              |
| 5.) To be completed by<br>Action Acceptable: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No   | 3.) Assignee Signature:                | Date: 4-15-2019              |
| 6.) Verification Required? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No   | Follow-up Audit Required? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> TBD |                              |
| 7.) Quality Assurance:   |   | Date NCCAF Closed: 4-15-2019 |

Note: Sections 1-3 to be completed by assignee. Sections 4-7 to be completed by Plant QA Department.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|   |   |                     |
|---|---|---------------------|
| FORM 1  | KASGRO RAIL CORP  | 3-21-17             |
| Non-Conformance/Corrective/Preventative Action Form   |   |                     |
| Distribute To: ORANO Engineering, Kasgro Project Manager  |   | NC# 6               |
| Audit General:  | Item Number: 9  | PO#: 15C3011916     |
| Location: Car Shop  | Date: 3-25-2019   | Quantity: 2         |
| <b>Non-Conformance:</b><br>Shear blocks Item #9 on Drawing 3018956 sheet 6 of 8 length dimension out of tolerance B-end shear block   |   |                     |
| <b>Reference Requirements:</b><br>Detail item 9, Drawing 3018956, sheet 6<br>Length dimension 90 inches plus .1   |   |                     |
| <b>Corrective/Preventative Action</b>   |   |                     |
| Assignee: Nick Hinsch   | Date Requested: 3-25-2019   | Date Due: 4-09-2019 |
| <b>1.) Determination of Root Cause:</b><br><br>The machine shop did not cut to proper length.   |   |                     |
| <b>2.) Corrective Action / Preventative Action Taken:</b><br><br>Continue to inspect incoming material from machine shop  |   |                     |
| <b>4.) Verification Method/Action:</b><br>The overall length of item #9 on the B-end is out of tolerance. The dimension is shown on Kasgro drawing Attachment Reference.<br><br>ORANO Engineering Department to evaluate dimensions.<br>ORANO Engineering Department approved to use as is. |   |                     |
| <b>5.) To be completed by</b><br>Action Acceptable: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No   | <b>3.) Assignee Signature:</b>                | Date: 4-15-2019     |
| <b>6.) Verification Required?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No   | <b>Follow-up Audit Required?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> TBD |                     |
| <b>7.) Quality Assurance:</b>    | Date NCCAF Closed:  | 4-15-2019           |

Note: Sections 1-3 to be completed by assignee. Sections 4-7 to be completed by Plant QA Department.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.1.7 – Certificate of Conformance**

|  |   |
|--|---|
| Orano Federal Services   |   |
| <b>DATA TRANSMITTAL FORM</b>   |   |
| Supplier: <b>KASGRO RAIL CORP., INC.</b>   | DTF No: <b>055</b> <span style="float: right;">Page <u>1</u> of <u>1</u></span>                   |
| P.O./SC No: <b>15C3011916</b>  | Date: <b>4/22/2019</b>  |
| Type of Submittal: <input type="checkbox"/> First <input checked="" type="checkbox"/> Re-Submittal                               | SDRL List Item No: <b>24</b>  |
| Submitted for: <input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted: <b>1</b>  |
| Submitted By: <b>RICK FORD</b>   | <b>Rick Ford</b> <small>Digitally signed by Rick Ford<br/>Date: 2019.04.22 15:54:00 -0400</small> |
| (Name)   | (Signature)   |
| <b>PROJECT MANAGER</b><br>(Title)  |   |

| ITEM NUMBER | DOCUMENT NUMBER | REVISION NUMBER | DOCUMENT DESCRIPTION   | FS DISPOSITION  |
|-------------|-----------------|-----------------|--|---|
| 1           | KAS 198         |                 | KASGRO CERTIFICATE OF CONFORMANCE ATLAS BUFFER CAR IDOX 10001  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
|             |                 |                 | <div style="border: 1px solid red; padding: 2px; display: inline-block;"> <b>KLEIN Slade</b> <small>Date: 2019.04.24 07:24:55 -0700</small> </div> |   |

|                          |   |
|--------------------------|---|
| Comments:<br>No comments | Technical Reviewer (i.e., RE, PTL, SME, QA, etc.)<br><b>KLEIN Slade</b> <small>Date: 2019.04.24 07:22:44 -07'00'</small><br>Date <b>4/24/2019</b> |
|--------------------------|---|

| FS DISPOSITION CODES AND DEFINITIONS |                                |  |                             |
|--------------------------------------|--------------------------------|--|-----------------------------|
| AP                                   | Approved                       | Work may proceed.  | Resubmittal is not required |
| AWC                                  | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| REV                                  | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| RWC                                  | Reviewed with Comment          | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit        |
| DS                                   | Disapproved                    | Work may <u>not</u> proceed.   | Correct and resubmit        |
| RSA                                  | Receipt Submittal Acknowledged | No other action required.  |                             |

If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change.

|  |   |
|--|---|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval<br> | <small>Digitally signed by GENTON Mark<br/>DN: c=ARENA GROUP,<br/>2.5.4.45=167A37C138C410E2D031700,<br/>ou=GENTON Mark<br/>Date: 2019.04.24 10:40:42 -0400</small><br>Date: <b>04/24/2019</b> |
|--|---|

FS-EN-FRM-023 Rev 02 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |                                    |   |
|--|------------------------------------|---|
|  | Orano Federal Services             |   |
|  | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:   | KASGRO / 15C3011916                | DTF No. / Rev: 055  |
| Charge No:   | 00225.03.0050.02.00001             | Due Date: 4/22/2019   |
| Document(s):   | See DTF No.: 055                   |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)                  |                                    |   |
| PE   | Slade Klein                        |   |
| REVIEWERS  | Slade Klein, Bernie Counterman     |   |
| QA   | Bernie Counterman                  |   |
| <b>Technical Review</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No comments  |                                    |   |
| Technical Reviewer(s) (Sign/Date):   |                                    | Date: 2019.04.24 07:21:18 -07'00'   |
| KLEIN Slade  |                                    |   |
| <b>Quality Assurance Review (As Applicable)</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No Comments  |                                    |   |
| QA Reviewer(s) (Sign/Date):  |                                    | Digitally signed by COUNTERMAN Bernard<br>Date: 2019.04.24 05:41:43 -07'00' |
|  |                                    |   |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary) |                                    |   |
|  |                                    |   |
|  |                                    |   |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

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KAS 198

Kasgro Rail Corporation  
121 Rundle Rd. New Castle, PA 16102  
724-658-9061 • 724-658-7689 Fax • www.kasgro.com



**KASGRO**

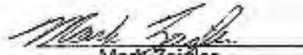
CERTIFICATE OF ORDER CONFORMANCE

Date: 04/22/2019

SUPPLIER:  
KasgroRail Corp  
121 Rundle Rd  
New Castle PA 16102

Rail Car Number: IDOX 010001

WE HEREBY CERTIFY THAT WE HAVE COMPLIED WITH AAR REQUIREMENTS AND  
ALL THE REQUIREMENTS OF YOUR PURCHASE ORDER NO. 15C3011916

  
Mark Zeigler

Director of Quality Control

TITLE

NOTE: The Recording of False, Fictitious or Fraudulent Statements or Entries on  
the Document may be Punishable as Felony Under Federal Statutes.

Specialty Rail Car Solutions



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

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## **APPENDIX B.2 – SPECIAL PROCESS INSPECTION DOCUMENTATION**

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|   |                                |   |
|---|--------------------------------|---|
| <br><b>orano</b>               | Orano Federal Services         |   |
| <b>SUPPLIER DOCUMENT SUBMITTAL REVIEW</b>   |                                |   |
| Supplier / PO No.:  | <b>KASGRO / 15C3011916</b>     | DTF No. / Rev: <b>035</b>   |
| Charge No:  | <b>00225.03.0050.02.00001</b>  | Due Date: <b>11/13/2018</b>   |
| Document(s):<br><b>See DTF No.: 035</b>   |                                |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)                       |                                |   |
| PE  | Slade Klein                    |   |
| REVIEWERS   | Slade Klein, Bernie Counterman |   |
| QA  | Bernie Counterman              |   |
| <b>Technical Review</b>   |                                |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                    |                                |   |
| Technical Reviewer Comments:  |                                |   |
| No comments.  |                                |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b>   |                                | Digitally signed by KLEIN Slade<br>Date: 2018.11.12 13:51:30 -08'00'        |
| <b>Quality Assurance Review (As Applicable)</b>   |                                |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                    |                                |   |
| Technical Reviewer Comments:  |                                |   |
| No Comments   |                                |   |
| QA Reviewer(s) (Sign/Date):  |                                | Digitally signed by COUNTERMAN Bernard<br>Date: 2018.11.12 15:37:05 -08'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary)      |                                |   |
|   |                                |   |
|   |                                |   |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



Orano Federal Services  
**Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Kasgro Rail Corporation**  
 Lug Proof Test Procedure 11-Atlas

LETT-11-Atlas 01-1003 Rev. 0

**SECURING AND JACKING LUG PROOF TEST CERTIFICATION FORM**  
 Form 45 Rev. 2 02-28-2018

Component – Tie Down Lugs  
 Drawing Number – E-1155-1, 1155-38  
 Part Number – 3-138  
 Standard Identifier – NA  
 Car CASK-1  
 Use Lug Proof Test Procedure # 11-A

| Lug Location | Test Pressure<br>PSI. | Test Load in<br>Pounds | Minutes<br>Tested | Post Test<br>Inspection | Date    |
|--------------|-----------------------|------------------------|-------------------|-------------------------|---------|
| CL           | 2860-3045             | 66826-71171            | 10                | ACCEPTED                | 8/28/18 |
| CR           | 2860-3045             | 66826-71171            | 10                | ACCEPTED                | 8/28/18 |
| AL           | 2860-3045             | 66826-71171            | 10                | ACCEPTED                | 8/28/18 |
| AR           | 2860-3045             | 66826-71171            | 10                | ACCEPTED                | 8/28/18 |

Securing and Jacking Lug Proof Test to be performed using Kasgro Rail Corp Lug Test Fixture Drawing D-1128-1

The securing and jacking lugs have been proof tested in strict accordance with all applicable specifications, drawings, procedures and contract requirements, including amendments / change notices.

Proof Test Certification covering compliance to this specification, Proof Test Procedure and results of pre-and post-proof test NDT inspection results are on file at Kasgro Rail Corp.

Seller's Authorized Representative: Bill Baker

Bill Baker

Date: 8/28/18

Sellers Name: KASGRO RAIL CORP

Note: The recording of false, fictitious, or fraudulent statements on this document may be punishable as a felony under federal statutes.

*Printed copy valid for 24 hours from time of printing unless printed "CONTROLLED COPY" in red.*

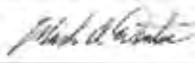
Date printed 9/24/18 6:36 AM



Orano Federal Services  
**Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Appendix B.2.2 – Spring Test Requirements and Tolerances Procedure #12

| AREVA Federal Services LLC   |   |  |   |   |
|--|---|--|---|---|
| DATA TRANSMITTAL FORM  |   |  |   |   |
| Supplier:  | KASGRD RAIL CORP., INC.   | DTF No:  | 001   | Page 1 of 2   |
| P.O./SC No:  | 15C3011916  | Date:  | 06/29/17  |   |
| Type of Submittal:   | <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal                                   |  | SDRL List Item No: 9,10                                 |   |
| Submitted for:   | <input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information |  | Number of Copies Submitted: 1                           |   |
| Submitted By:  | RICK FORD<br>(Name)   | <br>(Signature) | PROJECT MANAGER<br>(Title)                              |   |
| ITEM NUMBER  | DOCUMENT NUMBER   | REVISION NUMBER  | DOCUMENT DESCRIPTION                                    | AFS DISPOSITION   |
| 1  | KAS001  | 0  | ATLAS PROJECT PHASE 2 DOCUMENT SUBMITTAL (SEE ATTACHED) | <input type="checkbox"/> AP <input checked="" type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| The enclosed document submittals are accepted with comment for continued use on the Atlas railcar project. Resubmittal is not required, however consideration of AFS comments should be included in future work with the ultimate validation of Atlas project phase two documents being the receipt of the AAR EECs notice-to-proceed with test phase for the Atlas and buffer railcars. |   |  |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|  |   |  |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|  |   |  |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|  |   |  |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|  |   |  |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|  |   |  |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|  |   |  |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
| Comments:<br>See above statement and attached comments.  |   |  |   | Technical Reviewer (i.e., RC, PTL, SME, QA, etc.)<br><b>KLEIN Slade</b><br><small>Digitally signed by KLEIN Slade<br/>           Date: 2017.08.01 09:54:31 -0700</small>                  |
|  |   |  |   | Date: 8/1/2017  |
| AFS DISPOSITION CODES AND DEFINITIONS  |   |  |   |   |
| Code   | Definition  | Work may proceed   | Resubmittal is not required                             |   |
| AP   | Approved  | Work may proceed.  | Resubmittal is not required                             |   |
| AWC  | Approved with Comment   | Work may proceed; comments provided for Supplier's consideration only.                           | Resubmittal is not required                             |   |
| REV  | Reviewed  | Work may proceed; comments provided for Supplier's consideration only.                           | Resubmittal is not required                             |   |
| RWC  | Reviewed with Comment   | Work may proceed; subject to incorporation and compliance w/ Buyer comments.                     | Correct and resubmit                                    |   |
| DS   | Disapproved   | Work may <u>not</u> proceed.   | Correct and resubmit                                    |   |
| RSA  | Receipt Submittal Acknowledged  | No other action required.  |   |   |
| If, in the judgment of the Supplier, the incorporation of AFS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to AFS' C&P Representative describing the change.  |   |  |   |   |
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval<br>  |   |  | Date: 08/31/2017  |   |

AFS-EN-FRM-023 Rev 01 (Effective August 18, 2014)  
 Refer to AFS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|   |                                    |   |
|---|------------------------------------|---|
|   | AREVA Federal Services LLC         |   |
|   | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:  | Kasgro Rail / 15C3011916           | DTF No. / Rev: 001  |
| Charge No:  | 00225.03.0050.02.00001             | Due Date: 7/14/2017   |
| Document(s):  | See DTF No.:001                    |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. AFS Spec and Dwg. Codes, Stds, etc.)  |                                    |   |
| PE  | Slade Klein                        |   |
| REVIEWERS   | Slade Klein, Bernie Counterman     |   |
| QA  | Bernie Counterman                  |   |
| <b>Technical Review</b>   |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                                    |   |
| Technical Reviewer Comments:  |                                    |   |
| 1) WPS F002, Material specification should be: A572 Grade 50 and A572 Grade 60<br>2) Multiple documents have been provided as an example based on the M290 these documents will need to be updated or reproduced for the Atlas railcar.<br>3) The track scale test is an annual test and was last performed May 2016.<br>4) TUV UT Reference section 2.0 lists AWS D15.2, it should be AWS D15.1. |                                    |   |
| Technical Reviewer(s) (Sign/Date):  |                                    | Digitally signed by KLEIN Slade<br>Date: 2017.07.11 10:26:14 -07'00'        |
| <b>Quality Assurance Review (As Applicable)</b>   |                                    |   |
| Comments/Markup Attached Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |                                    |   |
| Technical Reviewer Comments:  |                                    |   |
| See attached comments.  |                                    |   |
| QA Reviewer(s) (Sign/Date):   |                                    | Digitally signed by COUNTERMAN Bernard<br>Date: 2017.07.31 15:33:14 -07'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary)  |                                    |   |
|   |                                    |   |
|   |                                    |   |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000

Project: 00225.03.0050 DOE Atlas Project

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|          |   |
|----------|---|
| #01      | <ul style="list-style-type: none"><li>Joint detail states "See Attached" no joint detail attached.</li></ul>  |
| #02      | <ul style="list-style-type: none"><li>ASTM A52, Grade 60 is not listed in AWS D15.1, Table 8.1 for prequalified materials. ASTM A52 was withdrawn in 1925 and replaced by ASTM A83 (which is also not prequalified material).</li><li>Preheat and interpass temperatures are identified as "See Attached Report". The attached report contains joint geometry and does not contain preheat or interpass temperatures.</li></ul> |
| #03      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #04      | <ul style="list-style-type: none"><li>Tensile Test Results state "See Attached Report". Report is not attached.</li><li>Need to include UT report #23.</li></ul>  |
| #05      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #06      | <ul style="list-style-type: none"><li>It is assumed (not stated) that the values are the pulling force. Therefore the test pressure should be changed to 2800 PSI +185 PSI -0 PSI and the test load would be 86828 LBS +4345 LBS - 0 LBS</li></ul>  |
| #07      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #08      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #09-10   | <ul style="list-style-type: none"><li>Need to identify the ID of trucks A through F on Exhibit F. Also, might be good to identify front or rear (A end or B end).</li></ul>   |
| #11      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #12      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #13      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #14      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #15      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #16      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #17      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #18      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #19      | <ul style="list-style-type: none"><li>Originator signature not legible. Also, is he a Level III?</li><li>Need TÜV document NDTG-CTP-1</li><li>Need TÜV document NDTG-UTQC-1</li></ul>   |
| #20      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #21      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #22      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #23      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #23      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #23      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #24      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #25      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #26      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #27      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #28      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #29      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #30      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #31      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #32      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #33      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #34      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #35      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #36      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #37      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #38      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #39      | <ul style="list-style-type: none"><li>Need to add a statement similar to "Except as noted on NCR Nos.:" if any NCRs are generated</li></ul>   |
| #40      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #41      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #42      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| #43      | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| WPS F001 | <ul style="list-style-type: none"><li>No Comments</li></ul>   |
| WPS F004 | <ul style="list-style-type: none"><li>Preheat and interpass temperature states "See attached report". Report is not attached</li></ul>  |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

Spring Test Requirements and Tolerances Procedure #12 Rev. 3

23 February 2016

## Kasgro Rail Corporation Spring Testing

290-ton flatcar springs shall be manufactured in accordance with the Association of American Railroads Specification M-114, ASTM A125, Kasgro Rail Corporation (Kasgro) Drawing D-1114-33, and the requirements specified herein. Kasgro reserves the right to reject springs not meeting the below stated requirements. All criteria herein shall be met unless otherwise approved or authorized by Kasgro.

Subsequent to end grinding, wet florescent magnetic particle testing of each spring shall be performed as specified on Drawing D-1114-33. Test and acceptance criteria shall be as follows:

- > Examination shall be by the continuous method.
- > Indications less than 1/64 inch shall be disregarded.
- > There shall be no linear indications 1/32 inch or greater. A linear indication is any indication where the length of the major axis is at least three times the length of the minor axis.
- > Rounded indications larger than 1/16 are cause for rejection.
- > Linearly disposed rounded indications shall be cause for rejection. Linearly disposed indications are three or more indications where adjacent indications are separated by less than 1/8 inch and a straight line can be drawn touching all three indications.
- > Surface indications that are not crack-like in appearance and are due to surface roughness may be accepted provided that at least 10 percent of each type of indication is removed and the indications do not reappear upon re-examination.
- > Local material removal (reworked surfaces) to determine the relevancy of an indication or to evaluate surface roughness shall be limited to a depth of 1/64 inch. Material may be removed by polishing or hand grinding (e.g., 100 grit stone).
- > Reworked surfaces shall be blended. Blended contours shall have no discontinuities or lapped-over surfaces. The bottom radius of a blended cavity shall be at least three times

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Page 1 of 6

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

Spring Test Requirements and Tolerances Procedure #12 Rev. 3 23 February 2016

the depth of the cavity, and the edges of the cavity shall be blended into the surrounding surfaces. All reworked and blended areas shall be re-wet florescent magnetic particle tested to confirm defect removal.

> All indications revealed by magnetic particle inspection do not necessarily represent defects since non-relevant indications are sometimes encountered. Indications caused by approved marking methods may be considered non-relevant. Examples of other such indications are as follows:

(a) Magnetic Writing. These indications are caused by contact with other steel or magnets while magnetized. They may be fuzzy and will be destroyed by demagnetization. They shall be verified as non-relevant by demagnetizing and re-examination.

(b) Change in Section. Indications which are broad and fuzzy may be caused by a concentration of the magnetic field coincident with a change in section. Non-relevancy shall be verified by a visual examination of the section and re-examination at a lower magnetizing current.

(c) Flow Lines. These are large groups of parallel indications which may occur in wrought material under excessive currents. Non-relevancy shall be determined by demagnetization and re-examination at a lower current.

Spring measurement and load test requirements and tolerances are defined as follows:

1. All springs are to be tested with the following values to be recorded.
  - 1.1. Free Height – Spring height in inches under zero load. If heights are measured in fractions of an inch, minimum data resolution is to be 0.03125 inches (1/32). If heights are measured digitally, minimum data resolution is to be 0.02 inches.
  - 1.2. Solid Height – Spring height in inches under a load which forces all or most coils into contact. If heights are measured in fractions of an inch, minimum data resolution is to

Kasgro Rail Corporation

Page 2 of 6

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

Spring Test Requirements and Tolerances Procedure #12 Rev. 3

23 February 2016

- be 0.03125 inches (1/32). If heights are measured digitally, minimum data resolution is to be 0.02 inches.
- 1.3. Load at Test Height 1 – Spring load in pounds at a defined test height (Test Height 1). Actual test height is to be within  $\pm 0.0625$  inches (1/16) of the defined test height. Minimum data resolution is to be to 1 pound.
  - 1.4. Load at Test Height 2 – Spring load in pounds at a defined test height (Test Height 2). Actual test height is to be within  $\pm 0.0625$  inches (1/16) of the defined test height. Minimum data resolution is to be 1 pound.
  2. Springs are to be compressed to solid height three (3) times before start of the above tests.
  3. Testing is to be performed using industry-accepted methods. All gages, test machines, load cells, or other test equipment are to be properly maintained and have current calibration certificates. Evidence of such calibration is to be provided on request.
  4. Results are to be provided in the form of a Microsoft Excel spreadsheet. The spreadsheet is to include header lines clearly identifying the spring tested and the test equipment used. Test results are to then follow in tabular form. Data are to include: Spring Serial Number, Free Height, Solid Height, Load at Test Height 1, Load at Test Height 2, Test Date, and Test Operator. Average and standard deviation values for each of the numeric data are to be calculated (using the Microsoft Excel AVERAGE and STDEVP functions). These values are to be followed by lines providing the minimum and maximum accepted value for each measurement as per the tables given in Paragraphs 5 and 6 below. A sample spreadsheet meeting the above requirements will be provided. A signed and dated paper copy of the spreadsheet is to be provided attesting that the measurements are accurate and have been performed according to the stated requirements.
  5. Test heights and acceptance tolerances for individual springs are as shown in Table 1. Minimum and maximum accepted values are given in the shaded columns. Solid Height max-

Kasgro Rail Corporation

Page 3 of 6

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

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Spring Test Requirements and Tolerances Procedure #12 Rev. 3 23 February 2016

imum tolerances must be maintained per values listed in Table 1. \* Solid height minimum dimensions are shown as desired values only and it is not required to have all springs meet the minimum value.

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Kasgro Rail Corporation

Page 4 of 6

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Spring Test Requirements and Tolerances Procedure #12 Rev. 3  
 23 February 2016

**Table 1. Spring Test Heights and Acceptance Tolerances**

| Spring | Free Height (inches) |        | Solid Height (inches) |       | Test Heights |       | Load (lbs) at Height 1 |      | Load (lbs) at Height 2 |      |
|--------|----------------------|--------|-----------------------|-------|--------------|-------|------------------------|------|------------------------|------|
|        | Min                  | Max    | Min*                  | Max   | 1            | 2     | Min                    | Max  | Min                    | Max  |
| 1-88   | 11.720               | 11.501 | 6.690                 | 6.250 | 10.250       | 8.000 | 1707                   | 1999 | 4320                   | 4612 |
| 1-89   | 11.720               | 11.501 | 6.690                 | 6.250 | 10.250       | 8.000 | 736                    | 861  | 1861                   | 1987 |
| 1-90   | 13.000               | 12.750 | 6.690                 | 6.250 | 10.250       | 8.000 | 2955                   | 3494 | 5373                   | 5712 |
| 1-91   | 13.000               | 12.750 | 6.690                 | 6.250 | 10.250       | 8.000 | 957                    | 1067 | 1741                   | 1851 |
| 1-92   | 9.250                | 9.125  | 6.690                 | 6.250 | 9.000        | 8.000 | 1047                   | 1583 | 5234                   | 5770 |
| 1-93   | 9.250                | 9.125  | 6.690                 | 6.250 | 9.000        | 8.000 | 555                    | 271  | 2776                   | 3061 |
| 1-94   | 11.090               | 10.903 | 6.690                 | 6.250 | 10.250       | 8.000 | 1116                   | 1409 | 4106                   | 4399 |
| 1-95   | 11.090               | 10.903 | 6.690                 | 6.250 | 10.250       | 8.000 | 552                    | 696  | 2080                   | 2175 |
| 1-96   | 11.000               | 10.813 | 6.690                 | 6.250 | 10.250       | 8.000 | 1808                   | 2327 | 7231                   | 7751 |
| 1-97   | 11.000               | 10.813 | 6.690                 | 6.250 | 10.250       | 8.000 | 701                    | 902  | 2804                   | 3005 |
| 1-99   | 7.500                | 7.375  | 5.375                 | 4.935 | 7.250        | 6.250 | 139                    | 80   | 694                    | 753  |

6. Table 2 provides acceptance tolerance per spring population (i.e., all springs of one type). The given tolerance ranges apply to the average value for a population. This requirement is intended to ensure that springs within a population do not cluster to one side or other of the tolerance range for individual springs. Minimum and maximum accepted values are again given in the shaded columns.

Kasgro Rail Corporation

Page 5 of 6

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Spring Requirements and Tolerances Procedure #12 Rev. 2 23 February 2016

**Table 2. Spring Population Acceptance Tolerances**

| Spring | Free Height (inches) |        | Load (lbs) at Height 1 |      | Load (lbs) at Height 2 |      |
|--------|----------------------|--------|------------------------|------|------------------------|------|
|        | Min                  | Max    | Min                    | Max  | Min                    | Max  |
| 1-88   | 11.720               | 11.793 | 1707                   | 1804 | 4320                   | 4417 |
| 1-89   | 11.720               | 11.793 | 736                    | 778  | 1861                   | 1903 |
| 1-90   | 13.000               | 13.083 | 2955                   | 3068 | 5373                   | 5486 |
| 1-91   | 13.000               | 13.083 | 957                    | 994  | 1741                   | 1778 |
| 1-92   | 9.250                | 9.292  | 1047                   | 868  | 5234                   | 5413 |
| 1-93   | 9.250                | 9.292  | 555                    | 461  | 2776                   | 2871 |
| 1-94   | 11.090               | 11.153 | 1116                   | 1019 | 4106                   | 4204 |
| 1-95   | 11.090               | 11.153 | 552                    | 600  | 2030                   | 2078 |
| 1-96   | 11.000               | 11.063 | 1808                   | 1635 | 7231                   | 7404 |
| 1-97   | 11.000               | 11.063 | 701                    | 634  | 2804                   | 2871 |
| 1-99   | 7.500                | 7.542  | 139                    | 119  | 694                    | 714  |

Kasgro Rail Corporation

Page 6 of 6

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.2.3 – Brake Cylinder Piston Travel Adjustment Procedure #12**

|   |   | Orano Federal Services   |  |   |  |
|---|---|--|--|---|--|
|   |   | DATA TRANSMITTAL FORM  |  |   |  |
| Supplier:   | KASGRO RAIL CORP., INC.   | DTF No:  | 048  | Page 1 of 1   |  |
| P.O./SC No:   | 15C3011916  | Date:  |  | 3/7/2019  |  |
| Type of Submittal:  | <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal                                   | SDRL List Item No:   |  | 24  |  |
| Submitted for:  | <input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted:  |  | 1   |  |
| Submitted By:   | <b>RICK FORD</b>  | Rick Ford  | <small>Digitally signed by Rick Ford<br/>Date: 2019.03.07 10:45:17<br/>+05'00'</small>   | PROJECT MANAGER   |  |
|   | <small>(Name)</small>   | <small>(Signature)</small>   |  | <small>(Title)</small>  |  |
| ITEM NUMBER   | DOCUMENT NUMBER   | REVISION NUMBER  | DOCUMENT DESCRIPTION   | FS DISPOSITION  |  |
| 1   | KAS 181   |  | KASGRO PROCEDURE 14, FOR ATLAS CASK CAR INCLUDES TEST RESULTS APPLICABLE TO CASK CAR IDOX 10001 ONLY   | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |  |
|   |   |  |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |  |
|   |   |  |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |  |
|   |   |  |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |  |
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| Comments:   |   |  | Technical Reviewer (i.e., RE, PTL, SME, QA, etc.)  |   |  |
| No comments   |   |  | <b>KLEIN Slade</b>   |   |  |
|   |   |  | Date: 2019.03.13<br>15:05:50 -07'00'   |   |  |
|   |   |  | Date: 3/13/2019  |   |  |
| FS DISPOSITION CODES AND DEFINITIONS  |   |  |  |   |  |
| AP  | Approved  | Work may proceed.  | Resubmittal is not required  |   |  |
| AWC   | Approved with Comment   | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required  |   |  |
| REV   | Reviewed  | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required  |   |  |
| RWC   | Reviewed with Comment   | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit   |   |  |
| DS  | Disapproved   | Work may <u>not</u> proceed.   | Correct and resubmit   |   |  |
| RSA   | Receipt Submittal Acknowledged  | No other action required.  |  |   |  |
| If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change. |   |  |  |   |  |
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval  |   |  | <small>Digitally signed by Mark A. Denton<br/>DN: cn=Mark A. Denton, o=Orano Federal Services, email=mark.denton@orano.gov, ou=ORF<br/>Date: 2019.03.13 16:15:22 -0400</small> | Date: 03/13/2019  |  |

FS-EN-FRM-023 Rev 02 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |                                    |   |
|--|------------------------------------|---|
|  | Orano Federal Services             |   |
|  | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:   | KASGRO / 15C3011916                | DTF No. / Rev: 048  |
| Charge No:   | 00225.03.0050.02.00001             | Due Date: 3/21/2019   |
| Document(s):   | See DTF No.: 048                   |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)                  |                                    |   |
| PE   | Slade Klein                        |   |
| REVIEWERS  | Slade Klein, Bernie Counterman     |   |
| QA   | Bernie Counterman                  |   |
| <b>Technical Review</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No comments.   |                                    |   |
| Technical Reviewer(s) (Sign/Date):   |                                    | Date: 2019.03.12 15:05:56 -07'00'   |
| KLEIN Slade  |                                    |   |
| <b>Quality Assurance Review (As Applicable)</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No Comments  |                                    |   |
| QA Reviewer(s) (Sign/Date):  |                                    | Digitally signed by COUNTERMAN Bernard<br>Date: 2019.03.13 13:48:09 -07'00' |
|  |                                    |   |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary) |                                    |   |
|  |                                    |   |
|  |                                    |   |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

MARK BAKER

*Mark Baker*

KAS 181

3-1-19

IDOX 010001

Kasgro Procedure No. 14  
Revision B dated 5/9/13  
Page 1 of 9

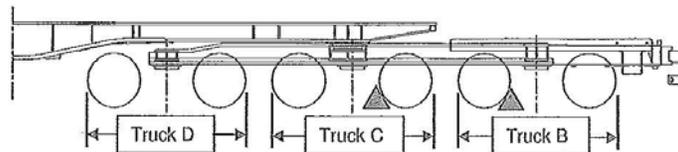
Brake Cylinder Piston Travel Adjustment Procedure  
Empty Car Offset Axle Method to Simulate a Loaded Railcar Condition

This procedure is a general set of guidelines for adjusting the brake cylinder piston travel on the railcar using shop service air and a Single-car Test Device, locomotive, or equivalent pressure regulating equipment. Because the load on the railcar affects the relative position of the elastomeric adapter pads within the truck side frames which in turn affects brake system response, hardwood wedges (or equivalent) shall be used to offset the axles within the side frames to simulate the loaded car condition.

Per the Field Manual of the AAR Interchange Rules (Rule 3, Figure 4), brake cylinder travel for the system used on the railcar should range between 2-1/2 and 3 inches at setup, and subsequent in-service checks may range from 2-1/4 inches to 3-3/4 inches. Piston travel in excess of 4 inches is ineffective. However, for the purpose of this procedure refer to General Requirement Item F below.

General Requirements:

- A. The operations to inspect and adjust brake cylinder piston travel should be performed on a section of track that is relatively straight and level.
- B. Install shoring, chocks, wheel retarders, or other restraining devices to preclude movement of the railcar along the track. The restraints (▲) should be installed between the axles on two separate trucks as illustrated below. This allows axle movement when the brakes are applied.



- C. When releasing or engaging the hand brake, make sure all personnel are free and clear of the brake rigging and moving parts. A three point stance should be used when applying the handbrakes (i.e., two feet spaced and firmly planted on the railcar end platform and one hand on the safety grip bar) to ensure personnel safety.
- D. Per AAR Standard S-486, piston travel adjustments shall be made using a 20 psi reduction, starting at 90 psig.
- E. A 2 to 2-1/4 inch block shall be positioned below the empty/load detector at each end of the railcar when adjusting brake cylinder piston travel. This reflects the loaded position.
- F. With the hardwood wedges installed, brake cylinder piston travel shall be set between 2-1/2 and 2-7/8 inches.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

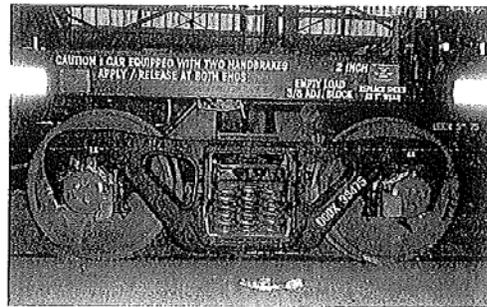
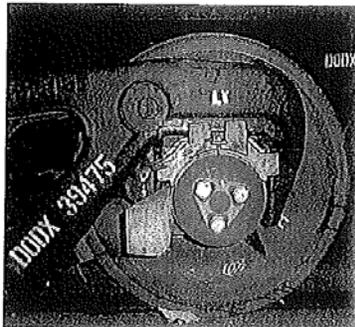
**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

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Kasgro Procedure No. 14  
Revision B dated 5/9/13  
Page 2 of 9

Procedure for Adjustment of Brake Cylinder Piston Travel:

1. Set up the system to check piston travel using a Single-Car Test Device in accordance with AAR Standard S-486, locomotive, or equivalent pressure regulating equipment.
2. Using a soap solution, or equivalent, confirm there is no leakage at any of the piping connections including the railcar glad-hand connection.
3. Confirm that the handbrakes on each end of the railcar are "fully" set.
4. Release the handbrakes by pulling the quick release lever at each end of the railcar.
5. Confirm that the brake cylinder pistons are fully retracted at each truck location.
6. Place a 2 to 2-1/4 inch block beneath each empty/load detector.
7. Perform an initial check of the piston travel (3 cycles, 20 psi reduction) as follows:
  - a. Pressurize the system to 90 psig. Hold until the flow rate is stabilized or below the condemning limit.
  - b. Reduce the system pressure to 70 psig and hold for approximately 15 seconds.
  - c. Repeat steps 7.a and 7.b for three full cycles.
8. With the system pressure at 70 psig, measure brake cylinder pressure (using a pressure tap hose assembly connected to the empty/load detectors at each end of the railcar) and the piston travel at each truck assembly and record in the data table on Form #66.
9. Reduce the system pressure another 15 psi (to a value of 55 psig). Measure brake cylinder pressure (at the two empty/load detectors) and the piston travel at each truck assembly and record in the data table on Form #66.
10. With the system pressure at 55 psig, drive hardwood wedges between the wheel/axle assemblies and the side frames as illustrated below to hold the axles in an offset outboard position.

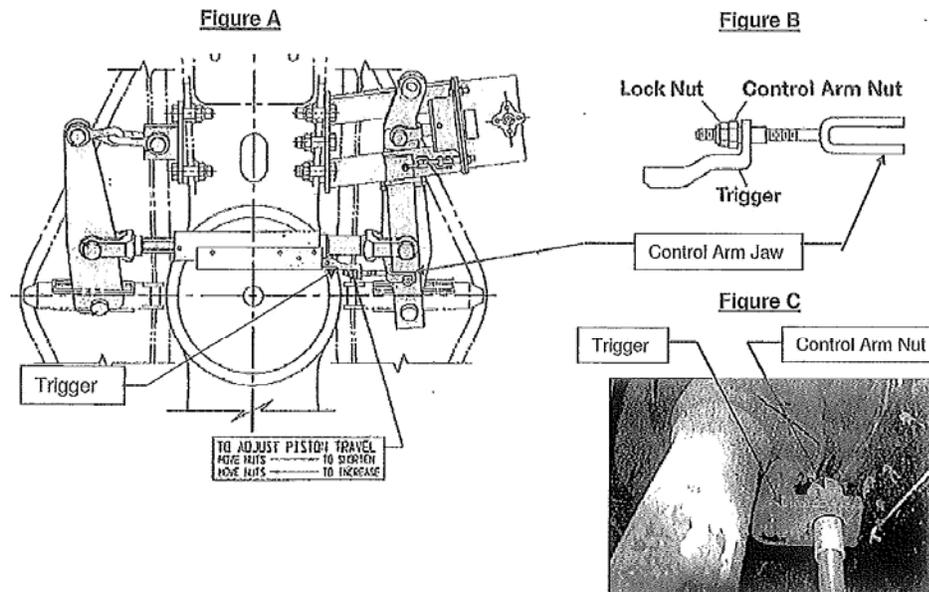


**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

Kasgro Procedure No. 14  
 Revision B dated 5/9/13  
 Page 3 of 9

11. With the wedges in place, cycle the brake system (5 cycles 20 psig reduction) as follows:
  - a. Pressurize the system to 90 psig. Hold until the flow rate is stabilized or below the condemning limit.
  - b. Reduce the system pressure to 70 psig and hold for approximately 15 seconds. Inspect the wedges to ensure they are still securely in place.
  - c. Repeat steps 11.a and 11.b for a total of five complete cycles.
12. With the system pressure at 70 psig, measure brake cylinder pressure (at each empty/load detector) and the piston travel at each truck assembly and record in the data table on Form #66.
13. Ensure the wedges are still securely in place, and then re-pressurize the system to 90 psig. Hold until the flow rate is stabilized or below the condemning limit, and confirm that the pistons have fully retracted at each truck location and the pressure at each empty load sensor is zero (0).
14. If the piston travel at any truck location (with the wedges installed) is outside the range of 2-1/2 to 2-7/8 adjust the travel at the deviated locations as follows.
  - a. Using a 7/8-inch open ended wrench and the aid of a light source, unthread (backoff) the lock nut from the control arm nut. Backoff a sufficient distance to enable adjustment of the control arm nut (see Step 14.b). Refer to Figures A, B and C for the brake arrangement and piece part location.
  - b. Using a 1-inch open ended wrench and the aid of a light source, adjust the control arm nut to shorten or increase piston travel to obtain travel between 2-1/2 to 2-7/8 inches. Move the nut away from the control arm jaw to increase piston travel or closer to the control arm jaw to shorten piston travel (see Figures A and B). Approximately 0.4 inch of control arm nut travel equates to 1.0-inch of change in brake cylinder piston travel. Refer to Table 1 for how to calculate control arm nut adjustment and direction.





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**

**Project: 00225.03.0050 DOE Atlas Project**

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Kasgro Procedure No. 14  
Revision B dated 5/9/13  
Page 4 of 9

15. Repeat Steps 14.a and 14.b at each truck assembly where adjustment is necessary.
16. With the wedges still in place, cycle the brake system (5 cycles 20 psig reduction) as follows:
  - a. Reduce the system pressure to 70 psig and hold for approximately 15 seconds.
  - b. Ensure the wedges are still securely in place, and then increase the system pressure to 90 psig. Hold until the flow rate is stabilized or below the condemning limit.
  - c. Reduce the system pressure to 70 psig and hold for approximately 15 seconds.
  - d. Repeat steps 16.a and 16.b for a total of five complete cycles.
17. With the system pressure at 70 psig, measure brake cylinder pressure (at each empty/load detector) and the piston travel at each truck assembly and record in the data table on Form # 66.
18. If the piston travel at each truck position is between 2-1/2 and 2-7/8 inches proceed to Step 19. Otherwise, repeat steps 13 through 17.
19. Perform a check of the loaded car piston travel at a full service brake application as follows:
  - a. Ensure the wedges are still securely in place, and then increase the system pressure to 90 psig. Hold until the flow rate is stabilized or below the condemning limit.
  - b. Reduce the system pressure to 60 psig and hold.
20. With the system pressure at 60 psig, measure brake cylinder pressure (at each empty/load detector) and the piston travel at each truck assembly and record in the data table on Form # 66. Piston travel should be between 2-1/4 and 3-3/4 inches.
21. With the system pressure at 60 psig, remove the hardwood wedges.
22. Perform a check of the piston travel (5 cycles, 20 psi reduction) as follows:
  - a. Pressurize the system to 90 psig. Hold until the flow rate is stabilized or below the condemning limit.
  - b. Reduce the system pressure to 70 psig and hold for approximately 15 seconds.
  - c. Repeat steps 22.a and 22.b for five full cycles.
23. With the system pressure at 70 psig, measure brake cylinder pressure (at each empty/load detector) and the piston travel at each truck assembly and record in the data table on Form #66. Piston travel should be between 2-1/4 and 3-3/4 inches. If any value is outside the acceptance range, contact the Plant Manager for further direction.
24. Perform a check of the empty car piston travel at a 20 psi reduction:
  - a. Increase the system pressure to 90 psig. Hold until the flow rate is stabilized or below the condemning limit.
  - b. Remove the 2 to 2-1/4 inch blocks from below the empty/load detectors.
  - c. Reduce the system pressure to 70 psig and hold.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

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Kasgro Procedure No. 14  
Revision B dated 5/9/13  
Page 5 of 9

25. With the system pressure at 70 psig, measure brake cylinder pressure (at each empty/load detector) and the piston travel at each truck assembly and record in the data table on Form # 66. Piston travel should be between 2-1/4 and 3-3/4 inches.
26. Perform a check of the empty car piston travel at a full service brake application as follows:
  - a. Increase the system pressure to 90 psig. Hold until the flow rate is stabilized or below the condemning limit.
  - b. Reduce the system pressure to 60 psig and hold.
27. With the system pressure at 60 psig, measure brake cylinder pressure (at each empty/load detector) and the piston travel at each truck assembly and record in the data table on Form # 66. Piston travel should be between 2-1/4 and 3-3/4 inches.
28. Relieve and vent system pressure and remove the single-car test device, or other equivalent system.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

Kasgro Procedure No. 14  
Revision B dated 5/9/13  
Page 6 of 9

TABLE 1 – CALCULATION FOR CONTROL ARM NUT ADJUSTMENT

| Truck | I     | II    | III  | IV  | V    | VI  |
|-------|-------|-------|------|-----|------|-----|
| B/1   | 2     | 2.625 | .625 | .25 | 1/4  | OUT |
| C/2   | 2     | 2.625 | .625 | .25 | 1/4  |     |
| D/3   | 1 3/4 | 2.625 | .875 | .35 | 5/16 |     |
| E/4   | 1 5/8 | 2.625 | 1    | .4  | 3/8  |     |
| F/5   | 2 1/8 | 2.625 | .5   | .2  | 3/16 |     |
| A/6   | 2 1/8 | 2.625 | .5   | .2  | 3/16 | OUT |

- Column I Record the measured piston travel.
- Column II 2.625 inches is the target value for the adjusted travel.
- Column III Subtract Column I from Column II (or II from I).
- Column IV Multiply Column III by 0.4.
- Column V Convert the decimal value in Column IV to the 1/16 inch fraction equivalent (refer to Table 2). If between two values, use the lower fraction equivalent.
- Column VI Identify whether the slack adjuster control arm nut must be moved "IN" or "OUT". If Column I is less than Column II move the control arm nut "OUT". If Column I is greater than Column II move the control arm nut "IN".

TABLE 2 – FRACTION TO DECIMAL EQUIVALENT

|       |       |
|-------|-------|
| 1/16  | 0.063 |
| 1/8   | 0.125 |
| 3/16  | 0.188 |
| 1/4   | 0.250 |
| 5/16  | 0.313 |
| 3/8   | 0.375 |
| 7/16  | 0.438 |
| 1/2   | 0.500 |
| 9/16  | 0.563 |
| 5/8   | 0.625 |
| 11/16 | 0.688 |
| 3/4   | 0.750 |
| 13/16 | 0.813 |
| 7/8   | 0.875 |
| 15/16 | 0.938 |



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

Kasgro Procedure No. 14  
Revision B dated 5/9/13  
Page 7 of 9

Data Record Sheets  
Form #66 1/17/13

| Record Data from Step 8<br>(Initial Piston Travel Check; 20 psi reduction) |                   |               |
|--|-------------------|---------------|
| Truck Location   | Cylinder Pressure | Piston Travel |
| B  | 51                | 2 1/2         |
| C  |                   | 2 3/8         |
| D  |                   | 2 1/2         |
| E  | 50                | 2 3/8         |
| F  |                   | 2 3/8         |
| A  |                   | 2 1/2         |

| Record Data from Step 9<br>(Initial Piston Travel Check; 35 psi reduction) |                   |               |
|--|-------------------|---------------|
| Truck Location   | Cylinder Pressure | Piston Travel |
| B  | 63                | 2 3/8         |
| C  |                   | 3 1/16        |
| D  |                   | 2 7/8         |
| E  | 62                | 2 3/4         |
| F  |                   | 3 1/8         |
| A  |                   | 2 7/8         |

| Record Data from Step 12<br>(Wedges Installed, Prior to Initial Adjustment) |                   |               |
|---|-------------------|---------------|
| Truck Location  | Cylinder Pressure | Piston Travel |
| B   | 60                | 2             |
| C   |                   | 2             |
| D   |                   | 1 3/4         |
| E   | 58                | 1 5/8         |
| F   |                   | 2 1/8         |
| A   |                   | 2 1/8         |



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

Kasgro Procedure No. 14  
Revision B dated 5/9/13  
Page 8 of 9

| Record Data from Step 17<br>(Wedges Installed; Subsequent to Initial Adjustment) |                   |               |
|--|-------------------|---------------|
| Truck Location   | Cylinder Pressure | Piston Travel |
| B  | 50                | 2 1/16        |
| C  |                   | 2 3/8         |
| D  |                   | 2 3/8         |
| E  | 48                | 2 3/8         |
| F  |                   | 2 1/16        |
| A  |                   | 2 1/16        |

| Record Data from Step 17 Repeat (if necessary)<br>(Wedges Installed; Subsequent to Additional/Final Adjustment) |                   |               |
|---|-------------------|---------------|
| Truck Location  | Cylinder Pressure | Piston Travel |
| B   |                   |               |
| C   |                   |               |
| D   |                   |               |
| E   |                   |               |
| F   |                   |               |
| A   |                   |               |

| Record Data from Step 20<br>(Wedges Installed; Full Service Brake Application; 30 psi Reduction) |                   |               |
|--|-------------------|---------------|
| Truck Location   | Cylinder Pressure | Piston Travel |
| B  | 64                | 2 1/16        |
| C  |                   | 2 3/8         |
| D  |                   | 2 3/4         |
| E  | 63                | 2 1/16        |
| F  |                   | 2 3/4         |
| A  |                   | 2 3/4         |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Kasgro Procedure No. 14  
 Revision B dated 5/9/13  
 Page 9 of 9

| Record Data from Step 23<br>(Piston Travel Check without Wedges) |                   |               |
|--|-------------------|---------------|
| Truck Location   | Cylinder Pressure | Piston Travel |
| B  | 46                | 2 7/8         |
| C  |                   | 3 1/8         |
| D  |                   | 3             |
| E  | 45                | 3 1/8         |
| F  |                   | 2 7/8         |
| A  |                   | 2 7/8         |

| Record Data from Step 25<br>(Empty Car Piston Travel; 20 psi Reduction) |                   |               |
|---|-------------------|---------------|
| Truck Location  | Cylinder Pressure | Piston Travel |
| B   | 26                | 2 1/2         |
| C   |                   | 2 5/8         |
| D   |                   | 2 1/2         |
| E   | 26                | 2 5/8         |
| F   |                   | 2 5/8         |
| A   |                   | 2 1/2         |

| Record Data from Step 27<br>(Empty Car Full Service Brake Application; 30 psi Reduction) |                   |               |
|--|-------------------|---------------|
| Truck Location   | Cylinder Pressure | Piston Travel |
| B  | 28                | 2 1/2         |
| C  |                   | 2 1/16        |
| D  |                   | 2 1/2         |
| E  | 28                | 2 1/16        |
| F  |                   | 2 1/2         |
| A  |                   | 2 1/2         |

Sellers Authorized Representative \_\_\_\_\_ Date: \_\_\_\_\_

Note: The recording of false, fictitious, or fraudulent statements on this document may be punishable as a felony under federal statutes.

*MARK R BAKER*

*MR & BL*

*3-1-19*

*IDOX 010001*



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.2.4 – Railcar Weighting Form, Form 46-A**

|   | Orano Federal Services  |  |  |   |
|---|---|--|--|---|
| <b>DATA TRANSMITTAL FORM</b>  |   |  |  |   |
| Supplier:   | KASGRO RAIL CORP., INC.   | DTF No:  | 037  |   |
| P.O./SC No:   | 15C3011916  | Date:  | 2/1/2019   |   |
| Type of Submittal:  | <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal                                   | SDRL List Item No:   | 24   |   |
| Submitted for:  | <input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted:  | 1  |   |
| Submitted By:   | <b>RICK FORD</b>  | Rick Ford <small>Digitally signed by Rick Ford<br/>Date: 2019.02.01 14:58:44<br/>-08'00'</small> | PROJECT MANAGER  |   |
|   | <small>(Name)</small>   | <small>(Signature)</small>   | <small>(Title)</small>   |   |
| ITEM NUMBER   | DOCUMENT NUMBER   | REVISION NUMBER  | DOCUMENT DESCRIPTION   | FS DISPOSITION  |
| 1   | KAS 118   |  | FORM 45A, ATLAS CASK CAR IDOX 010001 WEIGHING FORM   | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 2   | KAS 119   |  | ATLAS BUFFER CARS IDOX 020001-020002 TUV WELD INSPECTION REPORTS   | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 3   | KAS 120   |  | ATLAS BUFFER CARS IDOX 020001-020002 TUV NDE INSPECTION REPORTS  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 4   | KAS 121   |  | ATLAS BUFFER CAR IDOX 020001-020002 BRAKE EQUALIZATION, EMERGENCY APPLICATION AND HANDBRAKE TESTS  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 5   | KAS 122   |  | ATLAS BUFFER CARS IDOX 020001-020002 MIKE YON / S-486 WITNESS / ACCEPTANCE LETTER FOR SINGLE CAR AIR BRAKE TEST  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 6   | KAS 123   |  | FORM 36, S-A, ATLAS BUFFER CARS IDOX 020001-020002 STATIC BRAKE FORCE TEST   | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 7   | KAS 124   |  | SUPPLIER CERTIFICATION FORM / AMSTED RAIL TOM SEDARSKI TMS- / HANDBRAKE INSPECTION IDOX 020001-020002  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 8   | KAS 125   |  | SUPPLIER CERTIFICATION FORM / AMSTED RAIL SHAWN PIETZ BUFFER CARS TRUCK INSPECTION IDOX 020001-020002  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 9   | KAS 126   |  | SUPPLIER CERTIFICATION FORM / TTCI MATT DEGEORGE IDOX 020001-020002 EQUIPMENT MET S-401  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| Comments:   |   | Technical Reviewer (i.e., RE, PTL, SME, QA, etc.)  |  |   |
| No comments   |   | <b>KLEIN Slade</b> Date: 2019.02.19<br>06:42:35 -08'00'  |  |   |
|   |   | Date: 2/19/2019  |  |   |
| FS DISPOSITION CODES AND DEFINITIONS  |   |  |  |   |
| AP  | Approved  | Work may proceed.  | Resubmittal is not required  |   |
| AWC   | Approved with Comment   | Work may proceed; comments provided for Supplier's consideration only.                           | Resubmittal is not required  |   |
| REV   | Reviewed  | Work may proceed; comments provided for Supplier's consideration only.                           | Resubmittal is not required  |   |
| RWC   | Reviewed with Comment   | Work may proceed; <b>subject to incorporation and compliance w/ Buyer comments.</b>              | Correct and resubmit   |   |
| DS  | Disapproved   | Work may <b>not</b> proceed.   | Correct and resubmit   |   |
| RSA   | Receipt Submittal Acknowledged  | No other action required.  |  |   |
| If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change. |   |  |  |   |
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval  |   |  | <small>Digitally signed by Mark A. Denton<br/>         DN: cn=Mark A. Denton, o=Orano Federal Services, email=mark.denton@orano.gov, c=US<br/>         Date: 2019.02.19 10:22:30 -0800</small> | Date: 02/19/2019  |

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|   |   |   |
|---|---|---|
| <br><b>orano</b>  | Orano Federal Services                    |   |
|   | <b>SUPPLIER DOCUMENT SUBMITTAL REVIEW</b> |   |
| Supplier / PO No.:  | <b>KASGRO / 15C3011916</b>                | DTF No. / Rev: <b>037</b>   |
| Charge No:  | <b>00225.03.0050.02.00001</b>             | Due Date: <b>2/22/2019</b>  |
| Document(s):  | <b>See DTF No.: 037</b>                   |   |
| <small>REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)</small>                  |   |   |
| PE  | Slade Klein                               |   |
| REVIEWERS   | Slade Klein, Bernie Counterman            |   |
| QA  | Bernie Counterman                         |   |
| <b>Technical Review</b>   |   |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                              |   |   |
| Technical Reviewer Comments:  |   |   |
| No comments   |   |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b>   |   | Date: 2019.02.19 06:40:32 -08'00'   |
| <b>Quality Assurance Review (As Applicable)</b>   |   |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                              |   |   |
| Technical Reviewer Comments:  |   |   |
| No Comments   |   |   |
| QA Reviewer(s) (Sign/Date):   |   | Digitally signed by COUNTERMAN Bernard<br>Date: 2019.02.19 06:58:53 -08'00' |
| <small>COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary)</small> |   |   |
|   |   |   |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

RAILCAR WEIGHING FORM  
 Form 46A 3-29-18

ATLAS Project Cask Car  
 Drawing Number -- E-1155-3  
 Car # IDOX 010001  
 Use Car Weighing Procedure # 13

| Truck | Weight of Empty Car Pounds | Weight of Loaded Car Pounds | Percentage of Total Weight |
|-------|----------------------------|-----------------------------|----------------------------|
| A     | 43200                      | 88600                       | 19.77                      |
| F     | 35100                      | 58200                       | 12.98                      |
| E     | 33950                      | 77700                       | 17.33                      |
|       |                            |                             |                            |
| D     | 34550                      | 78200                       | 17.44                      |
| C     | 35650                      | 58400                       | 13.03                      |
| B     | 43250                      | 87050                       | 19.42                      |
| TOTAL | 225700                     | 448150                      |                            |

Acceptance Criteria:

1. The percentage of weight on individual trucks shall range from 10% to 20%, plus/minus 1% of the total weight.
2. The greater weight must be on the outboard trucks, (A & B).

Seller's Authorized Representative: Bill Baker 1-29-19

Sellers Name: KASGRO RAIL CORP.

Note: The recording of false, fictitious, or fraudulent statements on this document may be punishable as a felony under federal statutes.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.2.5 – Static Force Brake Test Data, Form 36-A**

|   |  |
|---|--|
| Orano Federal Services  |  |
| <b>DATA TRANSMITTAL FORM</b>  |  |
| Supplier: <b>KASGRO RAIL CORP., INC.</b>  | DTF No: <b>39</b> Page <u>1</u> of <u>1</u>  |
| P.O./SC No: <b>15C3011916</b>   | <b>KLEIN Slade</b> <small>Date: 2019.02.27 13:53:00 -0800</small> Date: <b>2/22/2019</b>                             |
| Type of Submittal: <input checked="" type="checkbox"/> <b>First</b> <input type="checkbox"/> Re-Submittal                               | SDRL List Item No: <b>24</b>   |
| Submitted for: <input checked="" type="checkbox"/> <b>Approval</b> <input type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted: <b>1</b>   |
| Submitted By: <b>RICK FORD</b>  | <b>Rick Ford</b> <small>Digitally signed by Rick Ford Date: 2019.02.22 09:16:40 -0500</small> <b>PROJECT MANAGER</b> |
| <small>(Name)</small>   | <small>(Signature)</small> <span style="float: right;"><small>(Title)</small></span>                                 |

| ITEM NUMBER | DOCUMENT NUMBER | REVISION NUMBER | DOCUMENT DESCRIPTION   | FS DISPOSITION  |
|-------------|-----------------|-----------------|--|---|
| 1           | KAS 138         |                 | ATLAS CASK/BUFFER CARS LAT/LON INSTALLATION AND TEST DATA                  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 2           | KAS 139         |                 | ATLAS CASK BODY MATERIAL HEAT IDENTIFICATION, FORMS 42, 40A, 44B           | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 3           | KAS 140         |                 | ATLAS BUFFER IDOX 2001 BODY MATERIAL HEAT IDENTIFICATION, FORM 44B         | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 4           | KAS 141         |                 | ATLAS BUFFER IDOX 2002 BODY MATERIAL HEAT IDENTIFICATION, FORM             | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 5           | KAS 142         |                 | ATLAS CASK CAR FORM 36 STATIC FORCE BRAKE TEST                             | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 6           | KAS 143         |                 | ATLAS CASK CAR IDOX 10001, FORM 5-13-B NEW CAR INSPECTION                  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 7           | KAS 144         |                 | ATLAS CASK IDOX 10001 SUPPLIER CERTIFICATION/ AMSTED RAIL SEDAR90 / MCCABE | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
|             |                 |                 |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |

|                          |  |
|--------------------------|--|
| Comments:<br>No comments | Technical Reviewer (i.e., RE, PTL, SME, QA, etc.)<br><b>KLEIN Slade</b> Date: 2019.02.26 07:33:08 -08'00'<br>Date <b>2/26/2019</b> |
|--------------------------|--|

| FS DISPOSITION CODES AND DEFINITIONS |                                |   |                             |
|--------------------------------------|--------------------------------|---|-----------------------------|
| AP                                   | Approved                       | Work may proceed.   | Resubmittal is not required |
| AWC                                  | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.              | Resubmittal is not required |
| REV                                  | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.              | Resubmittal is not required |
| RWC                                  | Reviewed with Comment          | Work may proceed; <b>subject to incorporation and compliance w/ Buyer comments.</b> | Correct and resubmit        |
| DS                                   | Disapproved                    | Work may <b>not</b> proceed.  | Correct and resubmit        |
| RSA                                  | Receipt Submittal Acknowledged | No other action required.   |                             |

If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change.

|  |  |
|--|--|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval<br> | <small>Digitally signed by Mark A. Denton<br/>         DN: cn=Mark A. Denton, o=Orano Federal Services, email=mark.denton@orano.gov, c=US<br/>         Date: 2019.02.28 12:39:54 -0500</small> Date: <b>02/28/2019</b> |
|--|--|

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |                                    |   |
|--|------------------------------------|---|
|  | Orano Federal Services             |   |
|  | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:   | KASGRO / 15C3011916                | DTF No. / Rev: 039  |
| Charge No:   | 00225.03.0050.02.00001             | Due Date: 3/8/2019  |
| Document(s):   | See DTF No.: 039                   |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)                  |                                    |   |
| PE   | Slade Klein                        |   |
| REVIEWERS  | Slade Klein, Bernie Counterman     |   |
| QA   | Bernie Counterman                  |   |
| <b>Technical Review</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No comments  |                                    |   |
| Technical Reviewer(s) (Sign/Date):   |                                    | Date: 2019.02.25 15:52:04 -08'00'   |
| KLEIN Slade  |                                    |   |
| <b>Quality Assurance Review (As Applicable)</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| KAS 142 Cask Car Form 36 Brake Test - Why is the Gross Shoe Force = 0                                      |                                    |   |
| QA Reviewer(s) (Sign/Date):  |                                    | Digitally signed by COUNTERMAN Bernard<br>Date: 2019.02.25 10:22:16 -08'00' |
|  |                                    |   |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary) |                                    |   |
|  |                                    |   |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

| KASGRO RAIL CORP                          |                |                                |                     |   |                     |   |                     |         |                             |
|---|----------------|--------------------------------|---------------------|---|---------------------|---|---------------------|---------|-----------------------------|
| FORM 36-A-R                               |                | STATIC FORCE BRAKE TEST DATA   |                     |   |                     | Rev 4 4/4/16  |                     |         |                             |
| Brake System:                             | DB 10/DB 20    | Date:                          | February 12, 2019   |   |                     |   |                     |         |                             |
| Brake Rigging:                            | TRUCK MOUNTED  | Product Order:                 |                     |   |                     |   |                     |         |                             |
| Stack Adjuster:                           | ELLCON 7100    | Car Type:                      | 12 AXLE FLAT        |   |                     |   |                     |         |                             |
| Handbrake:                                | ELLCON 33000-2 | For:                           |                     |   |                     |   |                     |         |                             |
| Bell Crank:                               |                | Car Series:                    | IDOX 010001         |   |                     |   |                     |         |                             |
| Sheave Wheel:                             | 8"             | Test Car No.:                  | IDOX 010001         |   |                     |   |                     |         |                             |
| Brake Shoe:                               | 2"             | Date Built:                    | Jan-19              |   |                     |   |                     |         |                             |
| Air Brake Force (Gross):                  |                | #                              |                     |   |                     |   | Light Weight:       | 225,700 | #                           |
| Brake Lever Ratio:                        |                | :                              | :1                  |   |                     |   | Gross Rail Load:    | 710,700 | #                           |
| Handbrake Force (Gross):                  |                | #                              |                     |   |                     |   | Brake Force Schem.: |         |                             |
| EMPTY LOAD %:                             |                | %                              |                     |   |                     |   | Brake Arrangement:  |         |                             |
| MEASURED BRAKE SHOE FORCE (IN NET POUNDS) |                |                                |                     |   |                     |   |                     |         |                             |
| Brake Cylinder Pressure (psig):           |                |                                |                     |   |                     |   |                     |         |                             |
| P<br>N<br>E<br>U<br>M<br>A<br>T<br>I<br>C | WHEEL          | Min red 8-7                    |                     | Light Car:                                |                     | Loaded Car:   |                     | FORCE   | 4040 lbs. on<br>Vert. Chain |
|   |                | UNTAPPED                       | TAPPED              | UNTAPPED                                  | TAPPED              | UNTAPPED  | TAPPED              |         |                             |
|   | L-1            | 4                              | 565                 | 1246                                      | 1466                | 3566  | 3505                | H       | 4126                        |
|   | R-1            | 2                              | 849                 | 1720                                      | 1676                | 4482  | 4284                | N       | 4823                        |
|   | L-2            | 3                              | 813                 | 1590                                      | 1634                | 4137  | 4020                | D       | 5018                        |
|   | R-2            | 1                              | 670                 | 1580                                      | 1618                | 4226  | 4052                | B       | 4976                        |
|   | L-3            | 5                              | 450                 | 1153                                      | 1216                | 3482  | 3160                | R       | 2420                        |
|   | R-3            | 7                              | 1180                | 1848                                      | 1749                | 4354  | 4000                | A       | 3408                        |
|   | L-4            | 6                              | 890                 | 1515                                      | 1705                | 3886  | 4065                | K       | 3514                        |
|   | R-4            | 8                              | 950                 | 1566                                      | 1588                | 3949  | 3851                | E       | 3518                        |
|   | L-5            | S-2 (#3)                       | 880                 | 1409                                      | 1453                | 3810  | 3928                |         | 2048                        |
|   | R-5            | S-2 (#2)                       | 935                 | 1488                                      | 1638                | 4026  | 4414                |         | 2272                        |
|   | L-6            | S-2 (#4)                       | 1110                | 1596                                      | 1675                | 4020  | 4032                |         | 3271                        |
|   | R-6            | S-2 (#1)                       | 1025                | 1601                                      | 1680                | 3752  | 4417                |         | 3135                        |
|   | L-7            | 2/S-2 (#4)                     | 515                 | 1678                                      | 1675                | 4131  | 4220                |         | 3225                        |
|   | R-7            | 2/S-2 (#2)                     | 518                 | 1599                                      | 1651                | 3836  | 4096                |         | 3067                        |
|   | L-8            | 2/S-2 (#3)                     | 553                 | 1848                                      | 1803                | 4390  | 4383                |         | 2810                        |
|   | R-8            | 2/S-2 (#1)                     | 517                 | 1131                                      | 1350                | 3750  | 3761                |         | 1735                        |
|   | L-9            | 6                              | 150                 | 1310                                      | 1417                | 3914  | 4057                |         | 3741                        |
|   | R-9            | 8                              | 277                 | 1395                                      | 1392                | 3692  | 3829                |         | 3641                        |
|   | L-10           | 5                              | 272                 | 1294                                      | 1478                | 4322  | 3981                |         | 3442                        |
|   | R-10           | 7                              | 154                 | 820                                       | 1099                | 3593  | 3410                |         | 2643                        |
|   | L-11           | 4                              | 334                 | 1612                                      | 1600                | 4193  | 4292                |         | 5393                        |
|   | R-11           | 2                              | 363                 | 1542                                      | 1580                | 4000  | 4008                |         | 5252                        |
|   | L-12           | 3                              | 264                 | 1445                                      | 1371                | 4032  | 4330                |         | 4740                        |
|   | R-12           | 1                              | 60                  | 595                                       | 815                 | 3362  | 3730                |         | 3896                        |
| <b>TOTALS:</b>                            |                |                                | 14294               |   | 36329               |   | 95825               |         | 86114                       |
| BCP @ Min. Red.                           |                | "A" End                        | (AVERAGE)<br>595.58 | "B" End                                   | (MINIMUM)<br>3673.3 | (AVERAGE)<br>3992.7   | (MAXIMUM)<br>4312.1 |         |                             |
| PISTON TRAVEL:                            |                | 2 5/8, 2 7/8, 2 3/4            |                     | 2 7/8, 2 3/4, 2 3/4                       |                     | Brake Cylinder Pressure, Min. 30psig Reduction: <input type="text"/> 74.1 |                     |         |                             |
|   |                |                                |                     |   |                     | Emergency Application: <input type="text"/>                               |                     |         |                             |
|   |                | <i>Pneumatic Loaded %</i>      |                     | <i>Handbrake Loaded %</i>                 |                     | <i>Pneumatic Light %</i>  |                     |         |                             |
| NET SHOE FORCE x100 =<br>LIGHT WEIGHT     |                |                                |                     |   |                     | $\frac{36329 \times 100}{225700} = 16.10$                                 |                     |         |                             |
| NET SHOE FORCE x100 =<br>GROSS RAIL LOAD  |                | $\frac{95825}{710700} = 13.48$ |                     | $\frac{86114 \times 100}{710700} = 12.12$ |                     |   |                     |         |                             |
| BRAKE PIPE CHARGE OF                      |                | 90 psig                        |                     | ATTESTED: CORY J. WAGNER                  |                     |   |                     |         |                             |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.2.6 – Single Car Air Brake Test Report Form 6-A**

|  |   |
|--|---|
| Orano Federal Services   |   |
| <b>DATA TRANSMITTAL FORM</b>   |   |
| Supplier: <b>KASGRO RAIL CORP., INC.</b>   | DTF No: <b>046</b> <span style="float: right;">Page <u>1</u> of <u>1</u></span>   |
| P.O./SC No: <b>15C3011916</b>  | <b>KLEIN Slade</b> <small>Date: 2019.03.12 16:53:06 -0700</small> <span style="float: right;">Date: <b>2/28/2019</b></span> |
| Type of Submittal: <input checked="" type="checkbox"/> <b>First</b> <input type="checkbox"/> <b>Re-Submittal</b>   | SDRL List Item No: <b>24</b>  |
| Submitted for: <input checked="" type="checkbox"/> <b>Approval</b> <input checked="" type="checkbox"/> <b>Review</b> <input type="checkbox"/> <b>Information</b> | Number of Copies Submitted: <b>1</b>  |
| Submitted By: <b>RICK FORD</b>   | <b>Rick Ford</b> <small>Digitally signed by Rick Ford Date: 2019.02.28 08:40:32 -0500</small> <b>PROJECT MANAGER</b>        |
| <small>(Name)</small>  | <small>(Signature)</small> <span style="float: right;"><small>(Title)</small></span>  |

| ITEM NUMBER | DOCUMENT NUMBER | REVISION NUMBER | DOCUMENT DESCRIPTION   | FS DISPOSITION  |
|-------------|-----------------|-----------------|--|---|
| 1           | KAS 171         |                 | IDOX 10001 FORM 6 AIR BRAKE TEST 2/12/2019                     | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 2           | KAS 172         |                 | IDOX 20001 FORM 6 AIR BRAKE TEST 2/12/2019                     | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 3           | KAS 173         |                 | IDOX 20002 FORM 6 AIR BRAKE TEST 2/12/2019                     | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 4           | KAS 174         |                 | IDOX 10001 FORM 6 AIR BRAKE TEST 2/27/2019                     | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input checked="" type="checkbox"/> DS <input type="checkbox"/> RSA |
|             |                 |                 | KAS 174 2/27/2019 ABT TEST REPEATED DUE TO TRUCK BOLSTER WORK. | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |

|   |   |
|---|---|
| Comments:<br>KAS 174, add a identification to the form that this brake test was performed after Amstead boss inspection and car reassembly. | Technical Reviewer (I.e., RE, PTL, SME, QA, etc.)<br><b>KLEIN Slade</b> <small>Date: 2019.03.12 11:30:57 -0700</small><br>Date: <b>3/4/2019</b> |
|---|---|

| FS DISPOSITION CODES AND DEFINITIONS |                                |  |                             |
|--------------------------------------|--------------------------------|--|-----------------------------|
| AP                                   | Approved                       | Work may proceed.  | Resubmittal is not required |
| AWC                                  | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| REV                                  | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| RWC                                  | Reviewed with Comment          | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit        |
| DS                                   | Disapproved                    | Work may <u>not</u> proceed.   | Correct and resubmit        |
| RSA                                  | Receipt Submittal Acknowledged | No other action required.  |                             |

If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change.

|  |  |
|--|--|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval<br> | <small>Digitally signed by Mark A. Denton Date: 2019.03.12 15:44:35 -0400</small><br><small>DIC: cmlark@A. Denton, s. 000-Orano Federal Services, email=mark.denton@orano-group.com</small> <span style="float: right;">Date: <b>03/12/2019</b></span> |
|--|--|

FS-EN-FRM-023 Rev 02 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |                                    |   |
|--|------------------------------------|---|
|  | Orano Federal Services             |   |
|  | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:   | <b>KASGRO / 15C3011916</b>         | DTF No. / Rev: <b>046</b>   |
| Charge No:   | <b>00225.03.0050.02.00001</b>      | Due Date: <b>3/8/2019</b>   |
| Document(s):   | <b>See DTF No.: 046</b>            |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg, Codes, Stds, etc.)                              |                                    |   |
| PE   | Slade Klein                        |   |
| REVIEWERS  | Slade Klein, Bernie Counterman     |   |
| QA   | Bernie Counterman                  |   |
| <b>Technical Review</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                           |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No comments.   |                                    |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b>  |                                    | Date: 2019.03.04 19:32:42 -08'00'   |
| <b>Quality Assurance Review (As Applicable)</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                           |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| Should KAS 174 IDOX 010001 Form 6 ABT 2-27-19 be identified as "Brake test reperformed after Amstead boss inspection"? |                                    |   |
| QA Reviewer(s) (Sign/Date):  |                                    | Digitally signed by COUNTERMAN Bernard<br>Date: 2019.03.12 10:39:38 -07'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary)             |                                    |   |
|  |                                    |   |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |  |  |                               |
|--|--|--|-------------------------------|
| Rev.5  |  | <b>Kasgro Rail Corp</b>                                |                               |
| Air Brake Test Report<br>(X=Tested)  |  | FORM 6 2/24/2016                                       | CAR NUMBER <u>2D0X 010001</u> |
| Single Car Test, 1Set  | _____  | Single Car Test, 2 Sets                                | _____X                        |
| Single Car Test (includes B.C. Pressure Test)                                | _____  | Single Car Test ( includes B.C. Pressure Test), 2 Sets | _____X                        |
| Slack Adjuster Test  | _____X   | Retainer Valve Test                                    | _____X                        |
| Empty / Load Valve Test  | _____X   | Brake Pipe Leakage Test                                | _____X                        |
| System Leakage Test  | _____X   | Equilization Pressure                                  | _____X                        |
| Piston Travel ( Unit Brakes)   | _____  | If Equipped With Load Sensor                           | _____X                        |
| Piston Travel ( Trk MTD Brakes)  | _____X   | Equilization Pressure Load Sensor                      | _____X                        |
| WABCO PAC / NYPOAC Piston Travel Adjustment                                  | _____  | Equilization Pressure Loaded                           | _____X                        |
| (Truck Mounted Brake es with Slack Adjuster                                  | _____  | Equilization Pressure Empty                            | _____X                        |
| Lube Handbrake   | _____  | Slack Adjuster Rack Measurement                        | _____                         |
| <b>SYSTEM REPAIRS- List repairs, parts replaced, Location, and why made.</b> |  |  |                               |
| Piston Travels   | B 2 <sup>9</sup> / <sub>16</sub> C 2 <sup>3</sup> / <sub>4</sub> D 2 <sup>11</sup> / <sub>16</sub> E 2 <sup>11</sup> / <sub>16</sub> F 2 <sup>7</sup> / <sub>8</sub> A 2 <sup>5</sup> / <sub>8</sub> |  |                               |
| EQUILIZATION PRESSURE  | B END  | SER 64   | EM 76                         |
|  | A END  | SER 63   | EM 76                         |
|  |  |  | EMPTY 27                      |
|  |  |  | EMPTY 28                      |
| DB-10 C  | A+B  |  |                               |
| DB-20  |  |  |                               |
| NEW YORK AIR BRAKE   | EL   | LOAD SENSOR  | 40%                           |
| Signature of Tester  | <i>Mark J. Bl...</i>   |  | Date 2-12-19                  |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |   |                           |
|--|---|---------------------------|
| Orano Federal Services   |   |                           |
| <b>DATA TRANSMITTAL FORM</b>   |   |                           |
| Supplier: <b>KASGRO RAIL CORP., INC.</b>   | DTF No: <b>046A</b>   | Page <u>1</u> of <u>1</u> |
| P.O./SC No: <b>15C3011916</b>  | Date: <b>03/25/2019</b>   |                           |
| Type of Submittal: <input type="checkbox"/> First <input checked="" type="checkbox"/> Re-Submittal                               | SDRL List Item No: <b>24</b>  |                           |
| Submitted for: <input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted: <b>1</b>  |                           |
| Submitted By: <b>RICK FORD</b>   | <b>Rick Ford</b><br><small>Digitally signed by Rick Ford<br/>Date: 2019.03.29 14:20:46<br/>+0300'</small> | <b>PROJECT MANAGER</b>    |
| <small>(Name)</small>  | <small>(Signature)</small>  | <small>(Title)</small>    |

| ITEM NUMBER | DOCUMENT NUMBER | REVISION NUMBER | DOCUMENT DESCRIPTION   | FS DISPOSITION  |
|-------------|-----------------|-----------------|--|---|
| 1           | KAS 174         |                 | (ID# 1000) FORM R AIRBRAKE TEST 03/22/2019<br>(TEST REPEATED AFTER TRUCK DISASSEMBLY/REASSEMBLY) | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |

|                           |  |
|---------------------------|--|
| Comments:<br>No comments. | Technical Reviewer (i.e., RE, PTL, SME, QA, etc.)<br><b>KLEIN Slade</b> Date: 2019.03.29<br>10:17:25 -07'00'<br>Date: <b>3/29/2019</b> |
|---------------------------|--|

| FS DISPOSITION CODES AND DEFINITIONS |                                |   |                             |
|--------------------------------------|--------------------------------|---|-----------------------------|
| <b>AP</b>                            | Approved                       | Work may proceed.   | Resubmittal is not required |
| <b>AWC</b>                           | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.              | Resubmittal is not required |
| <b>REV</b>                           | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.              | Resubmittal is not required |
| <b>RWC</b>                           | Reviewed with Comment          | Work may proceed; <b>subject to incorporation and compliance w/ Buyer comments.</b> | <b>Correct and resubmit</b> |
| <b>DS</b>                            | Disapproved                    | Work may <u>not</u> proceed.  | <b>Correct and resubmit</b> |
| <b>RSA</b>                           | Receipt Submittal Acknowledged | No other action required.   |                             |

If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change.

|  |  |
|--|--|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval<br> | <small>Digitally signed by DENTON Mark<br/>DN: cn=DENTON, o=ORANO<br/>c=US, email=DENTON.MARK@ORANO.COM, ou=DENTON, ou=ORANO<br/>Date: 2019.03.29 12:36:02 -0400'</small><br>Date: <b>03/29/2019</b> |
|--|--|

FS-EN-FRM-023 Rev 02 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

|  |                                    |   |
|--|------------------------------------|---|
|  | Orano Federal Services             |   |
|  | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:   | KASGRO / 15C3011916                | DTF No. / Rev: 046A   |
| Charge No:   | 00225.03.0050.02.00001             | Due Date: 4/8/2019  |
| Document(s):   | See DTF No.: 046A                  |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)                  |                                    |   |
| PE   | Slade Klein                        |   |
| REVIEWERS  | Slade Klein, Bernie Counterman     |   |
| QA   | Bernie Counterman                  |   |
| <b>Technical Review</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No comments.   |                                    |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b> Date: 2019.03.28 12:17:06 -07'00'                    |                                    |   |
| <b>Quality Assurance Review (As Applicable)</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No Comments  |                                    |   |
| QA Reviewer(s) (Sign/Date):  |                                    | Digitally signed by COUNTERMAN Bernard<br>Date: 2019.03.29 08:29:28 -07'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary) |                                    |   |
|  |                                    |   |
|  |                                    |   |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

|   |                         |  |
|---|-------------------------|--|
| Rev.5   | <b>Kasgro Rail Corp</b> |  |
|   | FORM 6 2/24/2016        | CAR NUMBER <u>IDOX 010001</u>                          |
| Air Brake Test Report<br>(X=Tested)   |                         |  |
| Single Car Test, 1Set   | _____                   | Single Car Test, 2 Sets                                |
| Single Car Test (Includes B.C. Pressure Test)   | _____                   | Single Car Test ( Includes B.C. Pressure Test), 2 Sets |
| Slack Adjuster Test   | <u>X</u>                | Retainer Valve Test                                    |
| Empty / Load Valve Test   | _____                   | Brake Pipe Leakage Test                                |
| System Leakage Test   | <u>X</u>                | Equalization Pressure                                  |
| Piston Travel (Unit Brakes)   | _____                   | If Equipped With Load Sensor                           |
| Piston Travel (Trk MTD Brakes)  | <u>X</u>                | Equalization Pressure Load Sensor                      |
| WABCO PAC / NYPOAC Piston Travel Adjustment   | _____                   | Equalization Pressure Loaded                           |
| (Truck Mounted Brakes with Slack Adjuster   | _____                   | Equalization Pressure Empty                            |
| Lube Handbrake  | _____                   | Slack Adjuster Rack Measurement                        |
| SYSTEM REPAIRS- List repairs, parts replaced, Location, and why made.   |                         |  |
| Piston Travels <u>B 2 1/2 C 2 1/4 D 2 1/2 E 2 1/2 F 2 1/4 A 2 3/4</u>   |                         |  |
| <u>B- END 64 HEN 65</u>   |                         |  |
| <u>LEAK TEST PER RULE 3 PAR FIELD MANUAL</u>  |                         |  |
| <u>ADJUST PISTON TRAVELS CAR IN LOADED CONDITION</u>  |                         |  |
| THIS BRAKE TEST WAS PERFORMED AFTER DISASSEMBLY/REASSEMBLY OF ATLAS CAR AFTER TRUCK BOLSTERS WERE REPLACED BY SUPPLIER AMSTED RAIL WITH SPRING RETAINER PIPE BOSSES CORRECTLY WELDED, TO AMSTED DRAWING REQUIREMENTS. |                         |  |
| Project Manager: RICK FORD  | <u>Rick Ford</u>        | DATE: 03/25/2019                                       |
| Signature of Tester   | <u>Mike R</u>           | Date <u>2-27-19</u>                                    |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.2.7 – AAR Witness Letter for Single Car Brake Test Results**

|                       |  |                             |                 |
|-----------------------|--|-----------------------------|-----------------|
|                       |  | Orano Federal Services      |                 |
| DATA TRANSMITTAL FORM |  |                             |                 |
| Supplier:             | KASGRO RAIL CORP., INC.  | DTF No:                     | 050             |
| P.O./SC No:           | 15C3011916   | Date:                       | 3/14/2019       |
| Type of Submittal:    | <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal  | SDRL List Item No:          | 24              |
| Submitted for:        | <input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input checked="" type="checkbox"/> Information | Number of Copies Submitted: | 1               |
| Submitted By:         | RICK FORD  | Rick Ford                   | PROJECT MANAGER |
|                       | (Name)   | (Signature)                 | (Title)         |

| ITEM NUMBER | DOCUMENT NUMBER | REVISION NUMBER | DOCUMENT DESCRIPTION  | FS DISPOSITION  |
|-------------|-----------------|-----------------|---|---|
| 1           | KAS 183         |                 | ATLAS BUFFER CARS AAR / TTCI SINGLE CAR AIR BRAKE TEST WITNESS LETTER FOR COMPLIANCE TO 8-488 | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 2           | KAS 184         |                 | ATLAS CAB CAR AAR / TTCI SINGLE CAR AIR BRAKE TEST WITNESS LETTER FOR COMPLIANCE TO 8-488     | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |

|             |   |
|-------------|---|
| Comments:   | Technical Reviewer (i.e., RE, PTL, SME, QA, etc.) |
| No comments | KLEIN Slade Date: 2019.03.19 08:11:34 -07'00'     |
|             | Date 3/19/2019                                    |

| FS DISPOSITION CODES AND DEFINITIONS |                                |  |                             |
|--------------------------------------|--------------------------------|--|-----------------------------|
| AP                                   | Approved                       | Work may proceed.  | Resubmittal is not required |
| AWC                                  | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| REV                                  | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| RWC                                  | Reviewed with Comment          | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit        |
| DS                                   | Disapproved                    | Work may <u>not</u> proceed.   | Correct and resubmit        |
| RSA                                  | Receipt Submittal Acknowledged | No other action required.  |                             |

If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change.

|  |  |       |            |
|--|--|-------|------------|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval |  | Date: | 03/19/2019 |
|  | <small>Digitally signed by Mark A. Denton<br/>DN: cn=Mark A. Denton, o=Orano Federal Services, email=mark.denton@orano.gov, c=US<br/>Date: 2019.03.19 11:30:13 -0400</small> |       |            |

FS-EN-FRM-023 Rev 02 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |                                    |   |
|--|------------------------------------|---|
|  | Orano Federal Services             |   |
|  | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:   | <b>KASGRO / 15C3011916</b>         | DTF No. / Rev: <b>050</b>   |
| Charge No:   | <b>00225.03.0050.02.00001</b>      | Due Date: <b>3/18/2019</b>  |
| Document(s):   | <b>See DTF No.: 050</b>            |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)                  |                                    |   |
| PE   | Slade Klein                        |   |
| REVIEWERS  | Slade Klein, Bernie Counterman     |   |
| QA   | Bernie Counterman                  |   |
| <b>Technical Review</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No comments  |                                    |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b>  |                                    | Date: 2019.03.14 15:16:48 -07'00'   |
| <b>Quality Assurance Review (As Applicable)</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No Comments  |                                    |   |
| QA Reviewer(s) (Sign/Date):  |                                    | Digitally signed by COUNTERMAN Bernard<br>Date: 2019.03.15 08:08:53 -07'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary) |                                    |   |
|  |                                    |   |
|  |                                    |   |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

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Mike Yon  
Field Inspector - MID/QA Auditor  
Cell: 814-515-3803  
Email: Mike\_yon@aar.com

March 12, 2019

File:KAS-NEWCPA-MC06-0219b-MSY

**Subject:** Single Car Air Brake Test Observations Specification testing  
of IDOX 010001, Heavy Duty Flat Car

Mr. David L. Cackovic  
Chief – Technical Standards & Inspections  
Transportation Technology Center, Inc.  
P.O. Box 11130  
Pueblo, CO 81001  
E-mail: David\_Cackovic@aar.com

Dear Mr. Cackovic,

Specification testing of IDOX 010001, Heavy Duty Flat Car, specifically the Single Car Air Brake Test and restriction test has been completed. Testing was done at the Kasgro Rail Corporation facility in New Castle, Pennsylvania on February 12, 2019 to comply with Specification S-2043 and S-486.

I was present (test witness) for the required Single Car Air Brake Test and can conclude that applicable requirements of AAR Specification S-486 have been satisfactorily addressed.

Attached information was supplied by the Kasgro Rail Corporation in support of the approval process. Should you need any additional information, please do not hesitate to call.

Sincerely,

Mike Yon

cc: Anna Fox, TTCI  
Richard Jones, Kasgro  
J. Hannafious, TTCI  
Kasgro, mark@kasgro.com



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

| Kasgro Rail Corp<br>FORM 5-A 2/25/2016 |   | CAR NUMBER <i>DDX 01001</i>         |
|--|---|-------------------------------------|
| Rev. 1                                 | Single Car Test, 1 Set                                | <input checked="" type="checkbox"/> |
| Rev. 2                                 | Single Car Test (Includes B.C. Pressure Test), 2 Sets | <input checked="" type="checkbox"/> |
| Rev. 3                                 | Retainer Valve Test                                   | <input checked="" type="checkbox"/> |
| Rev. 4                                 | Brake Pipe Leakage Test                               | <input checked="" type="checkbox"/> |
| Rev. 5                                 | Equalization Pressure                                 | <input checked="" type="checkbox"/> |
| Rev. 6                                 | If Equipped With Load Sensor                          | <input checked="" type="checkbox"/> |
| Rev. 7                                 | Equalization Pressure Load Sensor                     | <input checked="" type="checkbox"/> |
| Rev. 8                                 | Equalization Pressure Loaded                          | <input checked="" type="checkbox"/> |
| Rev. 9                                 | Equalization Pressure Empty                           | <input checked="" type="checkbox"/> |
| Rev. 10                                | Slack Adjuster Rack Measurement                       | <input checked="" type="checkbox"/> |
| Rev. 11                                |   |                                     |
| Rev. 12                                |   |                                     |
| Rev. 13                                |   |                                     |
| Rev. 14                                |   |                                     |
| Rev. 15                                |   |                                     |
| Rev. 16                                |   |                                     |
| Rev. 17                                |   |                                     |
| Rev. 18                                |   |                                     |
| Rev. 19                                |   |                                     |
| Rev. 20                                |   |                                     |
| Rev. 21                                |   |                                     |
| Rev. 22                                |   |                                     |
| Rev. 23                                |   |                                     |
| Rev. 24                                |   |                                     |
| Rev. 25                                |   |                                     |
| Rev. 26                                |   |                                     |
| Rev. 27                                |   |                                     |
| Rev. 28                                |   |                                     |
| Rev. 29                                |   |                                     |
| Rev. 30                                |   |                                     |
| Rev. 31                                |   |                                     |
| Rev. 32                                |   |                                     |
| Rev. 33                                |   |                                     |
| Rev. 34                                |   |                                     |
| Rev. 35                                |   |                                     |
| Rev. 36                                |   |                                     |
| Rev. 37                                |   |                                     |
| Rev. 38                                |   |                                     |
| Rev. 39                                |   |                                     |
| Rev. 40                                |   |                                     |
| Rev. 41                                |   |                                     |
| Rev. 42                                |   |                                     |
| Rev. 43                                |   |                                     |
| Rev. 44                                |   |                                     |
| Rev. 45                                |   |                                     |
| Rev. 46                                |   |                                     |
| Rev. 47                                |   |                                     |
| Rev. 48                                |   |                                     |
| Rev. 49                                |   |                                     |
| Rev. 50                                |   |                                     |
| Rev. 51                                |   |                                     |
| Rev. 52                                |   |                                     |
| Rev. 53                                |   |                                     |
| Rev. 54                                |   |                                     |
| Rev. 55                                |   |                                     |
| Rev. 56                                |   |                                     |
| Rev. 57                                |   |                                     |
| Rev. 58                                |   |                                     |
| Rev. 59                                |   |                                     |
| Rev. 60                                |   |                                     |
| Rev. 61                                |   |                                     |
| Rev. 62                                |   |                                     |
| Rev. 63                                |   |                                     |
| Rev. 64                                |   |                                     |
| Rev. 65                                |   |                                     |
| Rev. 66                                |   |                                     |
| Rev. 67                                |   |                                     |
| Rev. 68                                |   |                                     |
| Rev. 69                                |   |                                     |
| Rev. 70                                |   |                                     |
| Rev. 71                                |   |                                     |
| Rev. 72                                |   |                                     |
| Rev. 73                                |   |                                     |
| Rev. 74                                |   |                                     |
| Rev. 75                                |   |                                     |
| Rev. 76                                |   |                                     |
| Rev. 77                                |   |                                     |
| Rev. 78                                |   |                                     |
| Rev. 79                                |   |                                     |
| Rev. 80                                |   |                                     |
| Rev. 81                                |   |                                     |
| Rev. 82                                |   |                                     |
| Rev. 83                                |   |                                     |
| Rev. 84                                |   |                                     |
| Rev. 85                                |   |                                     |
| Rev. 86                                |   |                                     |
| Rev. 87                                |   |                                     |
| Rev. 88                                |   |                                     |
| Rev. 89                                |   |                                     |
| Rev. 90                                |   |                                     |
| Rev. 91                                |   |                                     |
| Rev. 92                                |   |                                     |
| Rev. 93                                |   |                                     |
| Rev. 94                                |   |                                     |
| Rev. 95                                |   |                                     |
| Rev. 96                                |   |                                     |
| Rev. 97                                |   |                                     |
| Rev. 98                                |   |                                     |
| Rev. 99                                |   |                                     |
| Rev. 100                               |   |                                     |

Air Brake Test Report (Re-tested)  
 Single Car Test, 1 Set  
 Single Car Test (Includes B.C. Pressure Test)  
 Slack Adjuster Test  
 Empty / Load Valve Test  
 System Leakage Test  
 Piston Travel (Unit Brakes)  
 Piston Travel (TK MTD Brakes)  
 WABCO/FAC / MPD/CAC Piston Travel Adjustment  
 (Thick Mounted Brakes with Slack Adjuster)  
 #1 #2 #3 #4  
 Lubrication  
 SYSTEM REPAIRS-List repairs, parts replaced, location, and why made.  
 Piston Travels *B 27% C 24 D 26 E 28 F 28 A 28*  
 EQUALIZATION PRESSURE: *B 60 D 64 E 64 F 66 G 66 H 66 I 66 J 66 K 66 L 66 M 66 N 66 O 66 P 66 Q 66 R 66 S 66 T 66 U 66 V 66 W 66 X 66 Y 66 Z 66*  
*B 60 D 64 E 64 F 66 G 66 H 66 I 66 J 66 K 66 L 66 M 66 N 66 O 66 P 66 Q 66 R 66 S 66 T 66 U 66 V 66 W 66 X 66 Y 66 Z 66*  
*A 60 C 63*  
 DB-100  
 DB-20  
 AIR BRAKE  
 NEED MORE AIR BRAKE ELK-B LOW SENSOR 4/10/16  
 RESTRICTION TEST 467 min, 50 actual (SHOT BALL OK)  
 Signature of Tester *DAVID R. R.* Date *2-2-19*  
 Note: The recording of false, fictitious, or fraudulent statements on this document may be punishable as a felony under federal statutes.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.2.8 – NDE & Weld Examination Results – Atlas Railcar Fabrication**

|  |  |
|--|--|
| Orano Federal Services   |  |
| <b>DATA TRANSMITTAL FORM</b>   |  |
| Supplier: <b>KASGRO RAIL CORP., INC.</b>   | DTF No: <b>038</b> Page <b>1</b> of <b>1</b>   |
| P.O./SC No: <b>15C3011916</b>  | <b>KLEIN Slade</b> <small>Date: 2019.02.27 14:12:31 -0800</small> Date: <b>2/19/2019</b>                             |
| Type of Submittal: <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal                               | SDRL List Item No: <b>24</b>   |
| Submitted for: <input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted: <b>1</b>   |
| Submitted By: <b>RICK FORD</b>   | <b>Rick Ford</b> <small>Digitally signed by Rick Ford Date: 2019.02.19 13:31:27 -0800</small> <b>PROJECT MANAGER</b> |
| <small>(Name)</small>  | <small>(Signature)</small> <span style="float: right;"><small>(Title)</small></span>                                 |

| ITEM NUMBER | DOCUMENT NUMBER    | REVISION NUMBER | DOCUMENT DESCRIPTION  | FS DISPOSITION  |
|-------------|--------------------|-----------------|---|---|
| 1           | KAS 127            |                 | ATLAS CASK CAR CMS LASER DIMENSIONS FOR PIN BLOCK ATTACHMENT BLOCKS | <input type="checkbox"/> AP <input checked="" type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 2           | KAS 128            |                 | FRA S-2044 INPSECTION FOR BUFFER CARS                               | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 3           | KAS 129            |                 | AAR S-488 BRAKE TEST CERTIFICATION                                  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 4           | KAS 130            |                 | TRACK SCALE CALIBRATION RECORDS                                     | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 5           | KAS 131            |                 | TUV UT NDE REPORT CASK CAR  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 6           | KAS 132            |                 | TUV PT NDE REPORT CASK CAR  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 7           | KAS 133            |                 | TUV MT NDE REPORT CASK CAR  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input checked="" type="checkbox"/> DS <input type="checkbox"/> RSA |
| 8           | KAS 143 <b>134</b> |                 | TUV VT NDE REPORT CASK CAR  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input checked="" type="checkbox"/> DS <input type="checkbox"/> RSA |
|             |                    |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |

Comments:

1) NOTE: KAS 127 provides as-built railcar dimensions. Kasgro rework modified some of these. Kasgro to submit final dimensions separately.  
 2) KAS 133 does not include the shear block or outer pin block weld MT.  
 3) KAS 134 does not include VT of the shear block welds.

Technical Reviewer (i.e., RE, PTL, SME, QA, etc.)  
**KLEIN Slade** Date: 2019.02.27 13:47:33 -08'00'  
 Date **2/27/2019**

| FS DISPOSITION CODES AND DEFINITIONS |                                |  |                             |
|--------------------------------------|--------------------------------|--|-----------------------------|
| AP                                   | Approved                       | Work may proceed.  | Resubmittal is not required |
| AWC                                  | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| REV                                  | Reviewed                       | Work may proceed, comments provided for Supplier's consideration only.       | Resubmittal is not required |
| RWC                                  | Reviewed with Comment          | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit        |
| DS                                   | Disapproved                    | Work may <u>not</u> proceed.   | Correct and resubmit        |
| RSA                                  | Receipt Submittal Acknowledged | No other action required.  |                             |

If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change.

Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval

*Mark A. Dector*

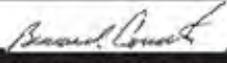
Digitally signed by Mark A. Dector  
 DN: cn=Mark A. Dector, o=Orano Federal Services, email=mark.dector@orano.gov, ou=US  
 Date: 02/27/2019

FS-EN-FRM-023 Rev 02 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |                                       |  |
|--|---------------------------------------|--|
| <br><b>orano</b>  | Orano Federal Services                |  |
| <b>SUPPLIER DOCUMENT SUBMITTAL REVIEW</b>  |                                       |  |
| Supplier / PO No.:   | <b>KASGRO / 15C3011916</b>            | DTF No. / Rev: <b>038</b>  |
| Charge No:   | <b>00225.03.0050.02.00001</b>         | Due Date: <b>3/8/2019</b>  |
| Document(s):   | <b>See DTF No.: 038</b>               |  |
| <small>REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)</small>   |                                       |  |
| PE   | <b>Slade Klein</b>                    |  |
| REVIEWERS  | <b>Slade Klein, Bernie Counterman</b> |  |
| QA   | <b>Bernie Counterman</b>              |  |
| <b>Technical Review</b>  |                                       |  |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |                                       |  |
| Technical Reviewer Comments:   |                                       |  |
| <b>KAS 133 does not include the required MT inspection of the shear blocks and outer pin blocks. This was required by Kasgro drawing 1155-41.</b>  |                                       |  |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b>  |                                       | Date: <b>2019.02.26 07:23:43 -08'00'</b>   |
| <b>Quality Assurance Review (As Applicable)</b>  |                                       |  |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |                                       |  |
| Technical Reviewer Comments:   |                                       |  |
| <b>Only potential question was regarding missing signature by the technician on the UT report. Discussed with TUV Rheinland Level III (Randy @ 616-818-8188). The technician signature is not required provided the report is signed by his supervisor. This report is signed by the individuals supervisor.</b> |                                       |  |
| QA Reviewer(s) (Sign/Date):   |                                       | Digitally signed by COUNTERMAN Bernard<br>Date: <b>2019.02.25 09:29:24 -08'00'</b> |
| <small>COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary)</small>  |                                       |  |
|  |                                       |  |
|  |                                       |  |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Flint, MI – Pittsburgh, PA – Birmingham, AL – Decatur, AL  
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**ULTRASONIC INSPECTION AWS REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 8 Page 1 of 2  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Cask Car #1

Date: July 24, 2018  
 Description: Performed Ultrasonic Inspection on Full Penetration Welds on Cask Car #1

| TRIS Procedure #: PA-WI-08-005 Rev.3 |            | Length: 8" – 12"             |                      | Ultrasonic Unit: Sonatest 350 |                  |           |       |                  |                 |                    |                   |                        |                               |                |        |        |  |
|--------------------------------------|------------|------------------------------|----------------------|-------------------------------|------------------|-----------|-------|------------------|-----------------|--------------------|-------------------|------------------------|-------------------------------|----------------|--------|--------|--|
| Test Method Standard: AWS D15.1      |            | Thickness: 1" – 1-1/4"       |                      | Serial #: 1002725             |                  |           |       |                  |                 |                    |                   |                        |                               |                |        |        |  |
| Acceptance Standard: AWS D15.1       |            | Location: New Castle, PA     |                      |                               |                  |           |       |                  |                 |                    |                   |                        |                               |                |        |        |  |
| Weld Identification                  | Meets Code | Fails Code                   | Procedure Legend No. | Indication Number             | Transducer Angle | From Face | Leg * | Decibels         |                 |                    |                   | Discontinuity Distance |                               |                |        |        |  |
|                                      |            |                              |                      |                               |                  |           |       | Indication Level | Reference Level | Attenuation Factor | Indication Rating | Length                 | Angular Distance (Sound Path) | Depth From "A" | From X | From Y |  |
|                                      |            |                              |                      |                               |                  |           |       | a                | B               | c                  | d                 |                        |                               |                |        |        |  |
| Weld #9                              | /          |                              | 1                    |                               | 70°              | A         | I/II  | 36               |                 |                    |                   |                        |                               |                |        |        |  |
| Weld #10                             | /          |                              | 1                    |                               | 70°              | A         | I/II  | 36               |                 |                    |                   |                        |                               |                |        |        |  |
| Weld #11                             | /          |                              | 1                    |                               | 70°              | A         | I/II  | 36               |                 |                    |                   |                        |                               |                |        |        |  |
| Weld #12                             | /          |                              | 1                    |                               | 70°              | A         | I/II  | 36               |                 |                    |                   |                        |                               |                |        |        |  |
| Weld #13                             | /          |                              | 1                    |                               | 70°              | A         | I/II  | 36               |                 |                    |                   |                        |                               |                |        |        |  |
| Weld #14                             | /          |                              | 1                    |                               | 70°              | A         | I/II  | 36               |                 |                    |                   |                        |                               |                |        |        |  |
| Weld #15                             | /          |                              | 1                    |                               | 70°              | A         | I/II  | 36               |                 |                    |                   |                        |                               |                |        |        |  |
| Weld #16                             | /          |                              | 1                    |                               | 70°              | A         | I/II  | 36               |                 |                    |                   |                        |                               |                |        |        |  |
| Couplant: Sonatrace 30               |            | Frequency: 2.25 MHz          |                      |                               |                  |           |       |                  |                 |                    |                   |                        |                               |                |        |        |  |
| Calibration Blocks: DSC              |            | Surface Condition: As Welded |                      |                               |                  |           |       |                  |                 |                    |                   |                        |                               |                |        |        |  |
| Technician: Noah Holden              |            | Level: II                    |                      |                               |                  |           |       |                  |                 |                    |                   |                        |                               |                |        |        |  |
| Interpreter: Noah Holden             |            | Level: II                    |                      |                               |                  |           |       |                  |                 |                    |                   |                        |                               |                |        |        |  |

Reviewed by: Date: 7/27/18  
 Testing was performed in accordance with accepted industry practice as well as the test methods referenced TUV Rheinland Industrial Solution, Inc. has no direct knowledge of the origin, sampling procedure, nor condition of the samples, and makes no claims as to the suitability nor final use of the material. This test report applies only to those items tested. This report shall not be reproduced except in full without the written consent of TUV Rheinland Industrial Solutions, Inc.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Flint, MI – Pittsburgh, PA – Birmingham, AL – Decatur, AL  
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**ULTRASONIC INSPECTION AWS REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 8  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Cask Car #1

Page 2 of 2

Date: July 24, 2018  
 Description: Performed Ultrasonic Inspection on Full Penetration Welds on Cask Car #1

| TRIS Procedure#: PA-WI-08-005 Rev.3 |            | Length: 14" – 48"               |                      | Ultrasonic Unit: Sonatest 350 |                  |           |       |                  |                 |                    |                   |               |                               |                |          |   |   |   |
|-------------------------------------|------------|---------------------------------|----------------------|-------------------------------|------------------|-----------|-------|------------------|-----------------|--------------------|-------------------|---------------|-------------------------------|----------------|----------|---|---|---|
| Test Method Standard: AWS D15.1     |            | Thickness: 2" – 2 1/2"          |                      | Serial #: 1002725             |                  |           |       |                  |                 |                    |                   |               |                               |                |          |   |   |   |
| Acceptance Standard: AWS D15.1      |            |                                 |                      | Location: New Castle, PA      |                  |           |       |                  |                 |                    |                   |               |                               |                |          |   |   |   |
| Weld Identification                 | Meets Code | Fails Code                      | Procedure Legend No. | Indication Number             | Transducer Angle | From Face | Leg * | Decibels         |                 |                    |                   | Discontinuity |                               |                |          |   |   |   |
|                                     |            |                                 |                      |                               |                  |           |       | Indication Level | Reference Level | Attenuation Factor | Indication Rating | Length        | Angular Distance (Sound Path) | Depth From "A" | Distance |   |   |   |
|                                     |            |                                 |                      |                               |                  |           |       |                  |                 |                    |                   |               |                               |                | a        | b | c | d |
| Weld #1                             | /          |                                 | 1                    |                               | 70°              | A         | I/II  | 36               |                 |                    |                   |               |                               |                |          |   |   |   |
| Weld #2                             | /          |                                 | 1                    |                               | 70°              | A         | I/II  | 36               |                 |                    |                   |               |                               |                |          |   |   |   |
| Weld #3                             | /          |                                 | 1                    |                               | 70°              | A         | I/II  | 36               |                 |                    |                   |               |                               |                |          |   |   |   |
| Weld #4                             | /          |                                 | 1                    |                               | 70°              | A         | I/II  | 36               |                 |                    |                   |               |                               |                |          |   |   |   |
| Weld #5                             | /          |                                 | 1                    |                               | 70°              | A         | I/II  | 36               |                 |                    |                   |               |                               |                |          |   |   |   |
| Weld #6                             | /          |                                 | 1                    |                               | 70°              | A         | I/II  | 36               |                 |                    |                   |               |                               |                |          |   |   |   |
| Weld #7                             | /          |                                 | 1                    |                               | 70°              | A         | I/II  | 36               |                 |                    |                   |               |                               |                |          |   |   |   |
| Weld #8                             | /          |                                 | 1                    |                               | 70°              | A         | I/II  | 36               |                 |                    |                   |               |                               |                |          |   |   |   |
| Couplant: Sonatrace 30              |            | Frequency: 2.25 MHz             |                      |                               |                  |           |       |                  |                 |                    |                   |               |                               |                |          |   |   |   |
| Calibration Blocks: DSC             |            | Surface Condition: Ground Flush |                      |                               |                  |           |       |                  |                 |                    |                   |               |                               |                |          |   |   |   |
| Technician: Noah Holden             |            | Level: II                       |                      |                               |                  |           |       |                  |                 |                    |                   |               |                               |                |          |   |   |   |
| Interpreter: Noah Holden            |            | Level: II                       |                      |                               |                  |           |       |                  |                 |                    |                   |               |                               |                |          |   |   |   |

Reviewed by:  Date: 7/27/18  
 Testing was performed in accordance with accepted industry practice as well as the test methods referenced TUV Rheinland Industrial Solutions, Inc. has no direct knowledge of the origin, sampling procedure, nor condition of the samples, and makes no claims as to the suitability nor final use of the material. This test report applies only to those items tested. This report shall not be reproduced except in full without the written consent of TUV Rheinland Industrial Solutions, Inc.

Ultrasonic AWS Report  
 RLK 61629

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

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**LIQUID PENETRANT INSPECTION REPORT**

Kasgro Rail Corporation  
 Mr. Mark Zeigler  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 14  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Page 1 of 1

Date: September 5, 2018  
 Description: Stainless Steel liners in Span Bolsters #1 and #2

|  |  |   |  |   |  |  |  |
|--|--|---|--|---|--|--|--|
| <b>TRIS Procedure:</b><br>PT-WI-08-001 Rev.4     |  | <b>Surface Condition:</b><br>Ground Smooth      |  | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress |  | <b>PT Material Identification:</b><br>Mfg. Sherwin         |  |
| <b>Test Method Standard:</b><br>ASTM - 1417      |  | <b>Percent of Inspection:</b><br><u>  X  </u> % |  | <input type="checkbox"/> Final  |  | Penetrant BC#119-D2  |  |
| <b>Acceptance Standard:</b><br>AWS D15.1         |  |   |  | <input type="checkbox"/> Other  |  | Developer BC#314-Y6  |  |
| <b>Product Form:</b><br>N/A                      |  |   |  | <b>For Welds:</b>   |  | Cleaner BC#39-E4   |  |
| <b>Type of Material:</b><br>304SS to A572 Gr. 50 |  |   |  | <input type="checkbox"/> Root Pass  |  | Emulsifier N/A   |  |
|  |  |   |  | <input type="checkbox"/> Intermediate                                       |  |  |  |
|  |  |   |  | <input checked="" type="checkbox"/> Final                                   |  | (Indicate type number and batch number for each item used) |  |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Other | Defect Location or Remarks | Technique:            | Visible |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------|----------------------------|-----------------------|---------|
|                               |        |        |        |         |        |          |       |                            | Fluorescent           | N/A     |
| <b>Bolster #2 (A-End)</b>     |        |        |        |         |        |          |       |                            | Visible Dye           | X       |
| 1-3 to 3-20                   | /      |        |        |         |        |          |       | Weld #5                    | Water Washable        | N/A     |
|                               |        |        |        |         |        |          |       |                            | Post Emulsified       | N/A     |
|                               |        |        |        |         |        |          |       |                            | Solvent Removed       | X       |
| <b>Bolster #1 (B-End)</b>     |        |        |        |         |        |          |       |                            | UV Meter No.          | N/A     |
| 1-3 to 3-20                   | /      |        |        |         |        |          |       | Weld #5                    | WL Meter No.          | N/A     |
|                               |        |        |        |         |        |          |       |                            | Meter Calibration     | N/A     |
|                               |        |        |        |         |        |          |       |                            | Due Date              | N/A     |
|                               |        |        |        |         |        |          |       |                            | Black Light Intensity | N/A     |
|                               |        |        |        |         |        |          |       |                            | White Light Intensity | N/A     |

Technician: Daniel S. Gjurich *Daniel S. Gjurich* Level: II

Reviewed By: *[Signature]* Date: 9/5/18

Testing was performed in accordance with accepted industry practice as well as the test methods referenced TUV Rheinland Industrial Solutions, Inc. has no direct knowledge of the origin, sampling procedure, nor condition of the samples, and makes no claims as to the suitability nor final use of the material. This test report applies only to those items tested. This report shall not be reproduced except in full without the written consent of TUV Rheinland Industrial Solutions, Inc.

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606



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**MAGNETIC PARTICLE INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 2 Page 1 of 1  
 P.O. #: K18-0079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Date: May 7, 2018  
 Description: Perform Magnetic Particle Inspections of Body Bolster Assemblies #1 & #2

|                              |                  |                                  |   |                   |  |
|------------------------------|------------------|----------------------------------|---|-------------------|--|
| <b>TRIS Procedure:</b>       | WI-08-002 Rev. 5 | <b>Production Stage:</b>         | <input checked="" type="checkbox"/> In Progress<br><input type="checkbox"/> Final<br><input type="checkbox"/> Other | <b>For Welds:</b> | <input type="checkbox"/> Root Pass<br><input type="checkbox"/> Intermediate<br><input checked="" type="checkbox"/> Final |
| <b>Surface Condition:</b>    | As Welded        | <b>Equipment Identification:</b> |   |                   |  |
| <b>Test Method Standard:</b> | ASTM E709        | Model #:                         | Parker DA400  |                   |  |
| <b>Acceptance Standard:</b>  | AWS D15.1        | Gage #/Serial #:                 | P135/17999  |                   |  |
| <b>Type of Material:</b>     | Carbon Steel     | Cal. Date Due:                   | 6-19-18   |                   |  |

| Product / Weld Identification  | Accept | Reject | Linear | Rounded | Cracks | Undercut | Other | Defect Location or Remarks | Technique   |   |
|--|--------|--------|--------|---------|--------|----------|-------|----------------------------|---|---|
|  |        |        |        |         |        |          |       |                            | Technique #:  | N/A   |
| <b>Body Bolster 3-10 (1)</b>   |        |        |        |         |        |          |       |                            | Method:   | Wet _____ Dry <input checked="" type="checkbox"/> |
| 3-14 to 3-10 (Inside)  | /      |        |        |         |        |          |       | Weld #2                    | Fluorescent _____ Visible <input checked="" type="checkbox"/> |   |
| 3-14 to 3-10 (Inside)  | /      |        |        |         |        |          |       | Weld #4                    |   |   |
| 3-14 to 3-10 (Outside)   | /      |        |        |         |        |          |       | Weld #1                    | Consumable Batch #: 09M014                                    |   |
| 3-14 to 3-10 (Outside)   | /      |        |        |         |        |          |       | Weld #3                    | Coil N/A FWDC N/A   |   |
|  |        |        |        |         |        |          |       |                            | Head Shot N/A Prods N/A                                       |   |
| <b>Body Bolster 3-10 (2)</b>   |        |        |        |         |        |          |       |                            | Amperage: N/A   |   |
| 3-14 to 3-10 (Inside)  | /      |        |        |         |        |          |       | Weld #2                    | Yoke Current: AC <input checked="" type="checkbox"/> DC _____ |   |
| 3-14 to 3-10 (Inside)  | /      |        |        |         |        |          |       | Weld #4                    | UV Meter #: N/A   |   |
| 3-14 to 3-10 (Outside)   | /      |        |        |         |        |          |       | Weld #1                    | UV Intensity verified at prescribed intervals?                |   |
| 3-14 to 3-10 (Outside)   | /      |        |        |         |        |          |       | Weld #3                    | Yes _____ No _____ N/A <input checked="" type="checkbox"/>    |   |
|  |        |        |        |         |        |          |       |                            | Quantity Tested 100%: <input checked="" type="checkbox"/>     |   |
|  |        |        |        |         |        |          |       |                            | Random: N/A %   |   |
| <p><b>NOTE: The Recording of False, Fictitious or Fraudulent Statements or Entries on the Document may be Punishable as a Felony Under Federal Statutes.</b></p> |        |        |        |         |        |          |       |                            |   |   |

SIGNED: \_\_\_\_\_ Kasgro Rail

Technician: Daniel S. Gjurich *Daniel S. Gjurich* Level: II

Reviewed By: \_\_\_\_\_ Date: 5/11/18  
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
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**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**MAGNETIC PARTICLE INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 4 Page 1 of 1  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Cask Car

Date: April 10, 2018 thru July 3, 2018  
 Description: Perform Magnetic Particle Inspections of Car Body Assembly

|                              |                  |                                  |   |                                       |   |
|------------------------------|------------------|----------------------------------|---|---------------------------------------|---|
| <b>TRIS Procedure:</b>       | W1-08-002 Rev. 5 | <b>Production Stage:</b>         | <input checked="" type="checkbox"/> In Progress | <b>For Welds:</b>                     | <input type="checkbox"/> Root Pass        |
| <b>Surface Condition:</b>    | As Welded        | <input type="checkbox"/> Final   | <input type="checkbox"/> Other                  | <input type="checkbox"/> Intermediate | <input checked="" type="checkbox"/> Final |
| <b>Test Method Standard:</b> | ASTM E709        | <b>Equipment Identification:</b> |   |                                       |   |
| <b>Acceptance Standard:</b>  | AWS D15.1        | Model #:                         | Parker DA400                                    |                                       |   |
| <b>Type of Material:</b>     | Carbon Steel     | Gage#/Serial #:                  | P135/ 17999                                     |                                       |   |
|                              |                  | Cal. Date Due:                   | 12-18-18  |                                       |   |

| Product / Weld Identification   | Accept | Reject | Linear | Rounded | Cracks | Undercut | Other | Defect Location or Remarks | Technique   |  |
|---|--------|--------|--------|---------|--------|----------|-------|----------------------------|---|--|
|   |        |        |        |         |        |          |       |                            | Technique #:  | N/A  |
| Car Body Assembly   |        |        |        |         |        |          |       |                            | Technique #:  | N/A  |
| Left Side Sill to Deck  |        |        |        |         |        |          |       |                            | Method:   | Wet <input type="checkbox"/> Dry <input checked="" type="checkbox"/>                             |
| Outside   | /      |        |        |         |        |          |       | Weld #29                   | Fluorescent <input type="checkbox"/> Visible <input checked="" type="checkbox"/>  |  |
| Inside  | /      |        |        |         |        |          |       | Weld #30                   |   |  |
| Right Side Sill to Deck   |        |        |        |         |        |          |       |                            | Consumable Batch #:   | 09M014   |
| Outside   | /      |        |        |         |        |          |       | Weld #33                   | Coil  | N/A FWDC N/A   |
| Inside  | /      |        |        |         |        |          |       | Weld #34                   | Head Shot   | N/A Prods N/A  |
| Left Center Sill to Deck  |        |        |        |         |        |          |       |                            | Amperage:   | N/A  |
| Outside   | /      |        |        |         |        |          |       | Weld #37                   | Yoke Current:   | AC <input checked="" type="checkbox"/> DC <input type="checkbox"/>                               |
| Inside  | /      |        |        |         |        |          |       | Weld #38                   | UV Meter #:   | N/A  |
| Right Center Sill to Deck   |        |        |        |         |        |          |       |                            | UV Intensity verified at prescribed intervals?  | Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> |
| Outside   | /      |        |        |         |        |          |       | Weld #39                   | Quantity Tested 100%:   | X  |
| Inside  | /      |        |        |         |        |          |       | Weld #40                   | Random:   | N/A %  |
| SIGNED: _____ Kasgro Rail<br><br>Technician: Daniel S. Gjurich <i>Daniel S. Gjurich</i> Level: II |        |        |        |         |        |          |       |                            | <b>NOTE: The Recording of False, Fictitious or Fraudulent Statements or Entries on the Document may be Punishable as a Felony Under Federal Statutes.</b> |  |

Reviewed By: *[Signature]* Date: 7/2/18  
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**Appendix B**

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 Project: 00225.03.0050 DOE Atlas Project

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**MAGNETIC PARTICLE INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102  
 Date: April 10, 2018 thru July 9, 2018  
 Description: Perform Magnetic Particle Inspections of Car Body Assembly

Report #: 5 Page 1 of 4  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Cask Car

|                              |                  |                                  |   |                   |   |
|------------------------------|------------------|----------------------------------|---|-------------------|---|
| <b>TRIS Procedure:</b>       | W1-08-002 Rev. 5 | <b>Production Stage:</b>         | <input checked="" type="checkbox"/> In Progress | <b>For Welds:</b> | <input checked="" type="checkbox"/> Root Pass |
| <b>Surface Condition:</b>    | As Welded        |                                  | <input type="checkbox"/> Final                  |                   | <input type="checkbox"/> Intermediate         |
| <b>Test Method Standard:</b> | ASTM E709        |                                  | <input type="checkbox"/> Other                  |                   | <input checked="" type="checkbox"/> Final     |
| <b>Acceptance Standard:</b>  | AWS D15.1        | <b>Equipment Identification:</b> |   |                   |   |
| <b>Type of Material:</b>     | Carbon Steel     | Model #:                         | Parker DA400                                    |                   |   |
|                              |                  | Gauge#/Serial #:                 | P135/17999                                      |                   |   |
|                              |                  | Cal. Date Due:                   | 12-18-18  |                   |   |

| Product / Weld Identification | Accept                                     | Reject | Linear | Rounded | Cracks | Undercut | Other | Defect Location or Remarks | Technique   |   |  |
|-------------------------------|--|--------|--------|---------|--------|----------|-------|----------------------------|---|---|--|
|                               |  |        |        |         |        |          |       |                            | Technique #:  |   |  |
| Car Body Assembly             |  |        |        |         |        |          |       |                            | Technique #:  | N/A   |  |
| 3-14 to 3-18                  | /  |        |        |         |        |          |       | Weld #27                   | Method:   | Wet _____ Dry <input checked="" type="checkbox"/> |  |
| 3-14 to 3-18                  | /  |        |        |         |        |          |       | Weld #28                   | Fluorescent _____ Visible <input checked="" type="checkbox"/>   |   |  |
| 3-14 to 3-17                  | /  |        |        |         |        |          |       | Weld #24                   |   |   |  |
| 3-28 to 3-37                  | /  |        |        |         |        |          |       | Weld #43                   | <b>Consumable Batch #:</b>  | 08A078  |  |
| 3-30 to 3-37                  | /  |        |        |         |        |          |       | Weld #45                   | Coil  | N/A FWDC N/A                                      |  |
| 3-30 to 3-36                  | /  |        |        |         |        |          |       | Weld #47                   | Head Shot   | N/A Prods N/A                                     |  |
| 3-28 to 3-36                  | /  |        |        |         |        |          |       | Weld #49                   | <b>Amperage:</b>  | N/A   |  |
| 3-14 to 3-17                  | /  |        |        |         |        |          |       | Weld #23 Root              | <b>Yoke Current:</b>  | AC <input checked="" type="checkbox"/> DC _____   |  |
| 3-14 to 3-17                  | /  |        |        |         |        |          |       | Weld #23 Final             | <b>UV Meter #:</b>  | N/A   |  |
| 3-28 to 3-14                  | /  |        |        |         |        |          |       | Weld #17                   | <b>UV Intensity verified at prescribed intervals?</b>   |   |  |
| 3-27 to 3-14                  | /  |        |        |         |        |          |       | Weld #18                   | Yes _____ No _____ N/A <input checked="" type="checkbox"/>  |   |  |
| 3-27 to 3-14                  | /  |        |        |         |        |          |       | Weld #19                   | <b>Quantity Tested 100%:</b>  | <input checked="" type="checkbox"/>               |  |
| 3-28 to 3-14                  | /  |        |        |         |        |          |       | Weld #20                   | <b>Random:</b>  | N/A %   |  |
|                               |  |        |        |         |        |          |       |                            | <b>NOTE: The Recording of False, Fictitious or Fraudulent Statements or Entries on the Document may be Punishable as a Felony Under Federal Statutes.</b> |   |  |
| <b>SIGNED:</b>                |  |        |        |         |        |          |       |                            |   |   |  |
| <b>Technician:</b>            | Daniel S. Gjurich <i>Daniel S. Gjurich</i> |        |        |         |        |          |       | <b>Level:</b>              | II  |   |  |

Reviewed By: *CA* Date: 7/10/18

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Flint, MI – Pittsburgh, PA – Birmingham, AL –  
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**MAGNETIC PARTICLE INSPECTION REPORT**

|   |   |             |
|---|---|-------------|
| Mr. Mark Zeigler<br>Kasgro Rail Corporation<br>121 Rundle Road<br>New Castle, PA 16102<br>Date: April 10, 2018 thru July 9, 2018<br>Description: Perform Magnetic Particle Inspections of Car Body Assembly | Report #: 5<br>P.O. #: K180079<br>Work Order #: 468009<br>Project: Cask Car | Page 2 of 4 |
|---|---|-------------|

|   |   |  |
|---|---|--|
| <b>TRIS Procedure:</b> W1-08-002 Rev. 5 | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress<br><input type="checkbox"/> Final<br><input type="checkbox"/> Other | <b>For Welds:</b><br><input checked="" type="checkbox"/> Root Pass<br><input type="checkbox"/> Intermediate<br><input checked="" type="checkbox"/> Final |
| <b>Surface Condition:</b> As Welded     | <b>Equipment Identification:</b>  |  |
| <b>Test Method Standard:</b> ASTM E709  | Model #: Parker DA400   |  |
| <b>Acceptance Standard:</b> AWS D15.1   | Gauge#/Serial #: P135/17999   |  |
| <b>Type of Material:</b> Carbon Steel   | Cal. Date Due: 12-18-18   |  |

| Product / Weld Identification  | Accept                                     | Reject | Linear | Rounded | Cracks | Undercut | Other  | Defect Location or Remarks | Technique   |  |
|--|--|--------|--------|---------|--------|----------|--------|----------------------------|---|--|
|  |  |        |        |         |        |          |        |                            | Technique #:  |  |
| Car Body Assembly  |  |        |        |         |        |          |        |                            | Technique #:  | N/A  |
| 3-14 to 3-17   | /  |        |        |         |        |          |        | Weld #25                   | Method:   | Wet _____ Dry <input checked="" type="checkbox"/>          |
| 3-14 to 3-17   | /  |        |        |         |        |          |        | Weld #26                   | Fluorescent _____ Visible <input checked="" type="checkbox"/> |  |
| 3-14 to 3-18   | /  |        |        |         |        |          |        | Weld #22                   | Consumable Batch #:   | 08A078   |
| 3-27 to 3-36   | /  |        |        |         |        |          |        | Weld #44                   | Coil  | N/A  |
| 3-30 to 3-36   | /  |        |        |         |        |          |        | Weld #46                   | Head Shot   | N/A  |
| 3-30 to 3-37   | /  |        |        |         |        |          |        | Weld #48                   | Prods   | N/A  |
| 3-28 to 3-37   | /  |        |        |         |        |          |        | Weld #50                   | Amperage:   | N/A  |
| 3-14 to 3-18   | /  |        |        |         |        |          |        | Weld #21 Root              | Yoke Current:   | AC <input checked="" type="checkbox"/> DC _____            |
| 3-14 to 3-18   | /  |        |        |         |        |          |        | Weld #21 Final             | UV Meter #:   | N/A  |
|  |  |        |        |         |        |          |        |                            | UV Intensity verified at prescribed intervals?                | Yes _____ No _____ N/A <input checked="" type="checkbox"/> |
|  |  |        |        |         |        |          |        |                            | Quantity Tested 100%:   | <input checked="" type="checkbox"/>                        |
|  |  |        |        |         |        |          |        |                            | Random:   | N/A %  |
| <p><b>NOTE: The Recording of False, Fictitious or Fraudulent Statements or Entries on the Document may be Punishable as a Felony Under Federal Statutes.</b></p> |  |        |        |         |        |          |        |                            |   |  |
| SIGNED: _____ Kasgro Rail  |  |        |        |         |        |          |        |                            |   |  |
| Technician:  | Daniel S. Gjurich <i>Daniel S. Gjurich</i> |        |        |         |        |          | Level: | II                         |   |  |

Reviewed By: *[Signature]* Date: 7/13/18

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Flint, MI – Pittsburgh, PA – Birmingham, AL –  
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**MAGNETIC PARTICLE INSPECTION REPORT**

|   |  |
|---|--|
| Mr. Mark Zeigler<br>Kasgro Rail Corporation<br>121 Rundle Road<br>New Castle, PA 16102<br>Date: April 10, 2018 thru July 9, 2018<br>Description: Perform Magnetic Particle Inspections of Car Body Assembly | Report #: 5      Page 3 of 4<br>P.O. #: K180079<br>Work Order #: 468009<br>Project: Cask Car |
|---|--|

|   |   |   |
|---|---|---|
| <b>TRIS Procedure:</b> W1-08-002 Rev. 5 | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress<br><input type="checkbox"/> Final<br><input type="checkbox"/> Other | <b>For Welds:</b><br><input type="checkbox"/> Root Pass<br><input type="checkbox"/> Intermediate<br><input checked="" type="checkbox"/> Final |
| <b>Surface Condition:</b> As Welded     | <b>Equipment Identification:</b>  |   |
| <b>Test Method Standard:</b> ASTM E709  | Model #: Parker DA400   | Gauge #/Serial #: P135/17999  |
| <b>Acceptance Standard:</b> AWS D15.1   | Cal. Date Due: 12-18-18   |   |
| <b>Type of Material:</b> Carbon Steel   |   |   |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Other | Defect Location or Remarks | Technique   |   |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------|----------------------------|---|---|
|                               |        |        |        |         |        |          |       |                            | Technique #:  | N/A   |
| Car Body Assembly             |        |        |        |         |        |          |       |                            | Method: Wet _____ Dry <input checked="" type="checkbox"/>   | Fluorescent _____ Visible <input checked="" type="checkbox"/> |
| 3-39 to 3-41                  | /      |        |        |         |        |          |       |                            | Consumable Batch #: 08A078  | Coil N/A FWDC N/A   |
| 3-39 to 3-15                  | /      |        |        |         |        |          |       |                            | Head Shot N/A Prods N/A   | Amperage: N/A   |
| 3-40 to 3-15                  | /      |        |        |         |        |          |       |                            | Yoke Current: AC <input checked="" type="checkbox"/> DC _____   | UV Meter #: N/A   |
| 3-74 to 3-15                  | /      |        |        |         |        |          |       |                            | UV Intensity verified at prescribed intervals?  | Yes _____ No _____ N/A <input checked="" type="checkbox"/>    |
| 3-30 to 3-15                  | /      |        |        |         |        |          |       |                            | Quantity Tested 100%: <input checked="" type="checkbox"/>   | Random: N/A %   |
| 3-27 to 3-15                  | /      |        |        |         |        |          |       |                            | <b>NOTE: The Recording of False, Fictitious or Fraudulent Statements or Entries on the Document may be Punishable as a Felony Under Federal Statutes.</b> |   |
| 3-28 to 3-15                  | /      |        |        |         |        |          |       |                            |   |   |
| 3-14 to 3-15                  | /      |        |        |         |        |          |       |                            |   |   |
| 3-30 to 3-15                  | /      |        |        |         |        |          |       |                            |   |   |
| 3-29 to 3-15                  | /      |        |        |         |        |          |       |                            |   |   |
| 3-17 to 3-15                  | /      |        |        |         |        |          |       |                            |   |   |
| 3-68 to 3-15                  | /      |        |        |         |        |          |       |                            |   |   |
| 3-71 to 3-15                  | /      |        |        |         |        |          |       |                            |   |   |
| 3-32 to 3-15                  | /      |        |        |         |        |          |       |                            |   |   |

SIGNED: \_\_\_\_\_ Kasgro Rail  
 Technician: Daniel S. Gjurich *Daniel S. Gjurich* Level: I I

Reviewed By: *[Signature]* Date: 7/13/18

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**MAGNETIC PARTICLE INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102  
 Date: April 10, 2018 thru July 9, 2018  
 Description: Perform Magnetic Particle Inspections of Car Body Assembly

Report #: 5 Page 4 of 4  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Cask Car

|                              |                 |   |                                      |                                       |   |
|------------------------------|-----------------|---|--------------------------------------|---------------------------------------|---|
| <b>TRIS Procedure:</b>       | WI-08-002 Rev.5 | <b>Production Stage:</b>                  | <input type="checkbox"/> In Progress | <b>For Welds:</b>                     | <input type="checkbox"/> Root Pass        |
| <b>Surface Condition:</b>    | As Welded       | <input checked="" type="checkbox"/> Final | <input type="checkbox"/> Other       | <input type="checkbox"/> Intermediate | <input checked="" type="checkbox"/> Final |
| <b>Test Method Standard:</b> | ASTM E709       | <b>Equipment Identification:</b>          |                                      |                                       |   |
| <b>Acceptance Standard:</b>  | AWS D15.1       | <b>Model #:</b>                           | Parker DA400                         |                                       |   |
| <b>Type of Material:</b>     | Carbon Steel    | <b>Gauge#/Serial #:</b>                   | P135/17999                           |                                       |   |
|                              |                 | <b>Cal. Date Due:</b>                     | 12-18-18                             |                                       |   |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Other | Defect Location or Remarks | Technique                                      |  |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------|----------------------------|--|--|
|                               |        |        |        |         |        |          |       |                            | Technique #:                                   |  |
| Car Body Assembly             |        |        |        |         |        |          |       |                            | Technique #:                                   | N/A  |
| Center Plate "A" End          |        |        |        |         |        |          |       |                            | Method:  | Wet <input type="checkbox"/> Dry <input checked="" type="checkbox"/>                         |
| 3-11 to 3-10                  | /      |        |        |         |        |          |       |                            | Fluorescent                                    | <input type="checkbox"/> Visible <input checked="" type="checkbox"/>                         |
| Center Plate "B" End          |        |        |        |         |        |          |       |                            | Consumable Batch #:                            | 08A078   |
| 3-11 to 3-10                  | /      |        |        |         |        |          |       |                            | Coil   | N/A FWDC N/A   |
|                               |        |        |        |         |        |          |       |                            | Head Shot                                      | N/A Prods N/A  |
|                               |        |        |        |         |        |          |       |                            | Amperage:                                      | N/A  |
|                               |        |        |        |         |        |          |       |                            | Yoke Current:                                  | AC <input checked="" type="checkbox"/> DC <input type="checkbox"/>                           |
|                               |        |        |        |         |        |          |       |                            | UV Meter #:                                    | N/A  |
|                               |        |        |        |         |        |          |       |                            | UV Intensity verified at prescribed intervals? |  |
|                               |        |        |        |         |        |          |       |                            | Yes  | <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> |
|                               |        |        |        |         |        |          |       |                            | Quantity Tested 100%:                          | <input checked="" type="checkbox"/>  |
|                               |        |        |        |         |        |          |       |                            | Random:  | N/A %  |

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SIGNED: \_\_\_\_\_ Kasgro Rail  
 Technician: Daniel S. Gjurich *Daniel S. Gjurich* Level: II

Reviewed By: *[Signature]* Date: 7/10/18  
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Orano Federal Services  
**Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**MAGNETIC PARTICLE INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 6 Page 1 of 2  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Date: July 11, 2018 thru August 29, 2018  
 Description: Magnetic Particle Inspections on Piece #1 Span Bolster Assembly

|  |   |   |
|--|---|---|
| <b>TRIS Procedure:</b> WI-08-002 Rev.5 | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress<br><input type="checkbox"/> Final<br><input type="checkbox"/> Other | <b>For Welds:</b><br><input type="checkbox"/> Root Pass<br><input type="checkbox"/> Intermediate<br><input checked="" type="checkbox"/> Final |
| <b>Surface Condition:</b> As Welded    | <b>Equipment Identification:</b>  |   |
| <b>Test Method Standard:</b> ASTM E709 | Model #: Parker DA400   |   |
| <b>Acceptance Standard:</b> AWS D15.1  | Gage #/Serial #: P135/17999   |   |
| <b>Type of Material:</b> Carbon Steel  | Cal. Date Due: 12-18-18   |   |

| Product / Weld Identification   | Accept                                     | Reject | Linear | Rounded | Cracks | Undercut | Other | Defect Location or Remarks | Technique   |             |  |
|---|--|--------|--------|---------|--------|----------|-------|----------------------------|---|-------------|--|
|   |  |        |        |         |        |          |       |                            | Method  | Fluorescent |  |
| Span Bolster Assembly   |  |        |        |         |        |          |       |                            | Technique #: N/A  |             |  |
| 3-18 to 3-15 R-Side   |  |        |        |         |        |          |       | Weld #3                    | Method: Wet _____ Dry <input checked="" type="checkbox"/>                 |             |  |
| INSIDE  | /  |        |        |         |        |          |       |                            | Fluorescent _____ Visible <input checked="" type="checkbox"/>             |             |  |
| OUTSIDE   | /  |        |        |         |        |          |       |                            |   |             |  |
| 3-17 to 3-15 L-Side   |  |        |        |         |        |          |       | Weld #4                    | Consumable Batch #: 08A078  |             |  |
| INSIDE  | /  |        |        |         |        |          |       |                            | Coil <input type="checkbox"/> N/A FWDC <input type="checkbox"/> N/A       |             |  |
| OUTSIDE   | /  |        |        |         |        |          |       |                            | Head Shot <input type="checkbox"/> N/A Prods <input type="checkbox"/> N/A |             |  |
| 3-12 to 3-15  | /  |        |        |         |        |          |       |                            | Amperage: N/A   |             |  |
| 3-9 to 3-15   | /  |        |        |         |        |          |       |                            | Yoke Current: AC <input checked="" type="checkbox"/> DC _____             |             |  |
| 3-8 to 3-15   | /  |        |        |         |        |          |       |                            | UV Meter #: N/A   |             |  |
|   |  |        |        |         |        |          |       |                            | UV Intensity verified at prescribed intervals?                            |             |  |
|   |  |        |        |         |        |          |       |                            | Yes _____ No _____ N/A <input checked="" type="checkbox"/>                |             |  |
|   |  |        |        |         |        |          |       |                            | Quantity Tested 100%: <input checked="" type="checkbox"/>                 |             |  |
|   |  |        |        |         |        |          |       |                            | Random: N/A %   |             |  |
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| Technician:   | Daniel S. Gjurich <i>Daniel S. Gjurich</i> |        |        |         |        |          |       | Level:                     | II  |             |  |

Reviewed By: *[Signature]* Date: 12/11/18  
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**MAGNETIC PARTICLE INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 6 Page 2 of 2  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Date: July 11, 2018 thru August 29, 2018  
 Description: Magnetic Particle Inspections on Piece #1 Span Bolster Assembly

|                              |                 |                                  |   |                   |   |
|------------------------------|-----------------|----------------------------------|---|-------------------|---|
| <b>TRIS Procedure:</b>       | WI-08-002 Rev.5 | <b>Production Stage:</b>         | <input checked="" type="checkbox"/> In Progress | <b>For Welds:</b> | <input type="checkbox"/> Root Pass        |
| <b>Surface Condition:</b>    | As Welded       |                                  | <input type="checkbox"/> Final                  |                   | <input type="checkbox"/> Intermediate     |
| <b>Test Method Standard:</b> | ASTM E709       |                                  | <input type="checkbox"/> Other                  |                   | <input checked="" type="checkbox"/> Final |
| <b>Acceptance Standard:</b>  | AWS D15.1       | <b>Equipment Identification:</b> |   |                   |   |
| <b>Type of Material:</b>     | Carbon Steel    | Model #:                         | Parker DA400                                    |                   |   |
|                              |                 | Gage #/Serial #:                 | P135/17999                                      |                   |   |
|                              |                 | Calibration :                    | 12-18-18  |                   |   |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Other | Defect Location or Remarks | Technique  |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------|----------------------------|--|
| Span Bolster Assembly         |        |        |        |         |        |          |       |                            |  |
| 3-14 to 3-17 L-Side           | /      |        |        |         |        |          |       | Weld #1                    | Technique #: N/A   |
| 3-14 to 3-18 R-Side           | /      |        |        |         |        |          |       | Weld #2                    | Method: Wet <input type="checkbox"/> Dry <input checked="" type="checkbox"/>                     |
|                               |        |        |        |         |        |          |       |                            | Fluorescent <input type="checkbox"/> Visible <input checked="" type="checkbox"/>                 |
| 3-27 to 3-14                  | /      |        |        |         |        |          |       |                            | Consumable Batch #: 08A078   |
| 3-27 to 3-2 Inside            | /      |        |        |         |        |          |       |                            | Coil <input type="checkbox"/> N/A FWDC <input type="checkbox"/> N/A                              |
| 3-27 to 3-2 Outside           | /      |        |        |         |        |          |       |                            | Head Shot <input type="checkbox"/> N/A Prods <input type="checkbox"/> N/A                        |
| 3-27 to 3-15 Inside           | /      |        |        |         |        |          |       |                            | Amperage: N/A  |
| 3-27 to 3-15 Outside          | /      |        |        |         |        |          |       |                            | Yoke Current: AC <input checked="" type="checkbox"/> DC <input type="checkbox"/>                 |
| 3-27 to 3-15 Inside           | /      |        |        |         |        |          |       |                            | UV Meter #: N/A  |
| 3-27 to 3-14 Outside          | /      |        |        |         |        |          |       |                            | UV Intensity verified at prescribed intervals?   |
| 3-27 to 3-15 Outside          | /      |        |        |         |        |          |       |                            | Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> |
| 3-33 to 3-2 Top               | /      |        |        |         |        |          |       |                            | Quantity Tested 100%: X  |
| 3-33 to 3-27 Top              | /      |        |        |         |        |          |       |                            | Random: N/A %  |
| 3-33 to 3-2 Underside         | /      |        |        |         |        |          |       |                            |  |
| 3-33 to 3-27 Underside        | /      |        |        |         |        |          |       |                            |  |

|             |   |        |    |
|-------------|---|--------|----|
| Technician: | Daniel S. Gjurich <i>Daniel Gjurich</i> | Level: | II |
|-------------|---|--------|----|

Reviewed By: *[Signature]* Date: 12/11/18  
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**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

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**MAGNETIC PARTICLE INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 9 Page 1 of 1  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Cask Car

Date: July 24, 2018  
 Description: Perform Magnetic Particle Inspections of Tie Down Lugs on Cask Car #1

|  |   |  |
|--|---|--|
| <b>TRIS Procedure:</b> WI-08-002 Rev.5 | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress<br><input type="checkbox"/> Final<br><input type="checkbox"/> Other | <b>For Welds:</b><br><input checked="" type="checkbox"/> Root Pass<br><input type="checkbox"/> Intermediate<br><input checked="" type="checkbox"/> Final |
| <b>Surface Condition:</b> As Welded    |   |  |
| <b>Test Method Standard:</b> ASTM E709 |   |  |
| <b>Acceptance Standard:</b> AWS D15.1  | <b>Equipment Identification:</b>  |  |
| <b>Type of Material:</b> Carbon Steel  | Model #: Parker DA400   |  |
|  | Gage#/Serial #: P135/17999  |  |
|  | Cal. Date Due: 12-18-18   |  |

| Product / Weld Identification | Accept                                     | Reject | Linear | Rounded | Cracks | Undercut | Other | Defect Location or Remarks | Technique   |  |  |
|-------------------------------|--|--------|--------|---------|--------|----------|-------|----------------------------|---|--|--|
|                               |  |        |        |         |        |          |       |                            | Technique #:  | N/A  |  |
| Car Body Assembly             |  |        |        |         |        |          |       |                            | Technique #:  | N/A  |  |
| Tie Down Lug                  |  |        |        |         |        |          |       |                            | Method:   | Wet <input type="checkbox"/> Dry <input checked="" type="checkbox"/>                             |  |
| 3-138 to 3-16 Root            | /  |        |        |         |        |          |       |                            | Fluorescent   | <input type="checkbox"/> Visible <input checked="" type="checkbox"/>                             |  |
| 3-138 to 3-16 Final           | /  |        |        |         |        |          |       |                            | Consumable Batch #:   | 08A078   |  |
| Tie Down Lug                  |  |        |        |         |        |          |       |                            | Coil  | N/A FWDC N/A   |  |
| 3-138 to 3-16 Root            | /  |        |        |         |        |          |       |                            | Head Shot   | N/A Prods N/A  |  |
| 3-138 to 3-16 Final           | /  |        |        |         |        |          |       |                            | Amperage:   | N/A  |  |
| Tie Down Lug                  |  |        |        |         |        |          |       |                            | Yoke Current:   | AC <input checked="" type="checkbox"/> DC <input type="checkbox"/>                               |  |
| 3-138 to 3-140 Root           | /  |        |        |         |        |          |       |                            | UV Meter #:   | N/A  |  |
| 3-138 to 3-140 Final          | /  |        |        |         |        |          |       |                            | UV Intensity verified at prescribed intervals?  | Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> |  |
| Tie Down Lug                  |  |        |        |         |        |          |       |                            | Quantity Tested 100%:   | X  |  |
| 3-138 to 3-139 Root           | /  |        |        |         |        |          |       |                            | Random:   | N/A %  |  |
| 3-138 to 3-139 Final          | /  |        |        |         |        |          |       |                            | <b>NOTE: The Recording of False, Fictitious or Fraudulent Statements or Entries on the Document may be Punishable as a Felony Under Federal Statutes.</b> |  |  |
| SIGNED: Kasgro Rail           |  |        |        |         |        |          |       |                            |   |  |  |
| Technician:                   | Daniel S. Gjurich <i>Daniel S. Gjurich</i> |        |        |         |        |          |       | Level:                     | II  |  |  |

Reviewed By: *[Signature]* Date: 7/27/18

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**MAGNETIC PARTICLE INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 10 Page 1 of 1  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Date: July 25, 2018 thru August 21, 2018  
 Description: Perform Magnetic Particle Inspections of Car Body Assembly of Cask car #1

|                              |                  |                                  |   |                   |   |
|------------------------------|------------------|----------------------------------|---|-------------------|---|
| <b>TRIS Procedure:</b>       | WI-08-002 Rev. 5 | <b>Production Stage:</b>         | <input checked="" type="checkbox"/> In Progress | <b>For Welds:</b> | <input type="checkbox"/> Root Pass        |
| <b>Surface Condition:</b>    | As Welded        |                                  | <input type="checkbox"/> Final                  |                   | <input type="checkbox"/> Intermediate     |
| <b>Test Method Standard:</b> | ASTM E709        |                                  | <input type="checkbox"/> Other                  |                   | <input checked="" type="checkbox"/> Final |
| <b>Acceptance Standard:</b>  | AWS D15.1        | <b>Equipment Identification:</b> |   |                   |   |
| <b>Type of Material:</b>     | Carbon Steel     | <b>Model #:</b>                  | Parker DA400                                    |                   |   |
|                              |                  | <b>Gage #/Serial #:</b>          | P135/17999                                      |                   |   |
|                              |                  | <b>Cal. Date Due:</b>            | 12-18-18  |                   |   |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Other | Defect Location or Remarks | Technique                                      |  |   |                                      |   |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------|----------------------------|--|--|---|--------------------------------------|---|
|                               |        |        |        |         |        |          |       |                            | Technique #:                                   | Method:                                | Consumable Batch #:                     | Amperage:                            |   |
| Car Body Assembly             |        |        |        |         |        |          |       |                            | Technique #:                                   | N/A                                    |   |                                      |   |
| Left Side Sill to Bot Flg     |        |        |        |         |        |          |       |                            | Method:  | Wet <input type="checkbox"/>           | Dry <input checked="" type="checkbox"/> | Fluorescent <input type="checkbox"/> | Visible <input checked="" type="checkbox"/> |
| Inside                        | /      |        |        |         |        |          |       | Weld #32                   | Consumable Batch #:                            | 08A078                                 |   |                                      |   |
| Right Side Sill to Bot Flg    |        |        |        |         |        |          |       |                            | Coil   | N/A                                    | FWDC                                    | N/A                                  |   |
| Outside                       | /      |        |        |         |        |          |       | Weld #35                   | Head Shot                                      | N/A                                    | Prods                                   | N/A                                  |   |
| Left Cntr Sill to Bot Flg     |        |        |        |         |        |          |       |                            | Amperage:                                      | N/A                                    |   |                                      |   |
| Left Side Sill to Bot Flg     |        |        |        |         |        |          |       |                            | Yoke Current:                                  | AC <input checked="" type="checkbox"/> | DC <input type="checkbox"/>             |                                      |   |
| Outside                       | /      |        |        |         |        |          |       | Weld #31                   | UV Meter #:                                    | N/A                                    |   |                                      |   |
| Right Side Sill to Bot Flg    |        |        |        |         |        |          |       |                            | UV Intensity verified at prescribed intervals? | Yes <input type="checkbox"/>           | No <input type="checkbox"/>             | N/A <input type="checkbox"/>         | X <input checked="" type="checkbox"/>       |
| Inside                        | /      |        |        |         |        |          |       | Weld #36                   | Quantity Tested 100%:                          | X                                      |   |                                      |   |
| Right Cntr Sill to Bot Flg    |        |        |        |         |        |          |       |                            | Random:  | N/A %                                  |   |                                      |   |
| Inside                        | /      |        |        |         |        |          |       | Weld #42                   |  |  |   |                                      |   |

SIGNED: \_\_\_\_\_ Kasgro Rail  
 Technician: Daniel S. Gjurich *Daniel S. Gjurich* Level: II

Reviewed By: \_\_\_\_\_ Date: 8/26/18

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 Magnetic Particle Inspection  
 RLK 5/15/09



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**MAGNETIC PARTICLE INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 11 Page 1 of 1  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Date: August 28, 2018  
 Description: Perform Magnetic Particle Inspections of Cask Car Body Assembly

|                              |                  |                                  |   |                                       |   |
|------------------------------|------------------|----------------------------------|---|---------------------------------------|---|
| <b>TRIS Procedure:</b>       | W1-08-002 Rev. 5 | <b>Production Stage:</b>         | <input checked="" type="checkbox"/> In Progress | <b>For Welds:</b>                     | <input type="checkbox"/> Root Pass        |
| <b>Surface Condition:</b>    | As Welded        | <input type="checkbox"/> Final   | <input type="checkbox"/> Other                  | <input type="checkbox"/> Intermediate | <input checked="" type="checkbox"/> Final |
| <b>Test Method Standard:</b> | ASTM E709        | <b>Equipment Identification:</b> |   |                                       |   |
| <b>Acceptance Standard:</b>  | AWS D15.1        | Model #:                         | Parker DA400                                    |                                       |   |
| <b>Type of Material:</b>     | Carbon Steel     | Gage//Serial #:                  | P135/17999                                      |                                       |   |
|                              |                  | Cal. Date Due:                   | 12-18-18  |                                       |   |

| Product / Weld Identification  | Accept            | Reject | Linear | Rounded | Cracks | Undercut | Other     | Defect Location or Remarks | Technique  |  |
|--|-------------------|--------|--------|---------|--------|----------|-----------|----------------------------|--|--|
| Car Body Assembly  |                   |        |        |         |        |          |           |                            |  |  |
| <b>Tie Down Lug</b>  |                   |        |        |         |        |          |           |                            | Technique #: N/A   |  |
| 3-138 to 3-16 After Test   | /                 |        |        |         |        |          |           |                            | Method: Wet <input type="checkbox"/> Dry <input checked="" type="checkbox"/><br>Fluorescent <input type="checkbox"/> Visible <input checked="" type="checkbox"/> |  |
| <b>Tie Down Lug</b>  |                   |        |        |         |        |          |           |                            | Consumable Batch #: 08A078   |  |
| 3-138 to 3-16 After Test   | /                 |        |        |         |        |          |           |                            | Coil <input type="checkbox"/> N/A FWDC <input type="checkbox"/> N/A<br>Head Shot <input type="checkbox"/> N/A Prods <input type="checkbox"/> N/A                 |  |
| <b>Tie Down Lug</b>  |                   |        |        |         |        |          |           |                            | Amperage: N/A  |  |
| 3-138 to 3-140 After Test  | /                 |        |        |         |        |          |           |                            | Yoke Current: AC <input checked="" type="checkbox"/> DC <input type="checkbox"/>   |  |
| <b>Tie Down Lug</b>  |                   |        |        |         |        |          |           |                            | UV Meter #: N/A  |  |
| 3-138 to 3-139 After Test  | /                 |        |        |         |        |          |           |                            | UV Intensity verified at prescribed intervals?<br>Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>               |  |
|  |                   |        |        |         |        |          |           |                            | Quantity Tested 100%: <input checked="" type="checkbox"/> X  |  |
|  |                   |        |        |         |        |          |           |                            | Random: N/A %  |  |
| <p><b>NOTE: The Recording of False, Fictitious or Fraudulent Statements or Entries on the Document may be Punishable as a Felony Under Federal Statutes.</b></p> |                   |        |        |         |        |          |           |                            |  |  |
| <b>SIGNED:</b>   |                   |        |        |         |        |          |           | Kasgro Rail                |  |  |
| Technician:  | Daniel S. Gjurich |        |        |         |        |          | Level: II |                            |  |  |

Reviewed By: Date: 8/30/18

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**MAGNETIC PARTICLE INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 12 Page 1 of 2  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Date: July 11, 2018 thru September 5, 2018  
 Description: Magnetic Particle Inspections on Piece #2 Span Bolster Assembly

|                              |                 |                                  |   |                                       |   |
|------------------------------|-----------------|----------------------------------|---|---------------------------------------|---|
| <b>TRIS Procedure:</b>       | WI-08-002 Rev.5 | <b>Production Stage:</b>         | <input checked="" type="checkbox"/> In Progress | <b>For Welds:</b>                     | <input type="checkbox"/> Root Pass        |
| <b>Surface Condition:</b>    | As Welded       | <input type="checkbox"/> Final   | <input type="checkbox"/> Other                  | <input type="checkbox"/> Intermediate | <input checked="" type="checkbox"/> Final |
| <b>Test Method Standard:</b> | ASTM E709       | <b>Equipment Identification:</b> |   |                                       |   |
| <b>Acceptance Standard:</b>  | AWS D15.1       | Model #:                         | Parker DA400                                    |                                       |   |
| <b>Type of Material:</b>     | Carbon Steel    | Gage #/Serial #:                 | P135/17999                                      |                                       |   |
|                              |                 | Cal. Date Due:                   | 12-18-18  |                                       |   |

| Product / Weld Identification | Accept                                     | Reject | Linear | Rounded | Cracks | Undercut | Other | Defect Location or Remarks | Technique   |   |
|-------------------------------|--|--------|--------|---------|--------|----------|-------|----------------------------|---|---|
|                               |  |        |        |         |        |          |       |                            | Technique #:  |   |
| Span Bolster Assembly         |  |        |        |         |        |          |       |                            | Technique #:  | N/A   |
| 3-18 to 3-15 R-Side           |  |        |        |         |        |          |       | Weld #3                    | Method: Wet   | <input type="checkbox"/> Dry <input checked="" type="checkbox"/>  |
| INSIDE                        | /  |        |        |         |        |          |       |                            | Fluorescent   | <input type="checkbox"/> Visible <input checked="" type="checkbox"/>  |
| OUTSIDE                       | /  |        |        |         |        |          |       |                            | Consumable Batch #:   | 08A078  |
| 3-17 to 3-15 L-Side           |  |        |        |         |        |          |       | Weld #4                    | Coil  | N/A FWDC N/A  |
| INSIDE                        | /  |        |        |         |        |          |       |                            | Head Shot   | N/A Prods N/A   |
| OUTSIDE                       | /  |        |        |         |        |          |       |                            | Amperage:   | N/A   |
| 3-12 to 3-15                  | /  |        |        |         |        |          |       |                            | Yoke Current:   | AC <input checked="" type="checkbox"/> DC <input type="checkbox"/>  |
| 3-9 to 3-15                   | /  |        |        |         |        |          |       |                            | UV Meter #:   | N/A   |
| 3-8 to 3-15                   | /  |        |        |         |        |          |       |                            | UV Intensity verified at prescribed intervals?  | Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> X <input checked="" type="checkbox"/> |
|                               |  |        |        |         |        |          |       |                            | Quantity Tested 100%:   | X   |
|                               |  |        |        |         |        |          |       |                            | Random:   | N/A %   |
|                               |  |        |        |         |        |          |       |                            | <b>NOTE: The Recording of False, Fictitious or Fraudulent Statements or Entries on the Document may be Punishable as a Felony Under Federal Statutes.</b> |   |
| Technician:                   | Daniel S. Gjurich <i>Daniel S. Gjurich</i> |        |        |         |        |          |       | Level:                     | II  |   |

Reviewed By: *[Signature]* Date: 9/11/18

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**MAGNETIC PARTICLE INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 12 Page 2 of 2  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Date: July 11, 2018 thru September 5, 2018  
 Description: Magnetic Particle Inspections on Piece #2 Span Bolster Assembly

|                              |                 |                                  |   |                                       |   |
|------------------------------|-----------------|----------------------------------|---|---------------------------------------|---|
| <b>TRIS Procedure:</b>       | WI-08-002 Rev.5 | <b>Production Stage:</b>         | <input checked="" type="checkbox"/> In Progress | <b>For Welds:</b>                     | <input type="checkbox"/> Root Pass        |
| <b>Surface Condition:</b>    | As Welded       | <input type="checkbox"/> Final   | <input type="checkbox"/> Other                  | <input type="checkbox"/> Intermediate | <input checked="" type="checkbox"/> Final |
| <b>Test Method Standard:</b> | ASTM E709       | <b>Equipment Identification:</b> |   |                                       |   |
| <b>Acceptance Standard:</b>  | AWS D15.1       | Model #:                         | Parker DA400                                    |                                       |   |
| <b>Type of Material:</b>     | Carbon Steel    | Gage #/Serial #:                 | P135/17999                                      |                                       |   |
|                              |                 | Calibration :                    | 12-18-18  |                                       |   |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Other | Defect Location or Remarks | Technique   |  |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------|----------------------------|---|--|
|                               |        |        |        |         |        |          |       |                            | Technique #:  | N/A  |
| Span Bolster Assembly         |        |        |        |         |        |          |       |                            | Technique #:  | N/A  |
| 3-14 to 3-17 L-Side           | /      |        |        |         |        |          |       | Weld #1                    | Method: Wet   | <input type="checkbox"/> Dry <input checked="" type="checkbox"/>                                 |
| 3-14 to 3-18 R-Side           | /      |        |        |         |        |          |       | Weld #2                    | Fluorescent   | <input type="checkbox"/> Visible <input checked="" type="checkbox"/>                             |
| 3-27 to 3-14                  | /      |        |        |         |        |          |       |                            | Consumable Batch #:   | 08A078   |
| 3-27 to 3-2 Inside            | /      |        |        |         |        |          |       |                            | Coil  | N/A FWDC N/A   |
| 3-27 to 3-2 Outside           | /      |        |        |         |        |          |       |                            | Head Shot   | N/A Prods N/A  |
| 3-27 to 3-15 Inside           | /      |        |        |         |        |          |       |                            | Amperage:   | N/A  |
| 3-27 to 3-15 Outside          | /      |        |        |         |        |          |       |                            | Yoke Current:   | AC <input checked="" type="checkbox"/> DC <input type="checkbox"/>                               |
| 3-27 to 3-14 Outside          | /      |        |        |         |        |          |       |                            | UV Meter #:   | N/A  |
| 3-27 to 3-15 Outside          | /      |        |        |         |        |          |       |                            | UV Intensity verified at prescribed intervals?  | Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> |
| 3-33 to 3-2 Top               | /      |        |        |         |        |          |       |                            | Quantity Tested 100%:   | X  |
| 3-33 to 3-27 Top              | /      |        |        |         |        |          |       |                            | Random:   | N/A %  |
| 3-33 to 3-2 Underside         | /      |        |        |         |        |          |       |                            | <b>NOTE: The Recording of False, Fictitious or Fraudulent Statements or Entries on the Document may be Punishable as a Felony Under Federal Statutes.</b> |  |
| 3-33 to 3-27 Underside        | /      |        |        |         |        |          |       |                            |   |  |

Technician: Daniel S. Gjurich *Daniel S. Gjurich* Level: II

Reviewed By: *[Signature]* Date: 8/12/18

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**MAGNETIC PARTICLE INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 15 Page 1 of 1  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Date: December 5, 2018  
 Description: Perform Magnetic Particle Inspections of Deck Attachments for Cask car #1

|                              |                  |                                  |   |                   |   |
|------------------------------|------------------|----------------------------------|---|-------------------|---|
| <b>TRIS Procedure:</b>       | WI-08-002 Rev. 5 | <b>Production Stage:</b>         | <input checked="" type="checkbox"/> In Progress | <b>For Welds:</b> | <input checked="" type="checkbox"/> Root Pass |
| <b>Surface Condition:</b>    | As Welded        |                                  | <input type="checkbox"/> Final                  |                   | <input type="checkbox"/> Intermediate         |
| <b>Test Method Standard:</b> | ASTM E709        |                                  | <input type="checkbox"/> Other                  |                   | <input type="checkbox"/> Final                |
| <b>Acceptance Standard:</b>  | AWS D15.1        | <b>Equipment Identification:</b> |   |                   |   |
| <b>Type of Material:</b>     | Carbon Steel     | <b>Model #:</b>                  | Parker DA400                                    |                   |   |
|                              |                  | <b>Gage #/Serial #:</b>          | P135/17999                                      |                   |   |
|                              |                  | <b>Cal. Date Due:</b>            | 12-18-18  |                   |   |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Other | Defect Location or Remarks   | Technique   |  |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------|------------------------------|---|--|
|                               |        |        |        |         |        |          |       |                              | Technique #:  | N/A  |
| Car Body Assembly             |        |        |        |         |        |          |       |                              | Technique #:  | N/A  |
| Item #7 (4)                   |        |        |        |         |        |          |       | Outside Lugs                 | Method:   | Wet <input type="checkbox"/> Dry <input checked="" type="checkbox"/>                             |
| Root                          | /      |        |        |         |        |          |       |                              | Fluorescent   | <input type="checkbox"/> Visible <input checked="" type="checkbox"/>                             |
| Final                         |        |        |        |         |        |          |       | Not welded as of this report | <b>Consumable Batch #:</b>                            | 08A078   |
|                               |        |        |        |         |        |          |       |                              | Coil  | N/A FWDC <input type="checkbox"/> N/A  |
| Item #8 (4)                   |        |        |        |         |        |          |       | Inside Lugs                  | Head Shot   | N/A Prods <input type="checkbox"/> N/A   |
| Root                          | /      |        |        |         |        |          |       |                              | <b>Amperage:</b>                                      | N/A  |
| Final                         |        |        |        |         |        |          |       | Not welded as of this report | <b>Yoke Current:</b>                                  | AC <input checked="" type="checkbox"/> DC <input type="checkbox"/>                               |
|                               |        |        |        |         |        |          |       |                              | <b>UV Meter #:</b>                                    | N/A  |
|                               |        |        |        |         |        |          |       |                              | <b>UV Intensity verified at prescribed intervals?</b> | Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> |
|                               |        |        |        |         |        |          |       |                              | <b>Quantity Tested 100%:</b>                          | <input checked="" type="checkbox"/>  |
|                               |        |        |        |         |        |          |       |                              | <b>Random:</b>  | N/A %  |

SIGNED: \_\_\_\_\_ Kasgro Rail

Technician: Daniel S. Gjurich *Daniel S. Gjurich* Level: II

Reviewed By: \_\_\_\_\_ Date: 12/5/18

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 Magnetic Particle Inspection  
 RLK 5/19/09



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Flint, MI – Pittsburgh, PA – Birmingham, AL – Decatur, AL  
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**MAGNETIC PARTICLE INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 17 Page 1 of 1  
 P.O. #: K180079  
 Work Order #: 473037  
 Project: Atlas Cask Car

Date: January 10, 2019  
 Description: Perform Magnetic Particle Inspections of Deok Attachments for Cask car #1

|                       |                  |                           |   |            |   |
|-----------------------|------------------|---------------------------|---|------------|---|
| TRIS Procedure:       | WI-08-002 Rev. 5 | Production Stage:         | <input checked="" type="checkbox"/> In Progress | For Welds: | <input checked="" type="checkbox"/> Root Pass |
| Surface Condition:    | As Welded        |                           | <input type="checkbox"/> Final                  |            | <input type="checkbox"/> Intermediate         |
| Test Method Standard: | ASTM E709        |                           | <input type="checkbox"/> Other                  |            | <input type="checkbox"/> Final                |
| Acceptance Standard:  | AWS D15.1        | Equipment Identification: |   |            |   |
| Type of Material:     | Carbon Steel     | Model #:                  | Parker DA400                                    |            |   |
|                       |                  | Gage #/Serial #:          | P135/17999                                      |            |   |
|                       |                  | Cal. Date Due:            | 6-18-19   |            |   |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Other | Defect Location or Remarks | Technique  |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------|----------------------------|--|
| Car Body Assembly             |        |        |        |         |        |          |       |                            |  |
| Item #7 (4)                   |        |        |        |         |        |          |       | Outside Lugs               | Technique #: N/A   |
| Root                          |        |        |        |         |        |          |       | See report #15             | Method: Wet <input type="checkbox"/> Dry <input checked="" type="checkbox"/>                     |
| Final                         | /      |        |        |         |        |          |       |                            | Fluorescent <input type="checkbox"/> Visible <input checked="" type="checkbox"/>                 |
| Item #8 (4)                   |        |        |        |         |        |          |       | Inside Lugs                | Consumable Batch #: 08A078   |
| Root                          |        |        |        |         |        |          |       | See report #15             | Coil <input checked="" type="checkbox"/> FWDC <input checked="" type="checkbox"/>                |
| Final                         | /      |        |        |         |        |          |       |                            | Head Shot <input checked="" type="checkbox"/> Prods <input checked="" type="checkbox"/>          |
|                               |        |        |        |         |        |          |       |                            | Amperage: N/A  |
|                               |        |        |        |         |        |          |       |                            | Yoke Current: AC <input checked="" type="checkbox"/> DC <input type="checkbox"/>                 |
|                               |        |        |        |         |        |          |       |                            | UV Meter #: N/A  |
|                               |        |        |        |         |        |          |       |                            | UV Intensity verified at prescribed intervals?   |
|                               |        |        |        |         |        |          |       |                            | Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> |
|                               |        |        |        |         |        |          |       |                            | Quantity Tested 100%: <input checked="" type="checkbox"/>  |
|                               |        |        |        |         |        |          |       |                            | Random: N/A %  |

SIGNED: \_\_\_\_\_ Kasgro Rail

Technician: Daniel S. Gjurich *Daniel S. Gjurich* Level: II

Reviewed By: *[Signature]* Date: 1/27/19

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 Magnetic Particle Inspection  
 RLK 5/19/09



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Pittsburgh, PA – Birmingham, AL  
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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 1 Page 1 of 6  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Date: April 10, 2018 thru January 21, 2019  
 Description: Visual Inspections of Car Body Assembly #1

|   |   |   |  |
|---|---|---|--|
| <b>TRIS Procedure:</b><br>NDE-VT-1        | <b>Surface Condition:</b><br>As Welded                                    | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress | <b>VT Gauge Identification:</b><br>Mfg. G.A.L. |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br><input checked="" type="checkbox"/> 100% | <input checked="" type="checkbox"/> Final                                   | Weld Gauge 1/4", 3/8" and 1/2" Fillet          |
| <b>Acceptance Standard:</b><br>AWS D15.1  | _____ %   | <input type="checkbox"/> Other  | Model #269-465-5750                            |
| <b>Product Form:</b><br>N/A               |   | <b>For Welds:</b><br><input type="checkbox"/> Root Pass                     | Serial # Cert #F4858                           |
| <b>Type of Material:</b> Carbon Steel     |   | <input type="checkbox"/> Intermediate                                       | Other Cam Type Gage                            |
|   |   | <input checked="" type="checkbox"/> Final                                   |  |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen | Exceed Reinforcement | Weld | Undersized | Defect Location, Length |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------------|----------------|----------------------|------|------------|-------------------------|
|                               |        |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-39 to 3-41                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-39 to 3-42                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-39 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-40 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-74 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-30 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-27 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-28 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-14 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-30 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-150 to 3-15                 | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-151 to 3-15                 | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-29 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-17 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-18 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-68 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-69 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |

SIGNED: \_\_\_\_\_ Kasgro Rail

Technician: Daniel S. Gjurich *Daniel S. Gjurich* Level: CWI #93041171

Reviewed By: \_\_\_\_\_ Date: 2/19/19  
 Testing was performed in accordance with accepted industry practice as well as the test methods referenced TUV Rheinland Industrial Solutions, Inc. as no direct knowledge of the origin, sampling procedure, nor condition of the samples, and makes no claims as to the suitability nor final use of the material. This test report applies only to those items tested. This report shall not be reproduced except in full without the written consent of TUV Rheinland Industrial Solutions, Inc.

NDTG-0100  
 March 19, 2001  
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 1 Page 2 of 6  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Date: April 10, 2018 thru January 21, 2019  
 Description: Visual Inspections of Car Body Assembly #1

|   |   |   |  |
|---|---|---|--|
| <b>TRIS Procedure:</b><br>NDE-VT-1        | <b>Surface Condition:</b><br>As Welded  | <b>Production Stage:</b><br>X In Progress | <b>VT Gauge Identification:</b><br>Mfg. G.A.L. |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br>X 100% | X Final                                   | Weld Gauge 1/4", 3/8" and 1/2" Fillet          |
| <b>Acceptance Standard:</b><br>AWS D15.1  | _____ %                                 | Other                                     | Model #269-465-5750                            |
| <b>Product Form:</b><br>N/A               |   | <b>For Welds:</b>                         | Serial # Cert #P4858                           |
| <b>Type of Material:</b> Carbon Steel     |   | _____ Root Pass                           | Other Cam Type Gage                            |
|   |   | _____ Intermediate                        |  |
|   |   | X Final                                   |  |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen | Excess Reinforcement | Weld | Undersized | Defect Location, Length |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------------|----------------|----------------------|------|------------|-------------------------|
|                               |        |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-70 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-71 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-144 to 3-15                 | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-31 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-32 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-36 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-37 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-19 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-20 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-22 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-33 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-131 to 3-15                 | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-141 to 3-15                 | /      |        |        |         |        |          |             |                |                      |      |            |                         |

|                               |   |
|-------------------------------|---|
|                               | Daniel S Gjurich<br>CWI 93041171<br>QC1 EXP. 4/1/2020 |
| SIGNED:                       | Kasgro Rail   |
| Technician: Daniel S. Gjurich | Level: CWI #93041171                                  |

Reviewed By: Date: 2/19/19  
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NDTG-0100  
 March 19, 2001  
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 1 Page 3 of 6  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Date: April 10, 2018 thru January 21, 2019  
 Description: Visual Inspections of Car Body Assembly #1

|   |   |   |  |
|---|---|---|--|
| <b>TRIS Procedure:</b><br>NDE-VT-1        | <b>Surface Condition:</b><br>As Welded                                    | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress | <b>VT Gauge Identification:</b><br>Mfg. G.A.L. |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br><input checked="" type="checkbox"/> 100% | <input type="checkbox"/> Final  | Weld Gauge 1/4", 3/8" and 1/2" Fillet          |
| <b>Acceptance Standard:</b><br>AWS D15.1  | <input type="checkbox"/> %  | <b>For Welds:</b><br><input type="checkbox"/> Root Pass                     | Model #269-465-5750                            |
| <b>Product Form:</b><br>N/A               |   | <input type="checkbox"/> Intermediate                                       | Serial # Cert #F4858                           |
| <b>Type of Material:</b> Carbon Steel     |   | <input checked="" type="checkbox"/> Final                                   | Other Cam Type Gage                            |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen | Exceed Reinforcement | Weld Undersized | Defect Location, Length |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------------|----------------|----------------------|-----------------|-------------------------|
|                               |        |        |        |         |        |          |             |                |                      |                 |                         |
| 3-14 to 3-18                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-14 to 3-18                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-29 to 3-31                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-17 to 3-31                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-18 to 3-32                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-29 to 3-32                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-14 to 3-17                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-28 to 3-37                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-30 to 3-37                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-30 to 3-36                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-28 to 3-36                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-14 to 3-17                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-28 to 3-14                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-27 to 3-14                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-27 to 3-14                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-28 to 3-14                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-18 to 3-75                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-151 to 3-75                 | /      |        |        |         |        |          |             |                |                      |                 |                         |

 Daniel S. Gjurich  
 CWI 93041171  
 QCT EXP. 4/1/2020

SIGNED: \_\_\_\_\_ Kasgro Rail

Technician: Daniel S. Gjurich *Daniel S. Gjurich* Level: CWI #93041171

Reviewed By: \_\_\_\_\_ Date: 2/10/19  
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NDIG-0109  
 March 19, 2004  
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 1 Page 4 of 6  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Date: April 10, 2018 thru January 21, 2019  
 Description: Visual Inspections of Car Body Assembly #1

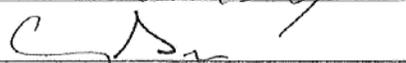
|   |   |   |   |
|---|---|---|---|
| <b>TRIS Procedure:</b><br>NDE-VT-1        | <b>Surface Condition:</b><br>As Welded                                    | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress | <b>VT Gauge Identification:</b><br>Mfg. G.A.L.                        |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br><input checked="" type="checkbox"/> 100% | <input checked="" type="checkbox"/> Final                                   | Weld Gauge $\frac{1}{4}$ " $\frac{3}{8}$ " and $\frac{1}{2}$ " Fillet |
| <b>Acceptance Standard:</b><br>AWS D15.1  | _____ %   | Other   | Model #269-465-5750   |
| <b>Product Form:</b><br>N/A               |   | <b>For Welds:</b><br>Root Pass  | Serial # Cert #F4858  |
| <b>Type of Material:</b> Carbon Steel     |   | Intermediate  | Other Cam Type Gage   |
|   |   | <input checked="" type="checkbox"/> Final                                   |   |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen | Exceed Reinforcement | Weld Undersized | Defect Location, Length |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------------|----------------|----------------------|-----------------|-------------------------|
| Car Body Assembly             |        |        |        |         |        |          |             |                |                      |                 |                         |
| 3-151 to 3-14                 | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-71 to 3-18                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-74 to 3-28                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-71 to 3-27                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-70 to 3-18                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-70 to 3-27                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-68 to 3-32                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-74 to 3-37                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-68 to 3-32                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-39 to 3-29                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-40 to 3-30                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-39 to 3-30                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-69 to 3-17                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-74 to 3-37                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-69 to 3-28                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-71 to 3-17                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-74 to 3-28                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-71 to 3-27                  | /      |        |        |         |        |          |             |                |                      |                 |                         |

|                |   |  |
|----------------|---|--|
| <b>SIGNED:</b> | <br>Daniel S. Gjurich<br>Kasgro Rail | Daniel S. Gjurich<br>CWI 93041171<br>QC1 EXP. 4/1/2020 |
| Technician:    | Daniel S. Gjurich   | Level: CWI #93041171                                   |

Reviewed By:  Date: 2/12/19  
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NDTG-0100  
 March 19, 2004  
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 1 Page 5 of 6  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Date: April 10, 2018 thru January 21, 2019  
 Description: Visual Inspections of Car Body Assembly #1

|   |   |   |   |
|---|---|---|---|
| <b>TRIS Procedure:</b><br>NDE-VT-1        | <b>Surface Condition:</b><br>As Welded                                    | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress | <b>VT Gauge Identification:</b><br>Mfg. G.A.L.                          |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br><input checked="" type="checkbox"/> 100% | <input type="checkbox"/> Final  | Weld Gauge $\frac{1}{4}''$ , $\frac{3}{8}''$ and $\frac{1}{2}''$ Fillet |
| <b>Acceptance Standard:</b><br>AWS D15.1  | <input type="checkbox"/> %  | <input type="checkbox"/> Other  | Model #269-465-5750   |
| <b>Product Form:</b><br>N/A               |   | <b>For Welds:</b><br><input type="checkbox"/> Root Pass                     | Serial # Cert #F4858  |
| <b>Type of Material:</b> Carbon Steel     |   | <input type="checkbox"/> Intermediate                                       | Other Cam Type Gage   |
| <input checked="" type="checkbox"/> Final |   |   |   |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen. | Exceed Reinforcement | Weld Undersized | Defect Location, Length |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------------|-----------------|----------------------|-----------------|-------------------------|
|                               |        |        |        |         |        |          |             |                 |                      |                 |                         |
| 3-70 to 3-18                  | /      |        |        |         |        |          |             |                 |                      |                 |                         |
| 3-70 to 3-27                  | /      |        |        |         |        |          |             |                 |                      |                 |                         |
| 3-150 to 3-14                 | /      |        |        |         |        |          |             |                 |                      |                 |                         |
| 3-153 to 3-14                 | /      |        |        |         |        |          |             |                 |                      |                 |                         |
| 3-153 to 3-134                | /      |        |        |         |        |          |             |                 |                      |                 |                         |
| 3-134 to 3-17                 | /      |        |        |         |        |          |             |                 |                      |                 |                         |
| 3-134 to 3-150                | /      |        |        |         |        |          |             |                 |                      |                 |                         |
| 3-75 to 3-17 & 3-137          | /      |        |        |         |        |          |             |                 |                      |                 |                         |
| 3-33 to 3-17 & 3-18           | /      |        |        |         |        |          |             |                 |                      |                 |                         |
| 3-20 to 3-31                  | /      |        |        |         |        |          |             |                 |                      |                 |                         |
| 3-76 to 3-29                  | /      |        |        |         |        |          |             |                 |                      |                 |                         |
| 3-22 to 3-29                  | /      |        |        |         |        |          |             |                 |                      |                 |                         |
| 3-131 to 3-18                 | /      |        |        |         |        |          |             |                 |                      |                 |                         |
| 3-141 to 3-18                 | /      |        |        |         |        |          |             |                 |                      |                 |                         |

 Daniel S Gjurich  
 CWI - 93041171  
 QC1 - EXP. 4/1/2020

SIGNED: Kasgro Rail

Technician: Daniel S. Gjurich *Daniel S Gjurich* Level: CWI #93041171

Reviewed By: *C. R.* Date: 2/10/19  
 Testing was performed in accordance with accepted industry practice as well as the test methods referenced TUV Rheinland Industrial Solutions, Inc. has no direct knowledge of the origin, sampling procedure, nor condition of the samples, and makes no claims as to the suitability nor final use of the material. This test report applies only to those items tested. This report shall not be reproduced except in full without the written consent of TUV Rheinland Industrial Solutions, Inc.

NDTQ-0100  
 March 19, 2004  
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 1  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Page 6 of 6

Date: April 10, 2018 thru January 21, 2019  
 Description: Visual Inspections of Car Body Assembly #1

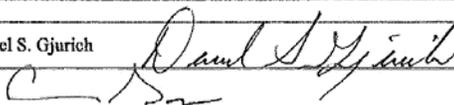
|   |   |   |  |
|---|---|---|--|
| <b>TRIS Procedure:</b><br>NDE-VT-1        | <b>Surface Condition:</b><br>As Welded                                    | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress | <b>VT Gauge Identification:</b><br>Mfg. G.A.L.   |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br><input checked="" type="checkbox"/> 100% | <input checked="" type="checkbox"/> Final                                   | <b>Weld Gauge:</b><br>1/4", 3/8" and 1/2" Fillet |
| <b>Acceptance Standard:</b><br>AWS D15.1  | <input type="checkbox"/> %  | <b>For Welds:</b><br><input type="checkbox"/> Root Pass                     | <b>Model:</b><br>#269-465-5750                   |
| <b>Product Form:</b><br>N/A               |   | <input type="checkbox"/> Intermediate                                       | <b>Serial #:</b><br>Cert #I4858                  |
| <b>Type of Material:</b> Carbon Steel     |   | <input checked="" type="checkbox"/> Final                                   | <b>Other:</b><br>Cam Type Gage                   |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen | Exceed Reinforcement | Weld Undersized | Defect Location, Length |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------------|----------------|----------------------|-----------------|-------------------------|
|                               |        |        |        |         |        |          |             |                |                      |                 |                         |
| <b>Tie Down Lug</b>           |        |        |        |         |        |          |             |                |                      |                 |                         |
| 3-138 to 3-16 Root            | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-138 to 3-16 Final           | /      |        |        |         |        |          |             |                |                      |                 |                         |
| <b>Tie Down Lug</b>           |        |        |        |         |        |          |             |                |                      |                 |                         |
| 3-138 to 3-16 Root            | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-138 to 3-16 Final           | /      |        |        |         |        |          |             |                |                      |                 |                         |
| <b>Tie Down Lug</b>           |        |        |        |         |        |          |             |                |                      |                 |                         |
| 3-138 to 3-140 Root           | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-138 to 3-140 Final          | /      |        |        |         |        |          |             |                |                      |                 |                         |
| <b>Tie Down Lug</b>           |        |        |        |         |        |          |             |                |                      |                 |                         |
| 3-138 to 3-139 Root           | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-138 to 3-139 Final          | /      |        |        |         |        |          |             |                |                      |                 |                         |

|   |   |
|---|---|
|  | Daniel S Gjurich<br>CWI - 93041171<br>QC1 - EXP. 4/1/2020 |
| Technician: Daniel S. Gjurich   | Level: CWI #93041171                                      |

Reviewed By:  Date: 2/19/19  
 Testing was performed in accordance with accepted industry practice as well as the test methods referenced TUV Rheinland Industrial Solutions, Inc. has no direct knowledge of the origin, sampling procedure, nor condition of the samples, and makes no claims as to the suitability nor final use of the material. This test report applies only to those items tested. This report shall not be reproduced except in full without the written consent of TUV Rheinland Industrial Solutions, Inc.

NDTG-0100  
 March 19, 2004  
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI - Pittsburgh, PA - Birmingham, AL  
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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 3  
 P.O. #: K18-0079  
 Work Order #: 466505  
 Project: Atlas Cask Car

Page 1 of 1

Date: May 7, 2018  
 Description: Visual Inspections of Body Bolsters Assemblies #1 & #2

|   |   |   |   |
|---|---|---|---|
| <b>TRIS Procedure:</b><br>NDE-VT-1        | <b>Surface Condition:</b><br>As Welded                                    | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress | <b>VT Gauge Identification:</b><br>Mfg. Nasco |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br><input checked="" type="checkbox"/> 100% | <input type="checkbox"/> Final  | <b>Weld Gauge:</b> 1/4", 3/8" and 1/2" Fillet |
| <b>Acceptance Standard:</b><br>AWS D15.1  | <input type="checkbox"/> %  | <input type="checkbox"/> Other  | <b>Model:</b> #NFG-7                          |
| <b>Product Form:</b><br>N/A               |   | <b>For Welds:</b>   | <b>S/N:</b> N/A                               |
| <b>Type of Material:</b> Carbon Steel     |   | <input type="checkbox"/> Root Pass  | <b>Other:</b> Cam Type Gauge                  |
|   |   | <input type="checkbox"/> Intermediate                                       |   |
|   |   | <input checked="" type="checkbox"/> Final                                   |   |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen | Exceed Reinforcement | Weld Undersized | Defect Location, Length |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------------|----------------|----------------------|-----------------|-------------------------|
|                               |        |        |        |         |        |          |             |                |                      |                 |                         |
| <b>Body Bolster 3-10 (#1)</b> |        |        |        |         |        |          |             |                |                      |                 |                         |
| 3-14 to 3-10 (4)              | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-13 to 3-10 (4)              | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-12 to 3-10 (4)              | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-12 to 3-14 (8)              | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-13 to 3-14 (8)              | /      |        |        |         |        |          |             |                |                      |                 |                         |
| <b>Body Bolster 3-10 (#2)</b> |        |        |        |         |        |          |             |                |                      |                 |                         |
| 3-14 to 3-10 (4)              | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-13 to 3-10 (4)              | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-12 to 3-10 (4)              | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-12 to 3-14 (8)              | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-13 to 3-14 (8)              | /      |        |        |         |        |          |             |                |                      |                 |                         |

 Daniel S. Gjurich  
 CWI #93041171  
 QC1 EXP. 4/1/2020

**NOTE: The Recording of False, Fictitious or Fraudulent Statements or Entries on the Document may be Punishable as a Felony Under Federal Statutes.**

SIGNED: Kasgro Rail

Technician: Daniel S. Gjurich *Daniel S. Gjurich* Level: CWI #93041171

Reviewed By: *[Signature]* Date: 5/11/18  
 Testing was performed in accordance with accepted industry practice as well as the test methods referenced. This test report applies only to those items tested. This report shall not be reproduced except in full without the written consent of Non-Destructive Testing Group, Inc.

NDTQ-0100  
 March 19, 2001  
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 7  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Page 1 of 4

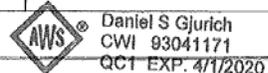
Date: July 11, 2018 thru August 29, 2018  
 Description: Visual Inspections on Piece #1 Span Bolster Assembly

|   |   |   |   |
|---|---|---|---|
| <b>TRIS Procedure:</b><br>NDE-VT-5        | <b>Surface Condition:</b><br>As Welded                                    | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress | <b>VT Gauge Identification:</b><br>Mfg. Nasco                         |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br><input checked="" type="checkbox"/> 100% | <input type="checkbox"/> Final *  | Weld Gauge $\frac{1}{4}$ " $\frac{3}{8}$ " and $\frac{1}{2}$ " Fillet |
| <b>Acceptance Standard:</b><br>AWS D15.1  | <input type="checkbox"/> %  | <b>For Welds:</b><br><input type="checkbox"/> Root Pass                     | Model #NFG-7  |
| <b>Product Form:</b><br>N/A               |   | <input type="checkbox"/> Intermediate                                       | S/N N/A   |
| <b>Type of Material:</b> Carbon Steel     |   | <input checked="" type="checkbox"/> Final                                   | Other Cam Type Gage   |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen | Exceed Reinforcement | Weld Undersized | Defect Location, Length  |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------------|----------------|----------------------|-----------------|--|
|                               |        |        |        |         |        |          |             |                |                      |                 |  |
| Span Bolster Assembly         |        |        |        |         |        |          |             |                |                      |                 |  |
| 3-18 to 3-15 R-Side           |        |        |        |         |        |          |             |                |                      |                 | Weld #3  |
| INSIDE                        | /      |        |        |         |        |          |             |                |                      |                 |  |
| OUTSIDE                       | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-17 to 3-15 L-Side           |        |        |        |         |        |          |             |                |                      |                 | Weld #4  |
| INSIDE                        | /      |        |        |         |        |          |             |                |                      |                 |  |
| OUTSIDE                       | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-12 to 3-15                  | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-11 to 3-15                  | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-9 to 3-15                   | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-8 to 3-15                   | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-12 to 3-17 & 3-18           | /      |        |        |         |        |          |             |                |                      |                 | NOTE: The Recording of False, Fictitious or Fraudulent Statements or Entries on the Document may be Punishable as a Felony Under Federal Statutes. |
| 3-11 to 3-17 & 3-18           | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-9 to 3-17 & 3-18            | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-8 to 3-17 & 3-18            | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-5 to 3-18                   | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-7 to 3-17                   | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-4 to 3-18                   | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-6 to 3-17                   | /      |        |        |         |        |          |             |                |                      |                 |  |

Technician: Daniel S. Gjurich *Daniel S. Gjurich* Level: CWI #93041171



Reviewed By: *[Signature]* Date: 12/10/18

TÜVRHEINLAND INDUSTRIAL SOLUTIONS, INC.

These test results report our findings, of the items listed, at the time of inspection and shall be reviewed by the client for compliance to the project requirements. Due to the limitations of nondestructive testing in evaluating all of the factors that determine the overall component quality, no guarantee is made or liability assumed by TÜVRheinland Industrial Solutions, Inc. ("TRIS") for the component quality or serviceability. This report shall not be reproduced without the written consent of TÜVRheinland Industrial Solutions, Inc.

NDEG-0100  
 March 19, 2004  
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 7  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Page 2 of 4

Date: July 11, 2018 thru August 29, 2018  
 Description: Visual Inspections on Piece #1 Span Bolster Assembly

|   |  |   |  |
|---|--|---|--|
| <b>TRIS Procedure:</b><br>NDE-VI-5        | <b>Surface Condition:</b><br>As Welded   | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress<br><input type="checkbox"/> Final *<br><input type="checkbox"/> Other | <b>VT Gauge Identification:</b><br>Mfg. Nasco<br>Weld Gauge 1/2", 3/8" and 1/2" Fillet<br>Model #NFG-7<br>S/N N/A<br>Other Cam Type Gage |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br><input checked="" type="checkbox"/> 100%<br>_____ % | <b>For Welds:</b><br><input type="checkbox"/> Root Pass<br><input type="checkbox"/> Intermediate<br><input checked="" type="checkbox"/> Final     |  |
| <b>Acceptance Standard:</b><br>AWS D15.1  |  |   |  |
| <b>Product Form:</b><br>N/A               |  |   |  |
| <b>Type of Material:</b> Carbon Steel     |  |   |  |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen | Exceed Reinforcement | Weld Undersized | Defect Location, Length |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------------|----------------|----------------------|-----------------|-------------------------|
|                               |        |        |        |         |        |          |             |                |                      |                 |                         |
| 3-3 to 3-18                   | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-1 to 3-17                   | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-19 to 3-17 & 3-18           | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-19 to 3-9                   | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-19 to 3-11                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-14 to 3-17 & 3-18           | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-21 to 3-18                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-26 to 3-18                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-90 to 3-14 & 3-16           | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-20 to 3-14 & 3-19 Top       | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-20 to 3-14 & 3-19 Bot.      | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-22 to 3-16                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-24 to 3-16                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-21 to 3-14                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-26 to 3-14                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-6 to 3-21 & 3-14            | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-4 to 3-21 & 3-14            | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-7 to 3-26 & 3-14            | /      |        |        |         |        |          |             |                |                      |                 |                         |

**NOTE: The Recording of False, Fictitious or Fraudulent Statements or Entries on the Document may be Punishable as a Felony Under Federal Statutes.**

Technician: Daniel S. Gjurich *Daniel S. Gjurich* Level: CWI #93041171  Daniel S Gjurich  
 CWI 93041171  
 QCT EXP. 4/17/2020

Reviewed By: *[Signature]*

Date: 12/15/18

TÜV RHEINLAND INDUSTRIAL SOLUTIONS, INC.

These test results report our findings, of the items listed, at the time of inspection and shall be reviewed by the client for compliance to the project requirements. Due to the limitations of nondestructive testing in evaluating all of the factors that determine the overall component quality, no guarantee is made or liability assumed by TÜV Rheinland Industrial Solutions, Inc. ("TRIS") for the component quality or serviceability. This report shall not be reproduced without the written consent of TÜV Rheinland Industrial Solutions, Inc.

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 March 19, 2004  
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 7  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Page 3 of 4

Date: July 11, 2018 thru August 29, 2018  
 Description: Visual Inspections on Piece #1 Span Bolster Assembly

|   |   |   |  |
|---|---|---|--|
| <b>TRIS Procedure:</b><br>NDE-VT-5        | <b>Surface Condition:</b><br>As Welded                                    | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress   | <b>VT Gauge Identification:</b><br>Mfg. Nasco  |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br><input checked="" type="checkbox"/> 100% | <input type="checkbox"/> Final *  | <b>Weld Gauge:</b> 1/8", 3/8" and 1/2" Fillet  |
| <b>Acceptance Standard:</b><br>AWS D15.1  | <input type="checkbox"/> %  | <input type="checkbox"/> Other  | <b>Model:</b> #NFG-7                           |
| <b>Product Form:</b><br>N/A               |   | <b>For Welds:</b><br><input type="checkbox"/> Root Pass<br><input type="checkbox"/> Intermediate<br><input checked="" type="checkbox"/> Final | <b>S/N:</b> N/A<br><b>Other:</b> Cam Type Gage |
| <b>Type of Material:</b> Carbon Steel     |   |   |  |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen | Exceed Reinforcement | Weld | Undersized | Defect Location, Length |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------------|----------------|----------------------|------|------------|-------------------------|
|                               |        |        |        |         |        |          |             |                |                      |      |            |                         |
| Span Bolster Assembly         |        |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-4 to 3-21 & 3-14            | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-1 to 3-14                   | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-3 to 3-14                   | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-2 to 3-14                   | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-2 & 3-8 to 3-14             | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-12 to 3-14                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-28 to 3-14                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-28 to 3-2 Inside            | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-28 to 3-2 Outside           | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-28 to 3-15 Inside           | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-28 to 3-15 Outside          | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-28 to 3-15 Inside           | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-28 to 3-14 Outside          | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-28 to 3-16 Outside          | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-33 to 3-2 Top               | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-33 to 3-27 Top              | /      |        |        |         |        |          |             |                |                      |      |            |                         |

**NOTE: The Recording of False, Fictitious or Fraudulent Statements or Entries on the Document may be Punishable as a Felony Under Federal Statutes.**

Technician: Daniel S. Gjurich *Daniel S. Gjurich* Level: CWI #93041171  Daniel S. Gjurich  
 CWI 93041171  
 QC1 EXP. 4/1/2020

Reviewed By: *[Signature]* Date: 12/10/18

TÜV RHEINLAND INDUSTRIAL SOLUTIONS, INC.  
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NDTG-0100  
 March 19, 2004  
 dxk



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI - Pittsburgh, PA - Birmingham, AL  
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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundt Road  
 New Castle, PA 16102

Report #: 7  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Page 4 of 4

Date: July 11, 2018 thru August 29, 2018  
 Description: Visual Inspections on Piece #1 Span Bolster Assembly

|   |   |   |  |
|---|---|---|--|
| <b>TRIS Procedure:</b><br>NDE-VT-5        | <b>Surface Condition:</b><br>As Welded                                    | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress   | <b>VT Gauge Identification:</b><br>Mfg. Nasco                          |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br><input checked="" type="checkbox"/> 100% | <input type="checkbox"/> Final *  | Weld Gauge $\frac{1}{4}$ " $\frac{3}{16}$ " and $\frac{1}{2}$ " Fillet |
| <b>Acceptance Standard:</b><br>AWS D15.1  | <input type="checkbox"/> %  | <input type="checkbox"/> Other  | Model #NFG-7   |
| <b>Product Form:</b><br>N/A               |   | <b>For Welds:</b><br><input type="checkbox"/> Root Pass<br><input type="checkbox"/> Intermediate<br><input checked="" type="checkbox"/> Final | S/N N/A<br>Other Cam Type Gage   |
| <b>Type of Material:</b> Carbon Steel     |   |   |  |

| Product / Weld Identification  | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen | Exceed Reinforcement | Weld Undersized | Defect Location, Length |
|--|--------|--------|--------|---------|--------|----------|-------------|----------------|----------------------|-----------------|-------------------------|
| Span Bolster Assembly  |        |        |        |         |        |          |             |                |                      |                 |                         |
| 3-33 to 3-2 Underside  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-33 to 3-27 Underside   | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-14 to 3-17 & 3-18 L-Side   | /      |        |        |         |        |          |             |                |                      |                 | Weld #2                 |
| 3-14 to 3-17 & 3-18 R-Side   | /      |        |        |         |        |          |             |                |                      |                 | Weld #1                 |
| 3-16 to 3-15 Inboard   | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-16 to 3-15 Outboard  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-16 to 3-17   | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-6 to 3-16  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-4 to 3-15  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-7 to 3-16  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-5 to 3-15  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-1 to 3-16 & 3-15   | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-3 to 3-15  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-2 to 3-15  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| NOTE: The Recording of False, Fictitious or Fraudulent Statements or Entries on the Document may be Punishable as a Felony Under Federal Statutes. |        |        |        |         |        |          |             |                |                      |                 |                         |

Technician: Daniel S. Gjurich *Daniel S. Gjurich* Level: CWI #93041171

Reviewed By: *[Signature]*

Date: *12/15/18*  
 Daniel S Gjurich  
 GWI-93041171  
 QC1 EXP. 4/1/2020

TÜV RHEINLAND INDUSTRIAL SOLUTIONS, INC.

These test results report our findings, of the items listed, at the time of inspection and shall be reviewed by the client for compliance to the project requirements. Due to the limitations of non-destructive testing in evaluating all of the factors that determine the overall component quality, no guarantee is made or liability assumed by TÜV Rheinland Industrial Solutions, Inc. ("TRIS") for the component quality or serviceability. This report shall not be reproduced without the written consent of TÜV Rheinland Industrial Solutions, Inc.

NBTO-0100  
 March 19, 2004  
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Pittsburgh, PA – Birmingham, AL  
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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 13  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Page 1 of 4

Date: July 11, 2018 thru September 5, 2018  
 Description: Visual Inspections on Piece #2 Span Bolster Assembly

|   |   |   |   |
|---|---|---|---|
| <b>TRIS Procedure:</b><br>NDE-VT-5        | <b>Surface Condition:</b><br>As Welded                                    | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress | <b>VT Gauge Identification:</b><br>Mfg. Nasco |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br><input checked="" type="checkbox"/> 100% | <input type="checkbox"/> Final *  | Weld Gauge 1/4", 3/8" and 1/2" Fillet         |
| <b>Acceptance Standard:</b><br>AWS D15.1  | <input type="checkbox"/> %  | <input type="checkbox"/> Other  | Model #NFG-7                                  |
| <b>Product Form:</b><br>N/A               |   | <b>For Welds:</b><br><input type="checkbox"/> Root Pass                     | S/N N/A                                       |
| <b>Type of Material:</b> Carbon Steel     |   | <input type="checkbox"/> Intermediate                                       | Other Cam Type Gage                           |
|   |   | <input checked="" type="checkbox"/> Final                                   |   |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen | Exceed Reinforcement | Weld | Undersized | Defect Location, Length |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------------|----------------|----------------------|------|------------|-------------------------|
|                               |        |        |        |         |        |          |             |                |                      |      |            |                         |
| Span Bolster Assembly         |        |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-18 to 3-15 R-Side           |        |        |        |         |        |          |             |                |                      |      |            | Weld #3                 |
| INSIDE                        | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| OUTSIDE                       | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-17 to 3-15 L-Side           |        |        |        |         |        |          |             |                |                      |      |            | Weld #4                 |
| INSIDE                        | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| OUTSIDE                       | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-12 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-11 to 3-15                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-9 to 3-15                   | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-8 to 3-15                   | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-12 to 3-17 & 3-18           | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-11 to 3-17 & 3-18           | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-9 to 3-17 & 3-18            | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-8 to 3-17 & 3-18            | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-5 to 3-18                   | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-7 to 3-17                   | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-4 to 3-18                   | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-6 to 3-17                   | /      |        |        |         |        |          |             |                |                      |      |            |                         |

 Daniel S Gjurich  
 CWI 93041171  
 QQ1 EXP. 4/1/2020

Technician: Daniel S. Gjurich *Daniel S Gjurich* / Level: CWI #93041171

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Reviewed By: *[Signature]* Date: 8/11/18

TÜV RHEINLAND INDUSTRIAL SOLUTIONS, INC.

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 March 19, 2004  
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Pittsburgh, PA – Birmingham, AL  
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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 13  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Page 2 of 4

Date: July 11, 2018 thru September 5, 2018  
 Description: Visual Inspections on Piece #2 Span Bolster Assembly

|   |   |   |   |
|---|---|---|---|
| <b>TRIS Procedure:</b><br>NDE-VT-5        | <b>Surface Condition:</b><br>As Welded                                    | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress | <b>VT Gauge Identification:</b><br>Mfg. Nasco |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br><input checked="" type="checkbox"/> 100% | <input type="checkbox"/> Final *  | Weld Gauge 1/4", 3/8" and 1/2" Fillet         |
| <b>Acceptance Standard:</b><br>AWS D15.1  | <input type="checkbox"/> %  | <input type="checkbox"/> Other  | Model #NFG-7                                  |
| <b>Product Form:</b><br>N/A               |   | <b>For Welds:</b><br><input type="checkbox"/> Root Pass                     | S/N N/A                                       |
| <b>Type of Material:</b> Carbon Steel     |   | <input type="checkbox"/> Intermediate                                       | Other Cam Type Gage                           |
|   |   | <input checked="" type="checkbox"/> Final                                   |   |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen | Exceed Reinforcement | Weld Undersized | Defect Location, Length  |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------------|----------------|----------------------|-----------------|--|
| Span Bolster Assembly         | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-3 to 3-18                   | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-1 to 3-17                   | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-19 to 3-17 & 3-18           | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-19 to 3-9                   | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-19 to 3-11                  | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-14 to 3-17 & 3-18           | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-21 to 3-18                  | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-26 to 3-18                  | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-90 to 3-14 & 3-16           | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-20 to 3-14 & 3-19 Top       | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-20 to 3-14 & 3-19 Bot.      | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-22 to 3-16                  | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-24 to 3-16                  | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-21 to 3-14                  | /      |        |        |         |        |          |             |                |                      |                 | NOTE: The Recording of False, Fictitious or Fraudulent Statements or Entries on the Document may be Punishable as a Felony Under Federal Statutes. |
| 3-26 to 3-14                  | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-6 to 3-21 & 3-14            | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-4 to 3-21 & 3-14            | /      |        |        |         |        |          |             |                |                      |                 |  |
| 3-7 to 3-26 & 3-14            | /      |        |        |         |        |          |             |                |                      |                 |  |

|                               |  |                      |
|-------------------------------|--|----------------------|
| Technician: Daniel S. Gjurich |  | Level: CWI #93041171 |
|-------------------------------|--|----------------------|

Reviewed By: Date: 8/11/18  
 TÜVRHEINLAND INDUSTRIAL SOLUTIONS, INC.

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 March 19, 2004  
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 13  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Page 3 of 4

Date: July 11, 2018 thru September 5, 2018  
 Description: Visual Inspections on Piece #2 Span Bolster Assembly

|   |   |   |   |
|---|---|---|---|
| <b>TRIS Procedure:</b><br>NDE-VT-5        | <b>Surface Condition:</b><br>As Welded                                    | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress | <b>VT Gauge Identification:</b><br>Mfg. Nasco                         |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br><input checked="" type="checkbox"/> 100% | <input type="checkbox"/> Final *  | Weld Gauge $\frac{1}{8}$ " $\frac{3}{8}$ " and $\frac{1}{2}$ " Fillet |
| <b>Acceptance Standard:</b><br>AWS D15.1  | <input type="checkbox"/> %  | <b>For Welds:</b><br><input type="checkbox"/> Root Pass                     | Model #NFG-7  |
| <b>Product Form:</b><br>N/A               |   | <input type="checkbox"/> Intermediate                                       | S/N N/A   |
| <b>Type of Material:</b> Carbon Steel     |   | <input checked="" type="checkbox"/> Final                                   | Other Cam Type Gage   |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen | Exceed Reinforcement | Weld | Undersized | Defect Location, Length |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------------|----------------|----------------------|------|------------|-------------------------|
|                               |        |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-4 to 3-21 & 3-14            | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-1 to 3-14                   | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-3 to 3-14                   | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-2 to 3-14                   | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-2 & 3-8 to 3-14             | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-12 to 3-14                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-28 to 3-14                  | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-28 to 3-2 Inside            | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-28 to 3-2 Outside           | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-28 to 3-15 Inside           | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-28 to 3-15 Outside          | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-28 to 3-15 Inside           | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-28 to 3-14 Outside          | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-28 to 3-16 Outside          | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-33 to 3-2 Top               | /      |        |        |         |        |          |             |                |                      |      |            |                         |
| 3-33 to 3-27 Top              | /      |        |        |         |        |          |             |                |                      |      |            |                         |

|                               |  |                      |
|-------------------------------|--|----------------------|
| Technician: Daniel S. Gjurich |  | Level: CWI #93041171 |
|-------------------------------|--|----------------------|

|              |               |
|--------------|---------------|
| Reviewed By: | Date: 9/11/18 |
|--------------|---------------|

Daniel S. Gjurich  
 CWI 93041171  
 QC1 EXP. 4/1/2020

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 March 19, 2004  
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 13  
 P.O. #: K180079  
 Work Order #: 468009  
 Project: Atlas Cask Car

Page 4 of 4

Date: July 11, 2018 thru September 5, 2018  
 Description: Visual Inspections on Piece #2 Span Bolster Assembly

|   |   |   |   |
|---|---|---|---|
| <b>TRIS Procedure:</b><br>NDE-VT-5        | <b>Surface Condition:</b><br>As Welded                                    | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress | <b>VT Gauge Identification:</b><br>Mfg. Nasco |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br><input checked="" type="checkbox"/> 100% | <input type="checkbox"/> Final *  | Weld Gauge 1/4", 3/8" and 1/2" Fillet         |
| <b>Acceptance Standard:</b><br>AWS D15.1  | <input type="checkbox"/> %  | <input type="checkbox"/> Other  | Model #NFG-7                                  |
| <b>Product Form:</b><br>N/A               |   | <b>For Welds:</b><br><input type="checkbox"/> Root Pass                     | S/N N/A                                       |
| <b>Type of Material:</b> Carbon Steel     |   | <input type="checkbox"/> Intermediate                                       | Other Cam Type Gage                           |
|   |   | <input checked="" type="checkbox"/> Final                                   |   |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen | Exceed Reinforcement | Weld Undersized | Defect Location, Length |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------------|----------------|----------------------|-----------------|-------------------------|
|                               |        |        |        |         |        |          |             |                |                      |                 |                         |
| Span Bolster Assembly         |        |        |        |         |        |          |             |                |                      |                 |                         |
| 3-33 to 3-2 Underside         | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-33 to 3-27 Underside        | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-14 to 3-17 & 3-18 L-Side    | /      |        |        |         |        |          |             |                |                      |                 | Weld #2                 |
| 3-14 to 3-17 & 3-18 R-Side    | /      |        |        |         |        |          |             |                |                      |                 | Weld #1                 |
| 3-16 to 3-15 Inboard          | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-16 to 3-15 Outboard         | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-16 to 3-17                  | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-6 to 3-16                   | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-4 to 3-15                   | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-7 to 3-16                   | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-5 to 3-15                   | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-1 to 3-16 & 3-15            | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-3 to 3-15                   | /      |        |        |         |        |          |             |                |                      |                 |                         |
| 3-2 to 3-15                   | /      |        |        |         |        |          |             |                |                      |                 |                         |

|  |   |
|--|---|
|  Daniel S Gjurich<br>CWI #93041171<br>QC1 EXP. 4/1/2020 | <b>NOTE: The Recording of False, Fictitious or Fraudulent Statements or Entries on the Document may be Punishable as a Felony Under Federal Statutes.</b> |
|--|---|

Technician: Daniel S. Gjurich *Daniel S Gjurich* Level: CWI #93041171

Reviewed By: *[Signature]*

Date: 9/10/18

TÜV RHEINLAND INDUSTRIAL SOLUTIONS, INC.  
 These test results report our findings, of the items listed, at the time of inspection and shall be reviewed by the client for compliance to the project requirements. Due to the limitations of non-destructive testing in evaluating all of the factors that determine the overall component quality, no guarantee is made or liability assumed by TÜV Rheinland Industrial Solutions, Inc. ("TRIS") for the component quality or serviceability. This report shall not be reproduced without the written consent of TÜV Rheinland Industrial Solutions, Inc.

NDTG-0100  
 March 19, 2004  
 6/8



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Pittsburgh, PA – Birmingham, AL  
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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 16 Page 1 of 3  
 P.O. #: K180079  
 Work Order #: 473037  
 Project: Atlas

Date: December 3,, 2018 thru January 10, 2019  
 Description: Perform Visual Inspections of Deck Attachments for Cask car #1

|   |   |   |  |
|---|---|---|--|
| <b>TRIS Procedure:</b><br>NDE-VT-1        | <b>Surface Condition:</b><br>As Welded                                    | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress | <b>VT Gauge Identification:</b><br>Mfg. G.A.L. |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br><input checked="" type="checkbox"/> 100% | <input type="checkbox"/> Final  | <b>Weld Gauge:</b> 1/4", 3/8" and 1/2" Fillet  |
| <b>Acceptance Standard:</b><br>AWS D15.1  | <input type="checkbox"/> %  | <input type="checkbox"/> Other  | <b>Model:</b> #269-465-5750                    |
| <b>Product Form:</b><br>N/A               |   | <b>For Welds:</b><br><input checked="" type="checkbox"/> Root Pass          | <b>Serial #:</b> Cert #F4858                   |
| <b>Type of Material:</b> Carbon Steel     |   | <input type="checkbox"/> Intermediate                                       | <b>Other:</b> Cam Type Gage                    |
| <input checked="" type="checkbox"/> Final |   | <input checked="" type="checkbox"/> Final                                   |  |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen | Exceed Reinforcement | Weld Undersized | Defect Location, Length |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------------|----------------|----------------------|-----------------|-------------------------|
|                               |        |        |        |         |        |          |             |                |                      |                 |                         |
| Root                          | /      |        |        |         |        |          |             |                |                      |                 |                         |
| Final                         | /      |        |        |         |        |          |             |                |                      |                 |                         |
| Item #8 to 3-10 (4)           |        |        |        |         |        |          |             |                |                      |                 |                         |
| Root                          | /      |        |        |         |        |          |             |                |                      |                 |                         |
| Final                         | /      |        |        |         |        |          |             |                |                      |                 |                         |
| Item #11 to 3-10              |        |        |        |         |        |          |             |                |                      |                 |                         |
| "A" End                       |        |        |        |         |        |          |             |                |                      |                 |                         |
| Root                          | /      |        |        |         |        |          |             |                |                      |                 |                         |
| Final                         | /      |        |        |         |        |          |             |                |                      |                 |                         |
| "B" End                       |        |        |        |         |        |          |             |                |                      |                 |                         |
| Root                          | /      |        |        |         |        |          |             |                |                      |                 |                         |
| Final                         | /      |        |        |         |        |          |             |                |                      |                 |                         |

|                               |                         |   |  |
|-------------------------------|-------------------------|---|--|
| <b>SIGNED:</b>                | Kasgro Rail             |  | Daniel S Gjurich<br>CWI 93041171<br>QC1 EXP. 4/1/20. |
| Technician: Daniel S. Gjurich | <i>Daniel S Gjurich</i> |   | Level: CWI #93041171                                 |

Reviewed By: *[Signature]* Date: 1/22/19  
 Testing was performed in accordance with accepted industry practice as well as the test methods referenced TUV Rheinland Industrial Solutions, Inc. AWS has no direct knowledge of the origin, sampling procedure, nor condition of the samples, and makes no claims as to the suitability for final use of the material. This test report applies only to those items tested. This report shall not be reproduced except in full without the written consent of TUV Rheinland Industrial Solutions, Inc.

NDEFG-0100  
 March 19, 2004  
 dxk



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Pittsburgh, PA – Birmingham, AL  
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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 16 Page 2 of 3  
 P.O. #: K180079  
 Work Order #: 473037  
 Project: Atlas

Date: December 3,, 2018 thru January 10, 2019  
 Description: Perform Visual Inspections of Deck Attachments for Cask car #1

|   |   |   |  |
|---|---|---|--|
| <b>TRIS Procedure:</b><br>NDE-VT-1        | <b>Surface Condition:</b><br>As Welded                                    | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress | <b>VT Gauge Identification:</b><br>Mfg. G.A.L. |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br><input checked="" type="checkbox"/> 100% | <input type="checkbox"/> Final  | Weld Gauge ¼", ⅜" and ½" Fillet                |
| <b>Acceptance Standard:</b><br>AWS D15.1  | <input type="checkbox"/> %  | <input type="checkbox"/> Other  | Model #269-465-5750                            |
| <b>Product Form:</b><br>N/A               |   | <b>For Welds:</b><br><input checked="" type="checkbox"/> Root Pass          | Serial # Cert #F4858                           |
| <b>Type of Material:</b> Carbon Steel     |   | <input type="checkbox"/> Intermediate                                       | Other Cam Type Gage                            |
| <input checked="" type="checkbox"/> Final |   |   |  |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete | Pen | Exceed | Reinforcement | Weld | Undersized | Defect Location, Length |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------------|------------|-----|--------|---------------|------|------------|-------------------------|
|                               |        |        |        |         |        |          |             |            |     |        |               |      |            |                         |
| <b>Item #10 to 3-10</b>       |        |        |        |         |        |          |             |            |     |        |               |      |            |                         |
| "A" End (2)                   |        |        |        |         |        |          |             |            |     |        |               |      |            |                         |
| Root                          | /      |        |        |         |        |          |             |            |     |        |               |      |            |                         |
| Final                         | /      |        |        |         |        |          |             |            |     |        |               |      |            |                         |
| "B" End (2)                   |        |        |        |         |        |          |             |            |     |        |               |      |            |                         |
| Root                          | /      |        |        |         |        |          |             |            |     |        |               |      |            |                         |
| Final                         | /      |        |        |         |        |          |             |            |     |        |               |      |            |                         |
| <b>Item #12 to 3-10</b>       |        |        |        |         |        |          |             |            |     |        |               |      |            |                         |
| "A" End                       |        |        |        |         |        |          |             |            |     |        |               |      |            |                         |
| Root                          | /      |        |        |         |        |          |             |            |     |        |               |      |            |                         |
| Final                         | /      |        |        |         |        |          |             |            |     |        |               |      |            |                         |
| "B" End                       |        |        |        |         |        |          |             |            |     |        |               |      |            |                         |
| Root                          | /      |        |        |         |        |          |             |            |     |        |               |      |            |                         |
| Final                         | /      |        |        |         |        |          |             |            |     |        |               |      |            |                         |

SIGNED: \_\_\_\_\_ Kasgro Rail

Technician: Daniel S. Gjurich *Daniel S. Gjurich* Level: CWI #93041171

Reviewed By: \_\_\_\_\_ Date: 1/22/19  
Testing was performed in accordance with accepted industry practice as well as the test methods referenced TUV Rheinland Industrial Solutions, Inc. has no direct knowledge of the origin, sampling procedure, nor condition of the samples, and makes no claims as to the suitability per final use of the material. This test report applies only to those items tested. This report shall not be reproduced except in full without the written consent of TUV Rheinland Industrial Solutions, Inc.

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 March 19, 2004  
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 18      Page 1 of 3  
 P.O. #: K180079  
 Work Order #: 473037  
 Project: Atlas

Date: January 14, 2019  
 Description: Perform Visual Inspections of Deck Attachments for Cask car #1

|   |   |   |  |
|---|---|---|--|
| <b>TRIS Procedure:</b><br>NDE-VT-1        | <b>Surface Condition:</b><br>As Welded                                    | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress | <b>VT Gauge Identification:</b><br>Mfg. G.A.L. |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br><input checked="" type="checkbox"/> 100% | <input type="checkbox"/> Final  | Weld Gauge 1/4", 3/8" and 1/2" Fillet          |
| <b>Acceptance Standard:</b><br>AWS D15.1  | <input type="checkbox"/> %  | <input type="checkbox"/> Other  | Model #269-465-5750                            |
| <b>Product Form:</b><br>N/A               |   | <b>For Welds:</b><br><input checked="" type="checkbox"/> Root Pass          | Serial # Cert #F4858                           |
| <b>Type of Material:</b> Carbon Steel     |   | <input type="checkbox"/> Intermediate                                       | Other Cam Type Gage                            |
|   |   | <input checked="" type="checkbox"/> Final                                   |  |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen | Exceed Reinforcement | Weld | Undersized | Defect Location, Length |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------------|----------------|----------------------|------|------------|-------------------------|
|                               |        |        |        |         |        |          |             |                |                      |      |            |                         |
| <b>Item #7 to 3-10 (4)</b>    |        |        |        |         |        |          |             |                |                      |      |            |                         |
| Root                          |        |        |        |         |        |          |             |                |                      |      |            | See Report #16          |
| Final                         |        |        |        |         |        |          |             |                |                      |      |            | See Report #16          |
| <b>Item #8 to 3-10 (4)</b>    |        |        |        |         |        |          |             |                |                      |      |            |                         |
| Root                          |        |        |        |         |        |          |             |                |                      |      |            | See Report #16          |
| Final                         |        |        |        |         |        |          |             |                |                      |      |            | See Report #16          |
| <b>Item #11 to 3-10</b>       |        |        |        |         |        |          |             |                |                      |      |            |                         |
| <b>"A" End</b>                |        |        |        |         |        |          |             |                |                      |      |            |                         |
| Root                          |        |        |        |         |        |          |             |                |                      |      |            | See Report #16          |
| Final                         |        |        |        |         |        |          |             |                |                      |      |            | See Report #16          |
| <b>"B" End</b>                |        |        |        |         |        |          |             |                |                      |      |            |                         |
| Root                          |        |        |        |         |        |          |             |                |                      |      |            | See Report #16          |
| Final                         |        |        |        |         |        |          |             |                |                      |      |            | See Report #16          |

|                               |                          |  |
|-------------------------------|--------------------------|--|
| <b>SIGNED:</b>                | Kasgro Rail              | <br>Daniel S. Gjurich<br>CWI 93041171<br>OCT EXP 01/2020<br>Level: CWI #93041171 |
| Technician: Daniel S. Gjurich | <i>Daniel S. Gjurich</i> |  |

Reviewed By: *[Signature]*      Date: 1/22/18  
 Testing was performed in accordance with accepted industry practice as well as the test methods referenced TUV Rheinland Industrial Solutions, Inc. is no direct knowledge of the origin, sampling procedure, or condition of the samples, and makes no claims as to the suitability or final use of the material. This test report applies only to those items tested. This report shall not be reproduced except in full without the written consent of TUV Rheinland Industrial Solutions, Inc.

NDTG-0100  
 March 19, 2004  
 ds:



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 18 Page 2 of 3  
 P.O. #: K180079  
 Work Order #: 473037  
 Project: Atlas

Date: January 14, 2019  
 Description: Perform Visual Inspections of Deck Attachments for Cask car #1

|   |   |   |  |
|---|---|---|--|
| <b>TRIS Procedure:</b><br>NDE-VT-1        | <b>Surface Condition:</b><br>As Welded                                    | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress | <b>VT Gauge Identification:</b><br>Mfg. G.A.L. |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br><input checked="" type="checkbox"/> 100% | <input type="checkbox"/> Final  | Weld Gauge 1/4", 3/8" and 1/2" Fillet          |
| <b>Acceptance Standard:</b><br>AWS D15.1  | <input type="checkbox"/> %  | <input type="checkbox"/> Other  | Model #269-465-5750                            |
| <b>Product Form:</b><br>N/A               |   | <b>For Welds:</b><br><input checked="" type="checkbox"/> Root Pass          | Serial # Cert #P4858                           |
| <b>Type of Material:</b> Carbon Steel     |   | <input type="checkbox"/> Intermediate                                       | Other Cam Type Gage                            |
|   |   | <input checked="" type="checkbox"/> Final                                   |  |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen | Exceed Reinforcement | Weld Undersized | Defect Location, Length |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------------|----------------|----------------------|-----------------|-------------------------|
|                               |        |        |        |         |        |          |             |                |                      |                 |                         |
| <b>Item #10 to 3-10</b>       |        |        |        |         |        |          |             |                |                      |                 |                         |
| "A" End (2)                   |        |        |        |         |        |          |             |                |                      |                 |                         |
| Root                          |        |        |        |         |        |          |             |                |                      |                 | See Report #16          |
| Final                         |        |        |        |         |        |          |             |                |                      |                 | See Report #16          |
| "B" End (2)                   |        |        |        |         |        |          |             |                |                      |                 |                         |
| Root                          |        |        |        |         |        |          |             |                |                      |                 | See Report #16          |
| Final                         |        |        |        |         |        |          |             |                |                      |                 | See Report #16          |
| <b>Item #12 to 3-10</b>       |        |        |        |         |        |          |             |                |                      |                 |                         |
| "A" End                       |        |        |        |         |        |          |             |                |                      |                 |                         |
| Root                          |        |        |        |         |        |          |             |                |                      |                 | See Report #16          |
| Final                         |        |        |        |         |        |          |             |                |                      |                 | See Report #16          |
| "B" End                       |        |        |        |         |        |          |             |                |                      |                 |                         |
| Root                          |        |        |        |         |        |          |             |                |                      |                 | See Report #16          |
| Final                         |        |        |        |         |        |          |             |                |                      |                 | See Report #16          |

|                               |                         |   |  |
|-------------------------------|-------------------------|---|--|
| <b>SIGNED:</b>                | Kasgro Rail             |  | Daniel S Gjurich<br>CWI 93041171<br>QC1 EXP: 4/17/2020<br>Level: CWI #93041171 |
| Technician: Daniel S. Gjurich | <i>Daniel S Gjurich</i> |   |  |

Reviewed By: *[Signature]* Date: 1/22/19  
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NDTG-0100  
 March 19, 2004  
 48:



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 18 Page 3 of 3  
 P.O. #: K180079  
 Work Order #: 473037  
 Project: Atlas

Date: January 14, 2019  
 Description: Perform Visual Inspections of Deck Attachments for Cask car #1

|   |   |   |  |
|---|---|---|--|
| <b>TRIS Procedure:</b><br>NDE-VT-1        | <b>Surface Condition:</b><br>As Welded                                    | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress | <b>VT Gauge Identification:</b><br>Mfg. G.A.L. |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br><input checked="" type="checkbox"/> 100% | <input type="checkbox"/> Final  | <b>Weld Gauge:</b> ¼", 3/8" and ½" Fillet      |
| <b>Acceptance Standard:</b><br>AWS D15.1  | <input type="checkbox"/> %  | <input type="checkbox"/> Other  | <b>Model:</b> #269-465-5750                    |
| <b>Product Form:</b><br>N/A               |   | <b>For Welds:</b><br><input type="checkbox"/> Root Pass                     | <b>Serial #:</b> Cert #F4858                   |
| <b>Type of Material:</b> Carbon Steel     |   | <input type="checkbox"/> Intermediate                                       | <b>Other:</b> Cam Type Gage                    |
|   |   | <input checked="" type="checkbox"/> Final                                   |  |

| Product / Weld Identification                         | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen | Exceed Reinforcement | Weld | Undersized | Defect Location, Length   |
|---|--------|--------|--------|---------|--------|----------|-------------|----------------|----------------------|------|------------|---|
|   |        |        |        |         |        |          |             |                |                      |      |            |   |
| <b>Item #5 to 3-10</b>                                |        |        |        |         |        |          |             |                |                      |      |            |   |
| "A" Side of Center                                    | /      |        |        |         |        |          |             |                |                      |      |            |   |
| "B" Side of Center                                    | /      |        |        |         |        |          |             |                |                      |      |            |   |
| <b>Item #6 to 3-10 (4)</b>                            |        |        |        |         |        |          |             |                |                      |      |            |   |
| "A" Side of Center (Left)                             | /      |        |        |         |        |          |             |                |                      |      |            |   |
| "A" Side of Center (Right)                            | /      |        |        |         |        |          |             |                |                      |      |            |   |
| "B" Side of Center (Left)                             | /      |        |        |         |        |          |             |                |                      |      |            |   |
| "B" Side of Center (Right)                            | /      |        |        |         |        |          |             |                |                      |      |            |   |
|   |        |        |        |         |        |          |             |                |                      |      |            |  Daniel S Gjurich<br>CWI 93041171<br>QC1 EXP. 4/1/2020 |
| <b>SIGNED:</b>  |        |        |        |         |        |          |             |                |                      |      |            |   |
| Technician: Daniel S. Gjurich <i>Daniel S Gjurich</i> |        |        |        |         |        |          |             |                |                      |      |            | Level: CWI #93041171  |

Reviewed By: *CS* Date: 1/22/19  
 Testing was performed in accordance with accepted industry practice as well as the test methods referenced TUV Rheinland Industrial Solutions, Inc. for no direct knowledge of the origin, sampling procedure, nor condition of the samples, and makes no claims as to the suitability nor final use of the material. This test report applies only to those items tested. This report shall not be reproduced except in full without the written consent of TUV Rheinland Industrial Solutions, Inc.

NDIG-0100  
 March 19, 2004  
 68







**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 20 Page 1 of 1  
 P.O. #: K180079  
 Work Order #: 473037  
 Project: Atlas

Date: February 12, 2019  
 Description: Perform Visual Inspections of Deck Attachments for Cask car #1

|  |   |   |  |
|--|---|---|--|
| <b>TRIS Procedure:</b><br>NDE-VT-1                       | <b>Surface Condition:</b><br>As Welded                                    | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress | <b>VT Gauge Identification:</b><br>Mfg. G.A.L. |
| <b>Test Method Standard:</b><br>AWS D15.1                | <b>Percent of Inspection:</b><br><input checked="" type="checkbox"/> 100% | <input type="checkbox"/> Final  | <b>Weld Gauge:</b> 1/4", 3/8" and 1/2" Fillet  |
| <b>Acceptance Standard:</b><br>AWS D15.1                 | <input type="checkbox"/> %  | <input type="checkbox"/> Other  | <b>Model:</b> #269-465-5750                    |
| <b>Product Form:</b><br>N/A                              |   | <b>For Welds:</b><br><input type="checkbox"/> Root Pass                     | <b>Serial #:</b> Cert #F4858                   |
| <b>Type of Material:</b> Stainless Steel to Carbon Steel |   | <input type="checkbox"/> Intermediate                                       | <b>Other:</b> Cam Type Gage                    |
|  |   | <input checked="" type="checkbox"/> Final                                   |  |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen | Excess Reinforcement | Weld Undersized | Defect Location, Length |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------------|----------------|----------------------|-----------------|-------------------------|
|                               |        |        |        |         |        |          |             |                |                      |                 |                         |
| Item #2 to Item #10 (4)       |        |        |        |         |        |          |             |                |                      |                 |                         |
| Final                         | /      |        |        |         |        |          |             |                |                      |                 |                         |
| <b>"B" End</b>                |        |        |        |         |        |          |             |                |                      |                 |                         |
| Item #2 to Item #10 (4)       |        |        |        |         |        |          |             |                |                      |                 |                         |
| Final                         | /      |        |        |         |        |          |             |                |                      |                 |                         |
| Item #2 to Item #8 (4)        |        |        |        |         |        |          |             |                |                      |                 |                         |
| Final                         | /      |        |        |         |        |          |             |                |                      |                 |                         |

 Daniel S Gjurich  
 CWI #3041171  
 QC1 EXP: 4/1/2020

SIGNED: \_\_\_\_\_ Kasgro Rail

Technician: Daniel S. Gjurich *Daniel S Gjurich* Level: CWI #93041171

Reviewed By: *[Signature]* Date: 2/12/19  
 Testing was performed in accordance with accepted industry practice as well as the test methods referenced TUV Rheinland Industrial Solutions, Inc. has no direct knowledge of the origin, sampling procedure, nor condition of the samples, and makes no claims as to the suitability nor final use of the material. This test report applies only to those items tested. This report shall not be reproduced except in full without the written consent of TUV Rheinland Industrial Solutions, Inc.

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 March 19, 2004  
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|                       |   |                             |                        |
|-----------------------|---|-----------------------------|------------------------|
|                       |   | Orano Federal Services      |                        |
| DATA TRANSMITTAL FORM |   |                             |                        |
| Supplier:             | KASGRO RAIL CORP., INC.   | DTF No:                     | 038A                   |
| P.O./SC No:           | 15C3011916  | Date:                       | 3/13/2019              |
| Type of Submittal:    | <input type="checkbox"/> First <input checked="" type="checkbox"/> Re-Submittal                                   | SDRL List Item No:          | 24                     |
| Submitted for:        | <input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted: | 1                      |
| Submitted By:         | RICK FORD   | Rick Ford                   | PROJECT MANAGER        |
|                       | <small>(Name)</small>   | <small>(Signature)</small>  | <small>(Title)</small> |

| ITEM NUMBER | DOCUMENT NUMBER | REVISION NUMBER | DOCUMENT DESCRIPTION       | FS DISPOSITION  |
|-------------|-----------------|-----------------|----------------------------|---|
| 1           | KAS 133         |                 | TUV MT NDE REPORT CASK CAR | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 2           | KAS 134         |                 | TUV VT NDE REPORT CASK CAR | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
|             |                 |                 |                            | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |                            | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |                            | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |                            | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |                            | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |                            | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |                            | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |                            | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |                            | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |

|             |  |
|-------------|--|
| Comments:   | Technical Reviewer (i.e., RE, PTL, SME, QA, etc.)    |
| No comments | <b>KLEIN Slade</b> Date: 2019.03.14 15:23:05 -07'00' |
|             | Date: 3/14/2019                                      |

| FS DISPOSITION CODES AND DEFINITIONS |                                |  |                             |
|--------------------------------------|--------------------------------|--|-----------------------------|
| AP                                   | Approved                       | Work may proceed.  | Resubmittal is not required |
| AWC                                  | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| REV                                  | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| RWC                                  | Reviewed with Comment          | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit        |
| DS                                   | Disapproved                    | Work may <u>not</u> proceed.   | Correct and resubmit        |
| RSA                                  | Receipt Submittal Acknowledged | No other action required.  |                             |

If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change.

|  |  |  |                  |
|--|--|--|------------------|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval |  | Digitally signed by Mark A. Denton<br>DN: cn=Mark A. Denton, o=Orano Federal Services, email=mark.denton@orano-group.com, ou=US<br>Date: 2019.03.14 16:46:30 -04'00' | Date: 03/14/2019 |
|--|--|--|------------------|

FS-EN-FRM-023 Rev 02 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |                                    |   |
|--|------------------------------------|---|
|  | Orano Federal Services             |   |
|  | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:   | <b>KASGRO / 15C3011916</b>         | DTF No. / Rev: <b>038A</b>  |
| Charge No:   | <b>00225.03.0050.02.00001</b>      | Due Date: <b>3/18/2019</b>  |
| Document(s):   | <b>See DTF No.: 038A</b>           |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)                  |                                    |   |
| PE   | Slade Klein                        |   |
| REVIEWERS  | Slade Klein, Bernie Counterman     |   |
| QA   | Bernie Counterman                  |   |
| <b>Technical Review</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No comments  |                                    |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b>  |                                    | Date: 2019.03.13 15:02:41 -07'00'   |
| <b>Quality Assurance Review (As Applicable)</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No Comments  |                                    |   |
| QA Reviewer(s) (Sign/Date):  |                                    | Digitally signed by COUNTERMAN Bernard<br>Date: 2019.03.14 07:44:38 -07'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary) |                                    |   |
|  |                                    |   |
|  |                                    |   |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Flint, MI – Pittsburgh, PA – Birmingham, AL – Decatur, AL  
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**MAGNETIC PARTICLE INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 23 Page 1 of 2  
 P.O. #: K180079  
 Work Order #: 473037  
 Project: Atlas Cask Car

Date: March 4, 2019  
 Description: Perform Magnetic Particle Inspections of Deck Attachments for Cask car #1

|   |   |   |
|---|---|---|
| <b>TRIS Procedure:</b> WI-08-002 Rev. 5 | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress<br><input type="checkbox"/> Final<br><input type="checkbox"/> Other | <b>For Welds:</b><br><input checked="" type="checkbox"/> Root Pass<br><input type="checkbox"/> Intermediate<br><input type="checkbox"/> Final |
| <b>Surface Condition:</b> As Welded     |   |   |
| <b>Test Method Standard:</b> ASTM E709  |   |   |
| <b>Acceptance Standard:</b> AWS D15.1   |   | <b>Equipment Identification:</b>  |
| <b>Type of Material:</b> Carbon Steel   |   | Model #: Parker DA400<br>Gage #/Serial #: P135/17999<br>Cal. Date Due: 6-18-19  |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Other | Defect Location or Remarks | Technique  |     |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------|----------------------------|--|-----|
|                               |        |        |        |         |        |          |       |                            | Technique #:   | N/A |
| <b>Car Body Assembly</b>      |        |        |        |         |        |          |       |                            |  |     |
| <b>Item #7 (4)</b>            |        |        |        |         |        |          |       | <b>Outside Lugs</b>        | <b>Method:</b> Wet <input type="checkbox"/> Dry <input checked="" type="checkbox"/>              |     |
| Root                          |        |        |        |         |        |          |       | See report #15             | Fluorescent <input type="checkbox"/> Visible <input checked="" type="checkbox"/>                 |     |
| Final                         |        |        |        |         |        |          |       | See report #17             |  |     |
| <b>Item #8 (4)</b>            |        |        |        |         |        |          |       | <b>Inside Lugs</b>         | <b>Consumable Batch #:</b> 08A078  |     |
| Root                          |        |        |        |         |        |          |       | See report #15             | Coil <input type="checkbox"/> N/A FWDC <input type="checkbox"/> N/A                              |     |
| Final                         |        |        |        |         |        |          |       | See report #17             | Head Shot <input type="checkbox"/> N/A Prods <input type="checkbox"/> N/A                        |     |
|                               |        |        |        |         |        |          |       |                            | <b>Amperage:</b> N/A   |     |
| <b>Item #11 to 3-10</b>       |        |        |        |         |        |          |       |                            | <b>Yoke Current:</b> AC <input checked="" type="checkbox"/> DC <input type="checkbox"/>          |     |
| "A" End                       |        |        |        |         |        |          |       |                            | <b>UV Meter #:</b> N/A   |     |
| Final                         | /      |        |        |         |        |          |       |                            | <b>UV Intensity verified at prescribed intervals?</b>  |     |
| "B" End                       |        |        |        |         |        |          |       |                            | Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> |     |
| Final                         | /      |        |        |         |        |          |       |                            | <b>Quantity Tested 100%:</b> X   |     |
|                               |        |        |        |         |        |          |       |                            | <b>Random:</b> N/A %   |     |
| <b>Item #10 to 3-10</b>       |        |        |        |         |        |          |       |                            |  |     |
| "A" End (2)                   |        |        |        |         |        |          |       |                            |  |     |
| Final                         | /      |        |        |         |        |          |       |                            |  |     |
| "B" End (2)                   |        |        |        |         |        |          |       |                            |  |     |
| Final                         | /      |        |        |         |        |          |       |                            |  |     |

SIGNED: \_\_\_\_\_ Kasgro Rail  
 Technician: Daniel S. Gjurich *Daniel S. Gjurich* Level: II

Reviewed By: \_\_\_\_\_ Date: 3/5/19

Testing was performed in accordance with accepted industry practice as well as the test methods referenced TUV Rheinland Industrial Solutions, Inc. has no direct knowledge of the origin, sampling procedure, nor condition of the samples, and makes no claims as to the suitability nor final use of the material. This test report applies only to those items tested. This report shall not be reproduced except in full without the written consent of TUV Rheinland Industrial Solutions, Inc.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Flint, MI – Pittsburgh, PA – Birmingham, AL – Decatur, AL  
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**MAGNETIC PARTICLE INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 23 Page 2 of 2  
 P.O. #: K180079  
 Work Order #: 473037  
 Project: Atlas Cask Car

Date: March 4, 2019  
 Description: Perform Magnetic Particle Inspections of Deck Attachments for Cask car #1

|                              |                  |                                  |   |                   |  |
|------------------------------|------------------|----------------------------------|---|-------------------|--|
| <b>TRIS Procedure:</b>       | WI-08-002 Rev. 5 | <b>Production Stage:</b>         | <input checked="" type="checkbox"/> In Progress<br><input type="checkbox"/> Final<br><input type="checkbox"/> Other | <b>For Welds:</b> | <input checked="" type="checkbox"/> Root Pass<br><input type="checkbox"/> Intermediate<br><input type="checkbox"/> Final |
| <b>Surface Condition:</b>    | As Welded        | <b>Equipment Identification:</b> |   |                   |  |
| <b>Test Method Standard:</b> | ASTM E709        | <b>Model #:</b>                  | Parker DA400  |                   |  |
| <b>Acceptance Standard:</b>  | AWS D15.1        | <b>Gage #/Serial #:</b>          | P135/17999  |                   |  |
| <b>Type of Material:</b>     | Carbon Steel     | <b>Cal. Date Due:</b>            | 6-18-19   |                   |  |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Other | Defect Location or Remarks | Technique   |                                     |                                     |             |                                     |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------|----------------------------|---|-------------------------------------|-------------------------------------|-------------|-------------------------------------|
|                               |        |        |        |         |        |          |       |                            | Technique #:  | Wet                                 | Dry                                 | Fluorescent |                                     |
| Car Body Assembly             |        |        |        |         |        |          |       |                            | Technique #:  | N/A                                 |                                     |             |                                     |
| Item #12 to 3-10              |        |        |        |         |        |          |       |                            | Method:   |                                     |                                     |             | <input checked="" type="checkbox"/> |
| "A" End                       |        |        |        |         |        |          |       |                            | Fluorescent   |                                     | Visible                             |             | <input checked="" type="checkbox"/> |
| Final                         | /      |        |        |         |        |          |       |                            | <b>Consumable Batch #:</b> 08A078                     |                                     |                                     |             |                                     |
| "B" End                       |        |        |        |         |        |          |       |                            | Coil  | N/A                                 | FWDC                                | N/A         |                                     |
| Final                         | /      |        |        |         |        |          |       |                            | Head Shot   | N/A                                 | Prods                               | N/A         |                                     |
| Item #9 to 3-10               |        |        |        |         |        |          |       |                            | <b>Amperage:</b>                                      | N/A                                 |                                     |             |                                     |
| "A" Side of Center            | /      |        |        |         |        |          |       |                            | <b>Yoke Current:</b>                                  | AC                                  | <input checked="" type="checkbox"/> | DC          |                                     |
| "B" Side of Center            | /      |        |        |         |        |          |       |                            | <b>UV Meter #:</b>                                    | N/A                                 |                                     |             |                                     |
|                               |        |        |        |         |        |          |       |                            | <b>UV Intensity verified at prescribed intervals?</b> | Yes                                 | No                                  | N/A         | <input checked="" type="checkbox"/> |
|                               |        |        |        |         |        |          |       |                            | <b>Quantity Tested 100%:</b>                          | <input checked="" type="checkbox"/> |                                     |             |                                     |
|                               |        |        |        |         |        |          |       |                            | <b>Random:</b>  | N/A %                               |                                     |             |                                     |

**SIGNED:** Kasgro Rail

Technician: Daniel S. Gjurich *Daniel S. Gjurich* Level: II

Reviewed By: *[Signature]* Date: 3/5/19

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 22 Page 1 of 3  
 P.O. #: K180079  
 Work Order #: 473037  
 Project: Atlas

Date: March 4, 2019  
 Description: Perform Visual Inspections of Deck Attachments for Cask car #1

|   |   |   |  |
|---|---|---|--|
| <b>TRIS Procedure:</b><br>NDE-VT-1        | <b>Surface Condition:</b><br>As Welded  | <b>Production Stage:</b><br>X In Progress | <b>VT Gauge Identification:</b><br>Mfg. G.A.L. |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br>X 100% | Final                                     | Weld Gauge 1/4", 3/8" and 1/2" Fillet          |
| <b>Acceptance Standard:</b><br>AWS D15.1  | %                                       | Other                                     | Model #269-465-5750                            |
| <b>Product Form:</b><br>N/A               |   | <b>For Welds:</b><br>X Root Pass          | Serial # Cert #F4858                           |
| <b>Type of Material:</b> Carbon Steel     |   | Intermediate                              | Other Cam Type Gage                            |
|   |   | X Final                                   |  |

| Product / Weld Identification   | Accept   | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen. | Exceed Reinforcement | Weld Undersized | Defect Location, Length |
|---|--|--------|--------|---------|--------|----------|-------------|-----------------|----------------------|-----------------|-------------------------|
|   |  |        |        |         |        |          |             |                 |                      |                 |                         |
| <b>Item #7 to 3-10 (4)</b>  |  |        |        |         |        |          |             |                 |                      |                 |                         |
| Root  |  |        |        |         |        |          |             |                 |                      |                 | See Report #16          |
| Final   |  |        |        |         |        |          |             |                 |                      |                 | See Report #16          |
| <b>Item #8 to 3-10 (4)</b>  |  |        |        |         |        |          |             |                 |                      |                 |                         |
| Root  |  |        |        |         |        |          |             |                 |                      |                 | See Report #16          |
| Final   |  |        |        |         |        |          |             |                 |                      |                 | See Report #16          |
| <b>Item #11 to 3-10</b>   |  |        |        |         |        |          |             |                 |                      |                 |                         |
| "A" End   |  |        |        |         |        |          |             |                 |                      |                 |                         |
| Root  |  |        |        |         |        |          |             |                 |                      |                 | See Report #16          |
| Final   |  |        |        |         |        |          |             |                 |                      |                 | See Report #16          |
| "B" End   |  |        |        |         |        |          |             |                 |                      |                 |                         |
| Root  |  |        |        |         |        |          |             |                 |                      |                 | See Report #16          |
| Final   |  |        |        |         |        |          |             |                 |                      |                 | See Report #16          |
|  Daniel S Gjurich<br>CWI 93041171<br>Q04 EXP. 4/1/2020 |  |        |        |         |        |          |             |                 |                      |                 |                         |
| SIGNED: Kasgro Rail   |  |        |        |         |        |          |             |                 |                      |                 |                         |
| Technician:   | Daniel S. Gjurich <i>Daniel S Gjurich</i> Level: CWI #93041171 |        |        |         |        |          |             |                 |                      |                 |                         |

Reviewed By: *[Signature]* Date: 3/5/19  
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NDTG-0100  
 March 19, 2004  
 6/8



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

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 Project: 00225.03.0050 DOE Atlas Project

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**VISUAL INSPECTION REPORT**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 22  
 P.O. #: K180079  
 Work Order #: 473037  
 Project: Atlas

Page 2 of 3

Date: March 4, 2019  
 Description: Perform Visual Inspections of Deck Attachments for Cask car #1

|   |   |   |  |
|---|---|---|--|
| <b>TRIS Procedure:</b><br>NDE-VT-1        | <b>Surface Condition:</b><br>As Welded                                    | <b>Production Stage:</b><br><input checked="" type="checkbox"/> In Progress | <b>VT Gauge Identification:</b><br>Mfg. G.A.L. |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br><input checked="" type="checkbox"/> 100% | <input type="checkbox"/> Final  | Weld Gauge 1/4", 3/8" and 1/2" Fillet          |
| <b>Acceptance Standard:</b><br>AWS D15.1  | <input type="checkbox"/> %  | <input type="checkbox"/> Other  | Model #269-465-5750                            |
| <b>Product Form:</b><br>N/A               |   | <b>For Welds:</b><br><input checked="" type="checkbox"/> Root Pass          | Serial # Cert #F4858                           |
| <b>Type of Material:</b> Carbon Steel     |   | <input type="checkbox"/> Intermediate                                       | Other Cam Type Gage                            |
|   |   | <input checked="" type="checkbox"/> Final                                   |  |

| Product / Weld Identification   | Accept                                    | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen | Exceed Reinforcement | Weld Undersized | Defect Location, Length |
|---|---|--------|--------|---------|--------|----------|-------------|----------------|----------------------|-----------------|-------------------------|
|   |   |        |        |         |        |          |             |                |                      |                 |                         |
| <b>Item #10 to 3-10</b>   |   |        |        |         |        |          |             |                |                      |                 |                         |
| "A" End (2)   |   |        |        |         |        |          |             |                |                      |                 |                         |
| Root  |   |        |        |         |        |          |             |                |                      |                 | See Report #16          |
| Final   |   |        |        |         |        |          |             |                |                      |                 | See Report #16          |
| "B" End (2)   |   |        |        |         |        |          |             |                |                      |                 |                         |
| Root  |   |        |        |         |        |          |             |                |                      |                 | See Report #16          |
| Final   |   |        |        |         |        |          |             |                |                      |                 | See Report #16          |
| <b>Item #12 to 3-10</b>   |   |        |        |         |        |          |             |                |                      |                 |                         |
| "A" End   |   |        |        |         |        |          |             |                |                      |                 |                         |
| Root  |   |        |        |         |        |          |             |                |                      |                 | See Report #16          |
| Final   |   |        |        |         |        |          |             |                |                      |                 | See Report #16          |
| "B" End   |   |        |        |         |        |          |             |                |                      |                 |                         |
| Root  |   |        |        |         |        |          |             |                |                      |                 | See Report #16          |
| Final   |   |        |        |         |        |          |             |                |                      |                 | See Report #16          |
|  Daniel S Gjurich<br>CWI 93041171<br>QC1 EXP. 4/1/2020 |   |        |        |         |        |          |             |                |                      |                 |                         |
| <b>SIGNED:</b> Kasgro Rail  |   |        |        |         |        |          |             |                |                      |                 |                         |
| Technician:   | Daniel S. Gjurich <i>Daniel S Gjurich</i> |        |        |         |        |          |             |                |                      |                 | Level: CWI #93041171    |

Reviewed By: \_\_\_\_\_ Date: 3/5/19  
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NDTG 0100  
 March 19, 2004  
 dsk



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**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
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 Project: 00225.03.0050 DOE Atlas Project

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**VISUAL INSPECTION REPORT**

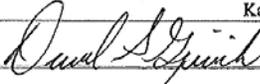
Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 22 Page 3 of 3  
 P.O. #: K180079  
 Work Order #: 473037  
 Project: Atlas

Date: March 4, 2019  
 Description: Perform Visual Inspections of Deck Attachments for Cask car #1

|   |   |   |  |
|---|---|---|--|
| <b>TRIS Procedure:</b><br>NDE-VT-1        | <b>Surface Condition:</b><br>As Welded  | <b>Production Stage:</b><br>In Progress   | <b>VT Gauge Identification:</b><br>Mfg. G.A.L. |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br>X 100% | <input checked="" type="checkbox"/> Final | Weld Gauge 1/4", 3/8" and 1/2" Fillet          |
| <b>Acceptance Standard:</b><br>AWS D15.1  | _____ %                                 | Other                                     | Model #269-465-5750                            |
| <b>Product Form:</b><br>N/A               |   | <b>For Welds:</b><br>Root Pass            | Serial # Cert #F4858                           |
| <b>Type of Material:</b> Carbon Steel     |   | Intermediate                              | Other Cam Type Gage                            |
|   |   | <input checked="" type="checkbox"/> Final |  |

| Product / Weld Identification  | Accept  | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen. | Excess Reinforcement | Weld | Undersized           | Defect Location, Length |
|--|---|--------|--------|---------|--------|----------|-------------|-----------------|----------------------|------|----------------------|-------------------------|
| Car Body Assembly  |   |        |        |         |        |          |             |                 |                      |      |                      |                         |
| Item #5 to 3-10  |   |        |        |         |        |          |             |                 |                      |      |                      |                         |
| "A" Side of Center   |   |        |        |         |        |          |             |                 |                      |      |                      | See Report #18          |
| "B" Side of Center   |   |        |        |         |        |          |             |                 |                      |      |                      | See Report #18          |
| Item #6 to 3-10 (4)  |   |        |        |         |        |          |             |                 |                      |      |                      |                         |
| "A" Side of Center (Left)  |   |        |        |         |        |          |             |                 |                      |      |                      | See Report #18          |
| "A" Side of Center (Right)   |   |        |        |         |        |          |             |                 |                      |      |                      | See Report #18          |
| "B" Side of Center (Left)  |   |        |        |         |        |          |             |                 |                      |      |                      | See Report #18          |
| "B" Side of Center (Right)   |   |        |        |         |        |          |             |                 |                      |      |                      | See Report #18          |
| Item #9 to 3-10  |   |        |        |         |        |          |             |                 |                      |      |                      |                         |
| "A" Side of Center   |   |        |        |         |        |          |             |                 |                      |      |                      | /                       |
| "B" Side of Center   |   |        |        |         |        |          |             |                 |                      |      |                      | /                       |
|  Daniel S. Gjurich<br>CWI #93041171<br>CC-1 EXP. 4/1/2020 |   |        |        |         |        |          |             |                 |                      |      |                      |                         |
| SIGNED: _____ Kasgro Rail  |   |        |        |         |        |          |             |                 |                      |      |                      |                         |
| Technician:  | Daniel S. Gjurich  |        |        |         |        |          |             |                 |                      |      | Level: CWI #93041171 |                         |

Reviewed By:  Date: 3/5/19  
 Testing was performed in accordance with accepted industry practice as well as the test methods referenced TUV Rheinland Industrial Solutions, Inc. / s/n no direct knowledge of the origin, sampling procedure, nor condition of the samples, and makes no claims as to the suitability nor final use of the material. This test report applies only to those items tested. This report shall not be reproduced except in full without the written consent of TUV Rheinland Industrial Solutions, Inc.

NDTG-0100  
 March 19, 2004  
 JS



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |   |
|--|---|
| Orano Federal Services   |   |
| <b>DATA TRANSMITTAL FORM</b>   |   |
| Supplier: <b>KASGRO RAIL CORP., INC.</b>   | DTF No: <b>042A</b> Page <u>1</u> of <u>1</u>   |
| P.O./SC No: <b>15C3011916</b>  | Date: <b>4/02/2019</b>  |
| Type of Submittal: <input type="checkbox"/> First <input checked="" type="checkbox"/> Re-Submittal                               | SDRL List Item No: <b>24</b>  |
| Submitted for: <input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted: <b>1</b>  |
| Submitted By: <b>RICK FORD</b>   | <b>Rick Ford</b> Digitally signed by Rick Ford<br><small>Date: 2019.04.02 09:03:40 -0400'</small> |
| (Name)   | (Signature)   |
| PROJECT MANAGER<br><small>(Title)</small>  |   |

| ITEM NUMBER | DOCUMENT NUMBER | REVISION NUMBER | DOCUMENT DESCRIPTION  | FS DISPOSITION  |
|-------------|-----------------|-----------------|---|---|
| 1           | KAS 154 Rev 1   |                 | TO PROVIDE LIST OF ATLAS DECK ATTACHMENT PARTS WITH NOTES ADDED TO CLARIFY REPORT | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |

|                          |   |
|--------------------------|---|
| Comments:<br>No comments | Technical Reviewer (i.e., RE, PTL, SME, QA, etc.)<br><b>KLEIN Slade</b> Date: 2019.04.03<br>13:54:21 -07'00'<br>Date: <b>4/3/2019</b> |
|--------------------------|---|

| FS DISPOSITION CODES AND DEFINITIONS |                                |   |                              |
|--------------------------------------|--------------------------------|---|------------------------------|
| AP                                   | Approved                       | Work may proceed.   | Resubmittal is not required  |
| AWC                                  | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.              | Resubmittal is not required  |
| REV                                  | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.              | Resubmittal is not required  |
| RWC                                  | Reviewed with Comment          | Work may proceed; <b>subject to incorporation and compliance w/ Buyer comments.</b> | <b>Correct and resubmit.</b> |
| DS                                   | Disapproved                    | Work may <b>not</b> proceed.  | <b>Correct and resubmit.</b> |
| RSA                                  | Receipt Submittal Acknowledged | No other action required.   |                              |

If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change.

|  |   |
|--|---|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval<br> | Digitally signed by Mark A. Ginter<br><small>DN: cn=AREVA GROUP, o=AREVA GROUP, ou=IDENTIFICATION, email=Mark.A.Ginter@areva.com, c=US</small><br>Date: <b>04/03/2019</b> |
|--|---|

FS-EN-FRM-023 Rev 02 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

|  |                                    |   |
|--|------------------------------------|---|
|  | Orano Federal Services             |   |
|  | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:   | KASGRO / 15C3011916                | DTF No. / Rev: 042A   |
| Charge No:   | 00225.03.0050.02.00001             | Due Date: 4/2/2019  |
| Document(s):   | See DTF No.: 042A                  |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev: FS Spec and Dwg, Codes, Stds, etc.)                  |                                    |   |
| PE   | Slade Klein                        |   |
| REVIEWERS  | Slade Klein, Bernie Counterman     |   |
| QA   | Bernie Counterman                  |   |
| <b>Technical Review</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No comments.   |                                    |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b> Date: 2019.04.02 10:08:42 -07'00'                    |                                    |   |
| <b>Quality Assurance Review (As Applicable)</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No Comments  |                                    |   |
| QA Reviewer(s) (Sign/Date):  |                                    | Digitally signed by COUNTERMAN Bernard<br>Date: 2019.04.03 08:18:41 -07'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary) |                                    |   |
|  |                                    |   |
|  |                                    |   |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

KAS 154 Rev. 1

Grand Rapids, MI – Flint, MI – Pittsburgh, PA – Birmingham, AL – Decatur, AL  
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Reported To: Mr. Josh Leavitt  
 Frontier Steel Company  
 4990 Grand Ave  
 Pittsburgh PA 15225

Date: October 11, 2018  
 Sales Order Number: 471640  
 P/O Number: G2202  
 Report Number: UT-1 REV 3  
 Project: 8 Steel Blocks  
 Project Location: Pittsburgh PA

**ULTRASONIC PLATE TEST REPORT**

|                               |                                   |
|-------------------------------|-----------------------------------|
| Equipment ID: USM GO 11075434 | Material Specification: See Below |
| Transducer: Straight          | Test Method Standard: ASTM A435   |
| Couplant: Sonotrace 40        | Inspection Method: TRIS-NDE-UT-5  |
|                               | Scanning Pattern: 100%            |

| Plate   | Top   | Bottom                            | Test Results |
|---------|---|-----------------------------------|--------------|
| Block 1 | No Indications  | No Indications                    | N/A          |
| Block 2 | 10% SH @ 1 1/4" Depth 3" Diameter   | No Indications                    | N/A          |
| Block 3 | No Indications  | 20% SH @ 3 7/8" Depth 2" Diameter | N/A          |
| Block 4 | No Indications  | No Indications                    | N/A          |
| Block 5 | 25% SH @ 3 3/4" Depth 2" Diameter, 10% SH @ 3" Depth 3" Width x 9" Length | No indications                    | N/A          |
| Block 6 | No indications  | No Indications                    | N/A          |
| Block 7 | 15% SH @ 1" Depth 1 1/2" Diameter   | 20% SH @ 2" Depth 2 1/2" Diameter | N/A          |
| Block 8 | 10% SH @ 1" Depth 1" Diameter   | No Indications                    | N/A          |

All indication areas were circled with paint on plate

All indications detected did not exhibit a total loss of back reflection. Indications found during this examination are not to be classified as laminations and are identified as defects with variable orientation and size within the plate

The (8) Blocks listed on this page are all Outboard Attachment Blocks that were UT'd to verify material was acceptable and the UT process was performed on two different dates to get the actual inclusion details of size & location.

*Rick Ford*  
 Rick Ford, Kasgro Rail, 4/2/2019

Notes: SH=Screen Height, During the Scan of the Blocks the backwall was set at 100% SH then added 6 db to scan, any indications were found during the inspection were only recorded above 10% SH.

Inspector: Noah Holden Level: II Assistant: \_\_\_\_\_

Interpreter: Noah Holden Level: II Date: 10/11/2018

Reviewer's Signature: *[Signature]* Date: 10/20/18

**TÜV RHEINLAND INDUSTRIAL SOLUTIONS, INC.**

These test results report our findings at the time of inspection and shall be reviewed by the client for compliance to the project requirements. Due to the limitations of nondestructive testing in evaluating all of the factors that determine the overall component quality, no guarantee is made or liability assumed by TÜV Rheinland Industrial Solutions, Inc. ("TRIS") for the component quality or serviceability.

Revision: 03/05/2012  
 TRIS Report – Plate

100 INDUSTRIAL BLVD • ALIQUIPPA, PA 15001 • TELEPHONE 724-378-3900 • FAX 724-378-3940







**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

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## **APPENDIX B.3 – OTHER INSPECTION DOCUMENTATION**

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.3.1 – CMS Laser Dimensions Report**

|                       |   |                             |                 |
|-----------------------|---|-----------------------------|-----------------|
|                       |   | Orano Federal Services      |                 |
| DATA TRANSMITTAL FORM |   |                             |                 |
| Supplier:             | KASGRO RAIL CORP., INC.   | DTF No:                     | 038             |
| P.O./SC No:           | 15C3011916  | Date:                       | 2/19/2019       |
| Type of Submittal:    | <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal                                   | SDRL List Item No:          | 24              |
| Submitted for:        | <input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted: | 1               |
| Submitted By:         | RICK FORD   | Rick Ford                   | PROJECT MANAGER |
|                       | (Name)  | (Signature)                 | (Title)         |

| ITEM NUMBER | DOCUMENT NUMBER    | REVISION NUMBER | DOCUMENT DESCRIPTION  | FS DISPOSITION  |
|-------------|--------------------|-----------------|---|---|
| 1           | KAS 127            |                 | ATLAS CASK CAR CMS LASER DIMENSIONS FOR PIN BLOCK ATTACHMENT BLOCKS | <input type="checkbox"/> AP <input checked="" type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 2           | KAS 128            |                 | FRA S-2044 INSPECTION FOR BUFFER CARS                               | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 3           | KAS 129            |                 | AAR S-486 BRAKE TEST CERTIFICATION                                  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 4           | KAS 130            |                 | TRACK SCALE CALIBRATION RECORDS                                     | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 5           | KAS 131            |                 | TUV UT NDE REPORT CASK CAR  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 6           | KAS 132            |                 | TUV PT NDE REPORT CASK CAR  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 7           | KAS 133            |                 | TUV MT NDE REPORT CASK CAR  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input checked="" type="checkbox"/> DS <input type="checkbox"/> RSA |
| 8           | KAS 143 <b>134</b> |                 | TUV VT NDE REPORT CASK CAR  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input checked="" type="checkbox"/> DS <input type="checkbox"/> RSA |
|             |                    |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |

|   |   |
|---|---|
| Comments:   | Technical Reviewer (i.e., RE, PTL, SME, QA, etc.)       |
| 1) NOTE: KAS 127 provides as-built railcar dimensions. Kasgro rework modified some of these. Kasgro to submit final dimensions separately.<br>2) KAS 133 does not include the shear block or outer pin block weld MT.<br>3) KAS 134 does not include VT of the shear block welds. | <b>KLEIN Slade</b> Date: 2019.02.27<br>13:47:33 -08'00' |
|   | Date: 2/27/2019   |

| FS DISPOSITION CODES AND DEFINITIONS |                                |  |                             |
|--------------------------------------|--------------------------------|--|-----------------------------|
| AP                                   | Approved                       | Work may proceed.  | Resubmittal is not required |
| AWC                                  | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| REV                                  | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| RWC                                  | Reviewed with Comment          | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit        |
| DS                                   | Disapproved                    | Work may <u>not</u> proceed.   | Correct and resubmit        |
| RSA                                  | Receipt Submittal Acknowledged | No other action required.  |                             |

If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change.

|  |   |       |            |
|--|---|-------|------------|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval |   | Date: | 02/27/2019 |
|  | Digitally signed by Mark A. Denton<br>DN: cn=Mark A. Denton, o=Orano Federal Services, email=mark.denton@orano-grou...<br>c=US<br>Date: 2019.02.27 17:54:03 -0800 |       |            |

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**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|   |                                |   |
|---|--------------------------------|---|
| <br><b>orano</b>   | Orano Federal Services         |   |
| <b>SUPPLIER DOCUMENT SUBMITTAL REVIEW</b>   |                                |   |
| Supplier / PO No.:  | <b>KASGRO / 15C3011916</b>     | DTF No. / Rev: <b>038</b>   |
| Charge No:  | 00225.03.0050.02.00001         | Due Date: <b>3/8/2019</b>   |
| Document(s):<br><b>See DTF No.: 038</b>   |                                |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)   |                                |   |
| PE  | Slade Klein                    |   |
| REVIEWERS   | Slade Klein, Bernie Counterman |   |
| QA  | Bernie Counterman              |   |
| <b>Technical Review</b>   |                                |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                                |   |
| Technical Reviewer Comments:  |                                |   |
| KAS 133 does not include the required MT inspection of the shear blocks and outer pin blocks. This was required by Kasgro drawing 1155-41.  |                                |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b>   |                                | Date: 2019.02.26 07:23:43 -08'00'   |
| <b>Quality Assurance Review (As Applicable)</b>   |                                |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                                |   |
| Technical Reviewer Comments:  |                                |   |
| Only potential question was regarding missing signature by the technician on the UT report. Discussed with TUV Rheinland Level III (Randy @ 616-818-8188). The technician signature is not required provided the report is signed by his supervisor. This report is signed by the individuals supervisor. |                                |   |
| QA Reviewer(s) (Sign/Date):    |                                | Digitally signed by COUNTERMAN Bernard<br>Date: 2019.02.25 09:29:24 -08'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary)  |                                |   |
|   |                                |   |
|   |                                |   |

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Orano Federal Services  
**Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



Atlas Cask Car Pin Block Attachment Inspection Plan Record

Form 79  
 01/31/2015

| Railcar # 1DOX010001 |              |   | Kasgro PO<br>15C3011916 |      | Notes:                             | Traveler |
|----------------------|--------------|---|-------------------------|------|------------------------------------|----------|
| Drawing: 3018956     |              |   | Sheet: 3                |      | Revision:                          | 0        |
| Feature Number       | Drawing Zone | Drawing Requirements<br>OUTER 4 ITEMS 11 & 12 | Insp. Freq.             | Code | Inspection Method<br>(If Required) |          |
| 1                    | D-7 IT 11    | // 1/16" B                                    | 100%                    | A-1  | LASER TRACKER                      |          |
| 2                    | D-7 IT 11    | ⊥ 1/16" A                                     | 100%                    | A-1  | LASER TRACKER                      |          |
| 3                    | D-1 IT 12    | // 1/16" B                                    | 100%                    | A-1  | LASER TRACKER                      |          |
| 4                    | D-1 IT 12    | ⊥ 1/16" A                                     | 100%                    | A-1  | LASER TRACKER                      |          |
| 5                    | C-1 IT 11    | // 1/16" B                                    | 100%                    | A-1  | LASER TRACKER                      |          |
| 6                    | C-1 IT 11    | ⊥ 1/16" A                                     | 100%                    | A-1  | LASER TRACKER                      |          |
| 7                    | C-7 IT 12    | // 1/16" B                                    | 100%                    | A-1  | LASER TRACKER                      |          |
| 8                    | C-7 IT 12    | ⊥ 1/16" A                                     | 100%                    | A-1  | LASER TRACKER                      |          |

| Feature Number | Tool Number | Actual Results | OOT Conditions | Deficiency Number | Inspector/Date             | Temperature (F) |
|----------------|-------------|----------------|----------------|-------------------|----------------------------|-----------------|
| 1              | 4674        | .025           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 2              | 4674        | .009           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 3              | 4674        | .015           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 4              | 4674        | .042           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 5              | 4674        | .042           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 6              | 4674        | .062           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 7              | 4674        | .014           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 8              | 4674        | .059           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |

\* 4674 IS THE LAST FOUR DIGITS OF THE S/N OF THE LASER TRACKER

CODES: A-1 = Actual Recorded dimension(s) for each occurrence: A-2 = Actual recorded range (high/low) for each occurrence:  
 Δ = Actual recorded range (high/low) for each occurrence to be submitted to customer: B = Record as "accept": C = Record as  
 "OK to gage" (for go/no go functional gauging): Out of Tolerance dimensions-Record actual dimension and the applicable NCR #  
 in the deficiency No. box.

Note: THE PERSON DESIGNATED TO SIGN FOR SUCH AN ACTION VERIFIES BASED ON PERSONAL OBSERVATION OR CERTIFIED RECORDS, AND CERTIFIES BY THIS SIGNATURE THAT THE ACTION HAS ACTUALLY BEEN PERFORMED IN ACCORDANCE WITH THE SPECIFIED REQUIREMENT.

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Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



Atlas Cask Car Pin Block Attachment Inspection Plan Record

Form 79  
 01/31/2015

| Railcar # 1DOX010001 |              |   | Kasgro PO 15C3011916 |      | Notes:                             | Traveler |
|----------------------|--------------|---|----------------------|------|------------------------------------|----------|
| Drawing: 3018956     |              |   | Sheet: 3             |      | Revision:                          | 0        |
| Feature Number       | Drawing Zone | Drawing Requirements<br>INNER 4 ITEM 10 | Insp. Freq.          | Code | Inspection Method<br>(if Required) |          |
| 9                    | D-7 IT 10    | // 1/16" B                              | 100%                 | A-1  | LASER TRACKER                      |          |
| 10                   | D-7 IT 10    | ⊥ 1/16" A                               | 100%                 | A-1  | LASER TRACKER                      |          |
| 11                   | D-1 IT 10    | // 1/16" B                              | 100%                 | A-1  | LASER TRACKER                      |          |
| 12                   | D-1 IT 10    | ⊥ 1/16" A                               | 100%                 | A-1  | LASER TRACKER                      |          |
| 13                   | C-1 IT 10    | // 1/16" B                              | 100%                 | A-1  | LASER TRACKER                      |          |
| 14                   | C-1 IT 10    | ⊥ 1/16" A                               | 100%                 | A-1  | LASER TRACKER                      |          |
| 15                   | C-7 IT 10    | // 1/16" B                              | 100%                 | A-1  | LASER TRACKER                      |          |
| 16                   | C-7 IT 10    | ⊥ 1/16" A                               | 100%                 | A-1  | LASER TRACKER                      |          |

| Feature Number | Tool Number | Actual Results | OOT Conditions | Deficiency Number | Inspector/Date             | Temperature (F) |
|----------------|-------------|----------------|----------------|-------------------|----------------------------|-----------------|
| 9              | 4674        | .015           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 10             | 4674        | .047           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 11             | 4674        | .010           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 12             | 4674        | .027           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 13             | 4674        | .027           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 14             | 4674        | .029           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 15             | 4674        | .006           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 16             | 4674        | .027           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |

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Orano Federal Services  
**Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



Atlas Cask Car Pin Block Attachment Inspection Plan Record

Form 79  
 01/31/2015

| Railcar # 1DOX010001 |              |                      | Kasgro PO<br>15C3011916 |      | Notes:                          | Traveler |
|----------------------|--------------|----------------------|-------------------------|------|---------------------------------|----------|
| Drawing: 3018956     |              |                      | Sheet: 3                |      | Revision:                       | 0        |
| Feature Number       | Drawing Zone | Drawing Requirements | Insp. Freq.             | Code | Inspection Method (If Required) |          |
| 17                   | D-5 IT 9     | $\oplus 1/16''$ C-D  | 100%                    | A-1  | LASER TRACKER                   |          |
| 18                   | D-5 IT 9     | $\perp 1/16''$ A     | 100%                    | A-1  | LASER TRACKER                   |          |
| 19                   | D-5 IT 9     | $\oplus 1/16''$ C-D  | 100%                    | A-1  | LASER TRACKER                   |          |
| 20                   | D-5 IT 9     | $\perp 1/16''$ A     | 100%                    | A-1  | LASER TRACKER                   |          |
| 21                   | C-6 IT 7     | $\perp 1/16''$ A     | 100%                    | A-1  | LASER TRACKER                   |          |
| 22                   | C-6 IT 7     | $\perp 1/16''$ A     | 100%                    | A-1  | LASER TRACKER                   |          |
| 23                   | C-6 IT 7     | $\perp 1/16''$ A     | 100%                    | A-1  | LASER TRACKER                   |          |
| 24                   | C-6 IT 7     | $\perp 1/16''$ A     | 100%                    | A-1  | LASER TRACKER                   |          |

| Feature Number | Tool Number | Actual Results | OOT Conditions | Deficiency Number | Inspector/Date             | Temperature (F) |
|----------------|-------------|----------------|----------------|-------------------|----------------------------|-----------------|
| 17             | 4674        | .051           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 18             | 4674        | .018           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 19             | 4674        | .004           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 20             | 4674        | .014           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 21             | 4674        | .007           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 22             | 4674        | .007           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 23             | 4674        | .016           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 24             | 4674        | .004           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |

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Orano Federal Services  
**Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



Atlas Cask Car Pin Block Attachment Inspection Plan Record

Form 79  
 01/31/2015

| Railcar # 1DOX010001 |              |                      | Kasgro PO 15C3011916 |      | Notes:                          | Traveler |
|----------------------|--------------|----------------------|----------------------|------|---------------------------------|----------|
| Drawing: 3018956     |              |                      | Sheet: 3             |      | Revision:                       | 0        |
| Feature Number       | Drawing Zone | Drawing Requirements | Insp. Freq.          | Code | Inspection Method (if Required) |          |
| 25                   | C-6 IT 8     | ⊥ 1/16" A            | 100%                 | A-1  | LASER TRACKER                   |          |
| 26                   | C-6 IT 8     | ⊥ 1/16" A            | 100%                 | A-1  | LASER TRACKER                   |          |
| 27                   | C-6 IT 8     | ⊥ 1/16" A            | 100%                 | A-1  | LASER TRACKER                   |          |
| 28                   | C-6 IT 8     | ⊥ 1/16" A            | 100%                 | A-1  | LASER TRACKER                   |          |
| 29                   | B-5 IT 7     | ⊕ 1/16" A E B        | 100%                 | A-1  | LASER TRACKER                   |          |
| 30                   | B-5 IT 8     | ⊕ 1/16" A E B        | 100%                 | A-1  | LASER TRACKER                   |          |
| 31                   | B-5 IT 8     | ⊕ 1/16" A E B        | 100%                 | A-1  | LASER TRACKER                   |          |
| 32                   | B-5 IT 7     | ⊕ 1/16" A E B        | 100%                 | A-1  | LASER TRACKER                   |          |

| Feature Number | Tool Number | Actual Results | OOT Conditions | Deficiency Number | Inspector/Date             | Temperature (F) |
|----------------|-------------|----------------|----------------|-------------------|----------------------------|-----------------|
| 25             | 4674        | .012           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 26             | 4674        | .002           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 27             | 4674        | .008           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 28             | 4674        | .002           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 29             | 4674        | .296           | .234           |                   | <i>[Signature]</i> 1/17/19 | 47              |
| 30             | 4674        | .275           | .213           |                   | <i>[Signature]</i> 1/17/19 | 47              |
| 31             | 4674        | .435           | .372           |                   | <i>[Signature]</i> 1/17/19 | 47              |
| 32             | 4674        | .421           | .358           |                   | <i>[Signature]</i> 1/17/19 | 47              |

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Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



Atlas Cask Car Pin Block Attachment Inspection Plan Record

Form 79  
 01/31/2015

| Railcar # 1DOX010001 |              |                      | Kasgro PO<br>15C3011916 | Notes:    | Traveler                        |
|----------------------|--------------|----------------------|-------------------------|-----------|---------------------------------|
| Drawing: 3018956     |              |                      | Sheet: 3                | Revision: | 0                               |
| Feature Number       | Drawing Zone | Drawing Requirements | Insp. Freq.             | Code      | Inspection Method (if Required) |
| 33                   | B-6 IT 7     | $\phi$ 1/16" (M) C-D | 100%                    | A-1       | LASER TRACKER                   |
| 34                   | B-6 IT 8     | $\phi$ 1/16" (M) C-D | 100%                    | A-1       | LASER TRACKER                   |
| 35                   | B-6 IT 8     | $\phi$ 1/16" (M) C-D | 100%                    | A-1       | LASER TRACKER                   |
| 36                   | B-6 IT 7     | $\phi$ 1/16" (M) C-D | 100%                    | A-1       | LASER TRACKER                   |
| 37                   | B-6          | 148.5" $\pm$ .06"    | 100%                    | A-1       | LASER TRACKER                   |
| 38                   | B-3          | 148.5" $\pm$ .06"    | 100%                    | A-1       | LASER TRACKER                   |
| 39                   | D-5          | 45.0" $\pm$ .50" TYP | 100%                    | A-2       | LASER / TAPE MEASURE            |
| 40                   | D-1          | 4X 18.05             | 100%                    | A-2       | LASER TRACKER                   |
| 41                   | C-1          | 4X 25.20             | 100%                    | A-2       | LASER TRACKER                   |

| Feature Number | Tool Number | Actual Results | OOT Conditions | Deficiency Number | Inspector/Date             | Temperature (F) |
|----------------|-------------|----------------|----------------|-------------------|----------------------------|-----------------|
| 33             | 4674        | .414           | .351           |                   | <i>[Signature]</i> 1/17/19 | 47              |
| 34             | 4674        | .334           | .271           |                   | <i>[Signature]</i> 1/17/19 | 47              |
| 35             | 4674        | .511           | .448           |                   | <i>[Signature]</i> 1/17/19 | 47              |
| 36             | 4674        | .412           | .350           |                   | <i>[Signature]</i> 1/17/19 | 47              |
| 37             | 4674        | 148.441        | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 38             | 4674        | 148.445        | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 39             | TAPE        | 45.00          | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 40             | 4674        | 18.062-18.029  | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 41             | 4674        | 25.214-25.182  | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |

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**Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



Atlas Cask Car Pin Block Attachment Inspection Plan Record

Form 79  
 01/31/2015

| Railcar #        |              |                      | Kasgro PO<br>15C3011916 | Notes:    | Traveler                        |
|------------------|--------------|----------------------|-------------------------|-----------|---------------------------------|
| Drawing: 3018956 |              |                      | Sheet: 4                | Revision: | 0                               |
| Feature Number   | Drawing Zone | Drawing Requirements | Insp. Freq.             | Code      | Inspection Method (if Required) |
| 42               | C-8          | ⊕ 1/16" F G          | 100%                    | A-1       | LASER TRACKER                   |
| 43               | B-6          | ⊕ 1/16" M J          | 100%                    | A-1       | LASER TRACKER                   |
| 44               | A-4          | ⊕ 1/16" N H          | 100%                    | A-1       | LASER TRACKER                   |
| 45               | A-3          | ⊕ 1/16" L K          | 100%                    | A-1       | LASER TRACKER                   |
|                  |              |                      |                         |           |                                 |
|                  |              |                      |                         |           |                                 |
|                  |              |                      |                         |           |                                 |
|                  |              |                      |                         |           |                                 |
|                  |              |                      |                         |           |                                 |

| Feature Number | Tool Number | Actual Results | OOT Conditions | Deficiency Number | Inspector/Date             | Temperature (F) |
|----------------|-------------|----------------|----------------|-------------------|----------------------------|-----------------|
| 42             | 4674        | .002           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 43             | 4674        | .057           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 44             | 4674        | .034           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 45             | 4674        | .059           | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
|                |             |                |                |                   |                            |                 |
|                |             |                |                |                   |                            |                 |
|                |             |                |                |                   |                            |                 |
|                |             |                |                |                   |                            |                 |
|                |             |                |                |                   |                            |                 |

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Orano Federal Services  
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 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



Atlas Cask Car Pin Block Attachment Inspection Plan Record

Form 79  
 01/31/2015

| Railcar # 1DOX010001 |              |                      | Kasgro PO<br>15C3011916 |      | Notes:                          | Traveler |
|----------------------|--------------|----------------------|-------------------------|------|---------------------------------|----------|
| Drawing: 3018956     |              |                      | Sheet: 3&4              |      | Revision:                       | 0        |
| Feature Number       | Drawing Zone | Drawing Requirements | Insp. Freq.             | Code | Inspection Method (If Required) |          |
| 46                   | C-6          | 46.50"               | 100%                    | A-2  | LASER TRACKER                   |          |
| 47                   | C-3          | 11.75"               | 100%                    | A-2  | LASER TRACKER                   |          |
|                      |              |                      |                         |      |                                 |          |
|                      |              |                      |                         |      |                                 |          |
|                      |              |                      |                         |      |                                 |          |
|                      |              |                      |                         |      |                                 |          |
|                      |              |                      |                         |      |                                 |          |
|                      |              |                      |                         |      |                                 |          |
|                      |              |                      |                         |      |                                 |          |
|                      |              |                      |                         |      |                                 |          |

| Feature Number | Tool Number | Actual Results  | OOT Conditions | Deficiency Number | Inspector/Date             | Temperature (F) |
|----------------|-------------|-----------------|----------------|-------------------|----------------------------|-----------------|
| 46             | 4674        | 46.482"-46.520" | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
| 47             | 4674        | 11.720"-11.729" | N/A            | N/A               | <i>[Signature]</i> 1/17/19 | 47              |
|                |             |                 |                |                   |                            |                 |
|                |             |                 |                |                   |                            |                 |
|                |             |                 |                |                   |                            |                 |
|                |             |                 |                |                   |                            |                 |
|                |             |                 |                |                   |                            |                 |
|                |             |                 |                |                   |                            |                 |
|                |             |                 |                |                   |                            |                 |

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Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

contract measurement services

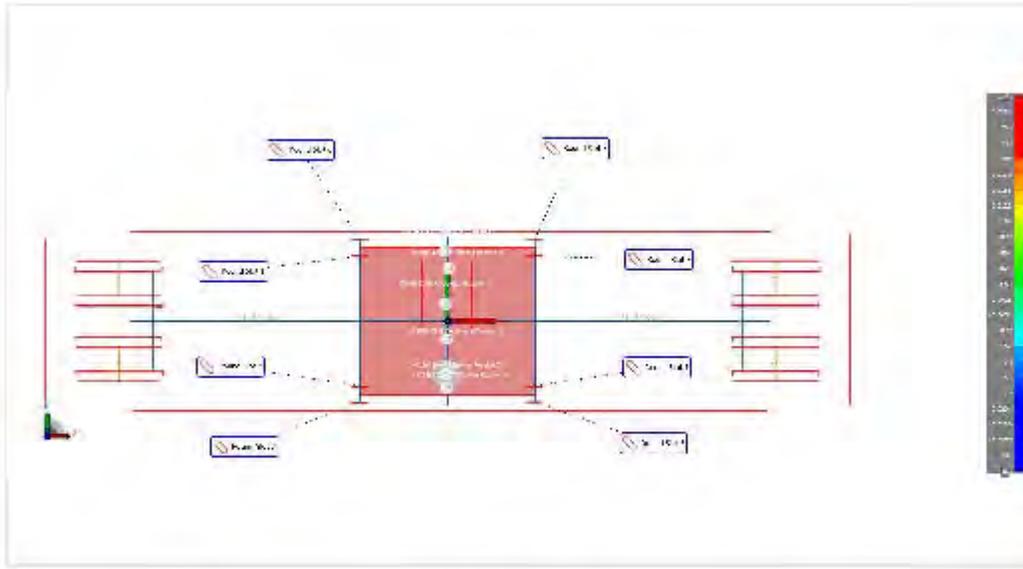
|                         |                        |
|-------------------------|------------------------|
| P.O. Box 540784         | jason@cmsllc1.com      |
| Grand Prairie, TX 75054 | http://www.cmsllc1.com |
| 972-322-3615            | 17 Jan 2019 08:51 PM   |

| Session Information                            |                         |
|--|-------------------------|
| File Name of FCD                               | Areva Atlas Railcar.fcd |
| Operator                                       | MATTHEW DILLE           |
| Company Name                                   | KASGRO                  |
| Date   | 1/17/2019               |
| Time   | 8:51 PM                 |
| Ambient Temperature                            | 47°F                    |
| Active Alignment Error                         |                         |
| Active Device                                  | V01001304674            |
| P08-05-11-09017 Current Device Error           |                         |
| V01001304674 -> Device Position 1 Device Error |                         |
| V01001304674 -> Device Position 2 Device Error |                         |
| V01001304674 -> Device Position 3 Device Error |                         |
| V01001304674 -> Device Position 4 Device Error |                         |
| V01001304674 -> Device Position 5 Device Error |                         |
| V01001304674 -> Device Position 6 Device Error | 0.0017In                |



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 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



| Round Slot 2 |            | Readings: 9 |           |           |          |           |
|--------------|------------|-------------|-----------|-----------|----------|-----------|
|              | actual     | nominal     | dev       | - tol     | +tol     | oot       |
| Center.x     | -62.5042in | -62.5000in  | -0.0042in | -0.0300in | 0.0300in | 0.0000in  |
| Center.z     | 9.3332in   | 9.5000in    | -0.1668in | -0.0300in | 0.0300in | -0.1368in |
| Length       | 5.2987in   | 5.3700in    | -0.0713in | 0.0000in  | 0.0600in | -0.0713in |
| Width        | 4.3452in   | 4.3700in    | -0.0248in | 0.0000in  | 0.0600in | -0.0248in |
| Form         | 0.0202in   |             | 0.0202in  | 0.0000in  | 0.0204in | 0.0000in  |
| → Position   | 0.3335in   |             | 0.3335in  | 0.0000in  | 0.0625in | 0.2710in  |

| Round Slot 3 |            | Readings: 8 |           |           |          |           |
|--------------|------------|-------------|-----------|-----------|----------|-----------|
|              | actual     | nominal     | dev       | - tol     | +tol     | oot       |
| Center.x     | -62.5039in | -62.5000in  | -0.0039in | -0.0300in | 0.0300in | 0.0000in  |
| Center.z     | 9.2931in   | 9.5000in    | -0.2069in | -0.0300in | 0.0300in | -0.1769in |
| Length       | 5.3243in   | 5.3700in    | -0.0457in | 0.0000in  | 0.0600in | -0.0457in |
| Width        | 4.3531in   | 4.3700in    | -0.0169in | 0.0000in  | 0.0600in | -0.0169in |
| Form         | 0.0134in   |             | 0.0134in  | 0.0000in  | 0.0204in | 0.0000in  |
| → Position   | 0.4135in   |             | 0.4135in  | 0.0000in  | 0.0625in | 0.3510in  |



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

| Round Slot 4 |           | Readings: 0 |           |           |          |           |
|--------------|-----------|-------------|-----------|-----------|----------|-----------|
|              | actual    | nominal     | dev       | -tol      | +tol     | oot       |
| Center.x     | 62.4720in | 62.5000in   | -0.0280in | -0.0300in | 0.0300in | 0.0000in  |
| Center.z     | 9.3627in  | 9.5000in    | -0.1373in | -0.0300in | 0.0300in | -0.1073in |
| Length       | 5.3443in  | 5.3700in    | -0.0258in | 0.0000in  | 0.0600in | -0.0258in |
| Width        | 4.3354in  | 4.3700in    | -0.0346in | 0.0000in  | 0.0600in | -0.0346in |
| Form         | 0.0167in  |             | 0.0167in  | 0.0000in  | 0.0204in | 0.0000in  |
| ↔ Position   | 0.2750in  |             | 0.2750in  | 0.0000in  | 0.0625in | 0.2125in  |

| Round Slot 5 |           | Readings: 8 |           |           |          |           |
|--------------|-----------|-------------|-----------|-----------|----------|-----------|
|              | actual    | nominal     | dev       | -tol      | +tol     | oot       |
| Center.x     | 62.5069in | 62.5000in   | 0.0069in  | -0.0300in | 0.0300in | 0.0000in  |
| Center.z     | 9.3517in  | 9.5000in    | -0.1483in | -0.0300in | 0.0300in | -0.1183in |
| Length       | 5.3301in  | 5.3700in    | -0.0399in | 0.0000in  | 0.0600in | -0.0399in |
| Width        | 4.3476in  | 4.3700in    | -0.0224in | 0.0000in  | 0.0600in | -0.0224in |
| Form         | 0.0118in  |             | 0.0118in  | 0.0000in  | 0.0204in | 0.0000in  |
| ↔ Position   | 0.2961in  |             | 0.2961in  | 0.0000in  | 0.0625in | 0.2336in  |

| Round Slot 1 |            | Readings: 8 |           |           |          |           |
|--------------|------------|-------------|-----------|-----------|----------|-----------|
|              | actual     | nominal     | dev       | -tol      | +tol     | oot       |
| Center.x     | -62.4972in | -62.5000in  | 0.0028in  | -0.0300in | 0.0300in | 0.0000in  |
| Center.z     | 9.2446in   | 9.5000in    | -0.2554in | -0.0300in | 0.0300in | -0.2254in |
| Length       | 5.3350in   | 5.3700in    | -0.0350in | 0.0000in  | 0.0600in | -0.0350in |
| Width        | 4.3376in   | 4.3700in    | -0.0324in | 0.0000in  | 0.0600in | -0.0324in |
| Form         | 0.0067in   |             | 0.0067in  | 0.0000in  | 0.0204in | 0.0000in  |
| ↔ Position   | 0.5108in   |             | 0.5108in  | 0.0000in  | 0.0625in | 0.4483in  |

| Round Slot 6 |            | Readings: 8 |           |           |          |           |
|--------------|------------|-------------|-----------|-----------|----------|-----------|
|              | actual     | nominal     | dev       | -tol      | +tol     | oot       |
| Center.x     | -62.5059in | -62.5000in  | -0.0059in | -0.0300in | 0.0300in | 0.0000in  |
| Center.z     | 9.2939in   | 9.5000in    | -0.2061in | -0.0300in | 0.0300in | -0.1761in |
| Length       | 5.3539in   | 5.3700in    | -0.0161in | 0.0000in  | 0.0600in | -0.0161in |
| Width        | 4.3576in   | 4.3700in    | -0.0124in | 0.0000in  | 0.0600in | -0.0124in |
| Form         | 0.0091in   |             | 0.0091in  | 0.0000in  | 0.0204in | 0.0000in  |
| ↔ Position   | 0.4120in   |             | 0.4120in  | 0.0000in  | 0.0625in | 0.3495in  |

| Round Slot 7 |           | Readings: 7 |           |           |          |           |
|--------------|-----------|-------------|-----------|-----------|----------|-----------|
|              | actual    | nominal     | dev       | -tol      | +tol     | oot       |
| Center.x     | 62.4711in | 62.5000in   | -0.0289in | -0.0300in | 0.0300in | 0.0000in  |
| Center.z     | 9.2830in  | 9.5000in    | -0.2170in | -0.0300in | 0.0300in | -0.1870in |
| Length       | 5.3304in  | 5.3700in    | -0.0396in | 0.0000in  | 0.0600in | -0.0396in |
| Width        | 4.3380in  | 4.3700in    | -0.0320in | 0.0000in  | 0.0600in | -0.0320in |
| Form         | 0.0014in  |             | 0.0014in  | 0.0000in  | 0.0204in | 0.0000in  |
| ↔ Position   | 0.4346in  |             | 0.4346in  | 0.0000in  | 0.0625in | 0.3721in  |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

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| Round Slot 8 |           | Readings: 8 |           |           |          |           |
|--------------|-----------|-------------|-----------|-----------|----------|-----------|
|              | actual    | nominal     | dev       | -tol      | +tol     | oot       |
| Center.x     | 62.4706in | 62.5000in   | -0.0295in | -0.0300in | 0.0300in | 0.0000in  |
| Center.z     | 9.2896in  | 9.5000in    | -0.2104in | -0.0300in | 0.0300in | -0.1804in |
| Length       | 5.3402in  | 5.3700in    | -0.0298in | 0.0000in  | 0.0600in | -0.0298in |
| Width        | 4.3643in  | 4.3700in    | -0.0057in | 0.0000in  | 0.0600in | -0.0057in |
| Form         | 0.0109in  |             | 0.0109in  | 0.0000in  | 0.0204in | 0.0000in  |
| ∴ Position   | 0.4208in  |             | 0.4208in  | 0.0000in  | 0.0625in | 0.3583in  |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

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## Appendix B.3.2 – Federal Services Dimensional Inspection Worksheet

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Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Atlas Railcar - As-Built Dimensional Inspection report  
 Drawing: DWG-300.856-000 Atlas Railcar, Cradle Attachment

Page 1 of 8

| Item/Description                 | Sheet/Zone or detail | Required Dimension | Tolerance | Actual Dimension | Accept | Reject | Inspection Reference                  | Comments   |
|----------------------------------|----------------------|--------------------|-----------|------------------|--------|--------|---------------------------------------|--|
| <b>A1</b>                        |                      |                    |           |                  |        |        |                                       |  |
| <b>outer pin blocks P13-P17</b>  |                      |                    |           |                  |        |        |                                       |  |
| Item 11                          | 3/D-7                | // 1/16 B          | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 1  |  |
| Item 11                          | 3/D-7                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 2  |  |
| Item 10                          | 3/D-7                | // 1/16 B          | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 9  |  |
| Item 10                          | 3/D-7                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 10 |  |
| Item 10                          | 3/C-7                | // 1/16 B          | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 15 |  |
| Item 10                          | 3/C-7                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 16 |  |
| Item 11                          | 3/C-7                | // 1/16 B          | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 7  |  |
| Item 11                          | 3/C-7                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 8  |  |
| <b>outer pin blocks P5-P12</b>   |                      |                    |           |                  |        |        |                                       |  |
| Item 11                          | 3/D-1                | // 1/16 B          | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 3  |  |
| Item 11                          | 3/D-1                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 4  |  |
| Item 10                          | 3/D-1                | // 1/16 B          | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 11 |  |
| Item 10                          | 3/D-1                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 12 |  |
| Item 10                          | 3/C-1                | // 1/16 B          | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 13 |  |
| Item 10                          | 3/C-1                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 14 |  |
| Item 11                          | 3/C-1                | // 1/16 B          | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 5  |  |
| Item 11                          | 3/C-1                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 6  |  |
| <b>Outer pin block location</b>  |                      |                    |           |                  |        |        |                                       |  |
| Item 30 face                     | 3/D-1                | 4X 18.05           | ±0.05*    | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 40 |  |
| Item 11/12 face                  | 3/C-1                | 4X 25.20           | ±0.05*    | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 41 |  |
| Item 10/11/12 edge               | 3/B-6                | 148.5              | ±0.06     | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 37 |  |
| Item 10/11/12 edge               | 3/B-3                | 148.5              | ±0.05     | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 38 |  |
| Item 10 (P11/P6)                 | 4/C-8                | ⊙ 1/16 F G         | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 42 |  |
| Item 10 (P13-P14)                | 4/B-6                | ⊙ 1/16 M J         | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 43 |  |
| Item 10 (P10-P7)                 | 4/A-4                | ⊙ 1/16 H I         | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 44 |  |
| Item 10 (P18-P15)                | 4/A-3                | ⊙ 1/16 L K         | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 45 |  |
| <b>center pin block location</b> |                      |                    |           |                  |        |        |                                       |  |
| width from centerline            | 3/D-6                | 2X 98*             | -         | -                | -      | -      | -                                     | CMS chose to measure from the railcar centerline (datum B). CMS chose a tolerance of ±0.05 on the 46.50 dimension to meet the intent of the drawing. This 2(±0.05) = ±0.06 tolerance matches the conceptual attachment drawing.<br>CMS chose to inspect using a ±0.05 tolerance. This meets the conceptual attachment drawing. |
| width from centerline            | 3/C-6                | 2X 46.50           | ±0.05*    | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 46 |  |
| width between                    | 4/C-3                | 4X 11.75           | ±0.05*    | -                | X      |        | DTP-038, KAS 127, Laser Tracker FN 47 |  |
| Item 7                           | 3/C-6                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker 21    |  |
| Item 7                           | 3/C-6                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker 22    |  |
| Item 7                           | 3/C-6                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker 23    |  |
| Item 7                           | 3/C-6                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker 24    |  |
| Item 8                           | 3/C-6                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker 25    |  |
| Item 8                           | 3/C-6                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker 26    |  |
| Item 8                           | 3/C-6                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker 27    |  |
| Item 8                           | 3/C-6                | ⊥ 1/16 A           | 1/16      | -                | X      |        | DTP-038, KAS 127, Laser Tracker 28    |  |



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Atlas Railcar - As-Built Dimensional Inspection report  
 Drawing: DWG-3018556-000 Atlas Railcar, Cradle Attachment

Page 2 of 8

| Item/Description | Sheet/Zone or detail | Required Dimension | Tolerance    | Actual Dimension         | Accept | Reject | Inspection Reference  | Comments   |
|------------------|----------------------|--------------------|--------------|--------------------------|--------|--------|---|--|
| Item 7 (3/C-4)   | 3/B-5                | 1/16 A E B         | 1/16 (.0625) | .296<br>Reworked to .045 | X      |        | DTF-038, KAS 127, Laser Tracker 29 and CMS deviation report<br>and Kasgro Cradle Attachment Inspection, 5. Stainless Pad Dimensions | Slot 5 on CMS Deviation Report<br>longitudinal, (.0060)<br>Height, (-.1483)<br>Total Positional = .2963<br><br>Minimum Worst Case Condition<br>KAS inspected height = 7.311 min (any pad)<br>minimum slot height from CMS Deviation Report = 4.3354 (any slot)<br>Total = 4.3354/2 + 7.311 = 9.4767<br><br>Maximum Worst Case Condition<br>KAS inspected height = 7.343 max (any pad)<br>maximum slot height from CMS Deviation Report = 4.3643 (any slot)<br>Total = 4.3643/2 + 7.343 = 9.534<br><br>Final condition following rework:<br>max deviation = .024 (using worst case)<br>updated positional<br>longitudinal, (.0060)<br>Height, (.024)<br>Total Positional = .045 < .0625 OK        |
| Item 8 (3/C-4)   | 3/B-5                | 1/16 A E B         | 1/16 (.0625) | .275<br>Reworked to .056 | X      |        | DTF-038, KAS 127, Laser Tracker 30 and CMS deviation report<br>and Kasgro Cradle Attachment Inspection, 5. Stainless Pad Dimensions | Slot 4 on CMS Deviation Report<br>longitudinal, (-.0280)<br>Height, (-.1373)<br>Total Positional = .2750<br><br>Final condition following rework:<br>max deviation = .024 (using worst case)<br>updated positional<br>longitudinal, (-.0280)<br>Height, (.024)<br>Total Positional = .024 > .0625 NOT OK<br><br>Actual Reworked Condition<br>KAS inspected height = 7.329 min (A-end lower)<br>slot height from CMS Deviation Report<br>= 4.3476 (slot 5) = 4.3354 (slot 4)<br>Min total = 4.3354/2 + 7.329 = 9.4967<br>Max total = 4.3476/2 + 7.329 = 9.503<br><br>max deviation = .023<br>updated positional<br>longitudinal, (-.0280)<br>Height, (.023)<br>Total Positional = .056 < .0625 OK |



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Atlas Railcar - As-Built Dimensional Inspection report  
 Drawing: DWG-3003256-000 Atlas Railcar, Cradle Attachment

Page 3 of 8

| Item/Description | Sheet/Zone or detail | Required Dimension | Tolerance    | Actual Dimension          | Accept | Reject | Inspection Reference  | Comments  |
|------------------|----------------------|--------------------|--------------|---------------------------|--------|--------|---|---|
| Item 6 (3/D-4)   | 3/B-5                | ⊙ 1/16 A E B       | 1/16 (.0625) | 0.435<br>Reworked to .061 | X      |        | DTI-038, KAS 127, Laser Tracker 31 and CMS deviation report<br>and Kasgro Cradle Attachment Inspection, 5. Stainless Pad Dimensions | Slot 7 on CMS Deviation Report<br>longitudinal, (-.0289)<br>Height, (-.2170)<br>Total Positional = .4346<br><br>Final condition following rework:<br>max deviation = .034<br>updated positional<br>longitudinal, (-.0289)<br>Height, (.024)<br>Total Positional = .075 > .0625 NOT OK<br><br>Actual Reworked Condition:<br>KAS inspected height = 7.321 min (A-end upper)<br>slot height from CMS Deviation Report<br>= 4.338 (slot 7) = 4.3643 (slot 8)<br>Min total = 4.338/2 + 7.321 = 8.49<br>Max total = 4.3643/2 + 7.321 = 9.509<br><br>max deviation = .01<br>updated positional<br>longitudinal, (-.0289)<br>Height, (.01)<br>Total Positional = .061 < .0625 OK  |
| Item 7 (3/D-4)   | 3/B-5                | ⊙ 1/16 A E B       | 1/16 (.0625) | 0.431<br>Reworked to .062 | X      |        | DTI-038, KAS 127, Laser Tracker 32 and CMS deviation report<br>and Kasgro Cradle Attachment Inspection, 5. Stainless Pad Dimensions | Slot 8 on CMS Deviation Report<br>longitudinal, (-.0293)<br>Height, (-.2104)<br>Total Positional = .4308<br><br>Final condition following rework:<br>max deviation = .034<br>updated positional<br>longitudinal, (-.0293)<br>Height, (.024)<br>Total Positional = .075 > .0625 NOT OK<br><br>Actual Reworked Condition:<br>KAS inspected height = 7.321 min (A-end upper)<br>slot height from CMS Deviation Report<br>= 4.338 (slot 7) = 4.3643 (slot 8)<br>Min total = 4.338/2 + 7.321 = 8.49<br>Max total = 4.3643/2 + 7.321 = 9.509<br><br>max deviation = .01<br>updated positional<br>longitudinal, (-.0293)<br>Height, (.01)<br>Total Positional = .0625 < .0625 OK |



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Atlas Railcar - As-Built Dimensional Inspection report  
 Drawing: DWG-3018956-000 Atlas Railcar, Cradle Attachment

Page 4 of 8

| Item/Description     | Sheet/Zone or detail | Required Dimension | Tolerance    | Actual Dimension          | Accept | Reject | Inspection Reference  | Comments  |
|----------------------|----------------------|--------------------|--------------|---------------------------|--------|--------|---|---|
| Item 7 (3/C-5)       | 3/B-5                | ⊕ 1/16 C-D         | 1/16 (.0625) | 0.414<br>Reworked to .049 | X      |        | DTP-038, KAS 127, Laser Tracker 33 and CMS deviation report<br><br>and Kasgro Cradle Attachment Inspection, 5. Stainless Pad Dimensions | Slot 3 on CMS Deviation Report<br>longitudinal, (-.0039)<br>Height, (-.2060)<br>Total Positional = .4135<br><br>Final condition following rework:<br>max deviation = .024 (using worst case)<br>updated positional<br>longitudinal, (-.0039)<br>Height, (.024)<br>Total Positional = .0485 < .0625 OK |
| Item 8 (3/C-5)       | 3/B-5                | ⊕ 1/16 C-D         | 1/16 (.0625) | 0.334<br>Reworked to .049 | X      |        | DTP-038, KAS 127, Laser Tracker 34 and CMS deviation report<br><br>and Kasgro Cradle Attachment Inspection, 5. Stainless Pad Dimensions | Slot 2 on CMS Deviation Report<br>longitudinal, (-.0042)<br>Height, (-.1868)<br>Total Positional = .3335<br><br>Final condition following rework:<br>max deviation = .024 (using worst case)<br>updated positional<br>longitudinal, (-.0042)<br>Height, (.024)<br>Total Positional = .0487 < .0625 OK |
| Item 8 (3/D-5)       | 3/B-5                | ⊕ 1/16 C-D         | 1/16 (.0625) | 0.511<br>Reworked to .049 | X      |        | DTP-038, KAS 127, Laser Tracker 35 and CMS deviation report<br><br>and Kasgro Cradle Attachment Inspection, 5. Stainless Pad Dimensions | Slot 1 on CMS Deviation Report<br>longitudinal, (.0028)<br>Height, (-.2954)<br>Total Positional = .5108<br><br>Final condition following rework:<br>max deviation = .024 (using worst case)<br>updated positional<br>longitudinal, (.0028)<br>Height, (.024)<br>Total Positional = .0483 < .0625 OK   |
| Item 7 (3/D-5)       | 3/B-5                | ⊕ 1/16 C-D         | 1/16 (.0625) | 0.412<br>Reworked to .049 | X      |        | DTP-038, KAS 127, Laser Tracker 36 and CMS deviation report<br><br>and Kasgro Cradle Attachment Inspection, 5. Stainless Pad Dimensions | Slot 6 on CMS Deviation Report<br>longitudinal, (-.0059)<br>Height, (-.2061)<br>Total Positional = .4120<br><br>Final condition following rework:<br>max deviation = .024 (using worst case)<br>updated positional<br>longitudinal, (-.0059)<br>Height, (.024)<br>Total Positional = .0484 < .0625 OK |
| shear block location | -                    | -                  | -            | -                         | -      | -      | -   | -   |
| Item 9 edge to B     | 3/D-5                | 45.00              | ±1/2         |                           | X      |        | DTP-038, KAS 127, Laser Tracker FN 39   | Tracker and tape measure  |
|                      | 3/D-5                | ⊕ 1/16 C-D         | 1/16         |                           | X      |        | DTP-038, KAS 127, Laser Tracker FN 17   |   |
|                      | 3/D-5                | ⊥ 1/16 A           | 1/16         |                           | X      |        | DTP-038, KAS 127, Laser Tracker FN 18   |   |
|                      | 3/D-5                | ⊕ 1/16 C-D         | 1/16         |                           | X      |        | DTP-038, KAS 127, Laser Tracker FN 19   |   |
|                      | 3/D-5                | ⊥ 1/16 A           | 1/16         |                           | X      |        | DTP-038, KAS 127, Laser Tracker FN 20   |   |



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Atlas Railcar - As-Built Dimensional Inspection report  
 Drawing: DWG-3018556-000 Atlas Railcar, Cradle Attachment

Page 5 of 8

| Item/Description       | Sheet/Zone or detail | Required Dimension      | Tolerance | Actual Dimension | Accept | Reject | Inspection Reference   | Comments         |
|------------------------|----------------------|-------------------------|-----------|------------------|--------|--------|--|------------------|
| Item 6 size / location | -                    | -                       | -         | -                | -      | -      | -  | -                |
|                        | 3/C-4                | 4X 9.0                  | ±1        |                  | X      |        | Keagro Cradle Attachment Inspection, 1. Keagro Measurements        |                  |
|                        | 3/3-C                | 4X 12.0                 | ±1        |                  | X      |        | Keagro Cradle Attachment Inspection, 1. Keagro Measurements        |                  |
|                        | 3/4-C                | 6.00 TYP                | ±.06      |                  | X      |        | Keagro Cradle Attachment Inspection, 1. Keagro Measurements        |                  |
|                        | 3/4-C                | 4.50 TYP                | ±.06      |                  | X      |        | Keagro Cradle Attachment Inspection, 1. Keagro Measurements        |                  |
|                        | 3/4-C                | 1.38 TYP                | ±.06      |                  | X      |        | Keagro Cradle Attachment Inspection, 1. Keagro Measurements        |                  |
| Item 6 size / location | -                    | -                       | -         | -                | -      | -      | -  | -                |
|                        | 3/D-4                | 2X 12.0                 | ±1        |                  | X      |        | Keagro Cradle Attachment Inspection, 1. Keagro Measurements        |                  |
|                        | 3/D-4                | 6.00 TYP                | ±.06      |                  | X      |        | Keagro Cradle Attachment Inspection, 1. Keagro Measurements        |                  |
|                        | 3/C-4                | 2X 12.0                 | ±1        |                  | X      |        | Keagro Cradle Attachment Inspection, 1. Keagro Measurements        |                  |
|                        | 3/D-3                | 2X 1/8                  | +0/-1/16  |                  | X      |        | Keagro Cradle Attachment Inspection, 6. Keagro Item 5 Email        |                  |
| Item 7 hole locations  | -                    | -                       | -         | -                | -      | -      | -  | -                |
|                        | 3/Detail 7           | 5.50                    | ±.06      |                  | X      |        | Keagro Cradle Attachment Inspection, 1. Keagro Measurements        |                  |
|                        | 3/Detail 7           | 6.50                    | ±.06      |                  | X      |        | Keagro Cradle Attachment Inspection, 1. Keagro Measurements        |                  |
|                        | 3/Detail 7           | 3.25                    | ±.06      |                  | X      |        | Keagro Cradle Attachment Inspection, 1. Keagro Measurements        |                  |
|                        | 3/Detail 7           | 2.60                    | ±.06      |                  | X      |        | Keagro Cradle Attachment Inspection, 1. Keagro Measurements        |                  |
|                        | 3/Detail 7           | 3X 5/8-11 UNC-2B -J-1.5 |           |                  | X      |        | Keagro Cradle Attachment Inspection, 1. Keagro Measurements        |                  |
| Item 7/8 size          | -                    | -                       | -         | -                | -      | -      | -  | -                |
|                        | 3/Detail 8           | 2X 10"                  | 1"        |                  | X      |        | Keagro Cradle Attachment Inspection, 1. Keagro Measurements        |                  |
|                        | 3/Detail 8           | 6.00                    | ±.06      |                  | X      |        | Keagro Cradle Attachment Inspection, 2. Inboard Attachment drawing |                  |
|                        | 3/Detail 8           | 2X 11.0                 | ±1        |                  | X      |        | Keagro Cradle Attachment Inspection, 1. Keagro Measurements        |                  |
|                        | 3/Detail 8           | 2X 8                    | ±1        |                  | X      |        | Keagro Cradle Attachment Inspection, 1. Keagro Measurements        |                  |
|                        | 3/Detail 8           | 6.0                     | ±1        |                  | X      |        | Keagro Cradle Attachment Inspection, 1. Keagro Measurements        |                  |
|                        | 3/Detail 8           | 12.0                    | ±1        |                  | X      |        | Keagro Cradle Attachment Inspection, 2. Inboard Attachment drawing |                  |
|                        | 3/Detail 8           | 5.37                    | +06/-00   | 5.2987-5.3539    |        | X      | DTP-038, KAS 127, CMS Deviation Report                             | See Keagro NC RS |
|                        | 3/Detail 8           | 4.37                    | +06/-00   | 4.3354-4.3643    |        | X      | DTP-038, KAS 127, CMS Deviation Report                             | See Keagro NC RS |
|                        | 3/Detail 8           | 2X 6.5                  | ±1        |                  | X      |        | DTP-038, KAS 127, CMS Deviation Report                             |                  |
|                        | 3/Detail 8           | 3.75                    | ±.06      |                  | X      |        | Keagro Cradle Attachment Inspection, 2. Inboard Attachment drawing |                  |



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Atlas Railcar - As-Built Dimensional Inspection report  
 Drawing: DWG-3021970-000 Atlas Railcar, Cradle Attachment

Page 6 of 8

| Item/Description   | Sheet/Zone or detail | Required Dimension | Tolerance  | Actual Dimension | Accept | Reject | Inspection Reference  | Comments                        |
|--------------------|----------------------|--------------------|------------|------------------|--------|--------|---|---------------------------------|
|                    | 5/Detail 8           | 30"                | ±1"        |                  | X      |        | Kaigro Cradle Attachment Inspection, 1. Kaigro Measurements         |                                 |
|                    | 5/Detail 8           | 18.0               | ±1         |                  | X      |        | Kaigro Cradle Attachment Inspection, 2. Inboard Attachment drawing  |                                 |
|                    | 5/Detail 8           | 16.0               | ±1         | 16.1875-16.75    |        | X      | Kaigro Cradle Attachment Inspection, 2. Inboard Attachment drawing  | See Kaigro NC #0                |
|                    | 5/Detail 8           | 4.0                | ±1         |                  | X      |        | Kaigro Cradle Attachment Inspection, 2. Inboard Attachment drawing  |                                 |
|                    | 5/Detail 8           | 2.0                | ±1         |                  | X      |        | Kaigro Cradle Attachment Inspection, 2. Inboard Attachment drawing  |                                 |
| Item 2 size        | -                    | -                  | -          | -                | -      | -      | -   | -                               |
|                    | 5/Detail 2           | 6.00               | ±0.06      |                  | X      |        | Kaigro Cradle Attachment Inspection, 1. Kaigro Measurements         |                                 |
|                    | 5/Detail 2           | 1.50               | ±0.06      |                  | X      |        | Kaigro Cradle Attachment Inspection, 1. Kaigro Measurements         |                                 |
|                    | 5/Detail 2           | 2X R.25            | ±0.06      |                  | X      |        | Kaigro Cradle Attachment Inspection, 1. Kaigro Measurements         |                                 |
|                    | 5/Detail 2           | 1.50               | ±0.06      |                  | X      |        | Kaigro Cradle Attachment Inspection, 1. Kaigro Measurements         |                                 |
| Item 13/14 size    | -                    | -                  | -          | -                | -      | -      | -   | -                               |
|                    | 5/Detail 13/14       | 2X .50 x 45°       | ±0.06 / 1° |                  | X      |        | Kaigro Cradle Attachment Inspection, 1. Kaigro Measurements         |                                 |
| Item 13            | 5/Detail 13/14       | 20.70              | ±0.06      |                  | X      |        | Kaigro Cradle Attachment Inspection, 1. Kaigro Measurements         |                                 |
| Item 14            | 5/Detail 13/14       | 37.20              | ±0.06      |                  | X      |        | Kaigro Cradle Attachment Inspection, 1. Kaigro Measurements         |                                 |
|                    | 5/Detail 13/14       | Ø4.000             | ±0.002     |                  | X      |        | Kaigro Cradle Attachment Inspection, 1. Kaigro Measurements         |                                 |
|                    | 5/Detail 13/14       | 5/8-11 UNC-2B ↓2.0 |            |                  | X      |        | Kaigro Cradle Attachment Inspection, 1. Kaigro Measurements         |                                 |
| Item 15 size       | -                    | -                  | -          | -                | -      | -      | -   | -                               |
|                    | 5/Detail 15          | 5.56               | ±0.06      | 5.5              | X      |        | Kaigro Cradle Attachment Inspection, 1. Kaigro Measurements         |                                 |
|                    | 5/Detail 15          | 2X R1.00           | ±0.06      |                  | X      |        | Kaigro Cradle Attachment Inspection, 1. Kaigro Measurements         |                                 |
|                    | 5/Detail 15          | 40.0               | ±1         |                  | X      |        | Kaigro Cradle Attachment Inspection, 1. Kaigro Measurements         |                                 |
| Item 10/11/12 size | -                    | -                  | -          | -                | -      | -      | -   | -                               |
|                    | 6/Detail 10          | 18.0               | ±1         | 17.75-18.125     |        | X      | Kaigro Cradle Attachment Inspection, 3a. Outboard Attachment, Rev A | Dimension "D", See Kaigro NC #4 |
|                    | 6/Detail 10          | 2X 16.0            | ±1         | 16.1875 max      |        | X      | Kaigro Cradle Attachment Inspection, 1. Kaigro Measurements         | See Kaigro NC #4                |
|                    | 6/Detail 10          | 5.5                | ±1         |                  | X      |        | Kaigro Cradle Attachment Inspection, 1. Kaigro Measurements         |                                 |
|                    | 6/Detail 10          | 11.0               | ±1         | 11-11.25         |        | X      | Kaigro Cradle Attachment Inspection, 1. Kaigro Measurements         | See Kaigro NC #4                |
|                    | 6/Detail 10          | 2.0                | ±1         |                  | X      |        | Kaigro Cradle Attachment Inspection, 3a. Outboard Attachment, Rev A | Dimension "F"                   |
|                    | 6/Detail 10          | 3.00               | ±0.06      | 3.25             |        | X      | Kaigro Cradle Attachment Inspection, 3a. Outboard Attachment, Rev A | Dimension "A", See Kaigro NC #4 |
|                    | 6/Detail 10          | 1.50               | ±0.06      | 1.625            |        | X      | Kaigro Cradle Attachment Inspection, 1. Kaigro Measurements         | See Kaigro NC #4                |
|                    | 6/Detail 10          | 2X 30°             | ±1"        |                  | X      |        | Kaigro Cradle Attachment Inspection, 1. Kaigro Measurements         |                                 |



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Atlas Railcar - As-Built Dimensional Inspection report  
 Drawing: DWG-3018956-000 Atlas Railcar, Cradle Attachment

Page 7 of 8

| Item/Description      | Sheet/Zone or detail | Required Dimension                        | Tolerance   | Actual Dimension           | Accept | Reject | Inspection Reference  | Comments   |
|-----------------------|----------------------|---|-------------|----------------------------|--------|--------|---|--|
|                       | 6/Detail 10          | 4X 15"                                    | 1"          |                            | X      |        | Kaagro Cradle Attachment Inspection, 1. Kaagro Measurements   |  |
|                       | 6/Detail 10          | 2X 8.0                                    | ±1          | 7.91-8.00                  | X      |        | Kaagro Cradle Attachment Inspection, 3b. Outboard Attachment Item 10  | dimension "1"/2"-B"  |
|                       | 6/Detail 10          | 4X 11.0                                   | ±1          |                            | X      |        | Kaagro Cradle Attachment Inspection, 1. Kaagro Measurements   |  |
|                       | 6/Detail 10          | 2X 64.00                                  | ±.06        |                            | X      |        | Kaagro Cradle Attachment Inspection, 3b. Outboard Attachment Item 10  | dimension "F"  |
|                       | 6/C-5                | 2X 4.37                                   | +0.06/-0.00 | 4.361 - 4.4001             |        | X      | CMS email 2/14/2019   | See Kaagro NC #4   |
| hole                  | 6/C-5                | ± 1/16 T 5<br>(8.00 ±.03)                 | 1/16        | 7.875 - 8.075              |        | X      | Kaagro Cradle Attachment Inspection, 3b. Outboard Attachment Item 10, Rev B<br><br>DTI-008, KAS 127, CMS Laser Report<br><br>CMS email 2/14/2019 and CMS email 3/7/2019 | OUTBOARD ATTACHMENT ITEM 10, Rev B drawing. See Kaagro NC #4<br><br>Additional measurements taken from top to edge of hole provided on Outboard Attachment Item 10, Rev B, Dimension "C" and "I" with a range of 5.6875 (part 8) to 5.875 without (part 8) the range is 5.75 to 5.875<br><br>From the CMS email the range for the hole height (all parts) is 4.323 to 4.4401<br><br>From the CMS email 2 the range for the hole height (part 8) is 4.375 to 4.4001 and (all others) 4.323 to 4.4401<br><br>The max and min for the additional measurements is:<br>5.875+4.4001/2 = 8.075 maximum<br>5.6875+4.375/2 = 7.875 minimum<br>5.75+4.323/2 = 7.512 minimum |
|                       | 6/Detail 10          | 4X 8.5                                    | ±1          |                            | X      |        | Kaagro Cradle Attachment Inspection, 1. Kaagro Measurements   |  |
|                       | 6/C-1                | 2X 4.37                                   | +0.06/-0.00 | 4.323-4.43                 |        | X      | CMS email 2/14/2019   | See Kaagro NC #4   |
| slot                  | 6/B-1                | ± 1/16 R T<br>(8.00 ±.03)<br>(48.00 ±.03) | 1/16        | 7.875 - 8.075<br>48-48.125 |        | X      | Kaagro Cradle Attachment Inspection, 3b. Outboard Attachment Item 10, Rev B<br><br>DTI-008, KAS 127, CMS Laser Report<br><br>CMS email 2/14/2019 and CMS email 3/7/2019 | OUTBOARD ATTACHMENT ITEM 10, Rev B drawing. See Kaagro NC #4<br><br>Range for top of part to hole = 7.875-8.075  |
|                       | 6/Detail 10          | 1 1/32 S                                  | 1/32        |                            |        |        | Kaagro Cradle Attachment Inspection, 1. Kaagro Measurements   | See Kaagro NC #4   |
|                       | 6/Detail 10          | 2X 5.37                                   | +0.06/-0.00 | 5.340-5.43                 |        | X      | CMS 2/14/2019   | See Kaagro NC #4   |
| Item 9 size           | -                    | -   | -           | -                          | -      | -      | -   | -  |
|                       | 6/Detail 9           | 90.0                                      | ±1          | 90.1875 max                |        | X      | Kaagro Cradle Attachment Inspection, 1. Kaagro Measurements   | See Kaagro NC #6   |
|                       | 6/Detail 9           | 21.0                                      | ±1          | 21.125 max                 |        | X      | Kaagro Cradle Attachment Inspection, 1. Kaagro Measurements   | See Kaagro NC #6   |
|                       | 6/Detail 9           | 4X .5 x 45°                               | ±1 / 1°     |                            | X      |        | Kaagro Cradle Attachment Inspection, 1. Kaagro Measurements   |  |
| Item 11/12 hole sizes | -                    | -   | -           | -                          | -      | -      | -   | -  |
|                       | 7/Detail 11/12       | 2X 5.50                                   | ±.06        |                            | X      |        | Kaagro Cradle Attachment Inspection, 1. Kaagro Measurements   |  |



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Atlas Railcar - As-Built Dimensional Inspection report  
 Drawing: DWG-3018958-000 Atlas Railcar, Cradle Attachment

Page 8 of 8

| Item/Description | Sheet/Zone or detail | Required Dimension         | Tolerance | Actual Dimension | Accept | Reject | Inspection Reference                                      | Comments |
|------------------|----------------------|----------------------------|-----------|------------------|--------|--------|---|----------|
|                  | 7/Detail 11/12       | 2X 6.50                    | ±.06      |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
|                  | 7/Detail 11/12       | 2X 3.25                    | ±.06      |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
|                  | 7/Detail 11/12       | 3.00                       | ±.06      |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
|                  | 7/Detail 11/12       | 2X 8.0                     | ±.1       |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
|                  | 7/Detail 11/12       | 6X 5/8-11 UNC-2B $\pm$ 1.5 |           |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
| Item 3 size      | -                    | -                          | -         | -                | -      | -      | -   |          |
|                  | 8/Detail 3           | 6.50                       | ±.06      |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
|                  |                      | 3.25                       | ±.06      |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
|                  |                      | $\varnothing$ 1.50         | ±.06      |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
|                  |                      | 2X $\varnothing$ 6.63      | ±.03      |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
|                  |                      | $\varnothing$ 5.63         | ±.06      |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
|                  |                      | 8.00                       | ±.06      |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
|                  |                      | 4.00                       | ±.06      |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
|                  |                      | 4X .19 X 45°               | ±.06 / 1° |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
|                  |                      | 5.10                       | ±.06      |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
|                  |                      | 2.60                       | ±.06      |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
| Item 4 size      | -                    | -                          | -         | -                | -      | -      | -   |          |
|                  | 8/Detail 4           | 4X $\varnothing$ 5         | ±.1       |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
|                  |                      | 2X 15°                     | ±1°       |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
|                  |                      | 2X 5.0                     | ±.1       |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
|                  |                      | 4.0                        | ±.1       |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
|                  |                      | 2.0                        | ±.1       |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
|                  |                      | 10.0                       | ±.1       |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
|                  |                      | $\varnothing$ 6.63         | ±.03      |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |
|                  |                      | 2.13                       | ±.06      |                  | X      |        | Kaigo Cradle Attachment Inspection, 1. Kaigo Measurements |          |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.3.3 – Atlas Cask Car Loaded Deck Height Document**

|                       |  |                             |                 |
|-----------------------|--|-----------------------------|-----------------|
|                       |  | Orano Federal Services      |                 |
| DATA TRANSMITTAL FORM |  |                             |                 |
| Supplier:             | KASGRO RAIL CORP., INC.  | DTF No:                     | 041             |
| P.O./SC No:           | 15C3011916   | Date:                       | 2/26/2019       |
| Type of Submittal:    | <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal  | SDRL List Item No:          | 24              |
| Submitted for:        | <input checked="" type="checkbox"/> Approval <input checked="" type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted: | 1               |
| Submitted By:         | RICK FORD  | Rick Ford                   | PROJECT MANAGER |
|                       | (Name)   | (Signature)                 | (Title)         |

| ITEM NUMBER | DOCUMENT NUMBER | REVISION NUMBER | DOCUMENT DESCRIPTION  | FS DISPOSITION  |
|-------------|-----------------|-----------------|---|---|
| 1           | KAS 147         |                 | KASGRO CERTIFICATE OF CONFORMANCE ATLAS BUFFER CAR IDOX 20001 | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
| 2           | KAS 148         |                 | KASGRO CERTIFICATE OF CONFORMANCE ATLAS BUFFER CAR IDOX 20002 | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
| 3           | KAS 149         |                 | FORMS 9Z-A, ATLAS BUFFER CARS                                 | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
| 4           | KAS 150         |                 | FORMS 9Z-A, ATLAS CASK CAR                                    | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
| 5           | KAS 151         |                 | ATLAS CASK CAR LOADED DECK HEIGHT                             | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |

|   |   |
|---|---|
| Comments:   | Technical Reviewer (I.e., RE, PTL, SME, QA, etc.)       |
| KAS 147, 148, 149 and 150 must be resubmitted.<br>KAS 147 and 148, correct CoC date.<br>KAS 149 and 150, complete "Mill Reports Received" and "Reports Correct" | <b>KLEIN Slade</b> Date: 2019.03.12<br>11:12:01 -07'00' |
|   | Date 3/12/2019  |

| FS DISPOSITION CODES AND DEFINITIONS |                                |  |                             |
|--------------------------------------|--------------------------------|--|-----------------------------|
| AP                                   | Approved                       | Work may proceed.  | Resubmittal is not required |
| AWC                                  | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| REV                                  | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| RWC                                  | Reviewed with Comment          | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit        |
| DS                                   | Disapproved                    | Work may <u>not</u> proceed.   | Correct and resubmit        |
| RSA                                  | Receipt Submittal Acknowledged | No other action required.  |                             |

If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change.

|  |  |  |                  |
|--|--|--|------------------|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval |  | Digitally signed by Mark A. Denton<br>DN: cn=Mark A. Denton, o=Orano Federal Services, email=mark.denton@orano.gov, ou=US<br>Date: 2019.03.12 15:03:28 -0600 | Date: 03/12/2019 |
|--|--|--|------------------|

FS-EN-FRM-023 Rev 02 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|   |                                    |                           |
|---|------------------------------------|---------------------------|
|   | Orano Federal Services             |                           |
|   | SUPPLIER DOCUMENT SUBMITTAL REVIEW |                           |
| Supplier / PO No.:  | <b>KASGRO / 15C3011916</b>         | DTF No. / Rev: <b>041</b> |
| Charge No:  | 00225.03.0050.02.00001             | Due Date: 3/8/2019        |
| Document(s):  | <b>See DTF No.: 041</b>            |                           |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)                     |                                    |                           |
| PE  | Slade Klein                        |                           |
| REVIEWERS   | Slade Klein, Bernie Counterman     |                           |
| QA  | Bernie Counterman                  |                           |
| <b>Technical Review</b>   |                                    |                           |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                  |                                    |                           |
| Technical Reviewer Comments:  |                                    |                           |
| KAS 147 and 148 need to be updated once the car paperwork is accepted.  |                                    |                           |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b> Date: 2019.03.04 18:58:29 -08'00'                       |                                    |                           |
| <b>Quality Assurance Review (As Applicable)</b>   |                                    |                           |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                  |                                    |                           |
| Technical Reviewer Comments:  |                                    |                           |
| KAS 149 & 150. Why are the two areas on the form "Mill Reports Received" and "Reports Correct" not completed? |                                    |                           |
| QA Reviewer(s) (Sign/Date):  Digitally signed by COUNTERMAN Bernard Date: 2019.03.12 08:12:30 -07'00'         |                                    |                           |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary)    |                                    |                           |
|   |                                    |                           |
|   |                                    |                           |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

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Kasgro Rail Corporation  
121 Rundle Road • New Castle, PA 16102  
724-658-9061 • 724-658-7856 FAX • www.KASGRO.com

**KASGRO**



February 25, 2019

Mark A. Denton  
ORANO Federal Services LLC  
10101 David Taylor Drive, Suite 200  
Charlotte, NC 28262

Subject: Atlas Cask Car Deck Height Dimensions  
Reference: ATLAS HLRM Railcar Project, AFS PO 15C3011916

Mark,

On 1/29/2019 OFS witnessed the railcar deck loaded to approximately 215,240 ±1000 pounds. Weights for each component of the load used are listed below:

- Frame: 850 pounds
- Plate: 15,000 pounds
- Stack 1: 107,100 pounds
- Stack 2: 43,250 pounds
- Stack 3: 43,250 pounds
- Stack 4: 5790 pounds

The weights were added sequentially and placed on a frame that distributed the weight to the center four pin locations. The deck height at the location of the cradle support pad was measured to the shop floor using a straight edge and tape measure. This measurement method is typical for Kasgro deck height measurements and is considered the official deck height to rail verification. The results of the deck height measurements taken by Kasgro are listed below.

- Right, B end: 56 3/4 inches
- Right, A end: 56 7/8 inches
- Left, B end: 56 9/16 inches
- Left, A end: 56 5/8 inches

If there are any questions or if further clarification is needed regarding this information, please contact me to discuss.

Sincerely,

Rick Ford  
Project Manager

Cc: Mark Zeigler

Specialty Rail Car Solutions



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**Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.3.4 – Spring Retention Bosses Replacement, Amsted Weld Inspection Report**



## Corrective Action Report



#GC-J490, February 08, 2019, (Rev C)  
 GRANITE CITY PLANT

|   |                             |             |                           |             |              |
|---|-----------------------------|-------------|---------------------------|-------------|--------------|
| Product   | SWING MOTION BOLSTER        | P/N         | 519A                      | Customer    | KASGRO       |
| Source  | IDOX 10001                  | Reported By | RICK FORD                 | CCA-19-045A |              |
| Assigned To   | JUSTIN ECKSTEIN / BOB LYONS |             | Issued Date               | 13 FEB 2019 |              |
| Facilitator   | JOHN ABBOTT                 |             | Estimated Completion Date | 01 MAR 2019 |              |
| <b>1 PROBLEM IDENTIFICATION</b><br>(Clearly define the nonconformance that led to the rejection)  |                             |             |                           |             | <b>DATE:</b> |
| <p><b>Background:</b> Kasgro's 12- HLRM flatcars are equipped with 100-ton Swing-Motion trucks per Amsted Rail Drawings AS-517-1 (end trucks) and AS-518-1 (middle trucks). The truck bolsters are modified per Amsted Rail Drawing 2-9529 to add special bosses for restraining the spring groups.</p> <p><b>Problem Initially Reported:</b> During the Preventative Maintenance Examination of another Kasgro 12- HLRM flatcar on January 15, 2019. The Servicing Facility reported that one of the spring retaining bosses on the left side of Truck B was no longer attached to the truck bolster. The boss had been secured with two small tack welds (180-degrees apart) and had broken free. The Servicing Facility re-tacked the boss in place prior to reassembly and departure of the railcar.</p> <p>Amsted Rail Drawing 78276-3 requires the bosses to be secured to the truck bolster using a 0.25-inch fillet weld around the circumference of the inside diameter of the boss per Drawing 2-9529. The Servicing Facility was not aware of the requirement, and therefore, the repair did not comply with Amsted's drawing and no other bosses were inspected to confirm compliance with the drawing.</p> |                             |             |                           |             | 25 Jan 2019  |
| Improper welds on Kasgro 519A spring restraint bosses.  |                             |             |                           |             |              |
| <b>2 SHORT TERM CONTAINMENT PLAN</b><br>(What steps were taken to fix or deal with the immediate problem or condition?)   |                             |             |                           |             | <b>DATE:</b> |
| Upon notification of the subject issue, Kasgro attempted to inspect the IDOX 10001 railcar but was unable to view the spring retainer bosses. Kasgro requested Amsted support to inspect using a borescope.   |                             |             |                           |             | 1/29/2019    |
| Amsted Rail sent a Field Service Engineer onsite to inspect IDOX 10001. The spring restraint bosses were welded, but not to Amsted drawing requirements and showed lack-of-fusion. See <b>Appendix A:</b> 2019-02-04 Kasgro - inspection of spring retainer welds IDOX 10001  |                             |             |                           |             | 2/4/2019     |
| At the Granite City Facility, all bolsters in work in progress and finished goods were inspected. Two bolsters required rework to the bosses to remove the plug weld and apply the 1/4" fillet weld per drawing 2-9529.   |                             |             |                           |             | 2/6/2019     |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

| <b>3 ROOT CAUSE IDENTIFICATION</b><br>(Identify the root cause(s) which, when corrected, will solve the problem)   |            | DATE:                      |
|--|------------|----------------------------|
| Check each of the factors below that were significant contributors to the Root Cause:<br>MANPOWER <input checked="" type="checkbox"/> / METHOD <input checked="" type="checkbox"/> / MEASUREMENT <input type="checkbox"/> / MACHINE/MATERIAL <input type="checkbox"/> / MANAGEMENT <input checked="" type="checkbox"/> / ENVIRONMENT <input type="checkbox"/><br>List details of each significant contributor:   |            | 2/8/2019                   |
| <ol style="list-style-type: none"> <li>1. <b>Management:</b> When the bolsters were inspected and accepted by QA the spring restraint were not attached. The welding of the spring restraint bosses was performed in the Test Lab by production welders. Our welders are certified to AWS D15.1 and are trained to inspect their own welds, see <b>Appendix E: Basis for Welder Qualification</b> (Amsted Rail Granite City). There were 2 welders, ID 4740 &amp; 7931, that performed the welding of the spring restraint bosses. <b>Appendix F: SMAW Welder Certifications</b> – ID 4740 &amp; 7931. No independent QA inspector inspected these welds prior to truck break-in at the Test Lab.</li> <li>2. <b>Method:</b> Shielded Metal Arc Welding (SMAW) was employed for the attachment of these spring restraint bosses. Due to the geometry of the boss and the tight joint configuration it was difficult to complete a 1/4" fillet weld using a SMAW electrode. Welder tried to execute a 360° weld without changing their position, hand/wrist movement or electrode manipulation during the weld. Welds were applied with an electrode angle that was almost straight down throughout the entire inner circumference (no angular manipulation and electrode was likely too large, thereby forcing weld pool away from attachment).</li> </ol> |            |                            |
| <b>4 LONG TERM PREVENTIVE ACTION</b><br>(State the specific actions planned/taken to assure that each Root Cause is eliminated or minimized)   |            | DATE:                      |
| <ol style="list-style-type: none"> <li>1. <b>Management:</b> Starting in January 2019, we changed the welding practice from SMAW to GMAW. The test lab does not have the capability to perform GMAW, so these spring restraint bosses are attached in the final finishing area prior to final QA acceptance. Our internal CWI will be responsible to complete the final spring restraint boss weld acceptance. The CWI will document the spring boss welds with photographs and associate these photographs to the serial number of the bolster. These reports will be distributed with each shipment.</li> <li>2. <b>Method:</b> Assigned a single welder that has been trained to the new WPS for GMAW for this process. <b>Appendix G: ASF-WPS-073, Training &amp; GMAW Welder Certification - ID 7473</b></li> </ol>   |            | 2/8/2019                   |
| <b>5 FOLLOW-UP &amp; VERIFICATION</b><br>(Verify that the corrective actions stated above have been taken and that they are effective)   |            |                            |
| Verifier   | <br>for JW | Completion Date 8 FEB 2019 |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

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Amsted Rail Company, Inc  
1700 Walnut Street  
Granite City, IL 62040  
Tel: 618-402-9666

**Trip Report – Inspection of Welds on Spring Retainers (Kasgro)**

**To:** Rick Ford  
**From:** Doug Compton – Field Service Engineer, Amsted Rail  
**Date:** 02-15-19  
**Subject:** Inspection of welds on springs retainers on cars IDOX 10001  
**CC:** Jennifer Novak, Nathan Reese, Joe Halford, Pete Goyer, Mike Watts, Tim O'Donnell

---

**Customer:** Kasgro Rail Corp  
**Location:** Kasgro Rail Corp, 121 Rundle Road, New Castle, PA 16102  
**Date of Visit:** 02-04-19 thru 02-05-19  
**Personnel Contacted:** Rick Ford and Dave Stull of Kasgro  
**Purpose of Visit:** To inspect the welds on the welded on spring retainers

**Inspections:**

I was on site to inspect the welds using a borescope and a flashlight. In order to gain access with the borescope probe, the cars had to be partially jacked to relieve the load on the outer coils. Each car has six (6) bolsters and each bolster spring seat had four (4) welded on spring retainers for a total of eight (8) spring retainers per bolster.

On February 4, 2019, I along with Dave Stull of Kasgro inspected car IDOX 10001. Some of the welds observed were plug welds, which are acceptable to Amsted Rail. All other welds had welds that were intact at least 25% of the circumference of the retainer. No tack welds were observed.



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

---



TB15005  
ME





Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

---



TB15005  
OME





Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

---



TE04002  
ME





Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

---



TE04002  
OME





Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

---



TE04006  
ME

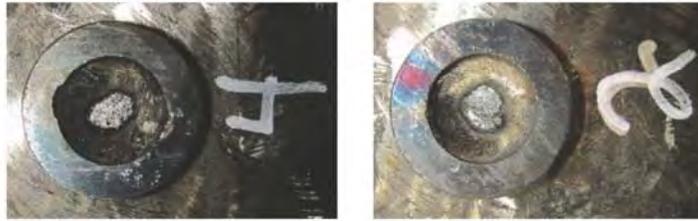




Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

---



TE04006  
OME



Joshua T. Callahan  
CWI 18010751  
CC1 EXP. 11/2021

*Handwritten signature and date: 2/21/19*





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High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

---



TE04008  
ME





Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

---



TE04008  
OME





Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

---



TE04010  
ME





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Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

---



TE04010  
OME





Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

---



TE04015  
OME





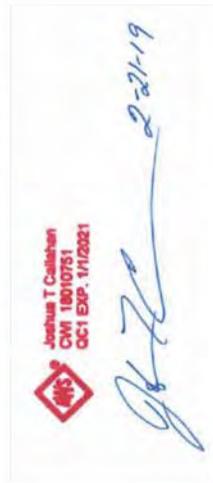
Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

---



TE04015  
ME





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**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

## Appendix B.3.5 – Spring Retention Bosses Replacement, Kasgro Weld Inspection Report

Grand Rapids, MI Pittsburgh, PA – Birmingham, AL  
 NDE • MECHANICAL LAB • ENVIRONMENTAL [www.tuvris.com](http://www.tuvris.com)



### VISUAL INSPECTION REPORT

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 21  
 P.O. #: K180079  
 Work Order #: 473037  
 Project: Atlas

Page 1 of 1

Date: February 25, 2019  
 Description: Visual Inspections of Bolster Boss Welds for Cask Car #1

|   |   |   |  |
|---|---|---|--|
| <b>TRIS Procedure:</b><br>NDE-VT-1        | <b>Surface Condition:</b><br>As Welded  | <b>Production Stage:</b><br>In Progress | <b>VT Gauge Identification:</b><br>Mfg. G.A.L. |
| <b>Test Method Standard:</b><br>AWS D15.1 | <b>Percent of Inspection:</b><br>X 100% | X Final                                 | Weld Gauge 1/2" Fillet Gauge                   |
| <b>Acceptance Standard:</b><br>AWS D15.1  | %                                       | Other                                   | Model #269-465-5750                            |
| <b>Product Form:</b><br>N/A               |   | <b>For Welds:</b><br>Root Pass          | Serial # Cert #F4857                           |
| <b>Type of Material:</b> Carbon Steel     |   | Intermediate                            | Other Cam Type Gauge                           |
|   |   | X Final                                 |  |

| Product / Weld Identification | Accept | Reject | Linear | Rounded | Cracks | Undercut | Lack Fusion | Incomplete Pen | Exceed Reinforcement | Weld Undersized | Defect Location, Length |
|-------------------------------|--------|--------|--------|---------|--------|----------|-------------|----------------|----------------------|-----------------|-------------------------|
|                               |        |        |        |         |        |          |             |                |                      |                 |                         |
| <b>TE04002 Bolster</b>        |        |        |        |         |        |          |             |                |                      |                 |                         |
| OEM side 1 thru 4             | /      |        |        |         |        |          |             |                |                      |                 |                         |
| ME Side 1 thru 4              | /      |        |        |         |        |          |             |                |                      |                 |                         |
| <b>TE04006 Bolster</b>        |        |        |        |         |        |          |             |                |                      |                 |                         |
| OEM side 1 thru 4             | /      |        |        |         |        |          |             |                |                      |                 |                         |
| ME Side 1 thru 4              | /      |        |        |         |        |          |             |                |                      |                 |                         |
| <b>TE04008 Bolster</b>        |        |        |        |         |        |          |             |                |                      |                 |                         |
| OEM side 1 thru 4             | /      |        |        |         |        |          |             |                |                      |                 |                         |
| ME Side 1 thru 4              | /      |        |        |         |        |          |             |                |                      |                 |                         |
| <b>TE04010 Bolster</b>        |        |        |        |         |        |          |             |                |                      |                 |                         |
| OEM side 1 thru 4             | /      |        |        |         |        |          |             |                |                      |                 |                         |
| ME Side 1 thru 4              | /      |        |        |         |        |          |             |                |                      |                 |                         |
| <b>TE04015 Bolster</b>        |        |        |        |         |        |          |             |                |                      |                 |                         |
| OEM side 1 thru 4             | /      |        |        |         |        |          |             |                |                      |                 |                         |
| ME Side 1 thru 4              | /      |        |        |         |        |          |             |                |                      |                 |                         |
| <b>TB15005 Bolster</b>        |        |        |        |         |        |          |             |                |                      |                 |                         |
| OEM side 1 thru 4             | /      |        |        |         |        |          |             |                |                      |                 |                         |
| ME Side 1 thru 4              | /      |        |        |         |        |          |             |                |                      |                 |                         |

Technician: Daniel S. Gjurich *Daniel S. Gjurich*  Daniel S Gjurich Level: CWI #93041171  
 CWI 93041171  
 QC1 EXP. 4/1/2020  
 Date: 2/25/19

Reviewed By: *[Signature]*  
 Testing was performed in accordance with accepted industry practice as well as the test methods referenced TUV Rheinland Industrial Solutions, Inc. as no direct knowledge of the origin, sampling procedure, nor condition of the samples, and makes no claims as to the suitability nor final use of the material. This test report applies only to those items tested. This report shall not be reproduced except in full without the written consent of TUV Rheinland Industrial Solutions, Inc.

NDE-0160  
 March 19, 2004  
 dsk



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

### Appendix B.3.6 – AAR Nonconformance Reports

Print Date: 2/21/2019

**THE WELD FILLET SIZE WAS INCORRECTLY LISTED BY KASGRO UNDER SECTIONS: 7.2.4.2.9, 7.4.2.7, AND 7.4.2.8 AS .025 INCH. THESE SECTIONS HAVE BEEN CORRECTED TO READ .25 INCH.**

QA-7.1

Association of American Railroads  
 Quality Assurance Nonconformance Report Form

**IT IS NOTED THAT AMSTED RESPONSES UNDER SECTIONS 7.4.2.9 AND 7.4.2.10 LISTED THE CORRECT .25 INCH FILLET WELD.**

*Rick Johnson* 2/26/2019  
 PROJECT MANAGER KASGRO RAIL

|                    |                           |
|--------------------|---------------------------|
| 7.2.4.1 Serial No. | 2019000065                |
| 7.2.4.2.1 Date     | February 19, 2019 4:32 pm |

|  |  |
|--|--|
| <p>7.2.4.2.1 Initiator: Kasgro Rail Corporation - New Castle</p> <p>7.2.4.2.2 Contractor: Amsted Rail Company, Inc. - Granite City</p> <p>7.2.4.2.3 Item Description: A9 - Manufacturer of Freight Side Frames and Bolsters</p>  | <p>7.2.4.2.1 Initiator Location: New Castle, PA 16102</p> <p>7.2.4.2.2 Contractor Plant Location: Granite City, IL 62040</p> <p>7.2.4.2.3 AAR Spec. Code or Standard No.: S-2034</p>   |
| <p>7.2.4.2.4 Contractor's part number, pattern numbers, drawing numbers, RMA#, PO#, and/or other: B9N-714N-HJ</p>  | <p>7.2.4.2.7 Material Condition: New <input checked="" type="checkbox"/> Reconditioned <input type="checkbox"/> Requalified <input type="checkbox"/></p>   |
| <p>7.2.4.2.5 Quantity Received: 12</p> <p>7.2.4.2.5 Quantity Rejected: 12</p> <p>7.2.4.2.5 Quantity Inspected: 12</p>  | <p>7.2.4.2.6 Material Inspected By Contractor? Yes</p> <p>7.2.4.2.6 If inspected by contractor, date of inspection: 2/19/2019</p>  |
| <p>7.2.4.2.9 Nonconformance Description: Manufacturing Defects</p> <p>SPRING RETAINING BOSSES DO NOT HAVE A 0.25 INCH FILLET WELD AROUND THE CIRCUMFERENCE OF THE INSIDE DIAMETER OF THE BOSS. AMSTED RAIL DRAWING 78276-3 REQUIRES THE BOSSES TO BE SECURED TO THE TRUCK BOLSTER USING A 0.25 INCH FILLET WELD AROUND THE CIRCUMFERENCE OF THE INSIDE DIAMETER OF THE BOSS.</p> |  |
| <p>7.2.4.2.10 Disposition of item (Return, Repaired, Scrapped, Other): Repair / Rework</p> <p>7.2.4.2.8 Serial Number, Identification Mark, or Car No.: BTE04001, TE04003, TE04011, TE04013, TE04009, TE04007</p>  |  |
| <p>7.2.4.3 Verify copy sent to contractor: 4/15/2019 4:32:22PM</p>   | <p>Contractor Information:</p> <p>Name &amp; Title: John Abbott</p> <p>Email: jabbott@amstedrail.com</p> <p>Company Name: Amsted Rail Company, Inc. - Granite City</p> <p>Street: 1700 Walnut Street</p> <p>City, State, Zip: Granite City, IL 62040</p> |
| <p>MARK ZEIGLER<br/>DIRECTOR OF QUALITY CONTROL</p>  | <p>Name: Mark Ziegler</p> <p>Address: 121 Rundle Road</p> <p>City, State, Zip: New Castle, PA 16102</p> <p>Phone: 724-658-9061 ext. 26</p> <p>Email: mark@kasgro.com</p>   |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

QA-7.2

Print Date: 2/21/2019

**Association of American Railroads**  
**Quality Assurance Nonconformance Response Form**

|  |  |                            |                                      |
|--|--|----------------------------|--------------------------------------|
|  |  | 7.4.2.1 Serial No.         | 2019000055                           |
|  |  | 7.4.2.2 Date               | 02/21/2019                           |
| 7.4.2.3 Contractor   | Amsted Rail Company, Inc. - Granite City   | 7.4.2.4 Initiator          | Kasgro Rail Corporation - New Castle |
| 7.4.2.3 Location   | Granite City, IL 62040   | 7.4.2.4 Initiator Location | New Castle PA, 16102                 |
| 7.4.2.5 Date QA-7.1 was filed  | 02/19/2019   | 7.4.2.6 Quantity Rejected  | 12                                   |
| 7.4.2.7 Description of non-conformance (from QA-7.1)                   | SPRING RETAINING BOSSES DO NOT HAVE A 0.25 INCH FILLET WELD AROUND THE CIRCUMFERENCE OF THE INSIDE DIAMETER OF THE BOSS. AMSTED RAIL DRAWING 78276-3 REQUIRES THE BOSSES TO BE SECURED TO THE TRUCK BOLSTER USING A 0.25 INCH FILLET WELD AROUND THE CIRCUMFERENCE OF THE INSIDE DIAMETER OF THE BOSS. |                            |                                      |
| <b>Action Required</b>   | <b>Description of Action Taken</b>   | <b>Date</b>                |                                      |
| 7.4.2.8 Clearly define the non-conformance which led to the rejection: | SPRING RETAINING BOSSES DO NOT HAVE A 0.25 INCH FILLET WELD AROUND THE CIRCUMFERENCE OF THE INSIDE DIAMETER OF THE BOSS. AMSTED RAIL DRAWING 78276-3 REQUIRES THE BOSSES TO BE SECURED TO THE TRUCK BOLSTER USING A 0.25 INCH FILLET WELD AROUND THE CIRCUMFERENCE OF THE INSIDE DIAMETER OF THE BOSS. | 01/25/2019                 |                                      |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

|   |   |                   |
|---|---|-------------------|
| <p>7.4.2.9 Clearly define the actions taken for disposition:</p>  | <p>Upon notification of the subject issue, Kasgro examined the truck assemblies received from Amsted Rail for assembly. The spring restraint boss welds were complete, but failed visual inspection and showed lack-of-fusion. These six trucks were returned to Amsted Rail – Granite City Facility for further analysis and testing. Amsted Rail sent a Field Service Engineer onsite to inspect assembled cars. The spring restraint bosses were complete, but failed visual inspection and showed lack-of-fusion. At the Granite City Facility, all bolsters in work in progress and finished goods were inspected. Two bolsters required rework to the bosses to remove the plug weld and apply the 1/4" fillet weld per drawing 2-9529. Amsted Rail Product Engineering used dynamic modeling to determine the maximum lateral load that could be applied to the spring restraint boss to be 2,500 lbs. This means that a weld that is about 20% of the ID circumference will be sufficient to hold the static load of the lateral spring shear. Granite City Laboratory designed a tabletop fixture to measure load required to shear the spring restraint boss. We simulated 5 different boss weld conditions 1) bad weld replication attempt #1, 2) 25% good weld at 6 o'clock position, 3) tack welded at 6 and 12 o'clock positions, 4) 25% good weld at 12 o'clock position and 5) bad weld replication attempt #2. Loads ranged from 2,640 lbs. to 16,800 lbs. Granite City designed a test fixture to measure the load required to shear 4 spring restraint bosses on a returned bolster. Bolster serial number TE04006 was selected and loads ranged from 12,990 - 15,350 lbs.</p> | <p>02/20/2019</p> |
| <p>7.4.2.10 Clearly define the root cause(s) which resulted in the nonconformance:</p>  | <p>1. Management: When the bolsters were inspected and accepted by QA the spring restraint were not attached. The welding of the spring restraint bosses was performed in the Test Lab by production welders. Our welders are certified to AWS D15.1 and are trained to inspect their own welds. There were 2 welders, ID 4740 &amp; 7931, that performed the welding of the spring restraint bosses. No independent QA inspector inspected these welds prior to truck break-in at the Test Lab.</p> <p>2. Method: Shielded Metal Arc Welding (SMAW) was employed for the attachment of these spring restraint bosses. Due to the geometry of the boss and the tight joint configuration it was difficult to complete a 1/4" fillet weld using a SMAW electrode. Welder tried to execute a 360° weld without changing their position, hand/wrist movement or electrode manipulation during the weld. Welds were applied with an electrode angle that was almost straight down throughout the entire inner circumference (no angular manipulation and electrode was likely too large, thereby forcing weld pool away from attachment).</p>   | <p>02/08/2019</p> |
| <p>7.4.2.11 Clearly define the corrective action(s) taken which will eliminate the root cause(s):</p>   | <p>1. Management: Starting in January 2019, we changed the welding practice from SMAW to GMAW. The test lab does not have the capability to perform GMAW, so these spring restraint bosses are attached in the final finishing area prior to final QA acceptance. Our internal CWI will be responsible to complete the final spring restraint boss weld acceptance. The CWI will document the spring boss welds with photographs and associate these photographs to the serial number of the bolster. These reports will be distributed with each shipment.</p> <p>2. Method: Assigned a single welder that has been trained to the new WPS for GMAW for this process.</p>  | <p>02/08/2019</p> |
| <p>7.4.2.12 Clearly define the follow-up plan(s) which will ensure the effectiveness of the corrective action(s) taken and its/permanence</p> | <p>A CWI will inspect and document the spring boss welds with photographs and associate these photographs to the serial number of the bolster. These reports will be distributed with each shipment.</p>  | <p>02/21/2019</p> |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

**QA-7.3**

Print Date: 2/21/2019

**Association of American Railroads**

**Quality Assurance Nonconformance Response Evaluation Form**

|  |     |   |   |
|--|-----|---|---|
| Date: 02/19/2019                                       |     | QA 7.1/QA 7.2 Serial No. 2019000055                 |   |
| Reporting Company Kasgro Rail Corporation - New Castle |     | Contractor Amsted Rail Company, Inc. - Granite City |   |
| Location: New Castle PA, 16102                         |     | Location: Granite City, IL                          |   |
| Person Performing Review Mark Zeigler                  |     |   |   |
| QA-7.2 received per 7.4.1 requirements?                | Yes | If no, response was received after how many days?   | 0 |

The above listed QA 7.2 has been reviewed and, in the opinion of the reviewer, the proposed corrective action, has been found to be proper and adequate. As such the QA 7.1 is considered closed.

**OR**

The above listed QA 7.2 has been reviewed and, in the opinion of the reviewer, the proposed corrective action:

Does NOT adequately identify the root cause:

Comments:

Does NOT propose a corrective action that will eliminate the identified Root Cause.

|                                 |                        |  |
|---------------------------------|------------------------|--|
| Verify Copy sent to Contractor: | Contractor Information |  |
|                                 | Name and Title         | John Abbott                              |
|                                 | Contractor Email       | jabbott@amstedrail.com                   |
|                                 | Company Name           | Amsted Rail Company, Inc. - Granite City |
|                                 | Street                 | 1700 Walnut Street                       |
|                                 | Location               | Granite City, IL 62040                   |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.3.7 – FRA Safety Appliance Compliance Letter**

|                              |  |  |                        |
|------------------------------|--|--|------------------------|
| AREVA                        |  | AREVA Federal Services LLC   |                        |
| <b>DATA TRANSMITTAL FORM</b> |  |  |                        |
| Supplier:                    | KASGRO RAIL CORP., INC.  | DTF No:  | 049                    |
| P.O./SC No:                  | 15C3011916   | Date:  | 3/11/2019              |
| Type of Submittal:           | <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal  | SDRL List Item No:   | 24                     |
| Submitted for:               | <input checked="" type="checkbox"/> Approval <input checked="" type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted:  | 1                      |
| Submitted By:                | <b>RICK FORD</b>   | Rick Ford <small>Digitally signed by Rick Ford<br/>Date: 2019.03.13 08:02:30 -0400</small> | PROJECT MANAGER        |
|                              | <small>(Name)</small>  | <small>(Signature)</small>   | <small>(Title)</small> |

| ITEM NUMBER | DOCUMENT NUMBER | REVISION NUMBER | DOCUMENT DESCRIPTION                 | AFS DISPOSITION   |
|-------------|-----------------|-----------------|--------------------------------------|---|
| 1           | KAS 182         |                 | FRA S-2044 ATLAS CASK CAR ACCEPTANCE | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |

|                          |   |
|--------------------------|---|
| Comments:<br>No comments | Technical Reviewer (i.e., RE, PTL, SME, QA, etc.)<br><b>KLEIN Slade</b> Date: 2019.03.13 15:07:48 -07'00'<br>Date 3/13/2019 |
|--------------------------|---|

| AFS DISPOSITION CODES AND DEFINITIONS |                                |  |                             |
|---------------------------------------|--------------------------------|--|-----------------------------|
| AP                                    | Approved                       | Work may proceed.  | Resubmittal is not required |
| AWC                                   | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| REV                                   | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| RWC                                   | Reviewed with Comment          | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit        |
| DS                                    | Disapproved                    | Work may <u>not</u> proceed.   | Correct and resubmit        |
| RSA                                   | Receipt Submittal Acknowledged | No other action required.  |                             |

If, in the judgment of the Supplier, the incorporation of AFS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to AFS' C&P Representative describing the change.

|  |  |
|--|--|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval<br> | <small>Digitally signed by Mark A. Denton<br/>         DN: cn=Mark A. Denton, o=Orano Federal Services, email=mark.denton@orano.gov, ou=ORF<br/>         Date: 2019.03.13 10:17:05 -0400</small><br>Date: 03/13/2019 |
|--|--|

AFS-EN-FRM-023 Rev 01 (Effective August 18, 2014)  
 Refer to AFS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|   |   |   |
|---|---|---|
| <br><b>orano</b>  | Orano Federal Services                    |   |
|   | <b>SUPPLIER DOCUMENT SUBMITTAL REVIEW</b> |   |
| Supplier / PO No.:  | <b>KASGRO / 15C3011916</b>                | DTF No. / Rev: <b>049</b>   |
| Charge No:  | <b>00225.03.0050.02.00001</b>             | Due Date: <b>3/21/2019</b>  |
| Document(s):  | <b>See DTF No.: 049</b>                   |   |
| <small>REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)</small>                  |   |   |
| PE  | Slade Klein                               |   |
| REVIEWERS   | Slade Klein, Bernie Counterman            |   |
| QA  | Bernie Counterman                         |   |
| <b>Technical Review</b>   |   |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                              |   |   |
| Technical Reviewer Comments:  |   |   |
| No comments   |   |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b>   |   | Date: 2019.03.12 15:12:55 -07'00'   |
| <b>Quality Assurance Review (As Applicable)</b>   |   |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                              |   |   |
| Technical Reviewer Comments:  |   |   |
| No Comments   |   |   |
| QA Reviewer(s) (Sign/Date):   |   | Digitally signed by COUNTERMAN Bernard<br>Date: 2019.03.13 13:49:36 -07'00' |
| <small>COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary)</small> |   |   |
|   |   |   |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

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U.S. Department  
of Transportation  
**Federal Railroad  
Administration**

1200 New Jersey Avenue, SE  
Washington, DC 20590

FEB 28 2019

Mr. Mark Zeigler  
Director of Quality Control  
Kasgro Rail Corporation  
121 Rundle Road  
New Castle, PA 16102

**Re: Kasgro Order, One New 12 Axle, 48' Ton Flat Car, III RM Cask Car IDOX 010001**

Dear Mr. Zeigler:

This reply is in reference to Kasgro Rail Corporation's (Kasgro) January 8, 2019, letter advising the Federal Railroad Administration (FRA) of the availability for review of a new car type. In this case, Kasgro tendered the following drawings for the above referenced order:

1. 1155-40 Handbrake Arrangement
2. 1155-1 General Arrangement
3. 1155-3 Stencil Arrangement
4. 1155-4 Platform Arrangement

This flat car is being built to meet the requirements of Association of American Railroads Standard S-2044, Appendix D1, *Safety Appliances for Flatcars with Full Decks*, Title 49 Code of Federal Regulations (CFR) Part 224, ReflectORIZATION of Rail Freight Rolling Stock, and CFR Section 231.18, *Cars of special construction*.

On February 12, 2019, FRA Region 2 Motive Power and Equipment (MP&E) inspectors made a Sample Car Inspection of flat car IDOX 010001 at the Kasgro plant in New Castle, Pennsylvania. This inspection found the car to be compliant with applicable regulations.

Based on the sample car inspection and a review of the above referenced drawings, FRA finds the safety appliance arrangement, the handbrake arrangement, and reflectORIZATION application for the above car acceptable as submitted. FRA's inspection revealed no other apparent hazards in the safety appliance arrangement. However, FRA's response should in no way be construed as certification or approval that the equipment complies with all Federal requirements. The drawings provided will serve as a reference for all cars built to this configuration, unless a revision takes place that affects the location, dimension, or manner of application of the safety appliances. If any such revision occurs, the FRA's letter of acceptability would no longer apply.



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

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Should you have any question or concern, the FRA point of contact for this issue is  
Dr. Tom Blankenship, Mechanical Engineer at 202-493-6446 or [tom.blankenship@dot.gov](mailto:tom.blankenship@dot.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Gary G. Fairbanks". The signature is fluid and cursive, with a large, sweeping initial "G".

Gary G. Fairbanks  
Staff Director, MP&E Division



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.3.8 – Amsted / TCI Supplier Certification Letters**

|                       |   |                             |                 |
|-----------------------|---|-----------------------------|-----------------|
|                       | Orano Federal Services  |                             |                 |
| DATA TRANSMITTAL FORM |   |                             |                 |
| Supplier:             | KASGRO RAIL CORP., INC.   | DTF No:                     | 39              |
| P.O./SC No:           | 15C3011916  | Date:                       | 2/22/2019       |
| Type of Submittal:    | <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal                                   | SDRL List Item No:          | 24              |
| Submitted for:        | <input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted: | 1               |
| Submitted By:         | RICK FORD   | Rick Ford                   | PROJECT MANAGER |
|                       | (Name)  | (Signature)                 | (Title)         |

| ITEM NUMBER | DOCUMENT NUMBER | REVISION NUMBER | DOCUMENT DESCRIPTION  | FS DISPOSITION  |
|-------------|-----------------|-----------------|---|---|
| 1           | KAS 138         |                 | ATLAS CASK/BUFFER CARB LAYDOWN INSTALLATION AND TEST DATA                   | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 2           | KAS 139         |                 | ATLAS CASK BODY MATERIAL HEAT IDENTIFICATION, FORMS 42, 40A, 44B            | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 3           | KAS 140         |                 | ATLAS BUFFER IDOX 20001 BODY MATERIAL HEAT IDENTIFICATION, FORM 44B         | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 4           | KAS 141         |                 | ATLAS BUFFER IDOX 20002 BODY MATERIAL HEAT IDENTIFICATION, FORM             | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 5           | KAS 142         |                 | ATLAS CASK CAR FORM 36 STATIC FORCE BRAKE TEST                              | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 6           | KAS 143         |                 | ATLAS CASK CAR IDOX 10001, FORM 5-13-B NEW CAR INSPECTION                   | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 7           | KAS 144         |                 | ATLAS CASK IDOX 10001 SUPPLIER CERTIFICATION/ AMSTED RAIL SEDARSHO / MCCABE | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |

|                          |   |
|--------------------------|---|
| Comments:<br>No comments | Technical Reviewer (I.e., RE, PTL, SME, QA, etc.)<br><b>KLEIN Slade</b><br>Date: 2019.02.26 07:33:08 -08'00'<br>Date: 2/26/2019 |
|--------------------------|---|

| FS DISPOSITION CODES AND DEFINITIONS |                                |  |                             |
|--------------------------------------|--------------------------------|--|-----------------------------|
| AP                                   | Approved                       | Work may proceed.  | Resubmittal is not required |
| AWC                                  | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| REV                                  | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| RWC                                  | Reviewed with Comment          | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit        |
| DS                                   | Disapproved                    | Work may <u>not</u> proceed.   | Correct and resubmit        |
| RSA                                  | Receipt Submittal Acknowledged | No other action required.  |                             |

If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change.

|  |  |                  |
|--|--|------------------|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval<br> | Digitally signed by Mark A. Denton<br>DN: cn=Mark A. Denton, o=Orano Federal Services, email=mark.denton@orano.com, ou=US<br>Date: 2019.02.26 10:28:54 -0500 | Date: 02/26/2019 |
|--|--|------------------|

FS-EN-FRM-023 Rev 02 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |                                    |   |
|--|------------------------------------|---|
|  | Orano Federal Services             |   |
|  | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:   | <b>KASGRO / 15C3011916</b>         | DTF No. / Rev: <b>039</b>   |
| Charge No:   | <b>00225.03.0050.02.00001</b>      | Due Date: <b>3/8/2019</b>   |
| Document(s):   | <b>See DTF No.: 039</b>            |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)                  |                                    |   |
| PE   | Slade Klein                        |   |
| REVIEWERS  | Slade Klein, Bernie Counterman     |   |
| QA   | Bernie Counterman                  |   |
| <b>Technical Review</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No comments  |                                    |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b> Date: 2019.02.25 15:52:04 -08'00'                    |                                    |   |
| <b>Quality Assurance Review (As Applicable)</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| KAS 142 Cask Car Form 36 Brake Test - Why is the Gross Shoe Force = 0                                      |                                    |   |
| QA Reviewer(s) (Sign/Date):  |                                    | Digitally signed by COUNTERMAN Bernard<br>Date: 2019.02.25 10:22:16 -08'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary) |                                    |   |
|  |                                    |   |
|  |                                    |   |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

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Kasgro Rail Corporation  
 121 Rundle Rd. • New Castle, PA 16102  
 724-898-8861 • 724-858-7639 Fax • www.kasgro.com



**KASGRO**

Car Number(s): IDOX 010001 \_\_\_\_\_

**SUPPLIER CERTIFICATION**

I have inspected at Kasgro Rail Corp., located at 121 Rundle rd., New Castle, PA 16102,  
12 Axle Atlas Cask Car(s)

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

The equipment is applied to car: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

This equipment has been applied in accordance with our recommended practices and is operating to our satisfaction.  
 Application and workmanship has been approved by me for our Company.

Representative: Matt DeGeorge  
 Title: Senior Engineer  
 Company: TICCI

Date: 02/12/19

Car met criteria for S-401 & S-406

*Specially Rail Car Solutions*



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

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Kasgro Rail Corporation  
 121 Rundle Rd. • New Castle, PA 16102  
 724-858-9061 • 724-658-7326 Fax • www.kasgro.com



**KASGRO**

Car Number(s): IDOX 010001

**SUPPLIER CERTIFICATION**

I have inspected at Kasgro Rail Corp., located at 121 Rundle rd., New Castle, PA 16102.  
 12 Axle Atlas Cask Car(s)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

The equipment is applied to car:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

This equipment has been applied in accordance with our recommended practices and is operating to our satisfaction.  
 Application and workmanship has been approved by me for our Company.

Representative: KATH Mc CABE

Date: \_\_\_\_\_

Title: GENERAL SERVICE ENGINEER

Company: ARRESTED RAIL

TOM BEDARSKI  
DIRECTOR - SERVICE ENGINEERING  
ARRESTED RAIL

Specialty Rail Car Solutions



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

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## **APPENDIX B.4 – COMMON INSPECTION DOCUMENTATION**

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.4.1 – Weld Procedure Qualification Records (PQR)**

| AREVA Federal Services LLC  |   |  |   |   |
|---|---|--|---|---|
| DATA TRANSMITTAL FORM   |   |  |   |   |
| Supplier:   | KASPRO RAIL CORP., INC.   | DTF No.:   | 00  | Page 1 of 2   |
| P.O./SC No.:  | 15C3011916  | Date:  | 08/30/17  |   |
| Type of Submittal:  | <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal                                   | SDRL List Item No.:  | 9,10  |   |
| Submitted for:  | <input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted:  | 1   |   |
| Submitted By:   | RICK FORD<br>(Name)   | <br>(Signature) | PROJECT MANAGER<br>(Title)  |   |
| ITEM NUMBER   | DOCUMENT NUMBER   | REVISION NUMBER  | DOCUMENT DESCRIPTION  | AFS DISPOSITION   |
| 1   | KAS001  | 0  | ATLAS PROJECT PHASE 2 DOCUMENT SUBMITTAL (SEE ATTACHED)   | <input type="checkbox"/> AP <input checked="" type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| <p>The enclosed document submittals are accepted with comment for continued use on the Atlas railcar project. Resubmittal is not required, however consideration of AFS comments should be included in future work with the ultimate validation of Atlas project phase two documents being the receipt of the AAR EECs notice-to-proceed with test phase for the Atlas and buffer railcars.</p> |   |  |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|   |   |  |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|   |   |  |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|   |   |  |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|   |   |  |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|   |   |  |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
| Comments:<br>See above statement and attached comments.   |   |  |   | Technical Reviewer (i.e., RE, PT, SME, QA, etc.)<br><b>KLEIN Slade</b><br><small>Digitally signed by KLEIN Slade<br/>         Date: 2017.08.01 09:54:31 -0700</small><br>Date: 8/1/2017   |
| AFS DISPOSITION CODES AND DEFINITIONS   |   |  |   |   |
| Code  | Definition  | Work may proceed   | Resubmittal is not required   |   |
| AP  | Approved  | Work may proceed   | Resubmittal is not required   |   |
| AWC   | Approved with Comment   | Work may proceed; comments provided for Supplier's consideration only.                           | Resubmittal is not required   |   |
| REV   | Reviewed  | Work may proceed; comments provided for Supplier's consideration only.                           | Resubmittal is not required   |   |
| RWC   | Reviewed with Comment   | Work may proceed, subject to incorporation and compliance w/ Buyer comments.                     | Correct and resubmit  |   |
| DS  | Disapproved   | Work may <u>not</u> proceed.   | Correct and resubmit  |   |
| RSA   | Receipt Submittal Acknowledged  | No other action required.  |   |   |
| <p>If, in the judgment of the Supplier, the incorporation of AFS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to AFS' C&amp;P Representative describing the change.</p>  |   |  |   |   |
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval  |   |               | <small>Digitally signed by [Name]<br/>         DN: cn=KLEIN Slade, o=AREVA Federal Services LLC, email=KLEIN.SL@AREVA.COM, c=US</small><br>Date: 08/31/2017 |   |

AFS-FN-FRM-023 Rev 01 (Effective August 18, 2014)  
 Refer to AFS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|   |                                    |   |
|---|------------------------------------|---|
|   | AREVA Federal Services LLC         |   |
|   | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:  | Kasgro Rail / 15C3011916           | DTF No. / Rev: 001  |
| Charge No:  | 00225.03.0050.02.00001             | Due Date: 7/14/2017   |
| Document(s):  | See DTF No.:001                    |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. AFS Spec and Dwg. Codes, Stds, etc.)  |                                    |   |
| PE  | Slade Klein                        |   |
| REVIEWERS   | Slade Klein, Bernie Counterman     |   |
| QA  | Bernie Counterman                  |   |
| <b>Technical Review</b>   |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                                    |   |
| Technical Reviewer Comments:  |                                    |   |
| 1) WPS F002, Material specification should be: A572 Grade 50 and A572 Grade 60<br>2) Multiple documents have been provided as an example based on the M290 these documents will need to be updated or reproduced for the Atlas railcar.<br>3) The track scale test is an annual test and was last performed May 2016.<br>4) TUV UT Reference section 2.0 lists AWS D15.2, it should be AWS D15.1. |                                    |   |
| Technical Reviewer(s) (Sign/Date):  |                                    | Digitally signed by KLEIN Slade<br>Date: 2017.07.11 10:26:14 -07'00'        |
| <b>Quality Assurance Review (As Applicable)</b>   |                                    |   |
| Comments/Markup Attached Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |                                    |   |
| Technical Reviewer Comments:  |                                    |   |
| See attached comments.  |                                    |   |
| QA Reviewer(s) (Sign/Date):   |                                    | Digitally signed by COUNTERMAN Bernard<br>Date: 2017.07.31 15:33:14 -07'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary)  |                                    |   |
|   |                                    |   |
|   |                                    |   |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000

Project: 00225.03.0050 DOE Atlas Project

|          |  |
|----------|--|
| #01      | <ul style="list-style-type: none"> <li>Joint detail states "See Attached" no joint detail attached.</li> </ul>   |
| #02      | <ul style="list-style-type: none"> <li>ASTM A52, Grade 60 is not listed in AWS D15.1, Table 8.1 for prequalified materials. ASTM A52 was withdrawn in 1925 and replaced by ASTM A83 (which is also not prequalified material).</li> <li>Preheat and interpass temperatures are identified as "See Attached Report". The attached report contains joint geometry and does not contain preheat or interpass temperatures.</li> </ul> |
| #03      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #04      | <ul style="list-style-type: none"> <li>Tensile Test Results state "See Attached Report". Report is not attached.</li> <li>Need to include UT report #23.</li> </ul>  |
| #05      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #06      | <ul style="list-style-type: none"> <li>It is assumed (not stated) that the values are the pulling force. Therefore the test pressure should be changed to 2860 PSI +185 PSI -0 PSI and the test load would be 68826 LBS +4345 LBS - 0 LBS</li> </ul>   |
| #07      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #08      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #09-10   | <ul style="list-style-type: none"> <li>Need to identify the ID of trucks A through F on Exhibit F. Also, might be good to identify front or rear (A end or B end).</li> </ul>  |
| #11      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #12      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #13      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #14      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #15      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #16      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #17      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #18      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #19      | <ul style="list-style-type: none"> <li>Originator signature not legible. Also, is he a Level III?</li> <li>Need TÜV document NDTG-CTP-1</li> <li>Need TÜV document NDTG-UTQC-1</li> </ul>  |
| #20      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #21      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #22      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #23      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #23      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #23      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #24      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #25      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #26      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #27      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #28      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #29      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #30      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #31      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #32      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #33      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #34      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #35      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #36      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #37      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #38      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #39      | <ul style="list-style-type: none"> <li>Need to add a statement similar to "Except as noted on NCR Nos.:" if any NCRs are generated</li> </ul>  |
| #40      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #41      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #42      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| #43      | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| WPS F001 | <ul style="list-style-type: none"> <li>No Comments</li> </ul>  |
| WPS F004 | <ul style="list-style-type: none"> <li>Preheat and interpass temperature states "See attached report". Report is not attached</li> </ul>   |





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

ANNEX D

**PROCEDURE QUALIFICATION RECORD (PQR)**

**PROCEDURE SPECIFICATION**

Material specification A656 gr 80 to A572 gr 60  
 Welding process E.C.A.W.  
 Manual or machine Manual  
 Position of welding 2F  
 Filler metal specification A5.29  
 Filler metal classification E81T1-Ni-Ti H8  
 Weld metal grade N/A  
 Shielding gas CO2 Flow rate 35 CFH  
 Single or multiple pass Single  
 Single or multiple arc Single  
 Welding current Direct  
 Welding progression Forehand  
 Preheat temperature 250° F  
 Postheat treatment None  
 Welder's name RICHARD BUCCIARELLI (0798)  
\*Applicable when filler metal has no AWS classification.

**GROOVE WELD TEST RESULTS**

Tensile strength, psi  
 1. N/A  
 2. N/A  
 Guided bend tests (2 root, 2 face, or 4 side-bend)  
 Root Face  
 1. N/A 1. N/A  
 2. N/A 2. N/A  
 Radiographic-ultrasonic examination  
 RT report no. \_\_\_\_\_  
 UT report no. \_\_\_\_\_

**FILLET WELD TEST RESULTS**

Minimum size multiple pass - Maximum size single pass  
 Macroetch Macroetch  
 1. \_\_\_\_\_ 2. \_\_\_\_\_ 1. 250" 3. 250"  
 4. \_\_\_\_\_ 2. 250"

**VISUAL INSPECTION**

Appearance Acceptable  
 Undercut Minor  
 Piping porosity None  
 Test date 3/10/2008  
 Witnessed by KASGRO RAIL

**All-weld-metal tension test**

Tensile strength, psi N/A  
 Yield point/strength, psi N/A  
 Elongation in 2 in., % N/A  
 Laboratory test no. \_\_\_\_\_

**WELDING PROCEDURE**

| Pass No. | Electrode Size | Welding Current |       | Travel Speed | Joint Detail |
|----------|----------------|-----------------|-------|--------------|--------------|
|          |                | Amperes         | Volts |              |              |
| 1        | 1/16"          | 300             | 31    | 8-11 ipm     |              |

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of AWS D16.1, ( 2012 ) Railroad Welding Specification—Cars and Locomotives.  
 (year)

Procedure no. E-003  
 Revision no. 1  
 Form D-2

Manufacturer or Contractor KASGRO RAIL CORPORATION  
 Authorized by [Signature]  
 Date 11/25/13



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

AWS D15.1/D15.1M:2007

ANNEX D

**PROCEDURE QUALIFICATION RECORD (PQR)**

**PROCEDURE SPECIFICATION**

Material specification A572 gr 60 to A240 gr 304  
 Welding process E.C.A.W.  
 Manual or machine Manual  
 Position of welding 1G Flat  
 Filler metal specification A5.22  
 Filler metal classification DW-309L  
 Weld metal grade\* \_\_\_\_\_  
 Shielding gas CO2 Flow rate 45 CFH  
 Single or multiple pass Multiple  
 Single or multiple arc Single  
 Welding current ICRP  
 Welding progression Forehand  
 Preheat temperature 50° F  
 Postheat treatment None  
 Welder's name MICHAEL J. PENZERRO  
 \*Applicable when filler metal has no AWS classification.

**VISUAL INSPECTION**

Appearance Acceptable  
 Undercut None  
 Piping porosity None  
 Test date 6/18/2008  
 Witnessed by KASGRO RAIL CORP.

**GROOVE WELD TEST RESULTS**

Tensile strength, psi  
 1. 79,000 (See attached report)  
 2. 77,500 (See attached report)

**Guided-bend tests (2 root-, 2 face-, or 4 side-bend)**

|                      |                      |                      |                      |
|----------------------|----------------------|----------------------|----------------------|
| Root                 |                      | Face                 |                      |
| 1. <u>1/32" tear</u> | 1. <u>NO DEFECTS</u> | 2. <u>1/16" tear</u> | 2. <u>NO DEFECTS</u> |

**Radiographic-ultrasonic examination**

RT report no. \_\_\_\_\_  
 UT report no. 23

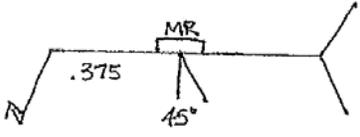
**FILLET WELD TEST RESULTS**

|                            |          |                          |          |
|----------------------------|----------|--------------------------|----------|
| Minimum size multiple pass |          | Maximum size single pass |          |
| Macroetch                  |          | Macroetch                |          |
| 1. _____                   | 2. _____ | 1. _____                 | 3. _____ |
| 3. _____                   |          | 2. _____                 |          |

**All-weld-metal tension test**

Tensile strength, psi N/A  
 Yield point/strength, psi N/A  
 Elongation in 2 in, % N/A  
 Laboratory test no. \_\_\_\_\_

**WELDING PROCEDURE**

| Pass No. | Electrode Size | Welding Current |       | Travel Speed | Joint Detail   |
|----------|----------------|-----------------|-------|--------------|--|
|          |                | Amperes         | Volts |              |  |
| ALL      | .062"          | 250             | 32    | 18 ipm       |  |

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of AWS D15.1, (2007) Railroad Welding Specification for Cars and Locomotives.  
 (year)

Procedure no. 08KR-F1087  
 Revision no. \_\_\_\_\_  
 Form D-2

Manufacturer or Contractor KASGRO RAIL CORP.  
 Authorized by [Signature]  
 Date 6-3-08

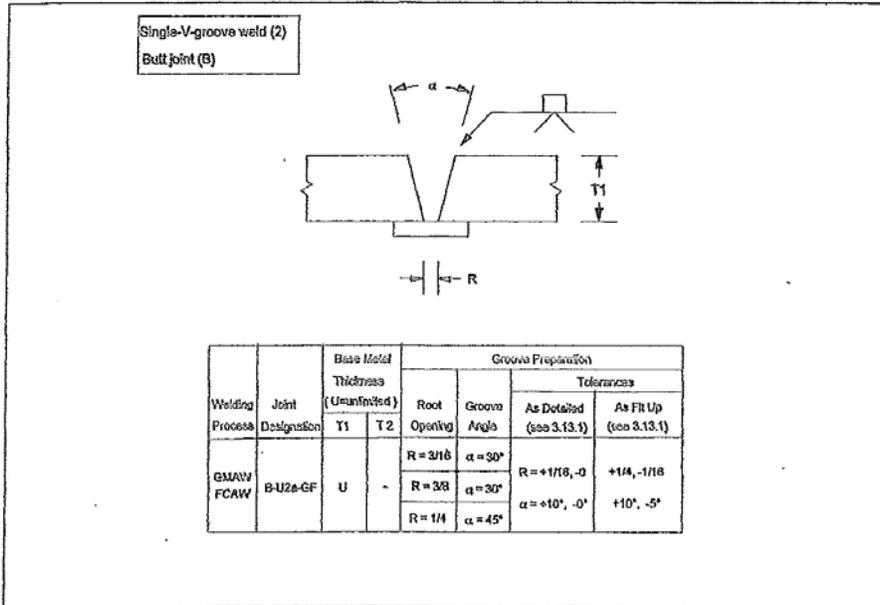




**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000

Project: 00225.03.0050 DOE Atlas Project



b-u2a-gf.gfl

Preheat

Less than or = to 3/4" 50 deg.  
 Over 3/4" thru 1-12" 150 deg.  
 Over 1-1/2" thru 2-1/2" 225 deg.  
 Over 2-1/2" 300 deg.



Orano Federal Services  
**Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|                              |   |  |  |
|------------------------------|---|--|--|
|                              | AREVA Federal Services LLC  |  |  |
| <b>DATA TRANSMITTAL FORM</b> |   |  |  |
| Supplier:                    | KASGRO RAIL CORP., INC.   | DTF No:  | 012A   |
| P.O./SC No:                  | 15C3011916  | Date:  | 04/05/2018                                       |
| Type of Submittal:           | <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal                                   | SDRL List Item No:   | 9  |
| Submitted for:               | <input type="checkbox"/> Approval <input checked="" type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted:  | 1  |
| Submitted By:                | <b>RICK FORD</b><br><small>(Name)</small>   | <i>Rick Ford</i><br><small>Digitally signed by Rick Ford<br/>Date: 2018.04.05 21:22:28<br/>-0402</small><br><small>(Signature)</small> | <b>PROJECT MANAGER</b><br><small>(Title)</small> |

| ITEM NUMBER | DOCUMENT NUMBER | REVISION NUMBER | DOCUMENT DESCRIPTION | AFS DISPOSITION   |
|-------------|-----------------|-----------------|----------------------|---|
| 1           | KAS 030         |                 | PQR 09KRC-1092       | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input checked="" type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA<br><input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |

|                          |  |
|--------------------------|--|
| Comments:<br>No comments | Technical Reviewer (i.e., RE, PTL, SME, QA, etc.)<br><b>KLEIN Slade</b> KLEIN Slade<br><small>2018.04.10 10:24:52 -0700</small><br>Date: 4/10/2018 |
|--------------------------|--|

| AFS DISPOSITION CODES AND DEFINITIONS |                                |  |                             |
|---------------------------------------|--------------------------------|--|-----------------------------|
| AP                                    | Approved                       | Work may proceed.  | Resubmittal is not required |
| AWC                                   | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| REV                                   | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| RWC                                   | Reviewed with Comment          | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit        |
| DS                                    | Disapproved                    | Work may <u>not</u> proceed.   | Correct and resubmit        |
| RSA                                   | Receipt Submittal Acknowledged | No other action required.  |                             |

If, in the judgment of the Supplier, the incorporation of AFS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to AFS' C&P Representative describing the change.

|  |  |                  |
|--|--|------------------|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval<br> | <small>Digitally signed by DENTON Mark<br/>         DN: c=AREVA GROUP,<br/>         2.5.4.49=187A37C1280410E2D2170D,<br/>         cn=DENTON Mark,<br/>         Date: 2018.04.10 13:40:32 -0400</small> | Date: 04/10/2018 |
|--|--|------------------|

AFS-EN-FRM-023 Rev 01 (Effective August 18, 2014)  
 Refer to AFS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |                                    |   |
|--|------------------------------------|---|
|  | AREVA Federal Services LLC         |   |
|  | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:   | Kasgro Rail / 15C3011916           | DTF No. / Rev: 012A   |
| Charge No:   | 00225.03.0050.02.00001             | Due Date: 4/19/2018   |
| Document(s):   | See DTF No.: 012A                  |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. AFS Spec and Dwg. Codes, Stds, etc.)                 |                                    |   |
| PE   | Slade Klein                        |   |
| REVIEWERS  | Slade Klein, Bernie Counterman     |   |
| QA   | Bernie Counterman                  |   |
| <b>Technical Review</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No comments.   |                                    |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b>  |                                    | KLEIN Slade<br>2018.04.10 05:22:50 -07'00'                                  |
| <b>Quality Assurance Review (As Applicable)</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No Comments  |                                    |   |
| QA Reviewer(s) (Sign/Date): <b>Bernard Counterman</b>  |                                    | Digitally signed by Bernard Counterman<br>Date: 2018.04.10 08:02:44 -07'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary) |                                    |   |
|  |                                    |   |
|  |                                    |   |



**Orano Federal Services**  
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**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

ANNEX D

**PROCEDURE QUALIFICATION RECORD (PQR)**

**PROCEDURE SPECIFICATION**

Material specification A514M to A572 gr 60  
 Welding process Flux Cored Arc Welding  
 Manual or machine Manual  
 Position of welding Vertical  
 Filler metal specification A5.29  
 Filler metal classification E11T1-K3  
 Weld metal grade\* \_\_\_\_\_  
 Shielding gas 75 Ar 25CO<sub>2</sub> Flow rate 40 CFH  
 Single or multiple pass Multiple  
 Single or multiple arc Single  
 Welding current Direct (DCRP)  
 Welding progression Uphill  
 Preheat temperature 125° F  
 Postheat treatment None  
 Welder's name ALBIN WILLIAMS 7875  
 \*Applicable when filler metal has no AWS classification.

**VISUAL INSPECTION**

Appearance ACCEPTABLE  
 Undercut None  
 Piping porosity None  
 Test date \_\_\_\_\_  
 Witnessed by \_\_\_\_\_

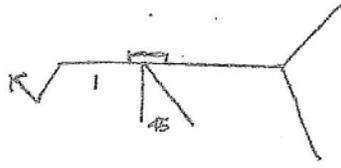
**GROOVE WELD TEST RESULTS**

Tensile strength, psi  
 1. See attached report  
 2. \_\_\_\_\_  
 Guided-bend tests (2 root, 2 face-, or 4 side-bend)  
 Root Face  
 1. SIDE - NO DEFECTS 1. SIDE - NO DEFECTS  
 2. SIDE - NO DEFECTS 2. SIDE - NO DEFECTS  
 Radiographic-ultrasonic examination  
 RT report no. \_\_\_\_\_  
 UT report no. See attached report #F3517

**FILLET WELD TEST RESULTS**

Minimum size multiple pass Maximum size single pass  
 Macroetch Macroetch  
 1. \_\_\_\_\_ 2. \_\_\_\_\_ 1. \_\_\_\_\_ 3. \_\_\_\_\_  
 3. \_\_\_\_\_ 2. \_\_\_\_\_  
 All-weld-metal tension test  
 Tensile strength, psi \_\_\_\_\_  
 Yield point/strength, psi \_\_\_\_\_  
 Elongation in 2 in, % \_\_\_\_\_  
 Laboratory test no. \_\_\_\_\_

**WELDING PROCEDURE**

| Pass No. | Electrode Size | Welding Current |       | Travel Speed | Joint Detail   |
|----------|----------------|-----------------|-------|--------------|--|
|          |                | Amperes         | Volts |              |  |
| ALL      | .062"          | 203             | 27    | 8-11 ipm     |  |

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of AWS D15.1, (2012) Railroad Welding Specification for Cars and Locomotives. (year)

Procedure no. 09XRC-1092  
 Revision no. 1  
 Form D-2

Manufacturer or Contractor KASPRO RAIL CORPORATION  
 Authorized by [Signature]  
 Date 11/25/13





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

51



179 State Street • Struthers, Ohio 44471 • (330) 755-7373

January 5, 2009

Test Report:

Kail Testing Laboratories, Inc.  
 R.D. #5 Box 419  
 New Castle, PA 16105

Phone (724) 946-3104  
 Fax (724) 946-3104

Attn: Mr. Paul Kail

(2) Welded steel test specimens of grade A514-TI to A572 Grade 60— sample identified as A and B — rec'd 12-23-08 for mechanical testing per AWS D 15.1M2007 Railroad Specifications for Kasgro Rail.

Page 1 of 1

Welder: Albin Williams, #133  
 Base Metal: A514-TI to A572 Grade 60  
 Filler: AWS A5.29; E111TI-K3  
 Filler Size: .0625"  
 Position: 3G Vertical  
 Processes: Flux Cored Arc Welding  
 Gas: 75 % Argon, 25% CO<sup>2</sup> at 40 CFH

Mechanical Test Results: (ASTM A 370-08a)

| Job # | Sample # | Outside Diameter Inches | Area Sq. In. | Ultimate Load lbs | Ultimate Stress psi | Type & Location of Failure |
|-------|----------|-------------------------|--------------|-------------------|---------------------|----------------------------|
| 63698 | A        | .502                    | .1979        | 19,620            | 99,000              | Ductile / Base Metal       |
| 63699 | B        | .504                    | .1995        | 19,630            | 98,500              | Ductile / Base Metal       |

*Frank L. Galletta*  
 Frank L. Galletta, Mgr.

Q9A



The results reported are limited to the sample tested and constitute data only with respect to the sample tested. Information and data in this report are correct and reliable to the best of our knowledge; however, results are not guaranteed and no responsibility is assumed. This report may not be reproduced, copied, in full, modified, or otherwise used without the written permission of Spectrochemical Testing, Inc.



Orano Federal Services  
**Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.4.2 – Weld Procedure Specification (WPS) Records**

|   |   |  |  |   |
|---|---|--|--|---|
|   | AREVA Federal Services LLC  |  |  |   |
| <b>DATA TRANSMITTAL FORM</b>  |   |  |  |   |
| Supplier:   | KASGRO RAIL CORP., INC.   | DTF No:  | 012  |   |
| P.O./SC No:   | 15C3011916  | Date:  | 03/20/2018   |   |
| Type of Submittal:  | <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal                                   | SDRL List Item No:   | 9  |   |
| Submitted for:  | <input type="checkbox"/> Approval <input checked="" type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted: 1  |  |   |
| Submitted By:   | RICK FORD<br>(Name)   | <br>(Signature)  | PROJECT MANAGER<br>(Title)   |   |
| ITEM NUMBER   | DOCUMENT NUMBER   | REVISION NUMBER  | DOCUMENT DESCRIPTION   | AFS DISPOSITION   |
| 1   | KAS 027   |  | WPS F001, REV 3  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input checked="" type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 2   | KAS 028   |  | WPS F002, REV 5  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input checked="" type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 3   | KAS 029   |  | WPS 08KR-F1087, REV. 2   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input checked="" type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 4   | KAS 030   |  | WPS F004, REV. 1   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input checked="" type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 5   | KAS 031   |  | WPS KRC-F-004A-514   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input checked="" type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 6   | KAS 032   |  | WPS F003, REV. 1   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input checked="" type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 7   | KAS 033   |  | WPS 15KR F1087, REV. 2   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input checked="" type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| Comments:   |   |  | Technical Reviewer (i.e., RE, PTL, SME, QA, etc.)                          |   |
| KAS 030 is an incomplete duplicate of KAS 031. KAS 030 will be disregarded. Re-submit KAS 030 to include PQR 09KRC-1092.  |   |  | KLEIN Slade<br><small>digital signature from slade.klein@areva.com</small> |   |
|   |   |  | Date 4/5/2018  |   |
| <b>AFS DISPOSITION CODES AND DEFINITIONS</b>  |   |  |  |   |
| AP  | Approved  | Work may proceed.  | Resubmittal is not required  |   |
| AWC   | Approved with Comment   | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required  |   |
| REV   | Reviewed  | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required  |   |
| RWC   | Reviewed with Comment   | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit   |   |
| DS  | Disapproved   | Work may <u>not</u> proceed.   | Correct and resubmit   |   |
| RSA   | Receipt Submittal Acknowledged  | No other action required.  |  |   |
| If, in the judgment of the Supplier, the incorporation of AFS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to AFS' C&P Representative describing the change. |   |  |  |   |
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval  |   |  | Date: 04/05/2018   |   |
|   |   |  |  |   |

AFS-EN-FRM-023 Rev 01 (Effective August 18, 2014)  
 Refer to AFS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |                                    |   |
|--|------------------------------------|---|
|  | AREVA Federal Services LLC         |   |
|  | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:   | Kasgro Rail / 15C3011916           | DTF No. / Rev: 012  |
| Charge No:   | 00225.03.0050.02.00001             | Due Date: 3/20/2018   |
| Document(s):   | See DTF No.: 012                   |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. AFS Spec and Dwg. Codes, Stds, etc.)                         |                                    |   |
| PE   | Slade Klein                        |   |
| REVIEWERS  | Slade Klein, Bernie Counterman     |   |
| QA   | Bernie Counterman                  |   |
| <b>Technical Review</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input type="checkbox"/>                                  |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| KAS 30 and KAS 31 are duplicates.  |                                    |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b>  |                                    | Digitally signed by KLEIN Slade<br>Date: 2018.04.05 07:53:47 -07'00'        |
| <b>Quality Assurance Review (As Applicable)</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                       |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| delete KAS 030 - incomplete and all required information is contained in KAS 031.<br>KAS 031 - need PQR 09KRC-1092 |                                    |   |
| QA Reviewer(s) (Sign/Date): <b>Bernard Counterman</b>  |                                    | Digitally signed by Bernard Counterman<br>Date: 2018.04.04 11:14:13 -07'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary)         |                                    |   |
|  |                                    |   |
|  |                                    |   |





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

ANNEX D

**TEST QUALIFIED WELDING PROCEDURE SPECIFICATION (WPS)**

Qualified by procedure qualification no. F-001  
 Material specification Class 182 (A387, A572/grd 2&60, A500, A600/gr B, A210/gr WCC, etc)  
 Welding process FCAW  
 Manual or machine Both  
 Position of welding: Flat, Horizontal, Vertical, Overhead  
 Filler metal specification A6.20  
 Filler metal classification E71T-1  
 Flux N/A  
 Weld metal grade N/A  
 Shielding gas: CO2 Flow rate: 35-60 cfm  
 Single or multiple pass Both  
 Single or multiple arc Single  
 Welding current Direct  
 Polarity DCEP  
 Welding progression Vertical (30) - Uphill  
 Root treatment Clean to sound metal  
 Preheat and interpass temperature See attached report  
 Postweld Heat Treatment None  
 Applicable only when filler metal has no AWS classification.

**WELDING PROCEDURE**

| Pass No.    | Electrode Size | Welding Current |       | Travel Speed | Joint Detail  |
|-------------|----------------|-----------------|-------|--------------|---|
|             |                | Amperes         | Volts |              |   |
| As required |                |                 |       |              | See attached reports<br><br>Thickness of weld layers not to exceed 1/4" |
| F 1/8"      | 3/16"          | 180-280         | 27-32 | 8-13 ipm     |   |
|             | 1/16"          | 200-400         | 25-31 | 8-13 ipm     |   |
|             | 3/32"          | 250-400         | 17-32 | 6-13 ipm     |   |
| H-20        | 1/16"          | 200-400         | 25-31 | 8-13 ipm     |   |
|             | 3/32"          | 250-400         | 17-32 | 6-13 ipm     |   |
| V-30        | 3/16"          | 160-210         | 24-39 | 4-9 ipm      |   |
|             | 1/16"          | 180-250         | 25-30 | 6-11 ipm     |   |
| O-40        | 3/16"          | 180-240         | 24-29 | 8-13 ipm     |   |
|             | 1/16"          | 200-270         | 28-30 | 8-13 ipm     |   |

This procedure may vary due to fabrication sequences; fitup; pass size; etc., within the limitation of variables given in AWS D16.1, ( 2012 ) Railroad Welding Specification for Cars and Locomotives, (year)

Procedure no. F-001 Manufacturer or Contractor: KANSAS RAIL CORP.  
 Revision no. 3 Authorized by: [Signature]  
 Form 0-3 Date: 11/25/13



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

ANNEX D

AWS D15.1/D15.1M:2012

**PREQUALIFIED WELDING PROCEDURE SPECIFICATION (WPS)**

Material specification A 572 Grade 50 and A 572 Grade 60  
 Welding process F.C.A.W.  
 Manual or machine Manual  
 Position of welding Flat, Horizontal, Vertical and Overhead  
 Filler metal specification A5.29  
 Filler metal classification E81T-1-Ni1C-JH8  
 Flux N/A  
 Weld metal grade\* N/A  
 Shielding gas CO2 Flow rate 35 - 50 CFH  
 Single or multiple pass Single/Multiple  
 Single or multiple arc Single  
 Welding current Direct  
 Polarity Reverse  
 Welding progression Vertical (3G)- Uphill  
 Root treatment Clean to sound metal  
 Preheat and interpass temperature See attached report  
 Postweld Heat Treatment None None X  
 \*Applicable only when filler metal has no AWS classification.

**WELDING PROCEDURE**

| Pass No. | Electrode Size | Electrical Characteristics |       | Travel Speed | Joint Detail  |
|----------|----------------|----------------------------|-------|--------------|---|
|          |                | Amperes                    | Volts |              |   |
| As       | Required       |                            |       |              | *See Attached Report<br><br><br><br><br>Thickness of weld layers not to exceed 1/4" |
| F-1G     | 1/16"          | 200-400                    | 25-31 | 8-13 IPM     |   |
| H-2G     | 1/16"          | 180-250                    | 24-39 | 8-13 IPM     |   |
| V-3G     | 1/16"          | 180-250                    | 24-39 | 6-11 IPM     |   |
| O-4G     | 1/16"          | 200-270                    | 26-30 | 8-13 IPM     |   |
|          |                |                            |       |              |   |

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in AWS D15.1: ( 2012 ) Railroad Welding Specification for Cars and Locomotives.  
 (year)

Procedure no. F-002  
 Revision no. 5  
 Form D-1

Manufacturer or Contractor Kasgro Rail Corp.  
 Authorized by [Signature]  
 Date 11-2-17



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000

Project: 00225.03.0050 DOE Atlas Project

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AWS D15.1: 2012

16

RAILROAD WELDING SPECIFICATION

PREQUALIFIED WELDING PROCEDURE SPECIFICATION (WPS) F.C.A.W.

Notes\*

1. Preheat and interpass temperatures:  
Less than or equal to  $3/4''$  - 50° F minimum  
Over  $3/4''$  thru  $1\frac{1}{8}''$  - 150° F minimum  
Over  $1\frac{1}{8}''$  thru  $2\frac{1}{8}''$  - 225° F minimum  
Over  $2\frac{1}{8}''$  - 300° F minimum
2. When the width of the layer of groove weld in the flat, horizontal or overhead position is  $5/8''$  or greater, a split layer technique is used for the next layer. In vertical, a split layer is used when the width of the layer exceeds  $1''$ .

**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

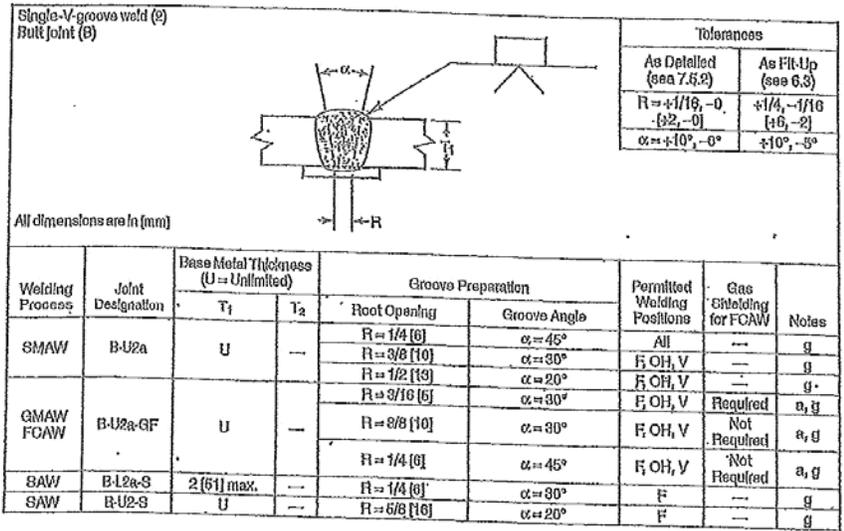


Figure 7.1B—Prequalified Complete Joint Penetration (CJP) Groove Welded Joint Details



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

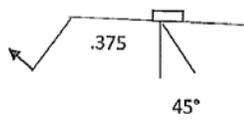
ANNEX D

**TEST QUALIFIED WELDING PROCEDURE SPECIFICATIONS (WPS)**

AWS D15.1/D15.1M:2012

Qualified by procedure qualification no. 08KRF-1087-6/30/08/ AND 15KR-F1087-1/14/15.  
 Material specification A572 GRADE 60 TO A240 GRADE 304  
 Welding process E.C.A.W.  
 Manual or machine Manual  
 Position of welding 1G Flat  
 Filler metal specification 5.22  
 Filler metal classification DW-309L  
 Flux \_\_\_\_\_  
 Weld metal grade\* \_\_\_\_\_  
 Shielding gas CO2 Flow rate 40 – 50 CFH  
 Single or multiple pass Multiple  
 Single or multiple arc Single  
 Welding current DCEP  
 Polarity Reverse  
 Welding progression Forehand  
 Root treatment Clean to sound metal  
 Preheat and interpass temperature 50°F  
 Post weld Heat Treatment None None x  
 \*Applicable only when filler metal has no AWS classification.

**WELDING PROCEDURE**

| Pass No. | Electrode Size | Welding Current |       | Travel Speed | Joint Detail   |
|----------|----------------|-----------------|-------|--------------|--|
|          |                | Amperes         | Volts |              |  |
| ALL      | .062"          | 240-280         | 29-33 | 15-18 imp    |  |

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in AWS D15.1, [ 2012 ] Railroad Welding Specification for Cars and Locomotives.  
 (Year)

Procedure no. 08KR-F1087 Manufacturer or Contractor KASGRO RAIL CORP.  
 Revision no. 2 Authorized by [Signature]  
 Date 07/27/15



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

47

TEST QUALIFIED WELDING PROCEDURE SPECIFICATION (WPS)

Qualified by procedure qualification # 09KRC-1092  
 Material specification A514T1 to A572 Grade 60  
 Welding process F.C.A.W.  
 Manual or machine Manual  
 Position of welding Vertical  
 Filler metal specification A5.29  
 Filler metal classification E111T1-K3  
 Flux \_\_\_\_\_  
 Weld metal grade\* \_\_\_\_\_  
 Shielding gas 75% Argon 25% CO2 Flow rate 40 CFH  
 Single or multiple pass Multiple  
 Single or multiple arc Single  
 Welding current Direct  
 Polarity Reverse  
 Welding progression Uphill  
 Root treatment Clean to sound metal  
 Preheat and interpass temperature See attached report  
 Postweld Heat Treatment None

\*Applicable only when filler metal has no AWS classification.

WELDING PROCEDURE

| Pass no. | Electrode size | Welding current |       | Travel speed | Joint detail |
|----------|----------------|-----------------|-------|--------------|--------------|
|          |                | Amps            | Volts |              |              |
| ALL      | .062"          | 190-300         | 27-30 | 8-11 ipm     |              |

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in AWS D15.1, (2012 year).

Procedure no. R-004 Manufacturer or contractor KASCRO RAIL CORP.  
 Revision no. 1 Authorized by [Signature]  
 Form D-3 Date 11/25/13



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

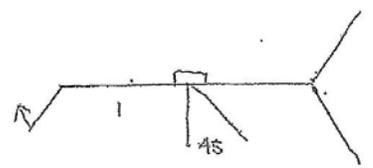
Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

TEST QUALIFIED WELDING PROCEDURE SPECIFICATION (WPS)

Qualified by procedure qualification # 09KRC-1092  
 Material specification A514T1 to A572 Grade 60  
 Welding process F.C.A.W.  
 Manual or machine Manual  
 Position of welding Vertical  
 Filler metal specification A5.29  
 Filler metal classification E111T1-K3  
 Flux \_\_\_\_\_  
 Weld metal grade\* \_\_\_\_\_  
 Shielding gas 75% Argon 25% CO2 Flow rate 40 CFH  
 Single or multiple pass Multiple  
 Single or multiple arc Single  
 Welding current Direct  
 Polarity Reverse  
 Welding progression Uphill  
 Root treatment Clean to sound metal  
 Preheat and interpass temperature See attached report  
 Postweld Heat Treatment None

\*Applicable only when filler metal has no AWS classification.

WELDING PROCEDURE

| Pass no. | Electrode size | Welding current |       | Travel speed | Joint detail   |
|----------|----------------|-----------------|-------|--------------|--|
|          |                | Amperes         | Volts |              |  |
| ALL      | .062"          | 190-300         | 27-30 | 8-11 ipm     |  |

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in AWS D15.1, ( 2012 year ).

Procedure no. E-004 Manufacturer or contractor KASCRO RAIL CORP.  
 Revision no. 1 Authorized by [Signature]  
 Form D-3 Date 11/25/13



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000

Project: 00225.03.0050 DOE Atlas Project

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AWS D15.1: 2012

48

RAILROAD WELDING SPECIFICATION

PREQUALIFIED WELDING PROCEDURE SPECIFICATION (WPS) F.C.A.W.

Notes\*

1. Preheat and interpass temperatures:  
Less than or equal to  $3/4$ " - 50° F minimum  
Over  $3/4$ " thru  $1\frac{1}{2}$ " - 150° F minimum  
Over  $1\frac{1}{2}$ " thru  $2\frac{1}{2}$ " - 225° F minimum  
Over  $2\frac{1}{2}$ " - 300° F minimum
2. When the width of the layer of groove weld in the flat, horizontal or overhead position is  $5/8$ " or greater, a split layer technique is used for the next layer. In vertical, a split layer is used when the width of the layer exceeds 1".



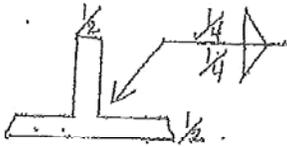
**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**TEST QUALIFIED WELDING PROCEDURE SPECIFICATION (WPS)**

Material specification A572 grade 60 to A656 grade 80  
 Welding process F.C.A.M.  
 Manual or machine Manual  
 Position of welding Flat, Horizontal, Vertical, Overhead  
 Filler metal specification A5.29  
 Filler metal classification E81T1-NiCu 88  
 Flux N/A  
 Weld metal grade N/A  
 Shielding gas CO2 Flow rate 35 to 50 CFH  
 Single or multiple pass Single/Multiple  
 Single or multiple arc Single  
 Welding current Direct  
 Polarity Reverse  
 Welding progression Vertical - Uphill  
 Root treatment Clean to sound metal  
 Preheat and Interpass temperature 250° F  
 Postweld Heat Treatment None None X  
 \*Applicable only when filler metal has no AWS classification.

**WELDING PROCEDURE**

| Pass no. | Electrode size | Welding current     |       | Travel speed | Joint detail   |
|----------|----------------|---------------------|-------|--------------|--|
|          |                | Amperes             | Volts |              |  |
| ALL      | 1/16"          | See attached report |       | 8-11 ipm     |  |

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in AWS D16.1, (2012).

Procedure no. E-003 Manufacturer or contractor Kasco Rail Corp  
 Revision no. 1 Authorized by [Signature]  
 Form D-1 Date 11/25/13



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

TEST QUALIFIED WELDING PROCEDURE SPECIFICATION (WPS)

Material specification A572 grade 60 to A556 grade 80  
 Welding process F.C.A.W.  
 Manual or machine Manual  
 Position of welding Flat, Horizontal, Vertical, Overhead  
 Filler metal specification A5.29  
 Filler metal classification E81T1-Ni1Cr H8  
 Flux N/A  
 Weld metal grade N/A  
 Shielding gas CO2  
 Single or multiple pass Single/Multiple Flow rate 35 to 50 CFH  
 Single or multiple arc Single  
 Welding current Direct  
 Polarity Reverse  
 Welding progression Vertical - Uphill  
 Root treatment Clean to sound metal  
 Preheat and Interpass temperature 250° F  
 Postweld Heat Treatment None None X  
 \*Applicable only when filler metal has no AWS classification.

WELDING PROCEDURE

| Pass no. | Electrode size | Welding current     |       | Travel speed | Joint detail |
|----------|----------------|---------------------|-------|--------------|--------------|
|          |                | Amps                | Volts |              |              |
| ALL      | 1/16"          | See attached report |       | 8-11 ipm     |              |

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in AWS D18.1, (2012) Year.

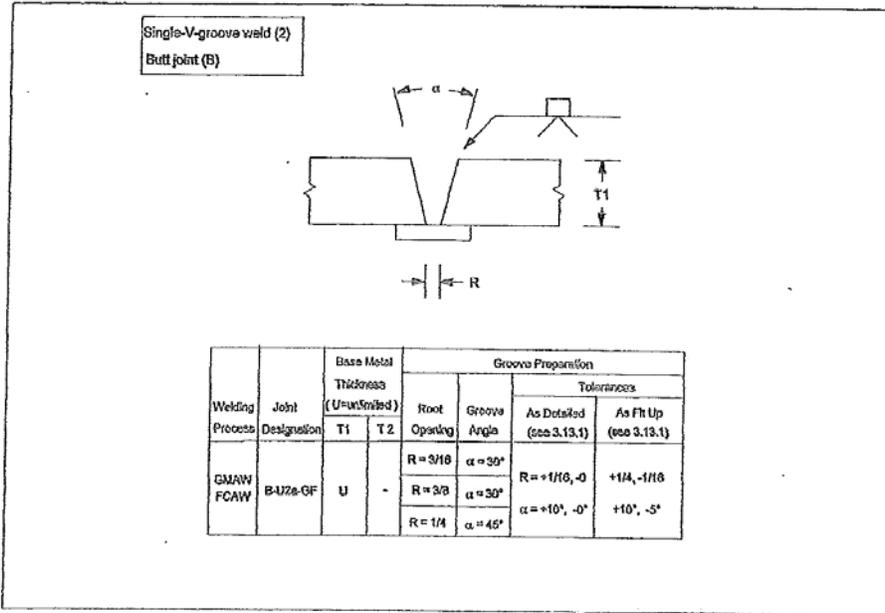
Procedure no. E-003 Manufacturer or contractor Baspro Rail Corp  
 Revision no. \_\_\_\_\_ Authorized by [Signature]  
 Form D-1 Date 11/25/13



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000

Project: 00225.03.0050 DOE Atlas Project



b-u2a-gf.gfl

Preheat

|                         |          |
|-------------------------|----------|
| Less than or = to 3/4"  | 50 deg.  |
| Over 3/4" thru 1-1/2"   | 150 deg. |
| Over 1-1/2" thru 2-1/2" | 225 deg. |
| Over 2-1/2"             | 300 deg. |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.4.3 – Kasgro Welder Qualifications Records**

|                       |   |   |                 |
|-----------------------|---|---|-----------------|
|                       | AREVA Federal Services LLC  |   |                 |
| DATA TRANSMITTAL FORM |   |   |                 |
| Supplier:             | KASGRO RAIL CORP., INC.   | DTF No:   | 018             |
| P.O./SC No:           | 15C3011916  | Date:   | 03/27/18        |
| Type of Submittal:    | <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal                                   | SDRL List Item No:  | 20              |
| Submitted for:        | <input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted:   | 1               |
| Submitted By:         | <b>RICK FORD</b>  | Rick Ford<br><small>Digitally signed by Rick Ford<br/>Date: 2018.03.27 15:35:09<br/>+0700</small> | PROJECT MANAGER |
|                       | (Name)  | (Signature)   | (Title)         |

| ITEM NUMBER | DOCUMENT NUMBER | REVISION NUMBER | DOCUMENT DESCRIPTION                                | AFS DISPOSITION   |
|-------------|-----------------|-----------------|---|---|
| 1           | KAS W1          |                 | Clock #157 Adam Durst Welding Qualifications        | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 2           | KAS W2          |                 | Clock #131 Albin Williams Welding Qualifications    | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 3           | KAS W3          |                 | Clock #819 Bill Flory Welding Qualifications        | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 4           | KAS W4          |                 | Clock #837 Bret Shepard Welding Qualifications      | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 5           | KAS W5          |                 | Clock #109 Charles Klutnski Welding Qualifications  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input checked="" type="checkbox"/> DS <input type="checkbox"/> RSA |
| 6           | KAS W6          |                 | Clock #822 Charles Spaulding Welding Qualifications | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 7           | KAS W7          |                 | Clock #15 Darryl Beachem Welding Qualifications     | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input checked="" type="checkbox"/> DS <input type="checkbox"/> RSA |
| 8           | KAS W8          |                 | Clock #817 Donald Keller Welding Qualifications     | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 9           | KAS W9          |                 | Clock #825 George Sepesie Welding Qualifications    | <input type="checkbox"/> AP <input checked="" type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |

|  |  |
|--|--|
| Comments:<br>Please see comments on DTF-018 FRM-026.<br>Re-submit W5 and W7. For W9, George Sepesie please provide ID # clarification. | Technical Reviewer (i.e., RE, PTL, SME, QA, etc.)<br><b>KLEIN Slade</b><br><small>KLEIN Slade<br/>2018.04.10 07:01:23 -0700</small><br>Date: 4/10/2018 |
|--|--|

| AFS DISPOSITION CODES AND DEFINITIONS |                                |  |                             |
|---------------------------------------|--------------------------------|--|-----------------------------|
| AP                                    | Approved                       | Work may proceed.  | Resubmittal is not required |
| AWC                                   | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| REV                                   | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| RWC                                   | Reviewed with Comment          | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit        |
| DS                                    | Disapproved                    | Work may <u>not</u> proceed.   | Correct and resubmit        |
| RSA                                   | Receipt Submittal Acknowledged | No other action required.  |                             |

If, in the judgment of the Supplier, the incorporation of AFS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to AFS' C&P Representative describing the change.

|  |   |
|--|---|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval<br> | <small>Digitally signed by DENTON Mark<br/>DN: cn=DENTON GROUP,<br/>3.5.4.45=197A37C138C410EDD2170C,<br/>o=DENTON Mark,<br/>Date: 2018.04.10 15:22:50 -0400</small><br>Date: 04/10/2018 |
|--|---|

AFS-EN-FRM-023 Rev 01 (Effective August 18, 2014)  
 Refer to AFS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|   |                                    |   |
|---|------------------------------------|---|
|   | AREVA Federal Services LLC         |   |
|   | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:  | Kasgro Rail / 15C3011916           | DTF No. / Rev: 018  |
| Charge No:  | 00225.03.0050.02.00001             | Due Date: 4/10/2018   |
| Document(s):  | See DTF No.: 018                   |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. AFS Spec and Dwg. Codes, Stds, etc.)  |                                    |   |
| PE  | Slade Klein                        |   |
| REVIEWERS   | Slade Klein, Bernie Counterman     |   |
| QA  | Bernie Counterman                  |   |
| <b>Technical Review</b>   |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                                    |   |
| Technical Reviewer Comments:  |                                    |   |
| No additional comments.   |                                    |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b>   |                                    | KLEIN Slade<br>2018.04.10 05:01:37 -07'00'                                  |
| <b>Quality Assurance Review (As Applicable)</b>   |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                                    |   |
| Technical Reviewer Comments:  |                                    |   |
| 1. Charles Kulinski - 4G Groove weld had 1-face and 1-root bend. Should be 2 side bends.<br>2. Darryl Beachem - qualification for .375 and 3G were performed for Miner Rail Services. Need qualifications to Kasgro. (Ref. D15.1, Section 9.4 Qualification Responsibility). 4G Groove weld had 1-face and 1-root bend. Should be 2 side bends.<br>3. George Sepesie - qualification for 1G and 3G use ID #7031. Qualification for 4G uses ID #631. |                                    |   |
| QA Reviewer(s) (Sign/Date): <b>Bernard Counterman</b>   |                                    | Digitally signed by Bernard Counterman<br>Date: 2018.04.04 14:18:14 -07'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary)  |                                    |   |
|   |                                    |   |
|   |                                    |   |



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



Date of Qualification

12/11/99

Date of Expiration

INDEFINITE  
 AS PER CODE.

Lab. No. 00225-1953

*Adam F. Durst*  
 Authorized Signature



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operators name ADAM F. DURSI Identification no. 157  
 Welding process SAW Manual  Semiautomatic  Machine   
 Position 3F Vertical Up  
 (Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification no. PS-001 or no. 01B  
 Material specification A-36  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness: 1.0"  
 In class range this qualifies UNLIMITED

**FILLER METAL**

Specification no. 5.20 Classification F71T-1 F no. 6  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name 1/2" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 covered arc welding 100% CO2

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Pitting porosity None

**Guided Bend Test Results**

| Type      | Result     | Type | Result |
|-----------|------------|------|--------|
| SIDE BEND | NO DEFECTS |      |        |
| SIDE BEND | NO DEFECTS |      |        |

Test conducted by KATI TESTING LABORATORY Laboratory test no. 99V30 1961  
 and [Signature] Test date 12/10/99

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test (not bend or form) \_\_\_\_\_ Marbetch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 and \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the results were prepared and tested in accordance with the requirements of the American Welding Society AWS D 9.1, (\_\_\_\_\_) year.

Manufacturer or contractor KASPRO RAIL CORP.  
 Authorized by [Signature]  
 Date 12-10-99

FORM B-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



Date of Qualification

9/11/2000

Date of Expiration

INDEFINITE  
 AS PER CODE

Lab. No. 20543 2047

*Paul J. Kail*  
 Authorized Signatory



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD**

Welder or welding operator's name ADAM DURST Identification no. 157  
 Welding process E.C.A.N. Manual  Semiautomatic  Machine   
 Position 4C Overhead Groove Weld  
 (Flat, horizontal, overhead or vertical - If vertical, state whether upward or downward)  
 In accordance with procedure specification no. Prequalified joint sig no. C18  
 Material specification A-36  
 Diameter and wall thickness (if pipe) - otherwise, joint thickness 1.0"  
 Thickness range this qualifies UNLIMITED

**FILLER METAL**

Specification no. 5.20 Classification E71T-1 F no. 6  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name 1/16" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 cored arc welding 100% CO2

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Flipping porosity None

**Guided Bent Test Results**

| Type      | Result     | Type | Result |
|-----------|------------|------|--------|
| SIDE BEND | NO DEFECTS |      |        |
| SIDE BEND | NO DEFECTS |      |        |

Test conducted by KATI TESTING LABORATORY Laboratory test no. 20845-2047  
 per [Signature] Test date 9/11/2000

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Marcoetch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1, ( 93 ) year.

Manufacturer or contractor KASCDO RAIL CORP.  
 Authorized by [Signature]  
 Date 9/1/00

Form D-4



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**QW-484 SUGGESTED FORMAT FOR WELDER/WELDING OPERATOR**  
**PERFORMANCE QUALIFICATIONS (W/PQ)**  
 (See QW-301, Section IX, ASME Boiler and Pressure Vessel Code)

Welder's name: ADAM LORETT      Check number: \_\_\_\_\_      Stamp no.: 157  
 Welding process(es) used: S.M.A.W.      Type: Manual  
 Identification of W/PQ followed by welder during welding of test coupon: \_\_\_\_\_  
 Base material(s) welded: SA106-B to SA106-B      Thickness: 432"

**Manual or Semiautomatic Variables for Each Process (QW-380)**

Backing (metal, weld metal, welded from both sides, flux, etc.) (QW-402)  
 ASME P-No. B-1 to ASME P-No. (QW-403)  
 ( ) Plate ( ) Pipe (enter diameter, if piped)  
 Filler metal specification (SFA): 5.5 & 5.5 Classification (QW-104)  
 Filler metal P-No. \_\_\_\_\_  
 Filler metal variety for GTAW, PAW (QW-404) \_\_\_\_\_  
 Consumable insert for GTAW or PAW \_\_\_\_\_  
 Weld deposit thickness for each welding process \_\_\_\_\_  
 Welding position (1G, 5G, etc.) (QW-405) \_\_\_\_\_  
 Progression (uphill/downhill) \_\_\_\_\_  
 Backing gas for GTAW, PAW, or GMAW; fuel gas for OFW (QW-406) \_\_\_\_\_  
 GMAW transfer mode (QW-409) \_\_\_\_\_  
 GTAW welding current type/polarity \_\_\_\_\_

| Actual Values | Range Qualified    |
|---------------|--------------------|
| Name          | With or without    |
| P-1           | P-1 to P-11 & P-4X |
| 5.625" OD     | 2.875" & over      |
| F-6010 E-7018 |                    |
| 3 4           | P-1 thru P-4       |
| N/A           | N/A                |
| N/A           | N/A                |
| 532"          | 1.064"             |
| GG            | All positions      |
| Uphill        | Uphill             |
| N/A           | N/A                |
| N/A           | N/A                |
| N/A           | N/A                |

**Machine Welding Variables for the Process Used (QW-380)**

Direct/remote visual control \_\_\_\_\_  
 Automatic voltage control (GTAW) \_\_\_\_\_  
 Automatic joint tracking \_\_\_\_\_  
 Welding position (1G, 5G, etc.) \_\_\_\_\_  
 Consumable insert \_\_\_\_\_  
 Backing (metal, weld metal, welded from both sides, flux, etc.) \_\_\_\_\_

| Actual Values | Range Qualified |
|---------------|-----------------|
|               |                 |
|               |                 |
|               |                 |
|               |                 |
|               |                 |
|               |                 |
|               |                 |
|               |                 |

| Guided Bend Test Type | QW-462.2 (SFA) Results | QW-462.3(a) (Trans. T.C.F.) Type | QW-462.3(b) (Long. R.O.F.) Results |
|-----------------------|------------------------|----------------------------------|------------------------------------|
| SIDE BEND 1           | 1/32" tear/PASSED      | SIDE BEND 3                      | Minor check/PASSED                 |
| SIDE BEND 2           | 1/64" tear/PASSED      | SIDE BEND 4                      | 3/64" tear/PASSED                  |

Visual examination results (QW-382.1) Satisfactory  
 Radiographic test results (QW-384 and QW-385) \_\_\_\_\_  
 (For alternative qualification of groove welds by radiography)  
 Fillet Weld — Fracture test \_\_\_\_\_ Length and percent of defects \_\_\_\_\_ in.  
 Macro test fusion \_\_\_\_\_ Fillet leg size \_\_\_\_\_ in. Convexity/concavity \_\_\_\_\_ in.  
 Welding test conducted by RAIL TESTING LABORATORY  
 Mechanical tests conducted by RAIL TESTING LABORATORY Laboratory test no. 20P-1030  
 We certify that the statements in this record are correct and that the test coupons were prepared, welded, and tested in accordance with the requirements of Section IX of the ASME Code.

Organization: KANSAS RAIL CORP.

Date: 9/11/2000

By: [Signature]

1298 The form (E93008) may be obtained from the Order Dept., ASME, 22 Law Drive, Box 2308, Fairfield, NJ 07007-2308.





Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name: AMELIA WILLIAMS Identification no. 131  
 Welding process: F.C.C.A.W. Manual \_\_\_\_\_ Semi-automatic: X Machine \_\_\_\_\_  
 Position: 1C FLAT  
 (Flat, horizontal, overhead or vertical if vert. test, state whether upward or downward)  
 In accordance with procedure specification no. 01KRC-3129  
 Material specification: A-36  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness: 1.5"  
 Thickness range this applies: UNLIMITED

**FILLER METAL**  
 Specification: E-70 Classification: E70T-1 F no. 6  
 Describe filler metal (if not covered by AWS specification): \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name: 3/32" Lincoln Flux for submerged arc or gas for gas metal arc or flux cored arc welding: 100% Cu2

**VISUAL INSPECTION**  
 Appearance: Satisfactory Undercut: None Piping density: None

**Guided Bent Test Results**

| Type      | Result            | Type | Result |
|-----------|-------------------|------|--------|
| EDGE BEND | 3/32" tear/PASSED |      |        |
| STOP BEND | NO DEFECTS        |      |        |

Test conducted by: KATHY TESTING LABORATORY Laboratory test no. 01FIG-2215  
 per: [Signature] Test date: 11/30/01

**Fillet Test Results**

Appearance: \_\_\_\_\_ Fillet size: \_\_\_\_\_  
 Fracture test root penetration: \_\_\_\_\_ Macroetch: \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by: \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per: \_\_\_\_\_ Test date: \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by: \_\_\_\_\_ Test no.: \_\_\_\_\_  
 per: \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D11.1, ( 93 )  
 year

Manufacturer or contractor: KASCO RAIL CORPORATION  
 Authorized by: [Signature]  
 Date: 11-30-01

Form D-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name: ALLEN WILLIAMS Identification no.: 131  
 Welding process: SMAW Manual: X Semi-automatic: \_\_\_\_\_ Machine: \_\_\_\_\_  
 Position: AS Vertical Up  
 (Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification no. Unqualified joint sig. no. G1B  
 Material specification: A-36  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness: 0.50"  
 Thickness range this qualifies: 1.0"

**FILLER METAL**  
 Specification: E1 & E5 Classification: R 7070 F no.: 4  
 Describe filler metal (if not covered by AWS specification): \_\_\_\_\_  
 Is backing strip used? Yes  
 If, or metal diameter and trade name: 1/8" Ebonite Flux for submerged arc or gas for gas metal arc or flux  
 covered arc welding: \_\_\_\_\_

**VISUAL INSPECTION**  
 Appearance: Satisfactory Undercut: None Pitting porosity: None

**Guided Bent Test Results**

| Type             | Result                   | Type | Result |
|------------------|--------------------------|------|--------|
| <u>SIDE BEND</u> | <u>NO DEFECTS</u>        |      |        |
| <u>SIDE BEND</u> | <u>1/64" tear/CRASED</u> |      |        |

Test conducted by: MAIL TESTING LABORATORY Laboratory test no.: 20520-1626  
 per: [Signature] Test date: 4/28/99

**Filet Test Results**

Appearance: \_\_\_\_\_ Fillet size: \_\_\_\_\_  
 Fracture test and penetration: \_\_\_\_\_ Macroetch: \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by: \_\_\_\_\_ Laboratory test no.: \_\_\_\_\_  
 per: \_\_\_\_\_ Test date: \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Expos | Remarks | Film identification | Results | Remarks |
|---------------------|-------|---------|---------------------|---------|---------|
|                     |       |         |                     |         |         |
|                     |       |         |                     |         |         |

Test witnessed by: \_\_\_\_\_ Test no.: \_\_\_\_\_  
 per: \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that all welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D1.1, ( \_\_\_\_\_ year )

Manufacturer or contractor: KUMERO EAST COEE  
 Authorized by: [Signature]  
 Date: 5-25-99

Form D-4



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name ALBIN WILLIAMS Identification no. 131  
 Welding process F.C.A.W. Manual        Semiautomatic X Machine         
 Position OC Vertical Up  
 (Flat, horizontal, overhead or vertical. If vertical, state whether upward or downward)  
 In accordance with procedure specification no. 05KRC-0136  
 Material specification A 36  
 Diameter and wall thickness (if pipe) - otherwise, joint thickness 1.0  
 Thickness range this qualifies UNS (P1) 30

**FILLER METAL**

Specification no. 5.29 Classification E11ET-1 F no. 6  
 Describe filler metal (if not covered by AWS specification)         
 Is backing strip used? Yes  
 Filler metal diameter and trade name 1/16" BSAE Flux for submerged arc or gas for gas metal arc or flux cored arc welding 100% CO<sub>2</sub>

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bend Test Results**

| Type      | Result            | Type | Result |
|-----------|-------------------|------|--------|
| SIDE BEND | 3/8" tear/PASSED  |      |        |
| SIDE BEND | 1/32" tear/PASSED |      |        |

Test conducted by RAIL TESTING LABORATORY Laboratory test no. 05390-2476  
 per [Signature] Test date 12/29/2005

**Fitup Test Results**

Appearance        Fillet size         
 Fracture test root penetration        Marcatch         
 (Describe the location, nature, and size of any crack or tearing of the specimen)  
 Test conducted by        Laboratory test no.         
 per        Test date       

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |
|                     |         |         |                     |         |         |

Test witnessed by        Test no.         
 per       

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1, (2001) year       .

Manufacturer or contractor K2SERO RAIL CORP.  
 Authorized by [Signature]  
 Date 12/29/05

Form D-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name: ADITHYAN 131  
 Welding process: MIG Shielded Metal Arc Semi-automatic Machine  
 Position: Vertical up  
 (Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 in accordance with procedure specification no. Qualification Joint, Fig. no. 010  
 Material specification: A-80  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness: 1.0"  
 Thickness range (if applicable): UNLIMITED

**FILLER METAL**

Specification no.: 3.32 Classification: ER70S-7 Flux: 6  
 Describe filler metal (if not covered by AWS specification): \_\_\_\_\_  
 Is backing strip used: Yes  
 Filler metal diameter and trade name: 1/16" LINCOLN Flux for submerged arc or gas for gas metal arc or flux cored arc welding: 100% CO<sub>2</sub>

**VISUAL INSPECTION**

Appearance: Satisfactory Internal: None Piping porosity: None

**Guidon Bar Test Results**

| Type              | Result                   | Type | Result |
|-------------------|--------------------------|------|--------|
| <u>SLIDE BEAD</u> | <u>NO DEFECTS</u>        |      |        |
| <u>SLIDE PAWL</u> | <u>1/16" Pass/PASSED</u> |      |        |

Test conducted by: KATE TRATING LABORATORY Laboratory test no.: WFS-2318  
 on: 5/25/00 Test date: 5/25/00

**Fit-Up Test Results**

Appearance: \_\_\_\_\_ File size: \_\_\_\_\_  
 Measure test root penetration: \_\_\_\_\_ Microinch: \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by: \_\_\_\_\_ Laboratory test no.: \_\_\_\_\_  
 on: \_\_\_\_\_ Test date: \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results |         | Film identification | Results |         |
|---------------------|---------|---------|---------------------|---------|---------|
|                     | Results | Remarks |                     | Results | Remarks |
|                     |         |         |                     |         |         |

Test witnessed by: \_\_\_\_\_ Test no.: \_\_\_\_\_  
 on: \_\_\_\_\_

We, the undersigned, certify that the information in this record is correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D16.1, \_\_\_\_\_ year.

Manufacturer or contractor: KARGO RAIL CORP.  
 Authorized by: [Signature]  
 Date: 5/25/00

Form W-4



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

ANNEX D

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name ARTHUR WILLIAMS Identification no. 131  
 Welding process E.C.A.W. Manual \_\_\_\_\_ Semiautomatic X Machine \_\_\_\_\_  
 (Flat, horizontal, overhead, or vertical—if vertical, state whether upward or downward.) 3G Vertical up  
 In accordance with procedure specification no. P-004  
 Material specification A51411 to A572 grade 60  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness 1.0"  
 Thickness range this qualifies UNLIMITED

**FILLER METAL**

Specification no. A5.29 Classification E11TT1-K3 F.no. 6  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name E11TT1-K3 ESAB Flux for submerged arc or gas for gas metal arc or flux  
 cored arc welding 75% Argon 25% CO2

**VISUAL INSPECTION**

Appearance Acceptable Undercut None Piping porosity None

**Guided Bend Test Results**

| Type        | Result     | Type        | Result     |
|-------------|------------|-------------|------------|
| SIDE BEND 1 | NO DEFECTS | SIDE BEND 3 | NO DEFECTS |
| SIDE BEND 2 | NO DEFECTS | SIDE BEND 4 | NO DEFECTS |

Test conducted by KALD TESTING LABORATORY Laboratory test no. 09130-7883  
for fuel tank Test date 1/14/2009

**Fillet Test Results**

Appearance \_\_\_\_\_ Filled size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Macroetch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of AWS 1115.1, ( 2007 ) Railroad Welding Specification—Cars and Locomotives.  
 (year)

Manufacturer or Contractor KASCO RAIL CORP.  
 Authorized by [Signature]  
 Date 1/25/09

Form D-4



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD**

Welder or welding operator's name ALBIN D. WILLEAMS Identification no. 131  
 Welding process E.C.A.W. Manual  Semiautomatic  Machine   
 Position 4E Overhead Groove Weld  
 (Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification no. Prequalified joint fig. no. Q18  
 Material specification A-36  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness .500"  
 Thickness range this qualifies 1.0"

**FILLER METAL**

Specification no. 5.20 Classification E71T-1 F no. 6  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used?  Yes  No  
 Filler metal diameter and trade name 1/16" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 cored arc welding 100% CO<sub>2</sub>

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bend Test Results**

| Type      | Result            | Type | Result |
|-----------|-------------------|------|--------|
| SIDE BEND | 1/32" tear/PASSED |      |        |
| SIDE BEND | 1/64" tear/PASSED |      |        |

Test conducted by KALL TESTING LABORATORY Laboratory test no. 20R12-2016  
 per Paul J. Kahl Test date 9/11/2000

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Macroetch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this report are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D16.1, (\_\_\_\_ 93 \_\_\_\_).  
 year

Manufacturer or contractor RASERO RAIL COMP.  
 Authorized by Paul J. Kahl  
 Date 9-11-00

Form D-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

AWS D16.10/15.1M 2007

ANNEX D

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name: BILL FLORY Identification no. 8175  
 Welding process: FCM Manual  Semicautomatic  Machine   
 (Flat, horizontal, overhead, or vertical. If vertical, state whether upward or downward.) 1C, Flat  
 In accordance with procedure specification no. P-005  
 Material specification: A-36  
 Diameter and wall thickness (if pipe)—otherwise, joint thickness: 3/32"  
 Thickness range this qualifies: UNLIMITED

**FILLER METAL**

Specification no. E-29 Classification E80C-1 F-no. 6  
 Describe filler metal (if not covered by AWS specification):  
 Is backing strip used? Yes  
 Filler metal diameter and trade name: 3/32" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 cured arc welding: 100% CO2

**VISUAL INSPECTION**

Appearance: Satisfactory Undercut: None Piping porosity: None

**Guided Bend Test Results**

| Type      | Result     | Type | Result |
|-----------|------------|------|--------|
| SIDE BEND | NO DEFECTS |      |        |
| SIDE BEND | NO DEFECTS |      |        |

Test conducted by: KRISTY TESSELL'S LABORATORY Laboratory test no. 10F1G-7946  
 per: [Signature] Test date: 2/18/2010

**Fillet Test Results**

Appearance: \_\_\_\_\_ Fillet size: \_\_\_\_\_  
 Fracture test root penetration: \_\_\_\_\_ Macroetch: \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by: \_\_\_\_\_ Laboratory test no.: \_\_\_\_\_  
 per: \_\_\_\_\_ Test date: \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by: \_\_\_\_\_ Laboratory test no.: \_\_\_\_\_  
 per: \_\_\_\_\_ Test date: \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of AWS D16.1, ( 2007 ) Standard Welding Specification for Cars and Locomotives (98.2)

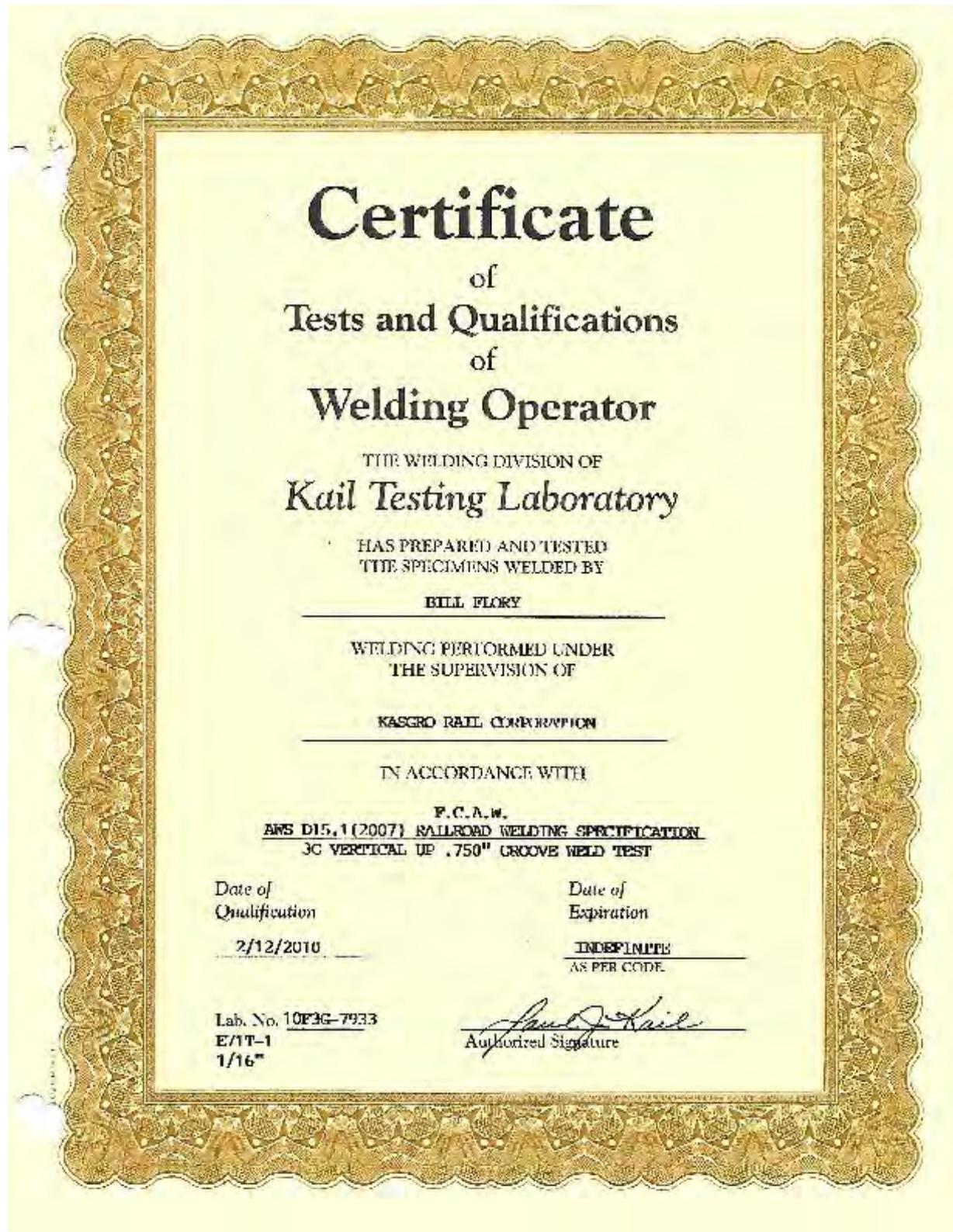
Manufacturer or Contractor: KASCRO RAIL CORP.  
 Authorized by: [Signature]  
 Date: 2/18/10

Form D-4



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

AWS D15.10 01.16 2007

ANNEX D

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name: BILL FLORY Identification no. 819  
 Welding process: FCM Manual  Semi-automatic  Machine   
 (Flat, horizontal, overhead, or vertical—if vertical, state whether upward or downward) 3C Vertical Dip  
 In accordance with procedure specification no. W-001  
 Material specification A-36  
 Diameter and wall thickness (if pipe) otherwise, joint thickness .750"  
 Thickness range this qualifies ONE TIME

**FILLER METAL**

Specification no. 5.20 Classification E70T-1 F-number 6  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? YES  
 Filler metal diameter and trade name 1/16" Lincoln Flux for submerged arc or gas for gas metal arc in flux  
 cored arc welding 100% CO2

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Peening possibility None

**Guided Bend Test Results**

| Type             | Result            | Type | Result |
|------------------|-------------------|------|--------|
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |

Test conducted by KAL INSURANCE LABORATORY Laboratory test no. 10P36-7933  
 per [Signature] Test date 2/12/2010

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Macroetch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Item Identification | Results | Remarks | Item Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

We, the undersigned, verify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of AWS D15.1 ( 2007 ) ; Handrod Welding Specification for Gas and Locomotives (yes ) \_\_\_\_\_

Manufacturer or Contractor KASCRO RAIL CORPORATION

Authorized by [Signature]  
 Date: 2/12/10



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Flint, MI – Pittsburgh, PA – Birmingham, AL – Decatur, AL  
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Reported To: Mr. Dave Stahl  
 Kugro Rail Corp  
 121 Rundle Road  
 New Castle, PA 16102

Date: March 25, 2015  
 P/O Number: QAF  
 Report Number: 1  
 Project: Welder Qualification

**AWS - WELDER, WELDING OPERATOR OR TACK WELDER QUALIFICATION TEST RECORD**

Name: Brett Sheppard Welding Code: AWS D15.1/015.1M-2012  
 Type of Welder: Semi Automatic Identification Number: 837  
 Welding Procedure Specification No. F-001 Rev: II Date: 3/25/15

| Variables                   | Record | Actual Values        | Qualification Range            |
|-----------------------------|--------|----------------------|--------------------------------|
| Process/Type                |        | FCAW                 | FCAW                           |
| Electrode (single/multiple) |        | Single               | Single                         |
| Current/Polarity            |        | DC/EP                |                                |
| Position                    |        | 3G                   | Flat, Vertical Fillet & Groove |
| Weld Progression            |        | Uphill               | Uphill                         |
| Backing (With or Without)   |        | With                 | With                           |
| Material/Spec               | A36    | to A36               | All AWS Prequalified Material  |
| Base Metal                  |        |                      |                                |
| Thickness: (Plate)          |        |                      |                                |
| Groove                      |        | 1"                   | 1/8" to Unlimited              |
| Fillet                      |        | N/A                  | 1/8" to Unlimited              |
| Thickness: (Pipe/tube)      |        |                      |                                |
| Groove                      |        | N/A                  | 1/8" to Unlimited              |
| Fillet                      |        | N/A                  | 1/8" to Unlimited              |
| Diameter: (Pipe)            |        |                      |                                |
| Groove                      |        | N/A                  | 24" OD and Over                |
| Fillet                      |        | N/A                  | Any Diameter                   |
| Filler Metal                |        |                      |                                |
| Spec. No.                   |        | A5.20                |                                |
| Class                       |        | E71T-1               |                                |
| F-No.                       |        | 6                    | F6                             |
| Gas/Flux Type               |        | 100% CO <sub>2</sub> |                                |
| Other                       |        | N/A                  | N/A                            |

VISUAL INSPECTION Acceptable:  Yes  No Date coupon welded: 3/25/15

Guided Bead Test Results

| Type      | Result            | Type | Result |
|-----------|-------------------|------|--------|
| Side Bend | No Defects - PASS |      |        |
| Side Bend | No Defects - PASS |      |        |

Fillet Test Results  
 Appearance: N/A Fillet Size: \_\_\_\_\_  
 Fracture Test Root: \_\_\_\_\_ Macromatch: \_\_\_\_\_

(Describe the location, nature, and size of any crack or tearing of the specimen):  
 Radiographic Test Results

| Film ID | Results | Remarks | Film ID | Results | Remarks |
|---------|---------|---------|---------|---------|---------|
| N/A     |         |         |         |         |         |

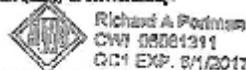
Film evaluated by: N/A Company: \_\_\_\_\_  
 Mechanical tests conducted by: Chris Nichol / Rich Portman Laboratory Test Number: 150383  
 Welding supervised by: Dan Giurici Company: TUV Rheinland Industrial Solutions

The welder identified above  PASSES,  FAILS based on the requirements of the code listed above.

Reviewer's Signature: [Signature] Date: 4/1/2015  
 Client Approval: [Signature] Date: 4/2/2015

**TUV RHEINLAND INDUSTRIAL SOLUTIONS, INC.**

These test results report our findings at the time of inspection and shall be reviewed by the client for compliance to the project requirements. Due to the limitations of nondestructive testing in evaluating all of the factors that determine the overall component quality, no guarantee is made or liability assumed by TUV Rheinland Industrial Solutions, Inc. ("TRIS") for the component quality or serviceability.



Richard A Portman  
 CWN 08861391  
 CC# EXP. 04/2017

Revision 7/19/2013  
 AWS Welder Qualification Page 1 of 1

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Flint, MI – Pittsburgh, PA – Birmingham, AL – Decatur, AL  
 MECHANICAL LAB [www.tuvris.com](http://www.tuvris.com)



Reported To: Mr. Dave Stahl  
 Kaysro Rail Corp  
 121 Rundle Road  
 New Castle, PA 16102

Date: March 25, 2015  
 WO Number: QAP  
 Report Number: 1  
 Project: Welder Qualification

**AWS - WELDER, WELDING OPERATOR OR TACK WELDER QUALIFICATION TEST RECORD**

Name: Brett Shepard Welding Code: AWS D15.1/D15.1M-2012  
 Type of Welder: Semi Automatic Identification Number: 337  
 Welding Procedure Specification No. E-001 Rev: 0 Date: 3/25/15

| Variables                   | Record Annual Values | Qualification Range            |
|-----------------------------|----------------------|--------------------------------|
| Process Type                | FCAW                 | FCAW                           |
| Electrode (single/multiple) | Single               | Single                         |
| Current/Polarity            | DCEP                 |                                |
| Position                    | 3G                   | Flat, Vertical Fillet & Groove |
| Weld Progression            | Uphill               | Uphill                         |
| Backing (With or Without)   | With                 | With                           |
| Material/Spec               | A36 to A36           | All AWS Prequalified Material  |
| Base Metal                  |                      |                                |
| Thickness (Plate)           |                      |                                |
| Groove                      | 1"                   | 1/8" to Unlimited              |
| Fillet                      | N/A                  | 1/8" to Unlimited              |
| Thickness (Pipe/Tube)       |                      |                                |
| Groove                      | N/A                  | 1/8" to Unlimited              |
| Fillet                      | N/A                  | 1/8" to Unlimited              |
| Diameter (Pipe)             |                      |                                |
| Groove                      | N/A                  | 24" OD and Over                |
| Fillet                      | N/A                  | Any Diameter                   |
| Filler Metal                |                      |                                |
| Spec. No.                   | A5.20                |                                |
| Class                       | E71T-1               |                                |
| F.No.                       | 6                    | TS                             |
| Gas/Flux Type               | 100% CO <sub>2</sub> |                                |
| Other                       | N/A                  | N/A                            |

VISUAL INSPECTION Acceptable:  Yes  No Date coupon welded: 3/25/15

Coupled Bend Test Results

| Type      | Result            | Type | Result |
|-----------|-------------------|------|--------|
| Side Bend | No Defects - PASS |      |        |
| Side Bend | No Defects - PASS |      |        |

Fillet Test Results  
 Appearance: N/A Fillet Size: \_\_\_\_\_  
 Fracture Test Root: \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen): \_\_\_\_\_

Radiographic Test Results

| Film ID | Results | Remarks | Film ID | Results | Remarks |
|---------|---------|---------|---------|---------|---------|
| N/A     |         |         |         |         |         |

Film evaluated by: N/A Company: \_\_\_\_\_  
 Mechanical tests conducted by: Chris Nichol / Rich Portman Laboratory Test Number: 150383  
 Welding supervised by: Don Gjurch Company: TUV Rheinland Industrial Solutions

The welder identified above  PASSES  FAILS based on the requirements of the code listed above.

Reviewer's Signature: [Signature] Date: 4/1/2015  
 Client Approval: [Signature] Date: 4/2/2015

**TUV RHEINLAND INDUSTRIAL SOLUTIONS, INC.**

These test results report our findings at the time of inspection and shall be reviewed by the client for compliance to the project requirements. Due to the limitations of manufacturing testing in simulating all of the factors that determine the overall structural quality, no guarantee is made or liability assumed by TUV Rheinland Industrial Solutions, Inc. ("TRIS") for the competence, quality or serviceability.



Richard A. Portman  
 CWI 33081311  
 CC1 EXP. 6/1/2017

Revision 11/02/2013  
 AWS Welder Qualification Page 1 of 1

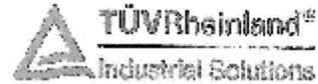
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Flint, MI – Pittsburgh, PA – Birmingham, AL – Decatur, AL  
 TBE • MECHANICAL LAB www.tbe.com



Reported To: Mr. Dave Stahl  
 Kasgro Rail Corp  
 121 Rundlo Road  
 New Castle, PA 16102

Date: March 25, 2015  
 WO Number: QAF  
 Report Number: 1  
 Project: Welder Qualification

**AWS - WELDER, WELDING OPERATOR OR TACK WELDER QUALIFICATION TEST RECORD**

Name: Ernst Shepard Welding Code: AWS D15.1/D15.1M-2012  
 Type of Welder: Semi Automatic Identification Number: 837  
 Welding Procedure Specification No. F-001 Rev: 0 Date: 3/25/15

| Variables                   | Record Actual Values |        | Qualification Range            |
|-----------------------------|----------------------|--------|--------------------------------|
| Process/Type                | FCAW                 |        | FCAW                           |
| Electrode (single/multiple) | Single               |        | Single                         |
| Current/Polarity            | DCEP                 |        |                                |
| Position                    | 3G                   |        | Flat, Vertical Fillet & Groove |
| Weld Progression            | Uphill               |        | Uphill                         |
| Bending (With or Without)   | With                 |        | With                           |
| Base Metal                  | A36                  | to A56 | All AWS Prequalified Material  |
| Thickness (Flat)            |                      |        |                                |
| Groove                      | 1"                   |        | 1/8" to Unlimited              |
| Fillet                      | N/A                  |        | 1/8" to Unlimited              |
| Thickness (Pipe/tube)       |                      |        |                                |
| Groove                      | N/A                  |        | 1/8" to Unlimited              |
| Fillet                      | N/A                  |        | 1/8" to Unlimited              |
| Diameter (Pipe)             |                      |        |                                |
| Groove                      | N/A                  |        | 24" OD and Over                |
| Fillet                      | N/A                  |        | Any Diameter                   |
| Fillet Metal                |                      |        |                                |
| Spec. No.                   | A5.20                |        |                                |
| Class                       | E71T-1               |        |                                |
| F-No.                       | 6                    |        | F6                             |
| Gas/Flux Type               | 100% O <sub>2</sub>  |        |                                |
| Other                       | N/A                  |        | N/A                            |

VISUAL INSPECTION Acceptable:  Yes  No Date coupon welded: 3/25/15

Guided Bend Test Results

| Type      | Result            | Type | Result |
|-----------|-------------------|------|--------|
| Side Bend | No Defects - PASS |      |        |
| Side Bend | No Defects - PASS |      |        |

Millet Test Results  
 Appearance: N/A Fillet Size:  
 Fracture Test Result: Manufacture:  
 (Describe the location, nature, and size of any crack or tearing of the specimen):

Radiographic Test Results

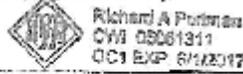
| Film ID | Results | Remarks | Film ID | Results | Remarks |
|---------|---------|---------|---------|---------|---------|
| N/A     |         |         |         |         |         |

Film evaluated by: N/A Company:  
 Mechanical tests conducted by: Chris Nichol / Rich Portman Laboratory Test Number: 150353  
 Welding supervised by: Don Gjauch Company: TUV Rheinland Industrial Solutions

The welder identified above:  PASSES,  FAILS based on the requirements of the code listed above.

Reviewer's Signature: [Signature] Date: 4/1/2015  
 Client Approval: [Signature] Date: 4/2/2015

**TUV RHEINLAND INDUSTRIAL SOLUTIONS, INC.**  
 These test results report our findings at the time of inspection and shall be reviewed by the client for compliance to the project requirements. Due to the limitations of nondestructive testing in evaluating all of the factors that determine the overall component quality, no guarantee is made or liability assumed by TUV Rheinland Industrial Solutions, Inc. ("TRIS") for the component quality or serviceability.



Revision 7/10/2013  
 AWS Welder Qualification Page 7 of 7

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Flint, MI – Pittsburgh, PA – Birmingham, AL – Decatur, AL  
 NDE • MECHANICAL LAB www.tuv.com



Reported To: Mr. Dave Stahl  
 Kasgro Rail Corp  
 121 Rundle Road  
 New Castle, PA 16102

Date: March 25, 2015  
 P/O Number: QAP  
 Report Number: 1  
 Project: Welder Qualification

**AWS - WELDER, WELDING OPERATOR OR TACK WELDER QUALIFICATION TEST RECORD**

Name: Scott Shepard Welding Code: AWS D15.1M15.1M-2012  
 Type of Welds: ESM Automatic Identification Number: 837  
 Welding Procedure Specification No. R-001 Rev: 0 Date: 3/25/15

| Variables                     | Record Actual Values | Qualification Range            |
|-------------------------------|----------------------|--------------------------------|
| Process / type                | FCAW                 | FCAW                           |
| Electrode (single/multi) (in) | Single               | Single                         |
| Current/Polarity              | DCEP                 |                                |
| Position                      | 3G                   | Flat, Vertical Fillet & Groove |
| Weld Preparation              | UpHill               | UpHill                         |
| Backing (With or Without)     | With                 | With                           |
| Matrix/Spec                   | A36 to A36           | All AWS Prequalified Material  |
| Base Metal                    |                      |                                |
| Thickness (Plate)             |                      |                                |
| Groove                        | 1"                   | 1/8" to Unlimited              |
| Fillet                        | N/A                  | 1/8" to Unlimited              |
| Thickness (Pipe/Tube)         |                      |                                |
| Groove                        | N/A                  | 1/8" to Unlimited              |
| Fillet                        | N/A                  | 1/8" to Unlimited              |
| Diameter (Pipe)               |                      |                                |
| Groove                        | N/A                  | 24" OD and Over                |
| Fillet                        | N/A                  | Any Diameter                   |
| Filler Metal                  |                      |                                |
| Spec. No.                     | A5.20                |                                |
| Class                         | E71T-1               |                                |
| F-No.                         | 6                    | F6                             |
| Gas/Flux Type                 | 100% CO <sub>2</sub> |                                |
| Other                         | N/A                  | N/A                            |

VISUAL INSPECTION Acceptable:  Yes  No Date coupon welded: 3/25/15

Qualified Bond Test Results

| Type      | Result            | Type | Result |
|-----------|-------------------|------|--------|
| Side Bond | No Defects - PASS |      |        |
| Side Bond | No Defects - PASS |      |        |

Fillet Test Results  
 Appearance: N/A Fillet Size: \_\_\_\_\_  
 Fracture Test Root: \_\_\_\_\_ Metaltech: \_\_\_\_\_

(Describe the location, nature, and size of any crack or testing of the specimen):  
 Macrographic Test Results

| Film ID | Results | Remarks | Film ID | Results | Remarks |
|---------|---------|---------|---------|---------|---------|
| N/A     |         |         |         |         |         |

Film evaluated by: N/A Company: \_\_\_\_\_

Mechanical tests conducted by: Chris Nichol / Rich Portman Laboratory Test Number: 1503E3

Welding supervised by: Dan Gjurch Company: TUV Rheinland Industrial Solutions

The welder identified above  PASSES,  FAILS based on the requirements of the code listed above.

Reviewer's Signature: [Signature] Date: 3/1/2015  
 Client Approval: [Signature] Date: 4/2/2015

**TUV RHEINLAND INDUSTRIAL SOLUTIONS, INC.**

These test results report our findings at the time of inspection and shall be reviewed by the client for compliance to the project requirements. Due to the limitations of nondestructive testing in controlling all of the factors that determine the overall component quality, no guarantee is made or liability assumed by TUV Rheinland Industrial Solutions, Inc. ("TRIS") for the component quality or serviceability.



Richard A Portman  
 QWR 58061311  
 QC EXP. 6/1/2017

Revision 1/16/2013  
 AWS Welder Qualification Page 1 of 1

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Flint, MI – Pittsburgh, PA – Birmingham, AL – Escalator, AL

MFG & MECHANICAL LAB

www.tuvris.com



Reported To: Mr. Dave Stahl  
 Kuegro Rail Corp  
 121 Round Road  
 New Castle, PA 16102

Date: March 25, 2015  
 P/O Number: QAF  
 Report Number: J  
 Project: Welder Qualification

**AWS - WELDER, WELDING OPERATOR OR TACK WELDER QUALIFICATION TEST RECORD**

Name: Steve Vignard Welding Code: AWS D15.1Q15.1M-2012  
 Type of Welder: Shielded Metal Arc Identification Number: 837  
 Welding Procedure Specification No. E-091 Rev: 0 Date: 3/25/15

| Variables                   | Record               | Actual Values | Qualification Range            |
|-----------------------------|----------------------|---------------|--------------------------------|
| Process/Type                | PCAW                 |               | PCAW                           |
| Electrode (single/multiple) | Single               |               | Single                         |
| Current/Polarity            | DCRP                 |               |                                |
| Position                    | 3G                   |               | Flat, Vertical Fillet & Groove |
| Weld Progression            | UpHill               |               | UpHill                         |
| Backing (With or Without)   | With                 |               | With                           |
| Material/Spec               | A36                  | to A36        | All AWS Prequalified Material  |
| Base Metal                  |                      |               |                                |
| Thickness (Plate)           |                      |               |                                |
| Groove                      | 1"                   |               | 1/8" to Unlimited              |
| Fillet                      | N/A                  |               | 1/8" to Unlimited              |
| Thickness (Pipe/Tube)       |                      |               |                                |
| Groove                      | N/A                  |               | 1/8" to Unlimited              |
| Fillet                      | N/A                  |               | 1/8" to Unlimited              |
| Diameter (Pipe)             |                      |               |                                |
| Groove                      | N/A                  |               | 24" OD and Over                |
| Fillet                      | N/A                  |               | Any Diameter                   |
| Filler Metal                |                      |               |                                |
| Spec. No.                   | A5.20                |               |                                |
| Class                       | E71T-1               |               |                                |
| F-No.                       | 6                    |               | F6                             |
| Gas/Flux Type               | 100% CO <sub>2</sub> |               |                                |
| Other                       | N/A                  |               | N/A                            |

VISUAL INSPECTION Acceptable:  Yes  No Date coupon welded: 3/25/15

**Guided Bend Test Results**

| Type      | Result            | Type | Result |
|-----------|-------------------|------|--------|
| Side Bend | No Defects - PASS |      |        |
| Side Bend | No Defects - PASS |      |        |

**Fillet Test Results**

Appearance: N/A Fillet Size: \_\_\_\_\_

Fracture Test Root: \_\_\_\_\_ Macroetch: \_\_\_\_\_

(Describe the location, nature, and size of any crack or tearing of the specimen):

**Radiographic Test Results**

| Film ID | Results | Remarks | Film ID | Results | Remarks |
|---------|---------|---------|---------|---------|---------|
| N/A     |         |         |         |         |         |

Film evaluated by: N/A Company: \_\_\_\_\_

Mechanical tests conducted by: Chris Nicol / Rich Portman Laboratory Test Number: 150335

Welding supervised by: Dan Giurch Company: TUV Rheinland Industrial Solutions

The welder identified above  PASSES,  FAILS based on the requirements of the code listed above.

Reviewer's Signature: [Signature] Date: 4/1/2015

Client Approval: [Signature] Date: 4/2/2015

**TUV RHEINLAND INDUSTRIAL SOLUTIONS, INC.**

These test results report our findings at the time of inspection and shall be reviewed by the client for compliance to the project requirements. Due to the limitations of non-destructive testing in evaluating all of the factors that determine the overall component quality, no guarantee is made or liability assumed by TUV Rheinland Industrial Solutions, Inc. ("TRIN") as to the component quality or serviceability.



Richard A. Portman  
 CWI 00221311  
 DCI EXP. 8/1/2017

Revision: 0000015  
 AWS Welder Qualification (Page 1 of 1)

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Flint, MI – Pittsburgh, PA – Birmingham, AL – Doerster, AL  
 NAME MECHANICAL LAB www.tuvrh.com



Reported To: Mr. Dave Stolt  
 Kasco Rail Corp  
 121 Rundles Road  
 New Castle, PA 16102

Date: March 25, 2015  
 P/O Number: QAF  
 Report Number: 1  
 Project: Welder Qualification

**AWS - WELDER, WELDING OPERATOR OR TACK WELDER QUALIFICATION TEST RECORD**

Name: Eric Shepard Welding Code: AWS D15.1/D15.1M-2012  
 Type of Welder: Semi Automatic Identification Number: 837  
 Welding Procedure Specification No. F-001 Rev: 0 Date: 3/25/15

| Variables                   | Record Actual Value  | Qualification Range            |
|-----------------------------|----------------------|--------------------------------|
| Process/Type                | FCAW                 | FCAW                           |
| Electrode (single/multiple) | Single               | Single                         |
| Current/Polarity            | DCEP                 | Single                         |
| Position                    | 3G                   | Flat, Vertical Fillet & Groove |
| Weld Progression            | Uphill               | Uphill                         |
| Backing (With or Without)   | With                 | With                           |
| Material/Spec               | A36                  | All AWS Prequalified Material  |
| Base Metal                  |                      |                                |
| Thickness: (Plate)          |                      |                                |
| Groove                      | 1"                   | 1/8" to Unlimited              |
| Fillet                      | N/A                  | 1/8" to Unlimited              |
| Thickness: (Pipe/tube)      |                      |                                |
| Groove                      | N/A                  | 1/8" to Unlimited              |
| Fillet                      | N/A                  | 1/8" to Unlimited              |
| Diameter: (Pipe)            |                      |                                |
| Groove                      | N/A                  | 24" OD and Over                |
| Fillet                      | N/A                  | Any Diameter                   |
| Welder Metal                |                      |                                |
| Spec. No.                   | A3.20                |                                |
| Class                       | E71T-1               |                                |
| E-No.                       | 6                    | F5                             |
| Gas/shield Type             | 100% CO <sub>2</sub> |                                |
| Other                       | N/A                  | N/A                            |

VISUAL INSPECTION Acceptable:  Yes  No Date coupon welded: 3/25/15

Guided Bend Test Results

| Type      | Result            | Type | Result |
|-----------|-------------------|------|--------|
| Side Bend | No Defects - PASS |      |        |
| Side Bend | No Defects - PASS |      |        |

Weld Test Results  
 Appearance: N/A Fillet Size:  
 Fracture Test Root: Macroetch:  
 (Describe the location, nature, and size of any crack or tearing of the specimen):

Macrographic Test Results

| Film ID | Results | Remarks | Film ID | Results | Remarks |
|---------|---------|---------|---------|---------|---------|
| N/A     |         |         |         |         |         |

Film evaluated by: N/A Company:  
 Mechanical tests conducted by: Chris Nichol / Rich Portman Laboratory Test Number: 150383  
 Welding supervised by: Dan Gjerch Company: TUV Rheinland Industrial Solutions

The welder identified above: 1 PASSES, FAILS based on the requirements of the code listed above.

Reviewer's Signature: [Signature] Date: 4/1/2015  
 Client Approval: [Signature] Date: 4/2/2015

**TUV RHEINLAND INDUSTRIAL SOLUTIONS, INC.**  
 These test results report our findings at the time of inspection and shall be reviewed by the client for compliance to the project requirements. Due to the limitations of nondestructive testing in evaluating all of the factors that determine the overall component quality, no guarantee is made or liability assumed by TUV Rheinland Industrial Solutions, Inc. ("TRIS") for the component quality or serviceability.



Richard A Portman  
 CWI 05081511  
 OCT EXP. 6/1/2017

Revision 7/01/2013  
 AWS Welder Qualification Page 1 of 1

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Flint, MI – Pittsburgh, PA – Birmingham, AL – Decatur, AL  
 NDE & MECHANICAL LAB [www.tuv.com](http://www.tuv.com)



Reported To: Mr. Dave Stahl  
 Knagro Rail Corp  
 121 Rundle Road  
 New Castle, PA 16102

Date: March 25, 2015  
 P/O Number: QAF  
 Report Number: 1  
 Project: Welder Qualification

**AWS - WELDER, WELDING OPERATOR OR TACK WELDER QUALIFICATION TEST RECORD**

Name: Brett Shepard Welding Code: AWS D15.1/D15.1R-2012  
 Type of Welder: Semi Automatic Identification Number: 937  
 Welding Procedure Specification No. (7-04) Rev: 0 Date: 3/25/15

| Variable                     | Record Actual Values | Qualification Range            |
|------------------------------|----------------------|--------------------------------|
| Process/Type                 | FCAW                 | FCAW                           |
| Electrode (single/multi) (s) | Single               | Single                         |
| Current/Polarity             | DCEP                 |                                |
| Position                     | 3G                   | Flat, Vertical Fillet & Groove |
| Weld Progression             | Uphill               | Uphill                         |
| Backing (With or Without)    | With                 | With                           |
| Material/Spec                | A36 to A36           | All AWS Prequalified Materials |
| Base Metal                   |                      |                                |
| Thickness: (Plate)           |                      |                                |
| Groove                       | 1"                   | 1/8" to Unlimited              |
| Fillet                       | N/A                  | 1/8" to Unlimited              |
| Thickness: (Pipe/tube)       |                      |                                |
| Groove                       | N/A                  | 1/8" to Unlimited              |
| Fillet                       | N/A                  | 1/8" to Unlimited              |
| Diameter: (Pipe)             |                      |                                |
| Groove                       | N/A                  | 24" OD and Over                |
| Fillet                       | N/A                  | Any Diameter                   |
| Filler Metal                 |                      |                                |
| Spec. No.                    | A5.20                |                                |
| Class                        | E71T-1               |                                |
| F-No.                        | 6                    | F6                             |
| Gas/flux Type                | 100% O <sub>2</sub>  |                                |
| Other                        | N/A                  | N/A                            |

VISUAL INSPECTION Acceptable:  Yes  No Date coupons welded: 3/25/15

**Guided Bend Test Results**

| Type      | Result            | Type | Result |
|-----------|-------------------|------|--------|
| Side Bend | No Defects - PASS |      |        |
| Side Bend | No Defects - PASS |      |        |

**Fillet Test Results**

Appearance: N/A Fillet Size: \_\_\_\_\_

Fracture Test Root: \_\_\_\_\_ Macroetch: \_\_\_\_\_

(Describe the location, nature, and size of any crack or tearing of the specimen):

**Radiographic Test Results**

| Film ID | Results | Remarks | Film ID | Results | Remarks |
|---------|---------|---------|---------|---------|---------|
| N/A     |         |         |         |         |         |

Film evaluated by: N/A Company: \_\_\_\_\_

Mechanical tests conducted by: Chris Nichol / Rich Portman Laboratory Test Number: 150383

Welding supervised by: Don Gjurch Company: TUV Rheinland Industrial Solutions

The welder identified above  **PASSES**  **FAILS** based on the requirements of the code listed above.

Reviewer's Signature: \_\_\_\_\_ Date: 4/1/2015

Client Approval: \_\_\_\_\_ Date: 4/2/2015

**TUV RHEINLAND INDUSTRIAL SOLUTIONS, INC.**

These test results report our findings at the time of inspection and shall be reviewed by the client for compliance to his project requirements. Due to the limitations of nondestructive testing in evaluating all of the factors that determine the overall component quality, no guarantee is made or liability assumed by TUV Rheinland Industrial Solutions, Inc. ("TRIS") for the component quality or serviceability.



Richard A. Portman  
 CWI 35001311  
 OC1 EXP 6/1/2017

Revision 7/20/2013  
 AWS Welder Qualification Page 1 of 1

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Flint, MI – Pittsburgh, PA – Birmingham, AL – Decatur, AL  
 NOT A MECHANICAL LAB www.tivr.com



Reported To: Mr. Dave Stahl  
 Kresgo Rail Corp  
 121 Knattle Road  
 New Castle, PA 16102

Date: March 25, 2015  
 PAO Number: QAT  
 Report Number: 1  
 Project: Welder Qualification

**AWS - WELDER, WELDING OPERATOR OR TACK WELDER QUALIFICATION TEST RECORD**

Name: Walt Sheppard Welding Code: AWS D15, D15.1M-2012  
 Type of Welder: Shielded Metal Arc Identification Number: 837  
 Welding Procedure Specification No. F-001 Rev: 1 Date: 3/25/15

| Variables                   | Record | Annual Values        | Qualification Range            |
|-----------------------------|--------|----------------------|--------------------------------|
| Process/Type                |        | FCAW                 | FCAW                           |
| Electrode (single/multiple) |        | Single               | Single                         |
| Current/Polarity            |        | DCRP                 |                                |
| Position                    |        | 3G                   | Flat, Vertical Fills & Grooves |
| Weld Progression            |        | UpHill               | UpHill                         |
| Beading (With or Without)   |        | With                 | With                           |
| Material/Spec               | A36    | to A36               | All AWS Prequalified Material  |
| Base Metal                  |        |                      |                                |
| Thickness: (Plate)          |        |                      |                                |
| Groove                      |        | 1"                   | 1/8" to Unlimited              |
| Fillet                      |        | N/A                  | 1/8" to Unlimited              |
| Thickness: (Pipe/tube)      |        |                      |                                |
| Groove                      |        | N/A                  | 1/8" to Unlimited              |
| Fillet                      |        | N/A                  | 1/8" to Unlimited              |
| Diameter: (Pipe)            |        |                      |                                |
| Groove                      |        | N/A                  | 24" OD and Over                |
| Fillet                      |        | N/A                  | Any Diameter                   |
| Filler Metal                |        |                      |                                |
| Spec. No.                   |        | E5.20                |                                |
| Class                       |        | E71F-1               |                                |
| F-No.                       |        | 6                    | E6                             |
| Gas/Flux Type               |        | 100% CO <sub>2</sub> |                                |
| Other                       |        | N/A                  | N/A                            |

VISUAL INSPECTION Acceptable:  Yes  No Date coupon welded: 3/25/15

Guided Bend Test Results

| Type      | Result            | Type | Result |
|-----------|-------------------|------|--------|
| Side Bend | No Defects - PASS |      |        |
| Side Bend | No Defects - PASS |      |        |

Fillet Test Results  
 Appearance: N/A Fillet Size:  
 Fracture Test Root: \_\_\_\_\_ Macroscopic:  
 (Describe the location, nature, and size of any crack or tearing of the specimen):

Radiographic Test Results

| Film ID | Results | Remarks | Film ID | Results | Remarks |
|---------|---------|---------|---------|---------|---------|
| N/A     |         |         |         |         |         |

Film evaluated by: N/A Company:  
 Mechanical tests conducted by: Chris Nichol / Rich Portman Laboratory Test Number: 15W333  
 Welding supervised by: Don Church Company: TIVR Rheinland Industrial Solutions

The welder identified above  PASSES,  FAILS based on the requirements of the code listed above.

Reviewer's Signature: \_\_\_\_\_ Date: 4/1/2015  
 Client Approval: \_\_\_\_\_ Date: 4/2/2015

**TIVR RHEINLAND INDUSTRIAL SOLUTIONS, INC.**  
 These test results report our findings at the time of inspection and shall be reviewed by the client for compliance to the project requirements. Due to the limitations of non-destructive testing in evaluating all of the factors that determine the overall component quality, no guarantee is made or liability assumed by TIVR Rheinland Industrial Solutions, Inc. ("TIVR") for the component quality or serviceability.



Richard A. Portman  
 GW# 00091311  
 QC1 EXP. 8/1/2017

Revision: 01/07/2015  
 AWS Welder Qualification Page 1 of 1

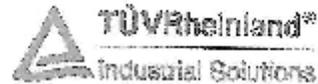
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Flint, MI – Pitsburgh, PA – Birmingham, AL – Decatur, AL  
 NDE & MECHANICAL LAB  
 www.tuvris.com



Reported To: Mr. Dave Smith  
 Kasgro Rail Corp  
 121 Rundle Road  
 New Castle, PA 16102

Date: March 25, 2015  
 P/O Number: QAF  
 Report Number: 1  
 Project: Welder Qualification

**AWS - WELDER, WELDING OPERATOR OR TACK WELDER QUALIFICATION TEST RECORD**

Name:  Brett Shepard  Welding Code:  AWS D15.1M-2012   
 Type of Welder:  Semi Automatic  Identification Number:  837   
 Welding Procedure Specification No.:  F-001  Rev:  0  Date:  3/25/15

| Variables                   | Record Actual Values | Qualification Range            |
|-----------------------------|----------------------|--------------------------------|
| Process/Type                | FCAW                 | FCAW                           |
| Electrode (single/multiple) | Single               | Single                         |
| Current/Polarity            | DCEP                 | DCEP                           |
| Position                    | 3G                   | Flat, Vertical Fillet & Groove |
| Weld Preparation            | Uphill               | Uphill                         |
| Beckling (With or Without)  | With                 | With                           |
| Material(s)                 | A36 to A36           | All AWS Prequalified Material  |
| Base Metal                  |                      |                                |
| Thickness (Plate)           |                      |                                |
| Groove                      | 1"                   | 1/8" to Unlimited              |
| Fillet                      | N/A                  | 1/8" to Unlimited              |
| Thickness (Pipe/tube)       |                      |                                |
| Groove                      | N/A                  | 1/8" to Unlimited              |
| Fillet                      | N/A                  | 1/8" to Unlimited              |
| Diameter (Pipe)             |                      |                                |
| Groove                      | N/A                  | 24" OD and Over                |
| Fillet                      | N/A                  | Any Diameter                   |
| Filler Metal                |                      |                                |
| Spec. No.                   | A5.20                |                                |
| Class                       | E71T-1               |                                |
| P-No.                       | 6                    | F6                             |
| Gas/Flux Type               | 100% CO <sub>2</sub> |                                |
| Other                       | N/A                  | N/A                            |

**VISUAL INSPECTION** Acceptable:  Yes  No Date coupon welded:  3/25/15

**Grinded Bead Test Results**

| Type      | Result            | Type | Result |
|-----------|-------------------|------|--------|
| Side Bend | No Defects - PASS |      |        |
| Side Bend | No Defects - PASS |      |        |

**Fillet Test Results**  
 Appearance:  N/A  Fillet Size: \_\_\_\_\_  
 Procedure Test Root: \_\_\_\_\_ Macroetch: \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen): \_\_\_\_\_

**Metallographic Test Results**

| Film ID | Results | Dynamics | Film ID | Results | Remarks |
|---------|---------|----------|---------|---------|---------|
| N/A     |         |          |         |         |         |

Film evaluated by:  N/A  Company: \_\_\_\_\_  
 Mechanical tests conducted by:  Chris Nichol / Rich Portman  Laboratory Test Number:  150383   
 Welding supervised by:  Dan Gjerch  Company:  TUV Rheinland Industrial Solutions

The welder identified above  1   PASSES ,  FAILS  based on the requirements of the code listed above.  
 Reviewer's Signature:  [Signature]  Date:  4/1/2015   
 Client Approval:  [Signature]  Date:  4/2/2015

**TUV RHEINLAND INDUSTRIAL SOLUTIONS, INC.**  
 These test results report our findings at the time of inspection and shall be reviewed by the client for compliance to the project requirements. Due to the limitations of non-destructive testing in evaluating all of the factors that determine the overall component quality, no guarantee is made or liability assumed by TUV Rheinland Industrial Solutions, Inc. ("TRIS") for the component quality or serviceability.



Richard A. Portman  
 CWI 06081311  
 QC1 EXP. 6/1/2017

Revision 7/10/2013  
 AWS Welder Qualification Page 1 of 1

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Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name CHUCK RULINSKI Identification no. 109  
 Welding process E-C-A-W Manual  Semi-automatic  Machine   
 Position 1G Flat  
 (Flat, horizontal, overhead or vertical. If vertical, state whether upward or downward)  
 In accordance with procedure qualification no. 0-KRC-0129  
 Material specification A-36  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness 1.0"  
 Thickness range this qualifies UNLIMITED

**FILLET METAL**

Specification no. Q-20 Classification E70T-1 Prep. 6  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing used? Yes  
 Filler metal diameter and trade name 3/16" Lincoln Flux for submerged arc or gas for gas metal arc or flux cored arc welding 100% CO2

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bend Test Results**

| Type      | Result     | Type | Result |
|-----------|------------|------|--------|
| SIDE BEND | NO DEFECTS |      |        |
| SIDE BEND | NO DEFECTS |      |        |

Test conducted by WAT TESTING LABORATORY Laboratory test no. 01F10-2176  
 per Paul J. Keel Test date 9/06/01

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Match \_\_\_\_\_  
 (Describe the location, nature and size of any cracks or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1 ( 93 ).  
 per \_\_\_\_\_

Manufacturer or contractor KASCRO RAIL CORP.  
 Authorized by Mark Zepf  
 Date 9-6-01

Form 2-4



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name CHUCK KULINSKI Identification no. 109  
 Welding process C.K.A.W. Manual  Semiautomatic  Machine   
 Position 3G Vertical Up  
 (Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification in QIRRC-0131  
 Material specification 306  
 Diameter and wall thickness (if pipe) otherwise, joint thickness .500"  
 Thickness range this qualifies 1-0"

**FILLER METAL**

Specification no. 5-10 Classification 5356 I no. 6  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is packaging ship name? No  
 Filler metal diameter and trade name 3/64" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 core or welding 100% AF

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bend Test Results**

| Type      | Result          | Type | Result |
|-----------|-----------------|------|--------|
| SIDE BEND | 1/16" tear/PASS |      |        |
| SIDE BEND | 1/16" tear/PASS |      |        |

Test conducted by KALC TESTING LABORATORY Laboratory test no. Q1433-1434  
 per Chuck Kulinski Test date 10/16/01

**Filet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Marcellite \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D 15.1 ( 53 )  
 year

Manufacturer or contractor KALCRO RAIL CORP.

Authorized by Chuck Kulinski

Date 10-16-01

Firm 0-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operators name YASUKI KUBIKAWA Identification no. 109  
 Welding process E.C.A.W. Manual \_\_\_\_\_ Semiautomatic X Machine \_\_\_\_\_  
 Position 3G Vertical Up  
 (Flat, horizontal, overhead or vertical - if vertical, state whether downward or downweild)  
 in accordance with procedure specification no. Prequalified joint fig. no. 611  
 Material specification A-78  
 Diameter and wall thickness (if pipe) - otherwise, c.m. thickness 500"  
 Thickness range this qualifies 7, 9"

**FILLER METAL**

Specification no. E.20 Classification KW22-3 F no. E  
 (Describe filler metal (if not covered by AWS specification))  
 Is capping strip used? Yes  
 Filler metal diameter and trade name 1/16" MINARON Flux for submerged arc or gas for gas metal arc or flux  
 cored arc welding 100% CO2

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping priority None

**Guided Bend Test Results**

| Type             | Result            | Type | Result |
|------------------|-------------------|------|--------|
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |

Test conducted by KALL TESTING LABORATORY Laboratory test no. 2019-1888  
 per Frank J. Kall Test date 3/21/20

**fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Macroetch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1, \_\_\_\_\_ year.

Manufacturer or contractor YASUKI KALL CORP.  
 Authorized by [Signature]  
 Date 5-21-19

Form D-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name CHARLES KULLINANT Identification no. 109  
 Welding process G.W.A. W Manual  Semi-automatic \_\_\_\_\_ Machine \_\_\_\_\_  
 Position CG Vertical and hp  
 (Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification no. Personal lead joint, 3/8", 90, 310  
 Material specification A-56  
 Diameter and wall thickness (if pipe) otherwise, joint thickness .3125"  
 Thickness range this qualifies 1.0"

**FILLER METAL**

Specification no. E.2 & 5.5 Classification E 70TB F no. 4  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name 3/16" Gasshield Flux for submerged arc or gas for gas metal arc or flux cored arc welding \_\_\_\_\_

**VISUAL INSPECTION**

Appearance Good Factory Uncoupled None Piling possible None

**Guided Bent Test Results**

| Type             | Result            | Type | Result |
|------------------|-------------------|------|--------|
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |
| <u>STON BEND</u> | <u>NO DEFECTS</u> |      |        |

Test conducted by MATE TESTING LABORATORY Laboratory test no. 88220-1071  
 our Paul J. Gal Test date 3/27/90

**Filet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Merccatch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D12.1, (\_\_\_\_) year.

Manufacturer or contractor MATEC PART CORP.  
 Authorized by Paul J. Gal  
 Date 3/27/90

Form J-1



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name CHARLES KUTLINSKI Identification no. 109  
 Welding process E.C.A.W. Manual            Semiautomatic X Machine             
 Position 35 Vertical Up  
 (Flat horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification no. 052RC-0136  
 Material specification A-35  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness 1.0  
 Thickness range this qualifies UNLIMITED

**FILLER METAL**

Specification no. 5.29 Classification E111F-1 F no. 5  
 Describe filler metal (if not covered by AWS specification)             
 Is backing strip used? Yes  
 Filler metal diameter and trade name 7/16" ESAB Flux for submerged arc or gas for gas met. arc or flux  
 cored arc welding 100% CO2

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Spiking porosity None

**Guided Bend Test Results**

| Type      | Result     | Type | Result |
|-----------|------------|------|--------|
| SIDE BEND | NO DEFECTS |      |        |
| SIDE BEND | NO DEFECTS |      |        |

Test conducted by RAIL TESTING LABORATORY Laboratory test no. 05130-2480  
 per [Signature] Test date 12/29/2005

**Fillet Test Results**

Appearance            Fillet size             
 Fracture test root penetration            Marcoetch             
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by            Laboratory test no.             
 per            Test date           

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |
|                     |         |         |                     |         |         |

Test witnessed by            Test no.             
 per           

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1, ( 2001 year ).

Manufacturer or contractor KANSAS RAIL CORP.  
 Authorized by [Signature]  
 Date 12/29/05

Form D-4





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD**

Welder or welding operator's name: CHUCK CULIVSKY Identification no. 109  
 Welding process: Shielded Metal Arc Manual            Semi-automatic X Machine             
 Position: 3G Vertical Up  
 (If 1st, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification no. Prequalified joint fig. no. CLB  
 Material specification: A-36  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness: 1.0"  
 Thickness range this qualifies: UNLIMITED

**FILLER METAL**

Specification no.: 5.20 Classification: E70C-1 F no.: 6  
 Describe filler metal (if not covered by AWS specification):             
 Is backing strip used? Yes  
 Filler metal diameter and trade name: 1/16" Lincoln Flux for submerged arc or gas for gas metal arc or flux cored arc welding: 100% CO2

**VISUAL INSPECTION**

Appearance: Satisfactory Undercut: None Riping porosity: None

**Guided Bend Test Results**

| Type      | Result     | Type | Result |
|-----------|------------|------|--------|
| SIDE BEND | NO DEFECTS |      |        |
| SIDE BEND | NO DEFECTS |      |        |

Test conducted by: ZAPF TESTING LABORATORY Laboratory test no.: 20F3G-2096  
 per: [Signature] Test date: 11/13/2000

**Fillet Test Results**

Appearance:            Fillet size:             
 Fracture test root penetration:            Macroetch:             
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by:            Laboratory test no.:             
 per:            Test date:           

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by:            Test no.:             
 per:           

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1, ( 93 year ).

Manufacturer or contractor: KASSRO RAIL, CORP.  
 Authorized by: [Signature]  
 Date: 11-13-00

Form D-4



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD**

Welder or welding operator's name CHARLES KUTINSKI Identification no. 109  
 Welding process E.M.A.W. Manual  Semiautomatic \_\_\_\_\_ Machine \_\_\_\_\_  
 Position 4G Overhead  
 (Flat, horizontal, overhead or vertical) — if vertical, state whether upward or downward)  
 In accordance with procedure specification no. Declassified joint fig. no. CID  
 Material specification A-36  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness .375"  
 Thickness range this qualifies .750"

**FILLER METAL**

Specification no. E-1 & 5.5 Classification E-7018 F no. 4  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name 1/8" TIGCOIN Flux for submerged arc or gas for gas metal arc or flux  
 cored arc welding \_\_\_\_\_

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bend Test Results**

| Type      | Result            | Type | Result |
|-----------|-------------------|------|--------|
| FACR BEND | 1/32" tear/PASSED |      |        |
| ROOT BEND | 3/64" tear/PASSED |      |        |

Test conducted by KAUF FERRING LABORATORY Laboratory test no. 03240-1754  
 per [Signature] Test date 8/05/2003

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Macroetch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1, ( 2001 )  
 year

Manufacturer or contractor KANSAS RAIL CORP.  
 Authorized by [Signature]  
 Date 8-5-03

Form D-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

AWS D16.13.15 IM-2007

ANNEX 1

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name: CHARLES SPALDING Identification no. 822  
 Welding process: PCBW Manual  Semi-automatic  Machine   
 (Flat, horizontal, overhead, or vertical—if vertical, state whether upward or downward.) 1G, Flat  
 in accordance with procedure specification no. E-DC5  
 Material specification A-36  
 Diameter and wall thickness (if pipe) - otherwise, joint thickness 750"  
 Thickness range this qualifies UNLIMITED

**FILLER METAL**

Specification no. E-29 Classification E8018 F no. 6  
 Describe filler metal (if not covered by AWS specification): \_\_\_\_\_  
 is backing strip used? Yes  
 Filler metal diameter and trade name 3/32" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 cored arc welding 100% CO2

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Spiking porosity None

**Guided Bend Test Results:**

| Type      | Result     | Type | Result |
|-----------|------------|------|--------|
| SIDE BEND | NO DEFECTS |      |        |
| STOP BEND | NO DEFECTS |      |        |

Test conducted by KATE TESTING LABORATORY Laboratory test no. 10P16-7949  
 per [Signature] Test date 2/18/2010

**Hard Test Results**

Appearance \_\_\_\_\_ Filler size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Macroetch \_\_\_\_\_  
 (Describe the location, nature, and size of any cracks or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that all the test welds were prepared and tested in accordance with the requirements of AWS D16.1, (2007) Railroad Welding Specification for Cars and Locomotives, (v98.)

Manufacturer or Contractor: KAGRO RAIL CORP.  
 Authorized by: [Signature]  
 Date: 2/18/10

Form D-4



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

ANNEX D

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name: CHARLES SPAULDING Identification no. 822  
 Welding process: ECAW Manual  Semi-automatic  Machine   
 (Flat, horizontal, overhead, or vertical - if vertical, state whether upward or downward) 3C Vertical Up  
 In accordance with procedure specification no. P-001  
 Material specification: A-36  
 Diameter and wall thickness (if pipe) - otherwise, joint thickness: .750"  
 Thickness range this qualifies: UNLIM/TTPD

**FILLER METAL**

Specification no. E5.20 Classification E710-1 Temp. 6  
 Describe filler metal (if not covered by AWS specification):  
 Is backing strip used? \_\_\_\_\_  
 Filler metal diameter and trade name: 1/16" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 cored arc welding: 100% CO2

**VISUAL INSPECTION**

Appearance: Satisfactory Undercut: None Piping porosity: None

**Guided Bent Test Results**

| Type             | Result            | Type | Result |
|------------------|-------------------|------|--------|
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |

Test conducted by: KATE PESHAK LABORATORY Laboratory test no. 10P3G-7954  
 per: [Signature] Test date: 2/25/2010

**Fillet Test Results**

Appearance: \_\_\_\_\_ Fillet size: \_\_\_\_\_  
 Fracture test tool penetration: \_\_\_\_\_ Macroetch: \_\_\_\_\_  
 (Describe the location, nature, and size of any cracks or tearing of the specimen.)  
 Test conducted by: \_\_\_\_\_ Laboratory test no.: \_\_\_\_\_  
 per: \_\_\_\_\_ Test date: \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by: \_\_\_\_\_ Laboratory test no.: \_\_\_\_\_  
 per: \_\_\_\_\_ Test date: \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of AWS D15.1, (2007) Railroad Welding Specification - Cars and Locomotives, (year)

Manufacturer or Contractor: KAIRO RAIL CORPORATION

Authorized by: [Signature]

Date: 2-25-10

Form D-4



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



**Professional Service Industries, Inc.**

**PITTSBURGH TESTING LABORATORY DIVISION**

**CERTIFICATE**

**OF**

**TEST AND APPROVAL OF WELDING PROCESS**

**AND**

**QUALIFICATION OF OPERATOR OF**

**WELDING EQUIPMENT**

*PROFESSIONAL SERVICE INDUSTRIES, INC., PITTSBURGH TESTING LABORATORY DIVISION, has witnessed the welding and testing of test specimens welded by*

Miner Railcar Services  
 2208 East Cherry Street  
 New Castle, PA 16102

in accordance with

American Welding Society  
 Structural Welding Code D11.1-88

Welding Operator DARRYL BEACHEM No. 15  
 Welding Process Flux Cored (Immershield)

Operator Tested

This is to certify that the Welding Technique used in this test and described in SPECIFICATIONS FOR WELDING PROCESS No. AWS D1.1-88 and the results of the test given in PHYSICAL TEST REPORT No. PHY90073 complied with the requirements of the above code within the following limitations.

Maximum Plate or Wall Thickness 3/4"  
 Minimum Plate or Wall Thickness Unlimited  
 Welding Positions Flat Groove  
 Other Limitations Flat, Horizontal Fillet

Remarks AWS A 5.20 E711-7 F. No. 6

No. 10875

Order No. B28-73122

File No. \_\_\_\_\_

Approved January 12, 1989

**PITTSBURGH TESTING LABORATORY DIVISION**  
 By J. Peter Merittas  
 Director



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |         |   |   |   |         |
|--|---------|---|---|---|---------|
| <b>PSI</b>   |         | <b>Professional Service Industries, Inc.</b><br>Pittsburgh Testing Laboratory Division                        |   | 850 Poplar Street<br>Pittsburgh, Pennsylvania 15220<br>412/222-4000 |         |
| <b>WELDER AND WELDER OPERATOR QUALIFICATION TEST REPORT</b>  |         |   |   |   |         |
| Welder/Welder Operator's Name<br>DARRYL BEACHEM  |         | Date Reported<br>November 21, 1988  | PTL Order No.<br>828-73122  |   |         |
| Welder Identification No.<br>15  |         | Date Tested<br>October 24, 1988   | Lab No.<br>PHY81607   |   |         |
| Client<br>Miner Railcar Services<br>2208 East Cherry Street<br>New Castle, PA 16102  |         | Welding Code (10 & year)<br>AWS D1.1-88   |   |   |         |
|  |         | Base Material Specification<br>A-36   |   |   |         |
| Process<br>Shielded Metal Arc Welding  |         | Specimen<br><input checked="" type="checkbox"/> Plate <input type="checkbox"/> Pipe                           | Joint<br><input checked="" type="checkbox"/> Groove <input type="checkbox"/> Fillet     |   |         |
| Position<br>Vertical Groove  |         | Specimen Furnished<br><input checked="" type="checkbox"/> PTL <input type="checkbox"/> Others                 | Plate Thickness<br>3/8"   |   |         |
| Weld Progression<br><input checked="" type="checkbox"/> Up <input type="checkbox"/> Down <input type="checkbox"/> CW <input type="checkbox"/> CCW <input type="checkbox"/> L to R <input type="checkbox"/> R to L  |         | Specimens Machined<br><input checked="" type="checkbox"/> PTL <input type="checkbox"/> Others                 | Diameter & Wall Thickness<br>—  |   |         |
| Welding Procedure AWS<br>No. D1.1-88 Rev. No. —  |         | Thickness Range Qualified<br>3/4" Maximum   | Polarity<br><input type="checkbox"/> Direct <input checked="" type="checkbox"/> Reverse |   |         |
| Welding Procedure Date by: <input checked="" type="checkbox"/> PTL Witnessed (Tech):   |         | <input type="checkbox"/> Other:   |   |   |         |
| <b>FILLER METAL</b>  |         |   |   |   |         |
| Specification No. AWS A5.1   |         | Classification E7018  | F.No. 4   |   |         |
| Backing A-36 Steel   |         | Diameter 1/8"   | Trade Name  |   |         |
| Shielding <input type="checkbox"/> Gas   |         | <input type="checkbox"/> Flux:  |   |   |         |
| <b>VISUAL INSPECTION (AWS ONLY)</b>  |         |   |   |   |         |
| Appearance   |         | Undercut  | Piping Porosity   |   |         |
| <b>VERTICAL GUIDED BEND TEST RESULTS</b>   |         |   |   |   |         |
| TYPE   |         | RESULTS   | TYPE  |   |         |
| FACE BEND  |         | Defect Under 1/8" - PASS  |   |   |         |
| ROOT BEND  |         | Defect Under 1/8" - PASS  |   |   |         |
| <b>FILLET TEST RESULTS</b>   |         |   |   |   |         |
| Weld Appearance<br><input type="checkbox"/> Pass <input type="checkbox"/> Fail   |         | Fillet Size<br>Leg: in. x in. <input type="checkbox"/> Convexity: in. <input type="checkbox"/> Convexity: in. |   |   |         |
| Macro Etch Test Results <input type="checkbox"/> Pass <input type="checkbox"/> Fail  |         |   |   |   |         |
| Fracture Test Results (Describe location, nature & size of any cracks or tearing of the specimen)  |         |   |   |   |         |
| <b>RADIOGRAPHIC TEST RESULTS</b>   |         |   |   |   |         |
| Film Identification  | Results | Remarks   | Film Identification   | Results   | Remarks |
|  |         |   |   |   |         |
| Tests Witnessed by:  |         |   |   |   |         |
| <b>QUALIFICATION RESULTS</b>   |         |   |   |   |         |
| The Welder/Operator identified above <input checked="" type="checkbox"/> DOES <input type="checkbox"/> DOES NOT meet the performance qualifications specified in the Code identified above for the variables stated. CITY OF PCH. ORDINANCE No. 243 & PA DEPT. OF HIGHWAYS |         |   |   |   |         |
| Remarks & Report Distribution (* denotes data not provided or not applicable)  |         |   |   | Submitted by:<br>J. Peter Meritman<br>Manager                       |         |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



**Professional Service Industries, Inc.**  
**Pittsburgh Testing Laboratory Division**

860 Proctor Street,  
 Pittsburgh, Pennsylvania 15226  
 412/399-4300

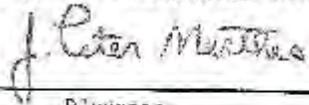
| WELDER AND WELDING OPERATOR QUALIFICATION TEST REPORT  |  |   |   |
|--|--|---|---|
| Welder/Welder Operator's Name<br><b>DARRYL BENCHEN</b>   |  | Date Reported<br><b>November 21, 1988</b>   | PTL Order No.<br><b>828-73122</b>   |
| Welder Identification No.<br><b>15</b>   |  | Date Tested<br><b>October 24, 1988</b>  | Lab No.<br><b>PHY21E07</b>  |
| Client<br><b>Miner Railway Services<br/>2208 East Cherry Street<br/>New Castle, PA 16102</b>   |  | Welding Code (ID & year)<br><b>AWS D1.1-88</b>  | Plant Order No.   |
| Process<br><b>GMAW</b>   |  | Base Material Specification<br><b>A36</b>   | Specimen<br><input checked="" type="checkbox"/> Plate <input type="checkbox"/> Pipe |
| Position<br><b>Vertical Groove</b>   |  | Specimen Furnished<br><input checked="" type="checkbox"/> PTL <input type="checkbox"/> Others | Weld<br><input checked="" type="checkbox"/> Groove <input type="checkbox"/> Fillet  |
| Weld Progression<br><input checked="" type="checkbox"/> Up <input type="checkbox"/> Down <input type="checkbox"/> CW <input type="checkbox"/> CCW <input type="checkbox"/> L to R <input type="checkbox"/> R to L    |  | Specimens Machined<br><input checked="" type="checkbox"/> PTL <input type="checkbox"/> Others | Plate Thickness<br><b>3/8" Thick</b>  |
| Welding Procedure No. _____ Rev. No. _____   |  | Thickness Range Qualified<br><b>3/4" Maximum</b>  | Diameter & Wall Thickness   |
| Welding Procedure Data by: <input checked="" type="checkbox"/> PTL Witnessed (Tech): _____   |  | Current VOLTAGE 18-21<br>AMPS 125-150 AC <input type="checkbox"/> DC                          | Polarity<br><input type="checkbox"/> Direct <input type="checkbox"/> Reverse        |
| <b>FILLER METAL</b>  |  |   |   |
| Specification No. <b>AWS A5.18</b>   | Class/position <b>E/US-3</b>   | Filler <b>G</b>   | Trade Name  |
| Backing <b>A36</b>   | Diameter <b>.045</b>   |   |   |
| Shielding <input checked="" type="checkbox"/> Gas 75% Argon 25% CO <sub>2</sub> <b>15-20 CFH</b>   |  |   |   |
| <b>VISUAL INSPECTION (AWS ONLY)</b>  |  |   |   |
| Appearance   | Undercut   | Piping Porosity   |   |
| <b>GUIDED BEND TEST RESULTS</b>  |  |   |   |
| TYPE   | RESULTS  | TYPE  | RESULTS   |
| FACE BEND  | Defect Under 1/8" - PASS   |   |   |
| ROOT BEND  | Defect Under 1/8" - PASS   |   |   |
| <b>FILLET TEST RESULTS</b>   |  |   |   |
| Weld Appearance<br><input type="checkbox"/> Pass <input type="checkbox"/> Fail   | Fillet Groove<br>Leg: <input type="checkbox"/> In <input type="checkbox"/> Out | Concavity: <input type="checkbox"/> In <input type="checkbox"/> Out                           | Convexity: <input type="checkbox"/> In <input type="checkbox"/> Out                 |
| Macro Etch Test Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail   |  |   |   |
| Fracture Test Results (Describe location, nature & size of any cracks or testing of the specimen)  |  |   |   |
| <b>RADIOGRAPHIC TEST RESULTS</b>   |  |   |   |
| Film Identification  | Results  | Remarks   | Film Identification   |
|  |  |   |   |
| Tests Witnessed by:  |  | Submitted by:   |   |
|  |  | <i>J. Peter Marthas</i> Manager   |   |
| <b>QUALIFICATION RESULTS</b>   |  |   |   |
| The Welder/Operator identified above <input checked="" type="checkbox"/> DOES <input type="checkbox"/> DOES NOT meet the performance qualifications specified in the Code identified above for the variables stated. |  |   |   |
| Remarks & Material Distribution: (*denotes data not provided or not applicable)  |  |   |   |

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|   |  |
|---|--|
|  <b>Professional Service Industries, Inc.</b><br><b>PITTSBURGH TESTING LABORATORY DIVISION</b><br><b>CERTIFICATE</b><br>OF<br><b>TEST AND APPROVAL OF WELDING PROCESS</b><br>AND<br><b>QUALIFICATION OF OPERATOR OF</b><br><b>WELDING EQUIPMENT</b>  |  |
| <p><i>PROFESSIONAL SERVICE INDUSTRIES, INC., PITTSBURGH TESTING LABORATORY DIVISION, has witnessed the welding and testing of test specimens welded by</i></p> <p align="center">       Miner Railcar Services<br/>       2208 East Cherry Street<br/>       New Castle, Pennsylvania 16108<br/>       in accordance with<br/>       American Welding Society<br/>       Structural Welding Code D1.1-88     </p> |  |
| Welding Operator <u>DARRYL BEACHEN</u><br>Welding Process <u>SMAW/GMAW</u>  | No. <u>15</u>  |
| Operator Tested   | <p>This is to certify that the Welding Technician used in this test and described in SPECIFICATIONS FOR WELDING PROCESS No. AWS D1.1-88 and the results of the test given in PHYSICAL TEST REPORT No. <u>PHYS1607</u> complied with the requirements of the above code within the following limitations.</p> <p>         Maximum Plate or Wall Thickness <u>3/4"</u> Maximum<br/>         Minimum Plate or Wall Thickness <u>Unlimited</u><br/>         Welding Positions <u>Flat-Horizontal-Vertical</u><br/>         Other Limitations <u>Fillet &amp; Groove</u> </p> <p>         Remarks <u>AWS A 5.1 E 7018 F, No. 4</u><br/> <u>AWS A 5.10 E 709-3 F, No. 6</u> </p> |
| No. <u>10782</u><br>Order No. <u>820-72122</u><br>File No. _____<br>Approved <u>October 24, 1988</u><br>nek   | <p align="center">PITTSBURGH TESTING LABORATORY DIVISION</p> <p align="center"> <br/>         Director       </p>  |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



**Professional Service Industries, Inc.**  
**Pittsburgh Testing Laboratory Division**

850 Foster Street  
 Pittsburgh, Pennsylvania 15220  
 412/922-4300  
 LPA#1  
 Rev. 7/88

| WELDER AND WELDING OPERATOR QUALIFICATION TEST REPORT  |                                 |   |   |         |         |
|--|---------------------------------|---|---|---------|---------|
| Welder/Welder Operator's Name<br><b>DARRYL BEACHEM</b>   |                                 | Date Reported<br><b>January 25, 1989</b>  | PTL Order No.<br><b>828-73172</b>   |         |         |
| Welder Identification No.<br><b>15</b>   |                                 | Date Tested<br><b>January 12, 1989</b>  | Lab No.<br><b>PHY90073</b>  |         |         |
| Client<br><b>Miner Railcar Services<br/>2208 East Cherry Street<br/>New Castle, PA 16102</b>   |                                 | Welding Code (ID & year)<br><b>AWS D1.1-88</b>  | Client Order No.  |         |         |
| Process<br><b>Flux Cored (Innershield)</b>   |                                 | Base Material Specification<br><b>A-36 Group 1</b>  | Joint <b>BU2a</b><br>XXI Groove J Fillet  |         |         |
| Position<br><b>Flat Groove</b>   |                                 | Specimen Furnished<br><input checked="" type="checkbox"/> PTL <input type="checkbox"/> Others                 | Plate Thickness<br><b>3/8"</b>  |         |         |
| Weld Progression<br><input checked="" type="checkbox"/> Up <input type="checkbox"/> Down <input type="checkbox"/> L to R <input type="checkbox"/> R to L   |                                 | Specimens Machined<br><input checked="" type="checkbox"/> PTL <input type="checkbox"/> Others                 | Diameter & Wall Thickness   |         |         |
| Welding Procedure No. <b>AWS D1.1-88</b> Rev. No. <b>0</b>   |                                 | Current<br><b>AMPS: 125-250</b> <input type="checkbox"/> AC <input type="checkbox"/> DC                       | Polarity<br><input type="checkbox"/> Direct <input checked="" type="checkbox"/> Reverse |         |         |
| Welding Procedure Data by: <input type="checkbox"/> PTL Witnessed (Tech): <b>A. J. Lepczyk</b>   |                                 | <input type="checkbox"/> Others   |   |         |         |
| FILLER METAL   |                                 |   |   |         |         |
| Specification No. <b>AWS A 5.20</b>  |                                 | Classification <b>E71T-7</b>  | P No. <b>6</b>  |         |         |
| Racking <b>A-36 Steel</b>  |                                 | Diameter  | Trade Name  |         |         |
| Shielding <input type="checkbox"/> Gas <input type="checkbox"/> Flux   |                                 |   |   |         |         |
| VISUAL INSPECTION (AWS ONLY)   |                                 |   |   |         |         |
| Appearance   |                                 | Undercut  | Pipino Porosity   |         |         |
| <b>FLAT GROOVE</b>   |                                 | <b>GUIDED BEND TEST RESULTS</b>   |   |         |         |
| TYPE   | RESULTS                         | TYPE  | RESULTS   |         |         |
| <b>FACE BEND</b>   | <b>Defect Under 1/8" - PASS</b> |   |   |         |         |
| <b>ROOT BEND</b>   | <b>Defect Under 1/8" - PASS</b> |   |   |         |         |
| FILLET TEST RESULTS  |                                 |   |   |         |         |
| Weld Appearance<br><input type="checkbox"/> Pass <input type="checkbox"/> Fail   |                                 | Fillet Size<br>Leg: in. x in. <input type="checkbox"/> Concavity: in. <input type="checkbox"/> Convexity: in. |   |         |         |
| Macro Etch Test Results<br><input type="checkbox"/> Pass <input type="checkbox"/> Fail   |                                 |   |   |         |         |
| Fracture Test Results (Describe location, nature & size of any cracks or tearing of the specimen)  |                                 |   |   |         |         |
| RADIOGRAPHIC TEST RESULTS  |                                 |   |   |         |         |
| Film Identification  | Results                         | Remarks   | Film Identification   | Results | Remarks |
|  |                                 |   |   |         |         |
| Tests Witnessed by:  |                                 |   |   |         |         |
| QUALIFICATION RESULTS  |                                 |   |   |         |         |
| The Welder/Operator identified above <input checked="" type="checkbox"/> DOES <input type="checkbox"/> DOES NOT meet the performance qualifications specified in the Code identified above for the variables stated. |                                 |   |   |         |         |
| Remarks & Report Distribution (Indicates data not provided or not applicable)<br><b>mck</b>  |                                 |   | Submitted by<br><b>J. Peter Mentzer</b><br>Manager                                      |         |         |

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Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operators name: DAVID S. WACKEN Identification no: 15  
 Welding process: F. C. A. R. Manual  Semi-automatic  Machine   
 Position: 30 Vertical Up  
 (Flat, horizontal, overhead or vertical) — If vertical, state whether upward or downward  
 In accordance with procedure specified on no. Prequalified Joint, Fig. No. 318  
 Material specification: A-36  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness: 1.0"  
 Thickest plate this qual fits: UNLIMITED

**FILLER METAL**

Specification no.: E. 20 Classification: E60XX-X Type: 3  
 Describe filler metal (if not covered by AWS specification):  
 Is backing strip used? Yes  
 Filler metal, manufacturer and trade name: LAGER LAGWELD Flux for submerged arc or gas for gas metal arc or flux  
 used in arc welding: 100% CO<sub>2</sub>

**VISUAL INSPECTION**

Appearance: Satisfactory Undercut: None Pitting areas by: None

**Guided Bend Test Results**

| Type             | Result            | Type | Result |
|------------------|-------------------|------|--------|
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |

Test conducted by: WELD TESTING LABORATORY Laboratory test no.: 00730-1800  
 per: [Signature] Test date: 07/25/88

**Filler Test Results**

Appearance: \_\_\_\_\_ Fillet size: \_\_\_\_\_  
 Exposure test root penetration: \_\_\_\_\_ Macroetch: \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by: \_\_\_\_\_ Laboratory test no.: \_\_\_\_\_  
 per: \_\_\_\_\_ Test date: \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |
|                     |         |         |                     |         |         |

Test witnessed by: \_\_\_\_\_ Test no.: \_\_\_\_\_  
 per: \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS Q15.1, ( 88 )  
 year

Manufacturer or contractor: GLOBAL FATT CORP.  
 Authorized by: [Signature]  
 Date: 02/22/89

Form W-1



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD**

Welder or welding operator's name DAVID BACHMAN Identification no. 15  
 Welding process S.M.A.W. Manual  Semiautomatic \_\_\_\_\_ Machine \_\_\_\_\_  
 Position 4G Overhead  
 (Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification no. Prequalification joint sig. CIR  
 Material specification A-36  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness .375"  
 Thickness range this qualifies .750"

**FILLER METAL**

Specification no. E-1 & E-2 Classification E-7018 F no. 1  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name 1/8" Lincoln Flux for submerged arc or gas for gas metal arc or flux cored arc welding \_\_\_\_\_

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bend Test Results**

| Type              | Result                     | Type | Result |
|-------------------|----------------------------|------|--------|
| <u>SPACE BEND</u> | <u>Minor check/PASSING</u> |      |        |
| <u>ROOT BEND</u>  | <u>1/16" tear/PASSING</u>  |      |        |

Test conducted by KAL WISNING LABORATORY Laboratory test no. 03040-1750  
 per [Signature] Test date 8/05/2003

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Marcoatch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1, ( 2001 )  
 year

Manufacturer or contractor KASCRO RAIL CORP.  
 Authorized by [Signature]  
 Date 8-5-03

Form D-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name DONALD E. KELLER Identification no. 817  
 Welding process F-C-A-W Manual  Semiautomatic  Machine   
 Position 3F Vertical Up  
 (Flat, horizontal, overhead or vertical – if vertical, state whether upward or downward)  
 In accordance with procedure specification no. Prequalified Joint, Fig. no. 010  
 Material specification A-06  
 Diameter and wall thickness (if pipe) – otherwise, joint thickness 1.0"  
 Thickness range this qualifies UNLIMITED

**FILLER METAL**

Specification no. 3.20 Classification E71T-1 F no. 6  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name 0.45" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 used arc welding 100% CO2

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bent Test Results**

| Type      | Result     | Type | Result |
|-----------|------------|------|--------|
| SIDE BEND | NO DEFECTS |      |        |
| SIDE BEND | NO DEFECTS |      |        |

Test conducted by KAIL TESTING LABORATORY Laboratory test no. QWEX-2524  
 per *Paul J. Kail* Test date 6/16/2006

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Macroetch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1, [2001], YEAR.

Manufacturer or contractor FASRR RAIL CORPORATION  
 Authorized by *Paul J. Kail*  
 Date 6-16-06

Form D-1



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project







Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

AWS D15.1 (D) 5.1M (2007)

ANNEX D

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name GEORGE SEPPESTR Identification no. 825  
 Welding process RCM Manual          Semi-automatic X Machine           
 (If vertical, overhead, or vertical—if vertical, state whether upward or downward) 3G Vertical Up  
 In accordance with procedure specification no. W-001  
 Material specification A-36  
 Diameter and wall thickness (if pipe)—full circle, joint thickness .750"  
 Thickness range (if plate) UNLIMITED

**FILLER METAL**

Specification no. A-20 Classification E71T-1 F.no. 6  
 Describe filler metal (if not covered by AWS specification)           
 Is backing strip used? Yes  
 Filler metal diameter and trade name 1/16" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 cored arc welding 100% CO2

**VISUAL INSPECTION**

Appearance Satisfactory Unclear None Piping porosity None

**Guided Bend Test Results**

| Type             | Result            | Type | Result |
|------------------|-------------------|------|--------|
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |

Test conducted by KATI WESTING LABORATORY Laboratory test no. 10F3G-7932  
 per [Signature] Test date 2/12/2010

**Fillet Test Results**

Appearance          Fillet size           
 Fracture (at root penetration)          Macroetch           
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by          Laboratory test no.           
 per          Test date         

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by          Laboratory test no.           
 per          Test date         

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of AWS D15.1, (2007)          Railroad Welding Specification for Cars and Locomotives.  
 (year)         

Manufacturer or Contractor ENSCO RAIL CORPORATION

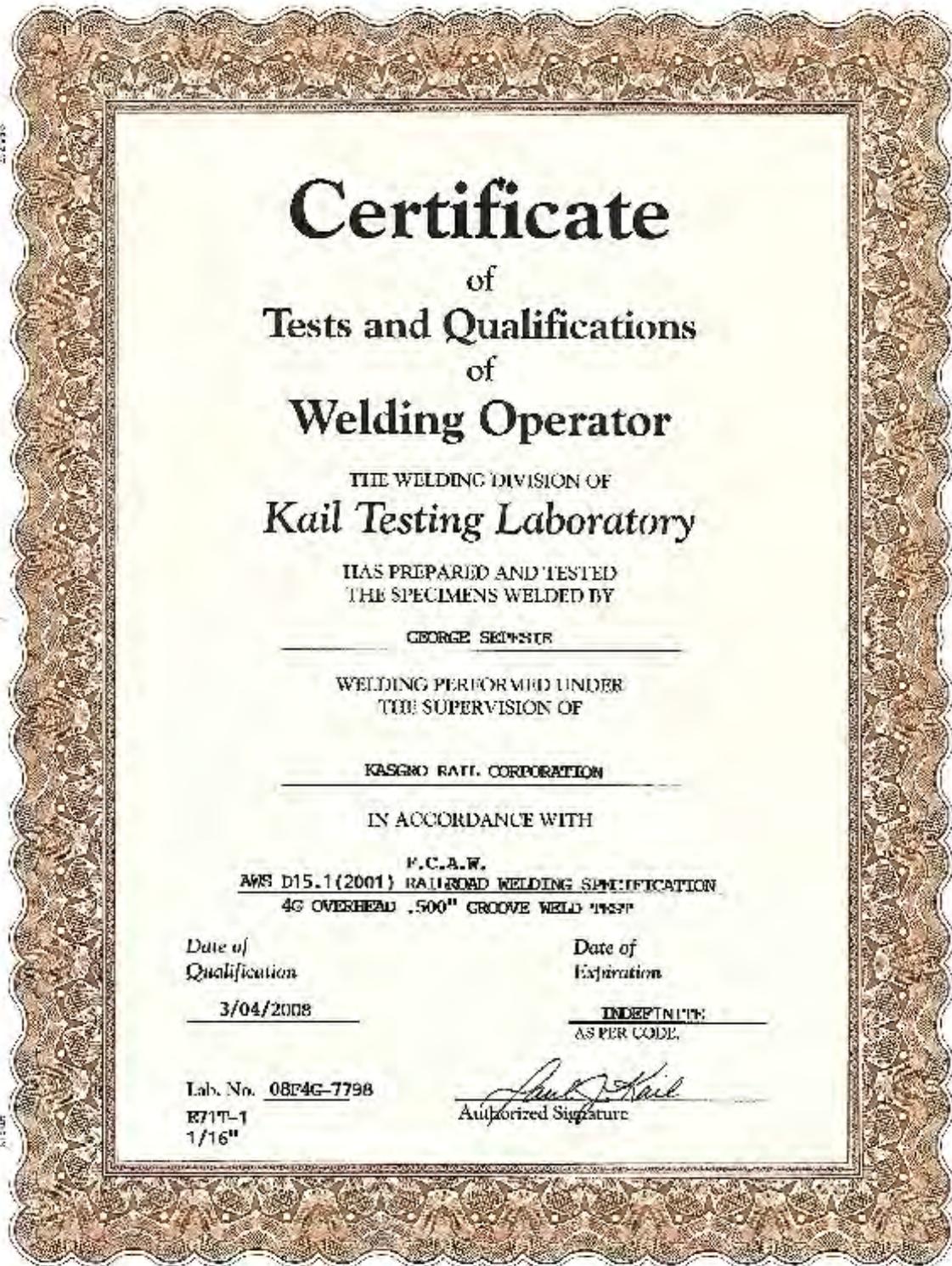
Authorized by [Signature]  
 Date 2/12/10

Form D-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

ANNEX D

AWS D15.1:2001

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name: GEORGE SEPSTIE Identification no. 825  
 Welding process: FC, A, W, Manual  Semiautomatic  Machine \_\_\_\_\_  
 (Flat, horizontal, overhead, or vertical—if vertical, state whether upward or downward.) 4G Overhead  
 In accordance with procedure specification no. E-001  
 Material specification: A-36  
 Diameter and wall thickness (if pipe)—otherwise, joint thickness: .500"  
 Thickness range this qualifies: 1.0"

**FILLER METAL**

Specification no. 5.20 Classification E71T-1 Filler 6  
 Describe filler metal (if not covered by AWS specification): \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name: 1/16" Lincoln Flux for submerged arc or gas for gas metal arc or flux-  
 cored arc welding: 100% CO<sub>2</sub>

**VISUAL INSPECTION**

Appearance: Satisfactory Undercut: None Piping porosity: None

**Guided Bend Test Results**

| Type             | Result            | Type | Result |
|------------------|-------------------|------|--------|
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |

Test conducted by: KA, DA, WISCONSIN LABORATORY Laboratory test no.: 08F1G-7798  
 per: [Signature] Test date: 3/04/2008

**Fillet Test Results**

Appearance: \_\_\_\_\_ Fillet size: \_\_\_\_\_  
 Fracture test root penetration: \_\_\_\_\_ Macroetch: \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by: \_\_\_\_\_ Laboratory test no.: \_\_\_\_\_  
 per: \_\_\_\_\_ Test date: \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by: \_\_\_\_\_ Laboratory test no.: \_\_\_\_\_  
 per: \_\_\_\_\_ Test date: \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the test results were prepared and tested in accordance with the requirements of AWS D15.1, ( 2001 ) Railroad Welding Specifications - Cars and Locomotives.  
 (year)

Manufacturer or Contractor: WASCOP, BATH, CORP.  
 Authorized by: [Signature]  
 Date: 3/4/08

Form D-1



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|                              |   |  |                        |
|------------------------------|---|--|------------------------|
|                              | AREVA Federal Services LLC  |  |                        |
| <b>DATA TRANSMITTAL FORM</b> |   |  |                        |
| Supplier:                    | KASGRO RAIL CORP., INC.   | DTF No:  | 18A                    |
| P.O./SC No:                  | 15C3011916  | Date:  | 4/11/18                |
| Type of Submittal:           | <input type="checkbox"/> First <input checked="" type="checkbox"/> Re-Submittal                                   | SDRL List Item No:   | 20                     |
| Submitted for:               | <input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted:  | 1                      |
| Submitted By:                | <b>RICK FORD</b>  | <b>Rick Ford</b><br><small>Digitally signed by Rick Ford<br/>Date: 2018.04.11 12:55:49<br/>-0402</small> | <b>PROJECT MANAGER</b> |
|                              | (Name)  | (Signature)  | (Title)                |

| ITEM NUMBER | DOCUMENT NUMBER       | REVISION NUMBER | DOCUMENT DESCRIPTION   | AFS DISPOSITION   |
|-------------|-----------------------|-----------------|--|---|
| 1           | W7                    |                 | Clock #15 Darryl Beachem Welding Qualification                                 | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 2           | W9                    |                 | Clock #825 George Sepesle Welding Qualifications                               | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 3           | Kasgro 4112018 Letter |                 | Letter transferring Welder Qualifications to Kasgro from previous company name | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
|             |                       |                 |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                       |                 |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                       |                 |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                       |                 |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                       |                 |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                       |                 |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |

|                          |  |
|--------------------------|--|
| Comments:<br>No comments | Technical Reviewer (I.e., RE, PTL, SME, QA, etc.)<br><b>KLEIN Slade</b><br><small>Digitally signed by KLEIN Slade<br/>Date: 2018.04.24 08:08:44 -0700</small><br>Date: 4/24/2018 |
|--------------------------|--|

| AFS DISPOSITION CODES AND DEFINITIONS |                                |  |                             |
|---------------------------------------|--------------------------------|--|-----------------------------|
| AP                                    | Approved                       | Work may proceed.  | Resubmittal is not required |
| AWC                                   | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| REV                                   | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| RWC                                   | Reviewed with Comment          | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit        |
| DS                                    | Disapproved                    | Work may <u>not</u> proceed.   | Correct and resubmit        |
| RSA                                   | Receipt Submittal Acknowledged | No other action required.  |                             |

If, in the judgment of the Supplier, the incorporation of AFS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to AFS' C&P Representative describing the change.

|  |   |
|--|---|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval<br> | <small>Digitally signed by MICHAEL A. HESTER<br/>DN: c=AREVA GROUP,<br/>2.5.4.49=1874375128041022021700,<br/>ou=CENTON Mack<br/>Date: 2018.04.24 13:01:30 -0400</small><br>Date: 04/24/2018 |
|--|---|

AFS-EN-FRM-023 Rev 01 (Effective August 18, 2014)  
 Refer to AFS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|   |                                    |  |
|---|------------------------------------|--|
|   | Orano Federal Services             |  |
|   | SUPPLIER DOCUMENT SUBMITTAL REVIEW |  |
| Supplier / PO No.:  | PTI / 16C3016046                   | DTF No. / Rev: 018A  |
| Charge No: 01916.01.C005.08.00100   | Due Date: 4/26/2018                |  |
| Document(s):  | See DTF-018A                       |  |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)   |                                    |  |
| PE  | Slade Klein                        |  |
| REVIEWERS   | Slade Klein, Bernie Counterman     |  |
| QA  | Bernie Counterman                  |  |
| <b>Technical Review</b>   |                                    |  |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                                    |  |
| Technical Reviewer Comments:  |                                    |  |
| Clock 109 (Charles Kluinski) will NOT be used for welding and was not resubmitted. Clock 15 (Darryl Beachem ok per letter. Miner Rail Services is now Kasgro. Clock numbers provided for all welders per R. Ford email. |                                    |  |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b>   |                                    | Digitally signed by KLEIN Slade<br>Date: 2018.04.24 07:52:31 -07'00'       |
| <b>Quality Assurance Review (As Applicable)</b>   |                                    |  |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                                    |  |
| Technical Reviewer Comments:  |                                    |  |
| No Comments   |                                    |  |
| QA Reviewer(s) (Sign/Date):   |                                    | Digitally signed by Bernie Counterman<br>Date: 2018.04.24 08:00:31 -07'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary)  |                                    |  |
|   |                                    |  |
|   |                                    |  |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

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Kasgro Rail Corporation  
121 Rundle Road • New Castle, PA 16201  
724-658-9061 • 724-658-7856 FAX • www.KASGRO.com



**KASGRO**

April 11, 2018

Weld Performance Qualification Records.

The weld performance qualification records of the following employees have been reviewed. They conform to the requirements of the American Welding Society D 15.1 Railroad Welding Specification for Cars and Locomotives.

Clock # 15 Darryl Beachem  
Clock # 825 George Sepesie

This review was performed when the ownership of the company was changed from Miner Railcar to Kasgro Rail Corp.

Reviewed By:

Mark Zeigler

*Specialty Rail Car Solutions*



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

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**From:** [Rick Ford](#)  
**To:** [KLEIN Slade \(ORN-BE\)](#)  
**Cc:** [DENTON Mark \(ORN-BE\)](#); [COUNTERMAN Bernie \(ORN-BE\)](#); [Mark](#)  
**Subject:** Kasgro Welder Identification  
**Date:** Tuesday, April 10, 2018 12:34:37 PM  
**Attachments:** [Kasgro Welder List.xls](#)

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Slade,

A number of the welder qualifications were developed under previous company names prior to Kasgro ownership using various methods such as social security numbers and/or employee numbers, that are no longer valid.

In reference to issue of welder identification and the original welder qualification records, the method used by Kasgro Rail is to use their current employee number per the attached list.

Sincerely,

*Rick Ford*  
*Kasgro Rail*

---

**From:** David Stull <dave@kasgro.com>  
**Sent:** Tuesday, April 10, 2018 2:41 PM  
**To:** Rick Ford  
**Subject:** FW:

---

**From:** Bill Baker [mailto:bbaker@kasgro.com]  
**Sent:** Monday, April 09, 2018 6:49 AM  
**To:** dave@kasgro.com  
**Subject:**



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000

Project: 00225.03.0050 DOE Atlas Project

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**Kasgro Welder Employee Numbers**

| <b>Emp. #</b> | <b>Employee Name</b> |
|---------------|----------------------|
| 11            | James Clark          |
| 12            | Jim McCready         |
| 15            | Darryl Beachem       |
| 16            | Bill Baker           |
| 56            | Scott Neely          |
| 57            | Robert Walker        |
| 81            | Trevor Barker        |
| 131           | Al Williams          |
| 148           | Mark Baker           |
| 157           | Adam Durst           |
| 300           | Keith Peterson       |
| 373           | John Novakovich      |
| 812           | Ryan Vogus           |
| 814           | Thomas Cummins       |
| 815           | Leonard Agee         |
| 819           | Bill Flory           |
| 821           | Triston Mills        |
| 822           | Charles Spaulding    |
| 823           | Steven Presnar       |
| 824           | Ron Price            |
| 825           | George Sepesie       |
| 826           | Randall Robison      |
| 834           | Matt Smith           |
| 836           | Paul Klamer          |
| 837           | Brett Shepard        |
| 841           | John Henke           |
| 842           | Neil Shalenberger    |
| 843           | Josh Clyde           |
| 844           | Mike Beachem         |



Orano Federal Services  
**Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|                              |   |  |                 |
|------------------------------|---|--|-----------------|
| AREVA                        |   | AREVA Federal Services LLC                                       |                 |
| <b>DATA TRANSMITTAL FORM</b> |   |  |                 |
| Supplier:                    | KASGRO RAIL CORP., INC.   | DTF No:  | 019             |
| P.O./SC No:                  |   | Date:  |                 |
| 15C3011916                   |   | 03/27/18   |                 |
| Type of Submittal:           | <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal                                   | SDRL List Item No:   | 20              |
| Submitted for:               | <input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information |  |                 |
|                              |   | Number of Copies Submitted: 1                                    |                 |
| Submitted By:                | <b>RICK FORD</b>  | Rick Ford  | PROJECT MANAGER |
|                              |   | Digitally signed by Rick Ford<br>Date: 2018.03.27 15:34:40 -0502 |                 |
| (Name)                       |   | (Signature)  | (Title)         |

| ITEM NUMBER | DOCUMENT NUMBER | REVISION NUMBER | DOCUMENT DESCRIPTION                              | AFS DISPOSITION   |
|-------------|-----------------|-----------------|---|---|
| 1           | KAS W10         |                 | Clock #11 James Clark Welding Qualifications      | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
| 2           | KAS W11         |                 | Clock #12 Jimmy McCready Welding Qualifications   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input checked="" type="checkbox"/> DS <input type="checkbox"/> RSA |
| 3           | KAS W12         |                 | Clock #841 John Henke Welding Qualifications      | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 4           | KAS W13         |                 | Clock #373 John Novakovich Welding Qualifications | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 5           | KAS W14         |                 | Clock #843 Josh Clyde Welding Qualifications      | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 6           | KAS W15         |                 | Clock #300 Keith Peterson Welding Qualifications  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 7           | KAS W16         |                 | Clock #815 Leonard Agee Welding Qualifications    | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 8           | KAS W17         |                 | Clock #148 Mark Baker Welding Qualifications      | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 9           | KAS W18         |                 | Clock #834 Matthew Smith Welding Qualifications   | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |

|   |   |
|---|---|
| Comments:<br>Please address comments on attached DTF-019 RFM-026. Re-submit for James Clark (W10) and James McCready (W11). | Technical Reviewer (i.e., RE, PTL, SME, QA, etc.)<br><b>KLEIN Slade</b> KLEIN Slade<br>2018.04.10 04:59:05 -0700<br>Date: 4/10/2018 |
|---|---|

| AFS DISPOSITION CODES AND DEFINITIONS |                                |  |                             |
|---------------------------------------|--------------------------------|--|-----------------------------|
| AP                                    | Approved                       | Work may proceed.  | Resubmittal is not required |
| AWC                                   | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| REV                                   | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| RWC                                   | Reviewed with Comment          | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit        |
| DS                                    | Disapproved                    | Work may <u>not</u> proceed.   | Correct and resubmit        |
| RSA                                   | Receipt Submittal Acknowledged | No other action required.  |                             |

If, in the judgment of the Supplier, the incorporation of AFS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to AFS' C&P Representative describing the change.

|  |  |
|--|--|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval<br> | Digitally signed by Mark A. Denton<br>DN: c=AREVA GROUP,<br>2.5.4.49=1747375128041022021700,<br>ou=DENTON Mark,<br>Date: 2018.04.10 08:51:37 -0500 |
| Date: 04/10/2018   |  |

AFS-EN-FRM-023 Rev 01 (Effective August 18, 2014)  
 Refer to AFS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|   |                                    |   |
|---|------------------------------------|---|
|   | AREVA Federal Services LLC         |   |
|   | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:  | Kasgro Rail / 15C3011916           | DTF No. / Rev: 019  |
| Charge No:  | 00225.03.0050.02.00001             | Due Date: 4/10/2018   |
| Document(s):  | See DTF No.: 019                   |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. AFS Spec and Dwg. Codes, Stds, etc.)  |                                    |   |
| PE  | Slade Klein                        |   |
| REVIEWERS   | Slade Klein, Bernie Counterman     |   |
| QA  | Bernie Counterman                  |   |
| <b>Technical Review</b>   |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                                    |   |
| Technical Reviewer Comments:  |                                    |   |
| No additional comments.   |                                    |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b>   |                                    | KLEIN Slade<br>2018.04.10 04:53:23 -07'00'                                  |
| <b>Quality Assurance Review (As Applicable)</b>   |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                                    |   |
| Technical Reviewer Comments:  |                                    |   |
| 1. James Clark – qualification for .375 was performed for Miner Rail Services. Need qualifications to Kasgro. (Ref. D15.1, Section 9.4 Qualification Responsibility).<br>2. James McCready – qualification 3-4 unlimited flat-groove was performed for Miner Rail Services. Need qualifications to Kasgro. (Ref. D15.1, Section 9.4 Qualification Responsibility).<br>qualification 3-4 unlimited flat-horizontal was performed for Miner Rail Services. Need qualifications to Kasgro. |                                    |   |
| QA Reviewer(s) (Sign/Date): <b>Bernard Counterman</b>   |                                    | Digitally signed by Bernard Counterman<br>Date: 2018.04.05 15:19:50 -07'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary)  |                                    |   |
|   |                                    |   |
|   |                                    |   |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



**Professional Service Industries, Inc.**  
**PITTSBURGH TESTING LABORATORY DIVISION**  
**CERTIFICATE**  
 OF  
**TEST AND APPROVAL OF WELDING PROCESS**  
 AND  
**QUALIFICATION OF OPERATOR OF**  
**WELDING EQUIPMENT**

*PROFESSIONAL SERVICE INDUSTRIES, INC., PITTSBURGH TESTING LABORATORY DIVISION, has witnessed the welding and testing of test specimens welded by*

MINER RAIL CAR SERVICES  
 2208 EAST CHERRY STREET  
 NEW CASTLE, PA 16102

in accordance with  
 American Welding Society  
 Structural Welding Code D1.1-88

Welding Operator James Clark No. 011  
 Welding Process SAW/GMAW/Flux Cored (Innershield)

Operator Tested

This is to certify that the Welding Testmate used in this test and described in SPECIFICATIONS FOR WELDING PROCESS No. AMS D1.1-88 and the results of the test given in PHYSICAL TEST REPORT No. PHY80142 complied with the requirements of the above code within the following limitations.

Maximum Plate or Wall Thickness 3/4" MAX.  
 Minimum Plate or Wall Thickness Unlimited  
 Welding Positions Flat-Horizontal-Vertical  
 Other Limitations Fillet & Groove

Remarks A5.20, A5.18, A5.1 E711-7, E70S-3  
E7018 T. NO. 4 & 6

No. 10387 PITTSBURGH TESTING LABORATORY DIVISION

Order No. 828-73122

File No. \_\_\_\_\_

Approved. 6-15-88 By Peter Mentzer  
Director



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



**Professional Service Industries, Inc.**  
**Pittsburgh Testing Laboratory Division**

650 Murray Avenue  
 Pittsburgh, Pennsylvania 15220  
 412/922-4000

| WELDER AND WELDING OPERATOR QUALIFICATION TEST REPORT  |                 |   |   |  |         |
|--|-----------------|---|---|--|---------|
| Welder/Welder Operator's Name<br>James Clark   |                 | Date Reported<br>4/29/88  |   | PTL Order No.<br>828-73122   |         |
| Welder Identification No.<br>011   |                 | Date Tested<br>4/15/88  |   | Lab No.<br>PHY80142  |         |
| Client<br>Miner Railcar Services<br>2208 East Cherry Street<br>New Castle, PA 16102  |                 | Welding Code (ID & year)<br>AWS D1.1-88   |   | Client Order No.   |         |
|  |                 | Base Material Specification<br>A-36 Group 1   |   |  |         |
| Process<br>F0UX CORED (INNERSHIELD)  |                 | Specimen<br><input checked="" type="checkbox"/> Plate <input type="checkbox"/> Pipe                           |   | Joint<br><input type="checkbox"/> Groove <input type="checkbox"/> Fillet                   |         |
| Position<br>Vertical Groove  |                 | Specimen Furnished<br><input checked="" type="checkbox"/> PTL <input type="checkbox"/> Others                 |   | Plate Thickness<br>3/8"  |         |
| Weld Progression<br><input checked="" type="checkbox"/> Up <input type="checkbox"/> CW <input type="checkbox"/> L to R<br><input type="checkbox"/> Down <input type="checkbox"/> CCW <input type="checkbox"/> R to L |                 | Specimens Machined<br><input checked="" type="checkbox"/> PTL <input type="checkbox"/> Others                 |   | Diameter & Wall Thickness<br>---   |         |
| Welding Procedure No. 01.1-88 AWS Rec. No.   |                 | Thickness Range Qualified<br>3/4" Max.  |   | Current<br>AMPS: 80-200 <input type="checkbox"/> AC <input checked="" type="checkbox"/> DC |         |
| Welding Procedure Data by: <input type="checkbox"/> PTL Witnessed (Tech):  |                 | Polarity<br><input type="checkbox"/> Direct <input checked="" type="checkbox"/> Reverse                       |   |  |         |
| <b>FILLER METAL</b>  |                 |   |   |  |         |
| Specification No. AWS A 5.20   |                 | Classification E71T-7   |   | F. No. 6   |         |
| Backing A-36 Steel   |                 | Diameter  |   | Trade Name   |         |
| Shielding <input type="checkbox"/> Gas: <input type="checkbox"/> Flux:   |                 |   |   |  |         |
| <b>VISUAL INSPECTION (AWS ONLY)</b>  |                 |   |   |  |         |
| Appearance   |                 | Undercut  |   | Piping Porosity  |         |
| <b>GUIDED BEND TEST RESULTS</b>  |                 |   |   |  |         |
| VERTICAL   |                 | RESULTS   |   | RESULTS  |         |
| TYPE   |                 |   | TYPE  |  |         |
| Face Bend  | No Defects PASS |   |   |  |         |
| Root Bend  | No Defects PASS |   |   |  |         |
| <b>FILLET TEST RESULTS</b>   |                 |   |   |  |         |
| Weld Appearance<br><input type="checkbox"/> Pass <input type="checkbox"/> Fail   |                 | Fillet Size<br>Leg: in. x in. <input type="checkbox"/> Concavity: in. <input type="checkbox"/> Convexity: in. |   |  |         |
| Macro Etch Test Results <input type="checkbox"/> Pass <input type="checkbox"/> Fail  |                 |   |   |  |         |
| Fracture Test Results (Describe location, nature & size of any cracks or tearing of the specimen)  |                 |   |   |  |         |
| <b>RADIOGRAPHIC TEST RESULTS</b>   |                 |   |   |  |         |
| Film Identification  | Results         | Remarks   | Film Identification                             | Results  | Remarks |
|  |                 |   |   |  |         |
| Tests Witnessed by:  |                 |   |   |  |         |
| <b>QUALIFICATION RESULTS</b>   |                 |   |   |  |         |
| The Welder/Operator identified above <input checked="" type="checkbox"/> DOES <input type="checkbox"/> DOES NOT meet the performance qualifications specified in the Code identified above for the variables stated. |                 |   |   |  |         |
| Remarks & Report Distribution (* denotes data not provided or not applicable)  |                 |   |   |  |         |
| Tcg  |                 |   | Submitted by: <i>J. Peter Mertes</i><br>Manager |  |         |

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



**Professional Service Industries, Inc.**  
**Pittsburgh Testing Laboratory Division**

850 Poplar Street  
 Pittsburgh, Pennsylvania 15220  
 412922-4000

| WELDER AND WELDING OPERATOR QUALIFICATION TEST REPORT  |         |   |                     |   |         |
|--|---------|---|---------------------|---|---------|
| Welder/Welder Operator's Name<br>James Clark   |         | Date Reported<br>4/29/88  |                     | PTL Order No.<br>828-73122  |         |
| Welder Identification No.<br>011   |         | Date Tested<br>4/15/88  |                     | Lab No.<br>PHY80142   |         |
| Client<br>Miner Railcar Services<br>2208 East Cherry Street<br>New Castle, PA 16102  |         | Welding Code (ID & year)<br>AWS D1.1  |                     | Client Order No.  |         |
|  |         | Base Material Specification<br>A-36   |                     |   |         |
| Process<br>GMAW  |         | Specimen Furnished<br><input checked="" type="checkbox"/> PTL <input type="checkbox"/> Others                 |                     | Joint<br><input checked="" type="checkbox"/> Groove <input type="checkbox"/> Fillet |         |
| Position<br>Vertical Groove  |         | Specimens Machined<br><input checked="" type="checkbox"/> PTL <input type="checkbox"/> Others                 |                     | Plate Thickness<br>1" Thick   |         |
| Weld Progression<br><input checked="" type="checkbox"/> Up <input type="checkbox"/> Down <input type="checkbox"/> CW <input type="checkbox"/> CCW <input type="checkbox"/> L to R <input type="checkbox"/> R to L    |         | Thickness Range Qualified<br>Unlimited  |                     | Diameter & Wall Thickness   |         |
| Welding Procedure No.<br>Rev. No.  |         | Current Volts 18-21<br>AMPS: 125-150   AC <input type="checkbox"/> DC   |                     | Polarity<br><input type="checkbox"/> Direct <input type="checkbox"/> Reverse        |         |
| Welding Procedure Data by: <input checked="" type="checkbox"/> PTL Witnessed (Tech): <input type="checkbox"/> Other:   |         |   |                     |   |         |
| FILLER METAL   |         |   |                     |   |         |
| Specification No. AWS A 5.18   |         | Classification E 70S-3  |                     | F. No. 6  |         |
| Backing A-36   |         | Diameter  |                     | Trade Name  |         |
| Shielding Gas 75% Argon 25% CO <sub>2</sub>  |         | 15-20 CFH   |                     |   |         |
| VISUAL INSPECTION (AWS ONLY)   |         |   |                     |   |         |
| Appearance   |         | Undercut  |                     | Piping Porosity   |         |
| GUIDED BEND TEST RESULTS   |         |   |                     |   |         |
| Vertical   |         | TYPE  |                     | RESULTS   |         |
|  |         | Face Bend   |                     | No Defects PASS   |         |
|  |         | Root Bend   |                     | No Defects PASS   |         |
| FILLET TEST RESULTS  |         |   |                     |   |         |
| Weld Appearance<br><input type="checkbox"/> Pass <input type="checkbox"/> Fail   |         | Fillet Size<br>Leg: in. x in. <input type="checkbox"/> Concavity: in. <input type="checkbox"/> Convexity: in. |                     |   |         |
| Macro Etch Test Results <input type="checkbox"/> Pass <input type="checkbox"/> Fail  |         |   |                     |   |         |
| Fracture Test Results (Describe location, nature & size of any cracks or tearing of the specimen)  |         |   |                     |   |         |
| RADIOGRAPHIC TEST RESULTS  |         |   |                     |   |         |
| Film Identification  | Results | Remarks   | Film Identification | Results   | Remarks |
|  |         |   |                     |   |         |
| Tests Witnessed by:  |         |   |                     |   |         |
| QUALIFICATION RESULTS  |         |   |                     |   |         |
| The Welder/Operator identified above <input checked="" type="checkbox"/> DOES <input type="checkbox"/> DOES NOT meet the performance qualifications specified in the Code identified above for the variables stated. |         |   |                     |   |         |
| Remarks & Report Distribution (*denotes data not provided or not applicable)   |         |   |                     | Submitted by:<br><i>Peter Mertes</i><br>Manager                                     |         |
| Tcq  |         |   |                     |   |         |

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



**Professional Service Industries, Inc.**  
**Pittsburgh Testing Laboratory Division**

850 Poplar Street  
 Pittsburgh, Pennsylvania 15220  
 412/922-6000

L P0013  
 Rev. 7/95

| WELDER AND WELDING OPERATOR QUALIFICATION TEST REPORT  |         |   |                     |   |         |
|--|---------|---|---------------------|---|---------|
| Welder/Welder Operator's Name  |         | Date Reported<br>4/29/88  |                     | PTL Order No.<br>828-73122  |         |
| Welder Identification No.<br><b>011</b>  |         | Date Tested<br>4/15/88  |                     | Lab No.<br>PHY80142   |         |
| Client<br>Miner Railcar Services<br>2208 East Cherry Street<br>New Castle, PA 16102  |         | Welding Code (ID & year)<br>AWS D1.1-88   |                     | Client Order No.  |         |
|  |         | Base Material Specification<br>A-36 Group 1   |                     |   |         |
| Process<br>Shielded Metal Arc Welding  |         | Specimen<br><input checked="" type="checkbox"/> Plate <input type="checkbox"/> Pipe                           |                     | Joint<br><input checked="" type="checkbox"/> Groove <input type="checkbox"/> Fillet   |         |
| Position<br>Vertical Groove  |         | Specimen Furnished<br><input checked="" type="checkbox"/> PTL <input type="checkbox"/> Others                 |                     | Plate Thickness<br>3/8"   |         |
| Weld Progression<br><input checked="" type="checkbox"/> Up <input type="checkbox"/> Down <input type="checkbox"/> CW <input type="checkbox"/> CCW <input type="checkbox"/> L to R <input type="checkbox"/> R to L    |         | Specimens Machined<br><input checked="" type="checkbox"/> PTL <input type="checkbox"/> Others                 |                     | Diameter & Wall Thickness   |         |
| Welding Procedure No.<br>D1.1-88   |         | AWS Rev. No.  |                     | Current AMPS: 80-200 <input type="checkbox"/> AC <input checked="" type="checkbox"/> DC <input type="checkbox"/> Direct <input checked="" type="checkbox"/> Reverse |         |
| Welding Procedure Data by: <input type="checkbox"/> PTL Witnessed (Tech):  |         | <input type="checkbox"/> Others:  |                     |   |         |
| FILLER METAL   |         |   |                     |   |         |
| Specification No.<br>AWS A 5.1   |         | Classification<br>E 7018  |                     | F No. F. No. 4  |         |
| Backing<br>A-36 Steel  |         | Diameter<br>1/8"  |                     | Trade Name  |         |
| Shielding <input type="checkbox"/> Gas: <input type="checkbox"/> Flux:   |         |   |                     |   |         |
| VISUAL INSPECTION (AWS ONLY)   |         |   |                     |   |         |
| Appearance   |         | Undercut  |                     | Piping Porosity   |         |
| GUIDED BEND TEST RESULTS   |         |   |                     |   |         |
| VERTICAL TYPE  |         | RESULTS   |                     | TYPE  |         |
| Face Bend  |         | No Defects PASS   |                     |   |         |
| Root Bend  |         | No Defects PASS   |                     |   |         |
| FILLET TEST RESULTS  |         |   |                     |   |         |
| Weld Appearance<br><input type="checkbox"/> Pass <input type="checkbox"/> Fail   |         | Fillet Size<br>Leg: in. x in. <input type="checkbox"/> Concavity: in. <input type="checkbox"/> Convexity: in. |                     |   |         |
| Macro Etch Test Results <input type="checkbox"/> Pass <input type="checkbox"/> Fail  |         |   |                     |   |         |
| Fracture Test Results (Describe location, nature & size of any cracks or tearing of the specimen)  |         |   |                     |   |         |
| RADIOGRAPHIC TEST RESULTS  |         |   |                     |   |         |
| Film Identification  | Results | Remarks   | Film Identification | Results   | Remarks |
|  |         |   |                     |   |         |
| Tests Witnessed by:  |         |   |                     |   |         |
| QUALIFICATION RESULTS  |         |   |                     |   |         |
| The Welder/Operator identified above <input checked="" type="checkbox"/> DOES <input type="checkbox"/> DOES NOT meet the performance qualifications specified in the Code identified above for the variables stated. |         |   |                     |   |         |
| Remarks & Report Distribution (*denotes data not provided or not applicable)   |         |   |                     | Submitted by:<br><i>J. Peter Mentzer</i><br>Manager   |         |
| 1cg  |         |   |                     |   |         |

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Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name: JAMES N. CLARK Identification no. 011  
 Welding process: IGAW Manual  Semi-automatic  Machine   
 Position: 3G Vertical UP  
 (Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification no. Pressure-tight joint, fig. no. CID  
 Material specification: A-36  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness: 1"  
 Thickness range the qualifies: UNLIMITED

**FILLER METAL**

Specification no. E-20 Classification E-719-1 F no. 6  
 (Describe filler metal (if not covered by AWS specification): \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trace name: 0.045" Titanium Flux for submerged arc or gas (or gas metal arc) as  
 cored arc weld no. 100 & 002

**VISUAL INSPECTION**

Appearance: Satisfactory Undercut: None Riping porosity: None

**Guided Bend Test Results**

| Type             | Result                   | Type | Result |
|------------------|--------------------------|------|--------|
| <u>SIDE BEND</u> | <u>NO DEFECTS</u>        |      |        |
| <u>SIDE BEND</u> | <u>1/64" Tear/PASSED</u> |      |        |

Test conducted by KATY TESTING LABORATORY Laboratory test no. 95-1643  
 per [Signature] Test date 6/29/95

**Fillet Test Results**

Appearance: \_\_\_\_\_ Fillet size: \_\_\_\_\_  
 Fracture test root penetration: \_\_\_\_\_ Marked notch: \_\_\_\_\_  
 (Describe the location, nature, and severity of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test performed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D18.1, ( 93 year )

Manufacturer or contractor: KANSAS BALL ROLLER  
 Authorized by: [Signature]  
 Date: 6/29/95



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name: JAMES CLARK Identification no. 011  
 Welding process: E.C.A.W. Manual  Semi-automatic  Machine   
 Position: EG OVERHEAD  
 (Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification no. PREQUALIFIED JOINT FIG. NO. C16  
 Material specification: A-36  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness: 501"  
 Thickness range this qualifies: 1.21"

**FILLER METAL**

Specification no. E-20 Classification: E70Y-1 F no. 6  
 Describe filler metal (if not covered by AWS specification): \_\_\_\_\_  
 Preheating step used? Yes  
 Filler metal diameter and trade name: .045" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 name and welding: 100% CO<sub>2</sub>

**VISUAL INSPECTION**

Appearance: Satisfactory Undercut: None Pitting porosity: None

**Guided Bent Test Results**

| Type      | Result     | Type | Result |
|-----------|------------|------|--------|
| SIDE BEND | NO DEFECTS |      |        |
| SIDE BEND | NO DEFECTS |      |        |

Test conducted by: KM TESTING LABORATORY Laboratory test no. DRF40-2265  
 per Paul J. Hart Test date: 3/25/2003

**Fillet Test Results**

Appearance: \_\_\_\_\_ Fillet size: \_\_\_\_\_  
 Fracture test root penetration: \_\_\_\_\_ Macro: \_\_\_\_\_  
 (Describe the location, nature and extent of any cracks or testing of the specimen.)  
 Test conducted by: \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per: \_\_\_\_\_ Test date: \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by: \_\_\_\_\_ Test no. \_\_\_\_\_  
 per: \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1 (.. 2001 )  
 year \_\_\_\_\_

Manufacturer or contractor: KANSAS RAIL CORP.  
 Authorized by: Mark Deigh  
 Date: 3-25-03

Firm D-4



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name JAMES MCCREDDY Identification no. 012  
 Welding process P.C.A.R. Manual                      Semi-automatic X Machine                       
 Position 1G FLAT  
 (Flat, horizontal, overhead or vertical - if vertical, state whether upward or downward)  
 In accordance with procedure specification no. Q1KRC-0129  
 Material specification A-56  
 Diameter and wall thickness of pipe; - otherwise, joint thickness 1.0"  
 Thickest range this qualifies UNLIMITED

**FILLED METAL**

Specification no. 5.20 Classification E701-1 F no. 6  
 Describe filler metal (if not covered by AWS specification)                       
 Is backing strip used?                      Yes                       
 Filler metal diameter and trade name 3/32" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 cored arc welding 100% CO2

**VISUAL INSPECTION**

Appearance Satisfactory Treatment None Piping porosity None

**Guided Bend Test Results**

| Type      | Result     | Type | Result |
|-----------|------------|------|--------|
| STOP BEND | NO DEFECTS |      |        |
| SIDE BEND | NO DEFECTS |      |        |

Test conducted by KALL TESTING LABORATORY Laboratory test no. 01FIG-2214  
 per [Signature] Test date 11/30/01

**Filet Test Results**

Appearance                      Filet size                       
 maximum root penetration                      Marcellite                       
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by                      Laboratory test no.                       
 per                      Test date                     

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by                      Test no.                       
 per                     

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1 ( 93 year ).

Manufacturer or contractor KASPRO RAIL CORPORATION  
 Authorized by [Signature]  
 Date 11-30-01

Form D-4



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|   |  |
|---|--|
|  <b>Professional Service Industries, Inc.</b><br><b>PITTSBURGH TESTING LABORATORY DIVISION</b><br><b>CERTIFICATE</b><br><b>OF</b><br><b>TEST AND APPROVAL OF WELDING PROCESS</b><br><b>AND</b><br><b>QUALIFICATION OF OPERATOR OF</b><br><b>WELDING EQUIPMENT</b>  |  |
| <p><i>PROFESSIONAL SERVICE INDUSTRIES, INC., PITTSBURGH TESTING LABORATORY DIVISION</i>, has witnessed the welding and testing of test specimens welded by</p> <p align="center">         Miner Railcar Services<br/>         2208 East Cherry Street<br/>         New Castle, Pennsylvania 16102       </p> <p align="center">         in accordance with<br/>         American Welding Society<br/>         Structural Welding Code D1.1-88<br/>         City of Pittsburgh ordinance No. 243<br/>         Series 1967 and Pennsylvania Department of Highways       </p> |  |
| Welding Operator <u>JAMES B. McCREADY</u> No. <u>012</u><br>Welding Process <u>Flux Cored (Innershield)</u>   | <p>This is to certify that the Welding Technique used in this test and described in SPECIFICATIONS FOR WELDING PROCESS No. AWS D1.1-88 and the results of the test given in PHYSICAL TEST REPORT No. PHY80580 complied with the requirements of the above code within the following limitations:</p> <p>         Maximum Plate or Wall Thickness <u>3/4"</u><br/>         Minimum Plate or Wall Thickness <u>Unlimited</u><br/>         Welding Positions <u>Flat Groove &amp; Fillet</u><br/>         Other Limitations <u>Fillet &amp; Groove</u> </p> |
| Operator Tested<br>No. <u>10592</u><br>Order No. <u>828-73122</u><br>File No. _____<br>Approved: <u>June 10, 1988</u>   | <p>Remarks <u>AKS A 5.20 E FIT-7 F. Ro. 5</u></p> <p align="center"> <b>PITTSBURGH TESTING LABORATORY DIVISION</b><br/>         By <u>J. Peter Martin</u><br/>         Director       </p>   |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



**Professional Service Industries, Inc.**  
**Pittsburgh Testing Laboratory Division**

858 Poplar Street  
 Pittsburgh, Pennsylvania 15223  
 412/922-4000

L7000.1  
 Rev. 7/88

| WELDER AND WELDING OPERATOR QUALIFICATION TEST REPORT  |   |   |   |
|--|---|---|---|
| Welder/Welder Operator's Name<br>JAMES B. MCCREADY   |   | Date Reported<br>June 27, 1988  | PTL Order No.<br>828-73122  |
| Welder Identification No.<br>012   |   | Date Tested<br>June 10, 1988  | Lab No.<br>PHY80580   |
| Client<br>Miner Railcar Services<br>2208 East Cherry Street<br>New Castle, PA 16102  |   | Welding Code (ID & year)<br>AWS D1.1-88   | Client Order No.  |
|  |   | Base Material Specification<br>A-36   |   |
| Process<br>GMAW  | Position<br>Vertical Groove   | Specimen<br><input checked="" type="checkbox"/> Plate <input type="checkbox"/> Pipe           | Joint<br><input checked="" type="checkbox"/> Groove <input type="checkbox"/> Fillet |
| Weld Progression<br><input checked="" type="checkbox"/> Up <input type="checkbox"/> CW <input type="checkbox"/> L to R<br><input type="checkbox"/> Down <input type="checkbox"/> CCW <input type="checkbox"/> R to L |   | Specimen Furnished<br><input checked="" type="checkbox"/> PTL <input type="checkbox"/> Others | Plate Thickness<br>3/8" Thick   |
| Welding Procedure No. _____ Rev. No. _____   |   | Specimens Machined<br><input checked="" type="checkbox"/> PTL <input type="checkbox"/> Others | Diameter & Wall Thickness   |
| Welding Procedure Data by: <input checked="" type="checkbox"/> PTL Witnessed (Tech): MIKE AZZARA   |   | Current Volts 18-21<br>AMPS: 125-150 <input type="checkbox"/> AC <input type="checkbox"/> DC  | Thickness Range Qualified<br>3/4" maximum   |
| Polarity<br><input type="checkbox"/> Direct <input checked="" type="checkbox"/> Reverse  |   |   |   |
| FILLER METAL   |   |   |   |
| Specification No. AWS A 5.18   | Classification E 70 S-3   | F. No. 6  |   |
| Backing A 36   | Diameter .045   | Trade Name  |   |
| Shielding <input checked="" type="checkbox"/> Gas: 75% Argon 25% CO <sub>2</sub> <del>XX PPMX</del> 15-20 CFH  |   |   |   |
| VISUAL INSPECTION (AWS ONLY)   |   |   |   |
| Appearance   | Undercut  | Piping Porosity   |   |
| VERTICAL GUIDED BEND TEST RESULTS  |   |   |   |
| TYPE   | RESULTS   | TYPE  | RESULTS   |
| FACE BEND  | Defect Under 1/8" - PASS  |   |   |
| ROOT BEND  | Defect Under 1/8" - PASS  |   |   |
| FILLET TEST RESULTS  |   |   |   |
| Weld Appearance<br><input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail  | Fillet Size<br>Leg: in. x in. <input type="checkbox"/> Concavity: in. <input type="checkbox"/> Convexity: in. | Macro Etch Test Results<br><input type="checkbox"/> Pass <input type="checkbox"/> Fail        |   |
| Fracture Test Results (Describe location, nature & size of any cracks or tearing of the specimen)  |   |   |   |
| RADIOGRAPHIC TEST RESULTS  |   |   |   |
| Film Identification  | Results   | Remarks   | Film Identification   |
|  |   |   |   |
| Tests Witnessed by:  |   |   |   |
| QUALIFICATION RESULTS  |   |   |   |
| The Welder/Operator identified above <input checked="" type="checkbox"/> DOES <input type="checkbox"/> DOES NOT meet the performance qualifications specified in the Code identified above for the variables stated. |   |   |   |
| Remarks & Report Distribution: (*) denotes data not provided or not applicable   |   |   | Submitted by<br><i>J. Peter Martin</i>  |

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



**Professional Service Industries, Inc.**  
**Pittsburgh Testing Laboratory Division**

650 Poplar Street  
 Pittsburgh, Pennsylvania 15203  
 412922-4002

Form  
 444.788

| WELDER AND WELDING OPERATOR QUALIFICATION TEST REPORT  |          |   |                     |  |  |
|--|----------|---|---------------------|--|--|
| Welder/Welder Operator's Name<br><b>JAMES B. McCREADY</b>  |          | Date Reported<br><b>June 27, 1988</b>   |                     | PTL Order No.<br><b>828-73122</b>  |  |
| Welder Identification No.<br><b>012</b>  |          | Date Tested<br><b>June 10, 1988</b>   |                     | Lab No.<br><b>PHY80560</b>   |  |
| Client<br><b>Miner Railcar Services<br/>220B East Cherry Street<br/>New Castle, PA 16102</b>   |          | Welding Code (ID & year)<br><b>AWS D1.1-88</b>  |                     | Client Order No.   |  |
|  |          | Base Material Specification<br><b>A-36 Group 1</b>  |                     | Specimen<br><input checked="" type="checkbox"/> Plate <input type="checkbox"/> L Pipe <input type="checkbox"/> Joint <b>BU2o</b><br><input checked="" type="checkbox"/> Groove <input type="checkbox"/> Fillet |  |
| Process<br><b>Flux Cored (Innershield)</b>   |          | Specimen Furnished<br><input checked="" type="checkbox"/> PTL <input type="checkbox"/> L Others         |                     | Plate Thickness<br><b>1/8"</b>   |  |
| Position<br><b>Flat Groove</b>   |          | Specimens Machined<br><input checked="" type="checkbox"/> PTL <input type="checkbox"/> Others           |                     | Diameter & Wall Thickness<br>---   |  |
| Weld Progression<br><input checked="" type="checkbox"/> Up <input type="checkbox"/> Down <input type="checkbox"/> CW <input type="checkbox"/> CCW <input type="checkbox"/> L to R <input type="checkbox"/> R to L    |          | Thickness Range Qualified<br><b>3/4" maximum</b>  |                     | Current<br>AMPS <b>125-250</b> <input type="checkbox"/> AC <input type="checkbox"/> DC Polarity<br><input type="checkbox"/> Direct <input checked="" type="checkbox"/> Reverse                                 |  |
| Welding Procedure No. <b>AWS D1.1-88</b> Rev. No. <b>0</b>   |          | Welding Procedure Date by: <input checked="" type="checkbox"/> PTL Witnessed (Tech): <b>Mike Azzara</b> |                     | <input type="checkbox"/> Others:   |  |
| FILLER METAL   |          |   |                     |  |  |
| Specification No. <b>AWS A 5.20</b>  |          | Classification <b>E 71 T-7</b>  |                     | F No. <b>6</b>   |  |
| Backing <b>A-36 Steel</b>  |          | Diameter  |                     | Trade Name   |  |
| Shielding <input type="checkbox"/> Gas:  |          | Flux:   |                     |  |  |
| VISUAL INSPECTION (AWS ONLY)   |          |   |                     |  |  |
| Appearance   |          | Undercut  |                     | Poring Porosity  |  |
| GUIDED BEND TEST RESULTS   |          |   |                     |  |  |
| Flat Groove  |          | RESULTS   |                     | TYPE   |  |
| FACE BEND  |          | Defect Under 1/8"-PASS  |                     |  |  |
| ROOT BEND  |          | Defect Under 1/8"-PASS  |                     |  |  |
| FILLET TEST RESULTS  |          |   |                     |  |  |
| Weld Appearance<br><input type="checkbox"/> Pass <input type="checkbox"/> Fail   |          | Fillet Size:<br>Leg: in x in.   |                     | Concavity: in <input type="checkbox"/> Convexity: in <input type="checkbox"/>  |  |
| Macro Etch Test Results<br><input type="checkbox"/> Pass <input type="checkbox"/> Fail   |          |   |                     |  |  |
| Fracture Test Results (Describe location, nature & size of any cracks or tearing of the specimen)  |          |   |                     |  |  |
| RADIOGRAPHIC TEST RESULTS  |          |   |                     |  |  |
| Film Identification  | Exposure | Remarks   | Film Identification | Results  | Remarks  |
|  |          |   |                     |  |  |
| Tests Witnessed by:  |          |   |                     |  |  |
| QUALIFICATION RESULTS  |          |   |                     |  |  |
| The Welder/Operator identified above <input checked="" type="checkbox"/> DOES <input type="checkbox"/> DOES NOT meet the performance qualifications specified in the Code identified above for the variables stated. |          |   |                     |  |  |
| Remarks & Report Distribution: ( * denotes data not provided or not applicable)  |          |   |                     |  |  |
|  |          |   |                     |  | Submitted by:<br><i>J. Peter Mearns</i><br>Manager |

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |  |
|--|--|
|  <b>Professional Service Industries, Inc.</b><br><b>PITTSBURGH TESTING LABORATORY DIVISION</b><br><b>CERTIFICATE</b><br><b>OF</b><br><b>TEST AND APPROVAL OF WELDING PROCESS</b><br><b>AND</b><br><b>QUALIFICATION OF OPERATOR OF</b><br><b>WELDING EQUIPMENT</b>   |  |
| <p><i>PROFESSIONAL SERVICE INDUSTRIES, INC., PITTSBURGH TESTING LABORATORY DIVISION</i>, has witnessed the welding and testing of test specimens welded by</p> <p align="center">         Miner Railcar Services<br/>         2206 East Cherry Street,<br/>         New Castle, Pennsylvania 16102       </p> <p align="center">         in accordance with<br/>         American Welding Society<br/>         Structural Welding Code D1.1-88<br/>         City of Pittsburgh Ordinance No. 243<br/>         Series 1962 and Pennsylvania Department of Highways       </p> |  |
| Welding Operator _____<br>Welding Process _____  | JAMES K. MCCREADY _____ No. <b>012</b><br>SMAW & GMAW  |
| <div style="border: 1px solid black; width: 150px; height: 100px; margin-bottom: 5px;"></div> Operator Tested  | <p>This is to certify that the Welding Technique used in this test and described in SPECIFICATIONS FOR WELDING PROCESS No. AWS D1.1-88 and the results of the test given in PHYSICAL TEST REPORT No. <u>PHY00580</u> complied with the requirements of the above code within the following limitations.</p> <p>         Maximum Plate or Wall Thickness _____ <u>3/4"</u> _____<br/>         Minimum Plate or Wall Thickness _____ <u>Unlimited</u> _____<br/>         Welding Positions _____ <u>Flat-Horizontal-Vertical</u> _____<br/>         Other Limitations _____ <u>Filet &amp; Groove</u> _____       </p> <p>         Remarks _____ <u>AWS A 5.1 F 7018 F, No. 4</u> _____<br/>         _____ <u>AWS A 5.18 E 705-3 T, No. 6</u> _____       </p> |
| No. _____ <u>10591</u> _____<br>Order No. _____ <u>828-73122</u> _____<br>File No. _____ _____<br>Approved _____ <u>June 12, 1988</u> _____  | <b>PITTSBURGH TESTING LABORATORY DIVISION</b><br><br><br>Director  |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**PSI** Professional Service Industries, Inc.  
 Pittsburgh Testing Laboratory Division

850 Foster Street  
 Pittsburgh, Pennsylvania 15220  
 412/522-4000

| WELDER AND WELDER OPERATOR QUALIFICATION TEST REPORT   |                          |  |   |   |                              |
|--|--------------------------|--|---|---|------------------------------|
| Welder/Welder Operator's Name<br>JAMES B. McCreedy   |                          | Date Reported<br>June 27, 1988   | PTL Order No.<br>828-73122  |   |                              |
| Welder Identification No.<br>012   |                          | Date Tested<br>June 10, 1988   | Lab No.<br>PHY80580   |   |                              |
| Client<br>Miner Railcar Services<br>2208 East Cherry Street<br>New Castle, PA 16102  |                          | Welding Code (ID & year)<br>AWS D1.1-88  |   | Base Material Specification<br>A-36   |                              |
|  |                          | Specimen<br><input checked="" type="checkbox"/> Plate <input type="checkbox"/> Pipe  | Joint<br><input checked="" type="checkbox"/> Groove <input type="checkbox"/> Fillet |   | Plate Thickness<br>3/8"      |
| Process<br>Shielded Metal Arc Welding  |                          | Specimen Furnished<br><input checked="" type="checkbox"/> PTL <input type="checkbox"/> Others                                    |   | Diameter & Wall Thickness<br>—  |                              |
| Position<br>Vertical Groove  |                          | Specimens Machined<br><input checked="" type="checkbox"/> PTL <input type="checkbox"/> Others                                    |   | Thickness Range Qualified<br>3/4" Maximum   |                              |
| Weld Progression<br><input checked="" type="checkbox"/> Up <input type="checkbox"/> Down <input type="checkbox"/> CW <input type="checkbox"/> CCW <input type="checkbox"/> L to R <input type="checkbox"/> R to L  |                          | Current<br>AMPS: 90-200 <input type="checkbox"/> AC <input checked="" type="checkbox"/> DC                                       |   | Polarity<br><input type="checkbox"/> Direct <input checked="" type="checkbox"/> Reverse |                              |
| Welding Procedure AWS<br>No. D1.1-88 Rev. No. —  |                          | Welding Procedure Data by: <input checked="" type="checkbox"/> PTL Witnessed (Tech): Mike Azzara <input type="checkbox"/> Others |   |   |                              |
| FILLER METAL   |                          |  |   |   |                              |
| Specification No. AWS A5.1   |                          | Classification E7018   |   | F.No. 4   |                              |
| Backing A-36 Steel   |                          | Diameter 1/8"  |   | Trade Name  |                              |
| Shielding <input checked="" type="checkbox"/> Gas <input type="checkbox"/> Flux  |                          |  |   |   |                              |
| VISUAL INSPECTION (AWS ONLY)   |                          |  |   |   |                              |
| Appearance   |                          | Undercut   |   | Spaying Porosity  |                              |
| VERTICAL GUIDED BEND TEST RESULTS  |                          |  |   |   |                              |
| TYPE   | RESULTS                  | TYPE   | RESULTS   |   |                              |
| SIDE BEND  | Defect Under 1/8" - PASS |  |   |   |                              |
| SIDE BEND  | Defect Under 1/8" - PASS |  |   |   |                              |
| FILLET TEST RESULTS  |                          |  |   |   |                              |
| Weld Appearance<br><input type="checkbox"/> Pass <input type="checkbox"/> Fail   |                          | Fillet Size<br>Leg: in. s. m. <input type="checkbox"/> Convexity: in. <input type="checkbox"/> Concavity: in.                    |   |   |                              |
| Macro Etch Test Results<br><input type="checkbox"/> Pass <input type="checkbox"/> Fail   |                          |  |   |   |                              |
| Fracture Test Results (Describe location, nature & size of any cracks or tearing of the specimen)  |                          |  |   |   |                              |
| RADIOGRAPHIC TEST RESULTS  |                          |  |   |   |                              |
| Film Identification  | Refrills                 | Remarks  | Film Identification   | Results   | Remarks                      |
|  |                          |  |   |   |                              |
| Tests Witnessed by:  |                          |  |   |   |                              |
| QUALIFICATION RESULTS  |                          |  |   |   |                              |
| The Welder/Operator identified above <input checked="" type="checkbox"/> DOES <input type="checkbox"/> DOES NOT meet the performance qualifications specified in the Code identified above for the variables stated. CITY OF PCH. ORDINANCE No. 243 & PA DEPT. OF HIGHWAYS |                          |  |   |   |                              |
| Remarks & Report Distribution (* denotes data not provided or not applicable)  |                          |  |   |   | Submitted By<br>Peter Martin |



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name: JAMES B. McCAADY Identification no. 012  
 Welding process: M.C.A.W. Manual  Semi-automatic  Machine   
 Position: 3G Vertical Up

(Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification no. Prequalified joint fig. no. C1B  
 Material specification: A-36  
 Diameter and wall thickness (if pipe) otherwise, joint thickness: 1"  
 Thickness range (filler metal): OMITTED

**FILLER METAL**  
 Specification no. 5, 20 Classification: E 7018 Filler: 0  
 Describe filler metal (if not covered by AWS specification):

Is backing strip used? Yes  
 Filler metal diameter and trade name: 0.45" Lincoln Flux for submerged arc or gas for gas metal arc or flux cored arc welding: 100% G62

**VISUAL INSPECTION**  
 Appearance: Satisfactory Undercut: None Piping porosity: None

**Guided Bend Test Results**

| Type             | Result            | Type | Result |
|------------------|-------------------|------|--------|
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |

Test conducted by: KATT TESTING LABORATORY Laboratory test no. 95T30-1657  
 per: [Signature] Test date: 10/10/95

**Filler Test Results**

Appearance: \_\_\_\_\_ Fillet size: \_\_\_\_\_  
 Fracture test root penetration: \_\_\_\_\_ Warpage: \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by: \_\_\_\_\_ Laboratory test no.: \_\_\_\_\_  
 per: \_\_\_\_\_ Test date: \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by: \_\_\_\_\_ Test no.: \_\_\_\_\_  
 per: \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1, ( 93 ) year.

Manufacturer or contractor: [Signature]  
 Authorized by: [Signature]  
 Date: 10-10-95

Form D-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name JAMES MCCREARY Identification no. 012  
 Welding process E.C.A.W. - Manual      - Semiautomatic X - Machine       
 Position 3G Vertical Up  
 (Flat, horizontal, overhead or vertical - if vertical, state whether upward or downward)  
 In accordance with procedure specification no. OSKRC-0136  
 Material specification A-36  
 Diameter and wall thickness (if pipe) - otherwise, joint thickness 1.0  
 Thickness range this qualifies: UNLIMITED

**FILLER METAL**

Specification no. 5.29 Classification E11T-1 F no. 6  
 Describe filler metal (if not covered by AWS specification)       
 Is backing strip used? Yes  
 Filler metal diameter and trade name 1/16" ES20 Flux for submerged arc or gas for gas metal arc or flux cored arc welding 100% CO2

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bend Test Results**

| Type      | Result     | Type | Result |
|-----------|------------|------|--------|
| SIDE BEND | NO DEFECTS |      |        |
| SIDE BEND | NO DEFECTS |      |        |

Test conducted by RAIL TESTING LABORATORY Laboratory test no. OSR3C-2475  
 per [Signature] Test date: 12/29/2005

**Fillet Test Results**

Appearance      Fillet size       
 Fracture test: root penetration      Macroetch       
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by      Laboratory test no.       
 per      Test date     

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |
|                     |         |         |                     |         |         |

Test witnessed by      Test no.       
 per     

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1, (2001 year).

Manufacturer or contractor ES&S RAIL CORP.  
 Authorized by [Signature]  
 Date 12-29-05

Form D-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name: JAMES MCCREARY Identification no: 012  
 Welding process: E.C.A.W. Manual          Semi-automatic X Machine           
 Position: 4G OVERHEAD  
 (Flat, horizontal), overhead or vertical          If vertical, state whether upward or downward:  
 In accordance with procedure specification no: PROQUALIFIED JOINT, FIG. NO. 410  
 Material specification: A 36  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness: 5.00"  
 Thickness range thickness qualifies: 1.00"

**FILLER METAL**

Specification no: 5.20 Class position: GTN-1 F no:          G           
 Describe filler metal (if not covered by AWS specification):           
 Is backing strip used? Yes  
 Filler metal diameter and trade name: 0.045" LINCOLN Flux for submerged arc or gas for gas metal arc or flux  
 coated arc welding: 100% O<sub>2</sub>

**VISUAL INSPECTION**

Appearance: Satisfactory Undercut: None Piping porosity: None

**Guided Bend Test Results**

| Type      | Result     | Type | Result |
|-----------|------------|------|--------|
| SIDE BEND | NO DEFECTS |      |        |
| SIDE BEND | NO DEFECTS |      |        |

Test conducted by: RATI TESTING LABORATORY Laboratory test no: UVF4G 2266  
 per: Paul J. Hart Test date: 8/25/2003

**Filet Test Results**

Appearance:          Fillet size:           
 Fracture test root penetration:          Maraging:           
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by:          Laboratory test no:           
 per:          Test date:         

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |
|                     |         |         |                     |         |         |

Test witnessed by:          Test no:           
 per:         

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D1.1, ( 2001 ).  
 year

Manufacturer or contractor: RATI CORP.  
 Authorized by:           
 Date: 8-25-03

Form D-4



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

General Inquiry: 800-368-7777 • TUV Rheinland, Inc. • 10000 Lakeside Blvd., Dallas, TX 75243-2198  
 TUV Rheinland

Reported To: Mr. Dave Stahl  
 Kasegro Rail Corp  
 121 Runzie Road  
 New Castle, PA 16102  
 Date: April 19, 2016  
 P/O Number: QAF  
 Report Number: 453841-1  
 Project: Welder Qualification

**AWS - WELDER, WELDING OPERATOR OR TACK WELDER QUALIFICATION TEST RECORD**

Name: John Heals  
 Welding Code: AWS D15.1/D15.1M-2012  
 Type of Welder: Semi Automatic  
 Identification Number: 841  
 Welding Procedure Specification No.: F-001  
 Rev: 0  
 Date: 4/13/2016

| Variables                  | Record Actual Values | Qualification Range            |
|----------------------------|----------------------|--------------------------------|
| Process Type               | FCAW                 | FCAW                           |
| Electric (single/multiple) | Single               | Single                         |
| Current/Polarity           | DCe2                 | DCe2                           |
| Position                   | 3G                   | Flat, Vertical Fillet & Groove |
| Weld Progression           | Upbill               | Upbill                         |
| Backing (With or Without)  | With                 | With                           |
| Material/Spec              | A36 10 A36           | All AWS Prequalified Material  |
| Base Metal                 |                      |                                |
| Thickness (Plate)          |                      |                                |
| Groove                     | 1"                   | 1/8" to Unlimited              |
| Fillet                     | N/A                  | 1/8" to Unlimited              |
| Thickness (Pipe/Tube)      |                      |                                |
| Groove                     | N/A                  | 1/8" to Unlimited              |
| Fillet                     | N/A                  | 1/8" to Unlimited              |
| Diameter (Pipe)            |                      |                                |
| Groove                     | N/A                  | 24" OD and Over                |
| Fillet                     | N/A                  | Any Diameter                   |
| Filler Metal               |                      |                                |
| Spec. No.                  | A5.20                |                                |
| Class                      | E71T-1               |                                |
| E-Num                      | 6                    | F6                             |
| Gas/Flux Type              | 100% CO <sub>2</sub> |                                |
| Other                      | N/A                  | N/A                            |

VISUAL INSPECTION Acceptable:  Yes  No Date coupon welded: 4/13/2016

Guided Bend Test Results

| Type      | Result | Type | Result |
|-----------|--------|------|--------|
| Side Bend | PASS   |      |        |
| Side Bend | PASS   |      |        |

Flillet Test Results  
 Appearance: N/A  
 Fillet Size: Macroscopic  
 Procedure Test Root: Macroscopic  
 (Describe the location, nature, and size of any crack or tearing of the specimen):

Macroscopic Test Results

| Film ID | Results | Remarks | Film ID | Results | Remarks |
|---------|---------|---------|---------|---------|---------|
| N/A     |         |         |         |         |         |

Film evaluated by: N/A  
 Mechanical tests conducted by: Tom Plese/Rich Postman Laboratory Test Number: 151996  
 Welding supervised by: Mark Ziegler Company: TUV Rheinland Industrial Solutions

The welder identified above  PASSES,  FAILS based on the requirements of the code listed above.

Reviewer's Signature: *[Signature]* Date: 4/20/2016  
 Client Approval: *[Signature]* Date: 4/19/2016

TUV RHEINLAND INDUSTRIAL SOLUTIONS, INC.  
 These test results report the findings at the time of inspection and shall be reviewed by the client for compliance to the project requirements. Due to the limitations of destructive testing in evaluating all of the factors that determine the overall component quality, no guarantee is made or liability assumed by TUV Rheinland Industrial Solutions, Inc. ("TRIS") for the component quality or acceptability.  
 QAF 03281000 Rev. 04/20/2015  
 Q01 EXP. 04/2017 AWS Welder Qualification Page 1 of 1



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD**

Welder or welding operator's name JOHN NOVAKOVICH ITT Identification no. 373  
 Welding process F.C.A.W. Manual \_\_\_\_\_ Semiautomatic X Machine \_\_\_\_\_  
 Position 3C Vertical Up  
 (Flat, horizontal, overhead or vertical — If vertical, state whether upward or downward)  
 In accordance with procedure specification no. KRC-C128  
 Material specification A-36  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness 1.0"  
 Thickness range this qualifies UNLIMITED

**FILLER METAL**

Specification no. 5.20 Classification E/IT-1 F no. 6  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name 1/16" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 cored arc welding 100% CO2

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bend Test Results**

| Type      | Result     | Type | Result |
|-----------|------------|------|--------|
| SIDE BEND | NO DEFECTS |      |        |
| SIDE BEND | NO DEFECTS |      |        |

Test conducted by KATH TESTING LABORATORY Laboratory test no. 03E9G-2274  
 per [Signature] Test date 10/24/2013

**Filet Test Results**

Appearance \_\_\_\_\_ Filet size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Marcostich \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the spooliner.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1, ( 2001 ),  
 year

Manufacturer or contractor KASCRO RAIL CORP.  
 Authorized by [Signature]  
 Date 10-24-13

Form D-4



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Kasgro Rail Corp**

121 Rundle Road  
 New Castle, PA 16102

**AWS - WELDER PERFORMANCE QUALIFICATION TEST RECORD**

Name: Josh Clyde Welding Code: AWS D15.1 2013  
 Type of Welder: Semi Automatic Identification Number: 843  
 Welding Procedure Specification No. F-001 Rev: 0 Date: 9/5/2017

| Variables                   | Record Actual Values |              | Qualification Range                 |
|-----------------------------|----------------------|--------------|-------------------------------------|
| Process/Type                | FCAW                 |              | FCAW                                |
| Electrode (single/multiple) | Single               |              | Single                              |
| Current/Polarity            | DCEP                 |              |                                     |
| Position                    | 3G                   |              | Flat and Vertical Fillet and Groove |
| Weld Progression            | Uphill               |              | Uphill                              |
| Backing (With or Without)   | With                 |              | Backing Only                        |
| Material/Spec               | A572 Gr50            | to A572 Gr50 | All AWS Prequalified Material       |
| Base Metal                  |                      |              |                                     |
| Thickness: (Plate)          |                      |              |                                     |
| Groove                      | 1"                   |              | 1/8" to Unlimited                   |
| Fillet                      | N/A                  |              | 1/8" to Unlimited                   |
| Thickness: (Pipe/tube)      |                      |              |                                     |
| Groove                      | N/A                  |              | 1/8" to Unlimited                   |
| Fillet                      | N/A                  |              | 1/8" to Unlimited                   |
| Diameter: (Pipe)            |                      |              |                                     |
| Groove                      | N/A                  |              | Greater Than 24" OD                 |
| Fillet                      | N/A                  |              | Any Diameter                        |
| Filler Metal                |                      |              |                                     |
| Spec. No.                   | A520                 |              |                                     |
| Class                       | E71T-1               |              |                                     |
| F-No.                       | 6                    |              | F6                                  |
| Gas/Flux Type               | C/C2                 |              |                                     |
| Other                       | N/A                  |              | N/A                                 |

VISUAL INSPECTION Acceptable:  Yes  No Date coupon welded: 9/5/2017

**Guided Bend Test Results**

| Type      | Result | Type | Result |
|-----------|--------|------|--------|
| Side Bend | PASS   |      |        |
| Side Bend | PASS   |      |        |

**Fillet Test Results**

Appearance: N/A Fillet Size:

Fracture Test Root: Macroetch:

(Describe the location, nature, and size of any crack or tearing of the specimen):

**Radiographic Test Results**

| Film ID | Results | Remarks | Film ID | Results | Remarks |
|---------|---------|---------|---------|---------|---------|
| N/A     |         |         |         |         |         |

Film evaluated by: N/A Company:

Mechanical tests conducted by: Tom Pleso/Rich Portman Laboratory Test Number: 154187

Welding supervised by: SCOTT NIBBY Company: TLV Rheinland Industrial Solutions

The welder identified above  PASSES  FAILS based on the requirements of the code listed above.

Reviewer's Signature: [Signature] Date: 9/12/17

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in conformance with the requirements of Section II of AWS D15.1 ( 2012 ) Railroad Welding Specification for Cars and Locomotives.

Manufacturer or Contractor Kasgro Specialty Railcar

Authorized By Mark Zeigler Date: September 12, 2017



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Pittsburgh, PA – Birmingham, AL  
 NDE • MECHANICAL LAB • ENVIRONMENTAL [www.tuvris.com](http://www.tuvris.com)



**GUIDED BEND TEST**

Mr. Mark Zeigler  
 Kaspro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 463668A Page 1 of 1  
 PO #: K17-2045  
 Lab #: 154187  
 Date Received: 9/07/2017  
 Date Tested: 9/08/2017  
 Work Order: 463668

Date: September 12, 2017

PQR #: N/A Welder ID: Josh Clyde - 843  
 Process: FCAW Position: JG  
 Base Metal(s): A572 Gr50 to A572 Gr50 Coupon Shape: 1" Plate

| Test # | Orientation | Result | Test # | Orientation | Result |
|--------|-------------|--------|--------|-------------|--------|
| 1      | Side        | PASS   |        |             |        |
| 2      | Side        | PASS   |        |             |        |

|  |  |
|--|--|
| Equipment Used:                                |  |
| <input type="checkbox"/> Wrap Around Bend Jig: | <input checked="" type="checkbox"/> Guided Fixture                                     |
| Pin Diameter: 1.5"                             |  |
| Specification: AWS D15.1                       | <input checked="" type="checkbox"/> Conforming <input type="checkbox"/> Non-Conforming |
| Test Witness By:                               |  |
| Test Technician: Tom Plese                     |  |

Respectfully submitted,  
  
 Tim Clark  
 Laboratory Manager  
 TÜV Rheinland Industrial Solutions, Inc.

Testing was performed in accordance with applicable industry practices as well as the test methods referenced. TÜV Rheinland Industrial Solutions, Inc. has no direct knowledge of the origin, sampling practices, use, condition, of the coupons, and makes no claim as to the suitability or actual use of the material. The manufacturer's specifications apply to those materials. This report shall not be reproduced, except in full, without the written consent of TÜV Rheinland Industrial Solutions, Inc.



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name KEITH PETERSON Identification no. 300  
 Welding process FCAW Manual                      Semiautomatic X Machine                       
 Position 3G Vertical Up  
 (Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification no. Q5KRC-0135  
 Material specification A-36  
 Diameter and wall thickness (if pipe) otherwise, joint thickness                       
 Thickness range this qualifies UNLIMITED

**FILLER METAL**

Specification no. 5.29 Classification E111C-1 F no. 6  
 Describe filler metal (if not covered by AWS specification)                       
 Is backing strip used? Yes  
 Filler metal diameter and trade name 1/16" ER60 Flux for submerged arc or gas for gas metal arc or flux cored arc welding 100% CO<sub>2</sub>

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bent Test Results**

| Type       | Result            | Type | Result |
|------------|-------------------|------|--------|
| SLIDE BEND | NO DEFECTS        |      |        |
| SLIDE BEND | 1/8" tear/FISSURE |      |        |

Test conducted by RAIL TESTING LABORATORY Laboratory test no. 06139-2493  
 per [Signature] Test date 1/09/2006

**Fillet Test Results**

Appearance                      Fillet size                       
 Fracture test root penetration                      Marcbetch                       
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by                      Laboratory test no.                       
 per                      Test date                     

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by                      Test no.                       
 per                     

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1, ( 2001 year ).

Manufacturer or contractor LAGGED RAIL CORP.  
 Authorized by [Signature]  
 Date 1-7-06

Form D-4



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |  |  |
|--|--|--|
| WELDING QUALIFICATION<br>BY<br><i>Kail Testing Laboratory</i><br>RD 5 BOX 116 SHADY GROVE NEW CASTLE, PA - 72424-3104<br>TESTED BY<br><b>KEITH PETERSON</b> S.S.J. [REDACTED]-9634<br>HAS MET THE REQUIREMENTS<br>OF AWS D15.1(93) RAILROAD WELDING SPEC/FCM<br>BASE METAL <u>A-36</u> FILLER <u>E71T-1</u> 1/16" POS. <u>3G UP</u><br>DATE OF TEST <u>11/13/2000</u> EXPIRATION <u>INDEFINITE</u><br>NUMBER <u>2DF3G-2090</u> SIGNED <i>A. J. Kail</i><br>WELDING SUPERVISOR  |  |  |
| <p align="center"> <b>ificate</b><br/>         of<br/> <b>Tests and Qualifications</b><br/>         of<br/> <b>Welding Operator</b><br/>         THE WELDING DIVISION OF<br/> <b>Kail Testing Laboratory, Inc.</b><br/>         HAS PREPARED AND TESTED<br/>         THE SPECIMENS WELDED BY<br/> <u>KEITH PETERSON</u><br/>         WELDING PERFORMED UNDER<br/>         THE SUPERVISION OF<br/> <u>KASCRO RAIL CORPORATION</u><br/>         IN ACCORDANCE WITH<br/>         F.C.A.W.<br/> <u>AWS D15.1(93) RAILROAD WELDING SPECIFICATION</u><br/> <u>3G VERTICAL, UP 1.0" GROOVE WELD TEST</u> </p> |  |  |
| Date of<br>Qualification<br><u>11/13/2000</u>  | Date of<br>Expiration<br><u>INDEFINITE</u><br>AS PER CODE. |  |
| Lab. No. <u>2DF3G-2090</u><br>E71T-1<br>1/16"  | <i>A. J. Kail</i><br>Authorized Signature                  |  |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD**

Welder or welding operator's name KEITH PETERSON Identification no. 300  
 Welding process T-C.P.W. Manual                      Semi-automatic X Machine                       
 Position 3G Vertical, Up  
 (Flat, horizontal, overhead or vertical. If vertical, state whether upward or downward)  
 In accordance with procedure specification no.                      Prequalified joint fig. no. C1B  
 Material specification A-36  
 Diameter and wall thickness (if pipe) otherwise, joint thickness 1.0"  
 Thickness range this qualifies UNLIMITED  
**FILLER METAL**  
 Specification no. E-20 Classification E71T-1 F no. 6  
 Describe filler metal (if not covered by AWS specification)                       
 Is backing strip used? Yes  
 Filler metal diameter and trade name 1/16" Lincoln Flux for submerged arc or gas for gas metal arc or flux cored arc welding 100% CO<sub>2</sub>

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bend Test Results**

| Type      | Result            | Type | Result |
|-----------|-------------------|------|--------|
| SIDE BEND | NO DEFECTS        |      |        |
| SIDE BEND | 1/32" tear/PASSRD |      |        |

Test conducted by RALPH TESTING LABORATORY Laboratory test no. 2013G-2090  
 per [Signature] Test date 11/13/2000

**Filler Test Results**

Appearance                      Filler size                       
 Fracture test root penetration                      Macroetch                       
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by                      Laboratory test no.                       
 per                      Test date                     

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |
|                     |         |         |                     |         |         |

Test witnessed by                      Test no.                       
 per                     

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1, ( 93 )  
 year

Manufacturer or contractor K&S CORP. RADIATION  
 Authorized by [Signature]  
 Date 11/13/2000

Form B-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD**

Welder or welding operator's name: KEITH PHIPPS Identification no. 300  
 Welding process: S.M.A.W. Manual  Semiautomatic \_\_\_\_\_ Machine \_\_\_\_\_  
 Position: 4G Overhead  
 (Flat, horizontal, overhead or vertical – If vertical, state whether upward or downward)  
 In accordance with procedure specification no. PROCESSED JOINT Fig. no. C1B  
 Material specification: A-36  
 Diameter and wall thickness (if pipe) – otherwise, joint thickness: .375"  
 Thickness range for qualifier: .730"

**FILLER METAL**

Specification no. 5.1 & 5.5 Classification: E-7018 F no. 4  
 Describe filler metal (if not covered by AWS specification): \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name: 1/8" Minolta Flux for submerged arc or gas for gas metal arc or flux cored arc welding: \_\_\_\_\_

**VISUAL INSPECTION**

Appearance: Satisfactory Undercut: None Piping porosity: None

**Guided Bend Test Results**

| Type      | Result             | Type | Result |
|-----------|--------------------|------|--------|
| FACE BEND | Minor check/PASSED |      |        |
| ROOT BEND | 1/32" bead/PASSED  |      |        |

Test conducted by: RAIL WELDING LABORATORY Laboratory test no. 02E4G-1757  
 per: [Signature] Test date: 8/25/2003

**Fillet Test Results**

Appearance: \_\_\_\_\_ Fillet size: \_\_\_\_\_  
 Fracture test root penetration: \_\_\_\_\_ Macroetch: \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by: \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per: \_\_\_\_\_ Test date: \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by: \_\_\_\_\_ Test no. \_\_\_\_\_  
 per: \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1, (\_\_\_\_ 2001 \_\_\_\_), year \_\_\_\_\_.

Manufacturer or contractor: KANSAS RAIL CORP.  
 Authorized by: [Signature]  
 Date: 8-25-03

Form D-4



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operators name LEONARD MOSE Identification no. 815  
 Welding process F.C.A.M. Manual  Semiautomatic  Machine   
 Position 4C Overhead  
 (Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification no. Prequalified joint fig. no. (11)  
 Material specification 2-36  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness .750"  
 Thickness range this qualifies .5"

**FILLER METAL**

Specification no. 5.20 Classification E 71T-1 Fno. G  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name .045" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 coated arc welding 100% CO<sub>2</sub>

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bend Test Results**

| Type      | Result            | Type | Result |
|-----------|-------------------|------|--------|
| SIDE BEND | NO DEFECTS        |      |        |
| SIDE BEND | 1/32" tear/PASSED |      |        |

Test conducted by KAIL TESTING LABORATORY Laboratory test no. 05F40-2447  
 per [Signature] Test date 3/18/2005

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Marcbetch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1, ( 2001 )  
 year

Manufacturer or contractor KANSAS RAIL CORPORATION  
 Authorized by [Signature]  
 Date 3-18-2005



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

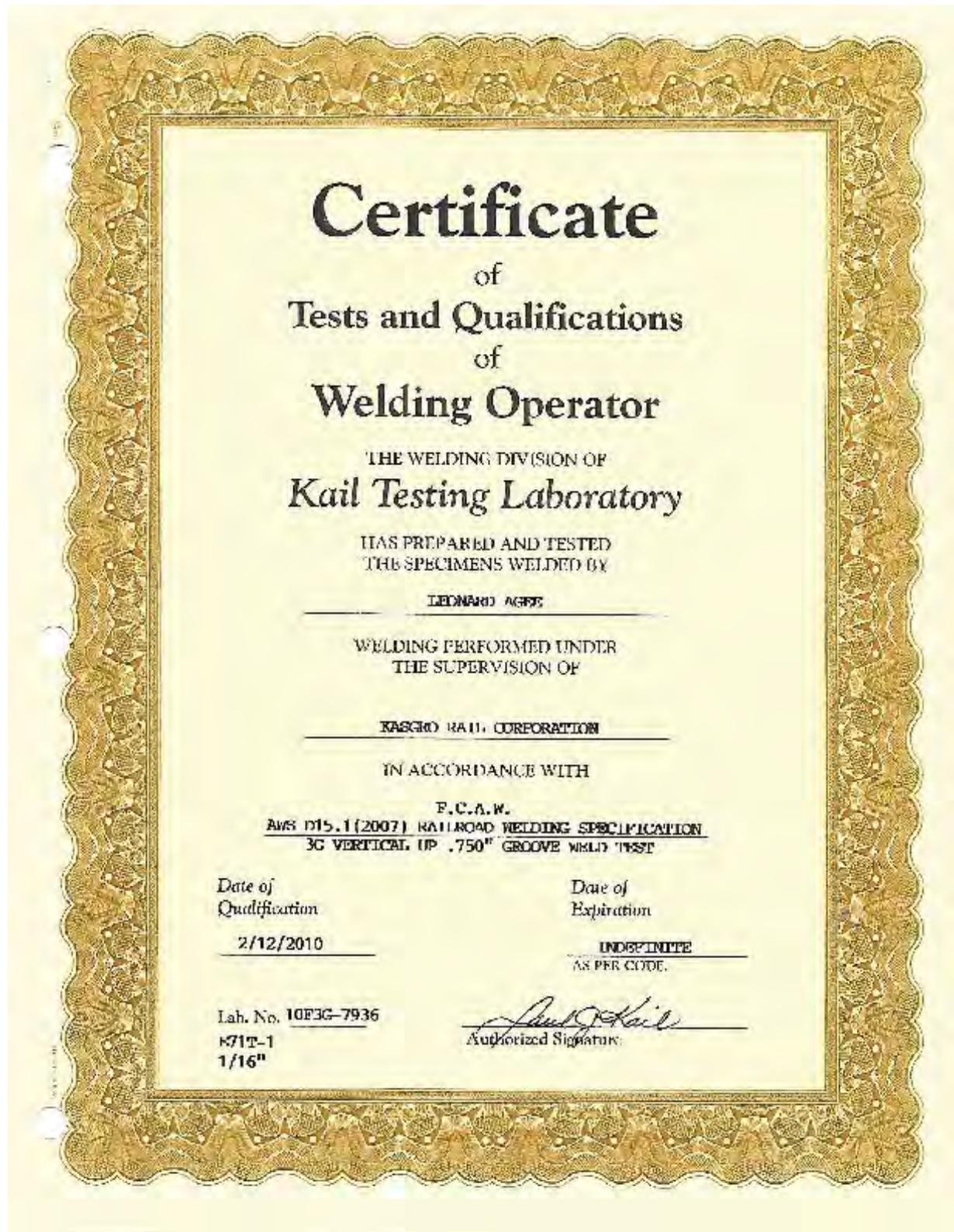






Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project







Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD**

Welder or welding operator's name MARK PARKER Identification no. 148  
 Welding process GTAW Manual  Semiautomatic  Machine   
 Position 4C Overhead  
 (Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification no. Prequalified joint fig. no. 01E  
 Material specification A-36  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness .375"  
 Thickness range this qualifies .750"

**FILLER METAL**

Specification no. E-20 Classification E7018 F no. 6  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name 1/16" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 cored arc welding 100% CO<sub>2</sub>

**VISUAL INSPECTION**

Appearance: Satisfactory Undercut None Piping porosity None

**Guided Bend Test Results**

| Type      | Result            | Type | Result |
|-----------|-------------------|------|--------|
| FACE BEND | NO DEFECTS        |      |        |
| ROOT BEND | 1/32" back/TASSED |      |        |

Test conducted by RAV TESTING LABORATORY Laboratory test no. U3F4G-2280  
 per [Signature] Test date 12/07/2003

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Matched \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1, ( 2001 ),  
 year

Manufacturer or contractor RASCRO RAIL CORP.  
 Authorized by [Signature]  
 Date 12-2-03

Form D-4



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name MARK BARRER Identification no. 148  
 Welding process G.M.A.W. Manual  Semi-automatic  Machine \_\_\_\_\_  
 Position 3G VERTICAL Up  
 (Flat, horizontal overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification no. Procedure # 01KRC-0131  
 Material specification 6061  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness .500"  
 Thickness range (if plates) 1/4"

**FILLER METAL**

Specification no. 5.10 Classification 5356 Filler 6  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? No  
 Filler metal diameter and trade name 3/64" LINCOLN Flux for submerged arc or gas for gas metal arc or flux  
 cord and welding 100% Argon

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Hoop porosity None

**Guided Bend Test Results**

| Type      | Result            | Type | Result |
|-----------|-------------------|------|--------|
| SIDE BEND | 1/32" Tear/PASSED |      |        |
| SIDE BEND | 3/64" Tear/PASSED |      |        |

Test witnessed by KALK TESTING LABORATORY Laboratory test no. 01MRG-1435  
 per Scott Hill Test date 10/16/01

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Max depth \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D16.1, [ 93 ] year.

Manufacturer or contractor KASPRO DATA CORP.  
 Authorized by Mark Barrer  
 Date 10-16-01

Form B-4



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name MARK R. BARPER Identification no. 148  
Welding process GTAW Manual  Semiautomatic  Machine   
Position 3G Vertical Up  
(Flat, horizontal, overhead or vertical. — if vertical, state whether upward or downward)  
In accordance with procedure specification no. Prequalified joint file, CO, CCB  
Material specification A-306  
Diameter and wall thickness (if plate) — otherwise joint thickness .500"  
Thickness range thickness 1.0"

**FILLER METAL**

Specification no. 5.20 Classification E70T-1 F no. 6  
Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
Is backing strip used? Yes  
Filler metal, diameter and trade name 1/16" E70T-1 Flux for submerged arc or gas for gas metal arc or flux  
some arc welding 100% CO2

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bent Test Results**

| Type             | Result                   | Type | Result |
|------------------|--------------------------|------|--------|
| <u>SIDE BEND</u> | <u>7/64" tear/PASSED</u> |      |        |
| <u>SIDE BEND</u> | <u>NO DEFECTS</u>        |      |        |

Test run checked by KAL YESTINE LABORATORY Laboratory test no. 99P30 1659  
per Paul J. Kal Test date 11/12/99

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
Fracture test root penetration \_\_\_\_\_ Marking \_\_\_\_\_  
(Describe the location, nature, and size of any cracks or tearing of the specimen.)  
Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1, (\_\_\_\_) 93 year \_\_\_\_\_

Manufacturer or contractor Castro Rail Corp.  
Authorized by Mark Zayh  
Date 11-12-99

Form D-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project







Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD**

Welder or welding operator's name MARZ HAKKER Identification no. 148  
 Welding process E.C.A.W. Manual  Semiautomatic  Machine  
 Position 31 Vertical Up  
 (Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification no. Prequalified joint fig. no. C1B  
 Material specification A-316  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness 0"  
 Thickness range (if applicable) UNLIMITED

**FILLER METAL**

Specification no. E-20 Classification E71T-1 F no. 6  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name 1/16" Lincoln Flux for submerged arc or gas for gas metal arc or flux cored arc welding 100% CO2

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bend Test Results**

| Type      | Result             | Type | Result |
|-----------|--------------------|------|--------|
| SIDE BEND | NO DEFECTS         |      |        |
| SIDE BEND | Minor check/PASSED |      |        |

Test conducted by KATE JUSTINE LABORATORY Laboratory test no. 20183-2097  
 per [Signature] Test date 11/13/2008

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Marcobitch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.3, ( 93 year ),

Manufacturer or contractor KASPRO RAIL CORP.  
 Authorized by [Signature]  
 Date 11-13-08

Form D-1



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Flint, MI – Pittsburgh, PA – Birmingham, AL – Decatur, AL

NDE + MECHANICAL LAB

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Reported To: Mr. Dave Stahl  
 Kasgro Rail Corp  
 121 Kundle Road  
 New Castle, PA 16102

Date: December 11, 2014  
 P/O Number: QAF  
 Report Number: I  
 Project: Welder Qualification

**AWS - WELDER, WELDING OPERATOR OR TACK WELDER QUALIFICATION TEST RECORD**

Name: Matthew Smith Welding Code: AWS D15.1D15.1M-2012  
 Type of Welder: Semi Automatic Identification Number: 834  
 Welding Procedure Specification No. F-001 Rev: 0 Date: 12-11-14

| Variables                   | Record Actual Values |        | Qualification Range                        |
|-----------------------------|----------------------|--------|--|
| Process/Type                | FCAW                 |        | FCAW                                       |
| Electrode (single/multiple) | Single               |        | Single                                     |
| Current/Polarity            | DC/EP                |        | Flat, Vertical, Horizontal Fillet & Groove |
| Position                    | 3G                   |        | Up Hill                                    |
| Weld Progression            | Up Hill              |        | With                                       |
| Backing (With or Without)   | With                 |        | All AWS Prequalified Material              |
| Material/Spec               | A36                  | to A36 |  |
| Base Metal                  |                      |        |  |
| Thickness: (Plate)          |                      |        |  |
| Groove                      | 2"                   |        | 1/8" to unlimited                          |
| Fillet                      | N/A                  |        | 1/8" to unlimited                          |
| Thickness: (Pipe/tube)      |                      |        |  |
| Groove                      | N/A                  |        | 1/8" to unlimited                          |
| Fillet                      | N/A                  |        | 1/8" to unlimited                          |
| Diameter: (Pipe)            |                      |        |  |
| Groove                      | N/A                  |        | 24" and greater                            |
| Fillet                      | N/A                  |        | Any Diameter                               |
| Filler Metal                |                      |        |  |
| Spec. No.                   | A5.20                |        |  |
| Class                       | E71T-1               |        |  |
| E-No.                       | 6                    |        | 6  |
| Gas/Flux Type               | 100% CO <sub>2</sub> |        |  |
| Other                       | N/A                  |        | Not an essential variable                  |

**VISUAL INSPECTION** Acceptable:  Yes  No Date coupon welded: 12/11/14

**Guided Bend Test Results**

| Type       | Result            | Type | Result |
|------------|-------------------|------|--------|
| Sides Bend | No Defects - PASS |      |        |
| Sides Bend | No Defects - PASS |      |        |

**Fillet Test Results**

Appearance: N/A Fillet Size:

Fracture Test Root: Magnetically

(Describe the location, nature, and size of any crack or tearing of the specimen):

**Radiographic Test Results**

| Film ID | Results | Remarks | Film ID | Results | Remarks |
|---------|---------|---------|---------|---------|---------|
| N/A     |         |         |         |         |         |

Film evaluated by: N/A Company:

Mechanical tests conducted by: Tom Pless / Rich Portman

Laboratory Test Number: 141586

Welding supervised by: Dan Church Company:

TUV Rheinland Industrial Solutions

The welder identified above  **PASSES**,  **FAILS** based on the requirements of the code listed above.

Reviewer's Signature: *Richard A. Portman*

Date: 12/24/14

Client Approval: *[Signature]*

Date: 12/24/14

**TÜV RHEINLAND INDUSTRIAL SOLUTIONS, INC.**

These test results report our findings at the time of inspection and shall be reviewed by the client for compliance to the project requirements. Due to the limitations of non-destructive testing in evaluating all of the factors that determine the overall component quality, no guarantee is made or liability assumed by TÜV Rheinland Industrial Solutions, Inc. ("TRIS") for the component quality of any item fabricated by Richard A. Portman.



Richard A. Portman  
 CAP 08061311  
 QC1 EXP. 8/1/2017

Revised 7/16/2013  
 AWS Welder Qualification

100 INDUSTRIAL BOULEVARD • ALBUQUERQUE, PA 15001 • TELEPHONE (724) 373-3900 • FAX (724) 373-3940



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Attachment 49

|  |   |
|--|---|
| Orano Federal Services   |   |
| <b>DATA TRANSMITTAL FORM</b>   |   |
| Supplier: <b>KASGRO RAIL CORP., INC.</b>   | DTF No: <b>019A</b> Page <u>1</u> of <u>1</u>   |
| P.O./SC No: <b>15C3011916</b>  | Date: <b>05/14/18</b>   |
| Type of Submittal: <input type="checkbox"/> First <input checked="" type="checkbox"/> Re-Submittal                               | SDRL List Item No: <b>20</b>  |
| Submitted for: <input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted: <b>1</b>  |
| Submitted By: <b>RICK FORD</b>   | <b>Rick Ford</b> <small>Digitally signed by Rick Ford<br/>Date: 2018.05.14 18:08:37 -0400</small> |
| (Name)   | (Signature)   |
| <b>PROJECT MANAGER</b><br>(Title)  |   |

| ITEM NUMBER | DOCUMENT NUMBER   | REVISION NUMBER | DOCUMENT DESCRIPTION   | FS DISPOSITION  |
|-------------|-------------------|-----------------|--|---|
| 1           | KAS W10           |                 | Clock #10 James Clark Welding Qualifications                                   | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 2           | KAS W11           |                 | Clock #11 Jimmy McCready Welding Qualifications                                | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 3           | KAS4112018 LETTER |                 | Letter Transferring Welder Qualifications to Kasgro from previous company name | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
|             |                   |                 |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                   |                 |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                   |                 |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                   |                 |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                   |                 |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                   |                 |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                   |                 |  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |

|                           |   |
|---------------------------|---|
| Comments:<br>No comments. | Technical Reviewer (i.e., RE, PTL, SME, QA, etc.)<br><b>KLEIN Slade</b> <small>Digitally signed by KLEIN Slade<br/>Date: 2018.05.21 15:29:51 -0700</small><br>Date <b>5/21/2018</b> |
|---------------------------|---|

| FS DISPOSITION CODES AND DEFINITIONS |                                |  |                             |
|--------------------------------------|--------------------------------|--|-----------------------------|
| AP                                   | Approved                       | Work may proceed.  | Resubmittal is not required |
| AWC                                  | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| REV                                  | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| RWC                                  | Reviewed with Comment          | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit        |
| DS                                   | Disapproved                    | Work may <u>not</u> proceed.   | Correct and resubmit        |
| RSA                                  | Receipt Submittal Acknowledged | No other action required.  |                             |

If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change.

|  |   |
|--|---|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval<br> | <small>Digitally signed by DENTON Mark<br/>DN: cn=AREVA GROUP,<br/>2.5.4.40=102437512804100001708,<br/>o=DENTON Mark<br/>Date: 2018.05.22 09:08:24 -0400</small><br>Date: <b>05/22/2018</b> |
|--|---|

FS-EN-FRM-023 Rev 02 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |                                    |  |
|--|------------------------------------|--|
|  | Orano Federal Services             |  |
|  | SUPPLIER DOCUMENT SUBMITTAL REVIEW |  |
| Supplier / PO No.:   | PTI / 16C3016046                   | DTF No. / Rev: 019A  |
| Charge No:   | 01916.01.C005.08.00100             | Due Date: 5/28/2018  |
| Document(s):   | See DTF No.: 019A                  |  |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)                  |                                    |  |
| PE   | Slade Klein                        |  |
| REVIEWERS  | Slade Klein, Bernie Counterman     |  |
| QA   | Bernie Counterman                  |  |
| <b>Technical Review</b>  |                                    |  |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |  |
| Technical Reviewer Comments:   |                                    |  |
| No comments.   |                                    |  |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b>  |                                    | Digitally signed by KLEIN Slade<br>Date: 2018.05.21 09:15:23 -07'00'       |
| <b>Quality Assurance Review (As Applicable)</b>  |                                    |  |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |  |
| Technical Reviewer Comments:   |                                    |  |
| No Comments  |                                    |  |
| QA Reviewer(s) (Sign/Date):  |                                    | Digitally signed by Bernie Counterman<br>Date: 2018.05.21 13:54:27 -07'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary) |                                    |  |
|  |                                    |  |
|  |                                    |  |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

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Kasgro Rail Corporation  
121 Rundle Road • New Castle, PA 16102  
724-658-9061 • 724-658-7856 FAX • www.KASGRO.com



**KASGRO**

April 11, 2018

Weld Performance Qualification Records.

The weld performance qualification records of the following employees have been reviewed. They conform to the requirements of the American Welding Society D 15.1 Railroad Welding Specification for Cars and Locomotives.

James Clark  
James McCready

This review was performed when the ownership of the company was changed from Miner Railcar to Kasgro Rail Corp.

Reviewed By:

Mark Zeigler

*Specialty Rail Car Solutions*



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

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**From:** [Rick Ford](#)  
**To:** [KLEIN Slade \(ORN-BE\)](#)  
**Cc:** [DENTON Mark \(ORN-BE\)](#); [COUNTERMAN Bernie \(ORN-BE\)](#); [Mark](#)  
**Subject:** Kasgro Welder Identification  
**Date:** Tuesday, April 10, 2018 12:34:37 PM  
**Attachments:** [Kasgro Welder List.xls](#)

---

Slade,

A number of the welder qualifications were developed under previous company names prior to Kasgro ownership using various methods such as social security numbers and/or employee numbers, that are no longer valid.

In reference to issue of welder identification and the original welder qualification records, the method used by Kasgro Rail is to use their current employee number per the attached list.

Sincerely,

*Rick Ford*  
*Kasgro Rail*

---

**From:** David Stull <dave@kasgro.com>  
**Sent:** Tuesday, April 10, 2018 2:41 PM  
**To:** Rick Ford  
**Subject:** FW:

---

**From:** Bill Baker [mailto:bbaker@kasgro.com]  
**Sent:** Monday, April 09, 2018 6:49 AM  
**To:** dave@kasgro.com  
**Subject:**



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000

Project: 00225.03.0050 DOE Atlas Project

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**Kasgro Welder Employee Numbers**

| <b>Emp. #</b> | <b>Employee Name</b> |
|---------------|----------------------|
| 11            | James Clark          |
| 12            | Jim McCreedy         |
| 15            | Darryl Beachem       |
| 16            | Bill Baker           |
| 56            | Scott Neely          |
| 57            | Robert Walker        |
| 81            | Trevor Barker        |
| 131           | Al Williams          |
| 148           | Mark Baker           |
| 157           | Adam Durst           |
| 300           | Keith Peterson       |
| 373           | John Novakovich      |
| 812           | Ryan Vogus           |
| 814           | Thomas Cummins       |
| 815           | Leonard Agee         |
| 819           | Bill Flory           |
| 821           | Triston Mills        |
| 822           | Charles Spaulding    |
| 823           | Steven Presnar       |
| 824           | Ron Price            |
| 825           | George Sepesie       |
| 826           | Randall Robison      |
| 834           | Matt Smith           |
| 836           | Paul Klamer          |
| 837           | Brett Shepard        |
| 841           | John Henke           |
| 842           | Neil Shalenberger    |
| 843           | Josh Clyde           |
| 844           | Mike Beachem         |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|                              |   |                             |                            |
|------------------------------|---|-----------------------------|----------------------------|
|                              | AREVA Federal Services LLC  |                             |                            |
| <b>DATA TRANSMITTAL FORM</b> |   |                             |                            |
| Supplier:                    | KASGRO RAIL CORP., INC.   | DTF No:                     | 020                        |
| P.O./SC No:                  | 15C3011916  | Date:                       | 03/27/18                   |
| Type of Submittal:           | <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal                                   | SDRL List Item No:          | 20                         |
| Submitted for:               | <input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted: | 1                          |
| Submitted By:                | <b>RICK FORD</b><br>(Name)  | Rick Ford<br>(Signature)    | PROJECT MANAGER<br>(Title) |

| ITEM NUMBER | DOCUMENT NUMBER | REVISION NUMBER | DOCUMENT DESCRIPTION                               | AFS DISPOSITION   |
|-------------|-----------------|-----------------|--|---|
| 1           | KAS W19         |                 | Clock #844 Michael Beacham Welding Qualifications  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 2           | KAS W20         |                 | Clock #842 Neil Sheleberger Welding Qualifications | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 3           | KAS W21         |                 | Clock #836 Paul Klamer Welding Qualifications      | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 4           | KAS W22         |                 | Clock #826 Randy Robinson Welding Qualifications   | <input type="checkbox"/> AP <input checked="" type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 5           | KAS W23         |                 | Clock # 57 Robert Walker Welding Qualifications    | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 6           | KAS W24         |                 | Clock #824 Ronald Price Welding Qualifications     | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 7           | KAS W25         |                 | Clock #812 Ryan Vogus Welding Qualifications       | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 8           | KAS W26         |                 | Clock #56 Scott Neely Welding Qualifications       | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 9           | KAS W27         |                 | Clock #823 Steven Persnar Welding Qualifications   | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |

|  |   |
|--|---|
| Comments:<br>Randy Robinson, 1G and 3G qualification ID #2880, 4G qualification ID #478. Please provide clarification. | Technical Reviewer (i.e., RE, PTL, SME, QA, etc.)<br><b>KLEIN Slade</b> KLEIN Slade<br>2018.04.10 07:03:18 -0700<br>Date: 4/10/2018 |
|--|---|

| AFS DISPOSITION CODES AND DEFINITIONS |                                |  |                             |
|---------------------------------------|--------------------------------|--|-----------------------------|
| AP                                    | Approved                       | Work may proceed.  | Resubmittal is not required |
| AWC                                   | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| REV                                   | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| RWC                                   | Reviewed with Comment          | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit        |
| DS                                    | Disapproved                    | Work may <u>not</u> proceed.   | Correct and resubmit        |
| RSA                                   | Receipt Submittal Acknowledged | No other action required.  |                             |

If, in the judgment of the Supplier, the incorporation of AFS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to AFS' C&P Representative describing the change.

|  |   |                  |
|--|---|------------------|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval<br> | Digitally signed by DENTON Mark<br>DN: c=AREVA GROUP,<br>2.5.4.49=177437512804102021700,<br>cn=DENTON Mark<br>Date: 2018.04.10 10:00:19 -0400 | Date: 04/10/2018 |
|--|---|------------------|

AFS-EN-FRM-023 Rev 01 (Effective August 18, 2014)  
 Refer to AFS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |                                    |   |
|--|------------------------------------|---|
|  | AREVA Federal Services LLC         |   |
|  | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:   | Kasgro Rail / 15C3011916           | DTF No. / Rev: 020  |
| Charge No:   | 00225.03.0050.02.00001             | Due Date: 4/10/2018   |
| Document(s):   | See DTF No.: 020                   |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. AFS Spec and Dwg. Codes, Stds, etc.)                 |                                    |   |
| PE   | Slade Klein                        |   |
| REVIEWERS  | Slade Klein, Bernie Counterman     |   |
| QA   | Bernie Counterman                  |   |
| <b>Technical Review</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No comments.   |                                    |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b>  |                                    | KLEIN Slade<br>2018.04.10 05:08:00 -07'00'                                  |
| <b>Quality Assurance Review (As Applicable)</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| Randall Robinson - 1G & 3G qualification ID #2880. 4G qualification ID #478                                |                                    |   |
| QA Reviewer(s) (Sign/Date): <b>Bernard Counterman</b>  |                                    | Digitally signed by Bernard Counterman<br>Date: 2018.04.05 15:58:54 -07'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary) |                                    |   |
|  |                                    |   |
|  |                                    |   |



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Kasgro Rail Corp**

121 Rundle Road  
 New Castle, PA 16102

**WELDER PERFORMANCE QUALIFICATION TEST RECORD**

Name: Michael Beauchem Welding Code: AWS D15.1 2012  
 Type of Welder: Semi Automatic Identification Number: 844  
 Welding Procedure Specification No. P-001 Rev: 0 Date: 10/2/2017

| Variables                   | Record Actual Values |              | Qualification Range                 |
|-----------------------------|----------------------|--------------|-------------------------------------|
| Process/Type                | FCAW                 |              | FCAW                                |
| Electrode (single/multiple) | Single               |              | Single                              |
| Current/Polarity            | DC/HP                |              |                                     |
| Position                    | 3G                   |              | Flat and Vertical Fillet and Groove |
| Weld Progression            | Uphill               |              | Uphill                              |
| Backing (With or Without)   | With                 |              | Backing Only                        |
| Material/Spec               | A572 Gr50            | to A572 Gr50 | All AWS Prequalified Material       |
| Base Metal                  |                      |              |                                     |
| Thickness: (Plate)          |                      |              |                                     |
| Groove                      | 1"                   |              | 1/8" to Unlimited                   |
| Fillet                      | N/A                  |              | 1/8" to Unlimited                   |
| Thickness: (Pipes/tube)     |                      |              |                                     |
| Groove                      | N/A                  |              | 1/8" to Unlimited                   |
| Fillet                      | N/A                  |              | 1/8" to Unlimited                   |
| Diameter: (Pipe)            |                      |              |                                     |
| Groove                      | N/A                  |              | Greater Than 24" OD                 |
| Fillet                      | N/A                  |              | Any Diameter                        |
| Filler Metal                |                      |              |                                     |
| Spec. No.                   | A5.20                |              |                                     |
| Class                       | E71T-E1              |              |                                     |
| F-No.                       | 6                    |              | 1/6                                 |
| Gas/Flux Type               | CO2                  |              |                                     |
| Other                       | N/A                  |              | N/A                                 |

VISUAL INSPECTION Acceptable:  Yes  No Date coupon welded: 10/7/2017

**Grided Bend Test Results**

| Type      | Result | Type | Result |
|-----------|--------|------|--------|
| Side Bend | PASS   |      |        |
| Side Bend | PASS   |      |        |

**Fillet Test Results**  
 Appearance: N/A Fillet Size: N/A  
 Fracture Test Root: N/A Macroetch: N/A

(Describe the location, nature, and size of any crack or tearing of the specimen):

**Radiographic Test Results**

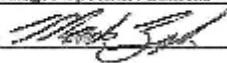
| Film ID | Results | Remarks | Film ID | Results | Remarks |
|---------|---------|---------|---------|---------|---------|
| N/A     |         |         | N/A     |         |         |

Film evaluated by: N/A Company: N/A  
 Mechanical tests conducted by: Tom Pleso/Tim Clark Laboratory Test Number: 154285  
 Welding supervised by: \_\_\_\_\_ Company: T.V Rheinland Industrial Solutions

The welder identified above X PASSES,      FAILS based on the requirements of the code listed above.

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in conformance with the requirements of Section 11 of AWS D15.1 ( 2012 ) Railroad Welding Specification for Cars and Locomotives.

Manufacturer or Contractor Kasgro Specialty Railcar

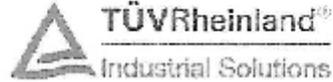
Authorized By Mark Zeigler  Date: October 2, 2017



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

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**GUIDED BEND TEST**

Mr. Mark Zeigler  
 Kuagro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 464194A Page 1 of 1  
 PO #: K17-2045  
 Lab #: 154283  
 Date Received: 10/02/2017  
 Date Tested: 10/05/2017

Date: October 5, 2017

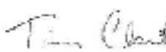
Work Order: 464194

|                |                        |               |                       |
|----------------|------------------------|---------------|-----------------------|
| PQR #:         | N/A                    | Welder ID:    | Michael Beachem - 844 |
| Process:       | FCAW                   | Position:     | 3G                    |
| Base Metal(s): | A572 Gr50 to A572 Gr50 | Coupon Shape: | 1" Plate              |

| Test # | Orientation | Result | Test # | Orientation | Result |
|--------|-------------|--------|--------|-------------|--------|
| 1      | Side        | PASS   |        |             |        |
| 2      | Side        | PASS   |        |             |        |

|  |  |
|--|--|
| Equipment Used:                                |  |
| <input type="checkbox"/> Wrap Around Bend Jig: | <input checked="" type="checkbox"/> Guided Fixture |
| Pin Diameter: 1.5"                             |  |
| Specification: AWS D13.1                       | [ X ] Conforming   [ ] Non-Conforming              |
| Test Witness By:                               |  |
| Test Technician: Tom Plose                     |  |

Respectfully submitted,  
  
 Tim Clark  
 2017.10.05 11:24:16 -0400  
 Tim Clark  
 Laboratory Manager  
 TÜV Rheinland Industrial Solutions, Inc.

Testing was performed in accordance with accepted industry practices as well as the standard data referenced. TÜV Rheinland Industrial Solutions, Inc. has no direct knowledge of the sample, sampling procedure, nor condition of the sample, and makes no claim as to the suitability for final use of the material. This test report applies only to those items tested. This report shall not be reproduced except in full without the written consent of TÜV Rheinland Industrial Solutions, Inc.

Guided Bend Test Report  
 RI 8-07916



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Kasgro Rail Corp**

121 Rundle Road  
 New Castle, PA 16102

**AWS - WELDER PERFORMANCE QUALIFICATION TEST RECORD**

Name: Neil Shelebenser Welding Code: AWS D15.1 2012  
 Type of Welder: Semi Automatic Identification Number: 842  
 Welding Procedure Specification No. F-001 Rev: 0 Date: 8/15/2017

| Variables                   | Record Actual Values |              | Qualification Range                 |
|-----------------------------|----------------------|--------------|-------------------------------------|
| Process/Type                | FCAW                 |              | FCAW                                |
| Electrode (single/multiple) | Single               |              | Single                              |
| Current/Polarity            | DC/CP                |              |                                     |
| Position                    | 3G                   |              | Flat and Vertical Fillet and Groove |
| Weld Progression            | Uphill               |              | Uphill                              |
| Backing (With or Without)   | With                 |              | Backing Only                        |
| Material/Spec               | A572 Gr50            | to A572 Gr50 | All AWS Prequalified Material       |
| Base Metal                  |                      |              |                                     |
| Thickness: (Plate)          |                      |              |                                     |
| Groove                      | 1"                   |              | 1/8" to Unlimited                   |
| Fillet                      | N/A                  |              | 1/8" to Unlimited                   |
| Thickness: (Pipe/tube)      |                      |              |                                     |
| Groove                      | N/A                  |              | 1/8" to Unlimited                   |
| Fillet                      | N/A                  |              | 1/8" to Unlimited                   |
| Diameter: (Pipe)            |                      |              |                                     |
| Groove                      | N/A                  |              | Greater than 74" O.D.               |
| Fillet                      | N/A                  |              | Any Diameter                        |
| Filler Metal                |                      |              |                                     |
| Spec. No.                   | A5.20                |              |                                     |
| Class                       | E71T-1               |              |                                     |
| F-No.                       | 6                    |              | F6                                  |
| Gas/flux type               | CO <sub>2</sub>      |              |                                     |
| Other                       | N/A                  |              | N/A                                 |

VISUAL INSPECTION Acceptable:  Yes  No Date coupon welded: 8/15/2017

**Guided Bend Test Results**

| Type      | Result | Type | Result |
|-----------|--------|------|--------|
| Side Bend | PASS   |      |        |
| Side Bend | PASS   |      |        |

**Fillet Test Results**  
 Appearance: N/A Fillet Size:  
 Fracture Test Root: Macroetch:

(Describe the location, nature, and size of any crack or tearing of the specimen):

**Radiographic Test Results**

| Film ID | Results | Remarks | Film ID | Results | Remarks |
|---------|---------|---------|---------|---------|---------|
| N/A     |         |         |         |         |         |

Film evaluated by: N/A Company:

Mechanical tests conducted by: Tom Pless/Richard Portman Laboratory Test Number: 154115

Welding supervised by: Neil Shelebenser Company: TUV Rheinland Industrial Solutions

The welder identified above  **PASSES**  **FAILS** based on the requirements of the code listed above.

Reviewer's Signature: Neil Shelebenser Date: 8/24/2017

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in conformance with the requirements of Section 11 of AWS D15.1 ( 2012 ) Railroad Welding Specification for Cars and Locomotives.

Manufacturer or Contractor: Kasgro Specialty Railcar

Authorized By: Mark Zeidler Date: August 17, 2017



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

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**GUIDED BEND TEST**

Mr. Mark Zeigler  
 Kasgro Rail Corporation  
 121 Rundle Road  
 New Castle, PA 16102

Report #: 463300A      Page 1 of 1  
 PO #: K17-2045  
 Lab #: 154115  
 Date Received: 8/17/2017  
 Date Tested: 8/22/2017  
 Work Order: 463300

Date: August 22, 2017

|                |                        |               |                       |
|----------------|------------------------|---------------|-----------------------|
| PQR #:         | N/A                    | Welder ID:    | Noel Shelberger - 842 |
| Process:       | FCAW                   | Position:     | 3G                    |
| Base Metal(s): | A572 Gr50 to A572 Gr59 | Coupon Shape: | 1" Plate              |

| Test # | Orientation | Result | Test # | Orientation | Result |
|--------|-------------|--------|--------|-------------|--------|
| 1      | Side        | PASS   |        |             |        |
| 2      | Side        | PASS   |        |             |        |

|  |  |
|--|--|
| Equipment Used:                                |  |
| <input type="checkbox"/> Wrap Around Bend Jig: | <input checked="" type="checkbox"/> Guided Fixture                                     |
| Pin Diameter: 1.5"                             |  |
| Specification: AWS D15.1                       | <input checked="" type="checkbox"/> Conforming <input type="checkbox"/> Non-Conforming |
| Test Witness By:                               |  |
| Test Technician: Tom Plese                     |  |

Respectfully submitted,  
  
 Tim Clark  
 Laboratory Manager  
 TÜV Rheinland Industrial Solutions, Inc.

This is a reproduction of a procedure with accepted industry practice as well as the test methods referenced. TÜV Rheinland Industrial Solutions, Inc. has certified the validity of the design, sampling procedure, and condition of the samples, and makes no claims as to the suitability and final use of the material. This test report applies only to those parameters. This report shall not be reproduced except in full without the written consent of TÜV Rheinland Industrial Solutions, Inc.

Guided Bend Test Report  
 IIR 507341



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

Grand Rapids, MI – Flint, MI – Pittsburgh, PA – Birmingham, AL – Decatur, AL  
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Reported To: Mr. Dave Stahl  
 Kasgro Rail Corp  
 121 Rundle Road  
 New Castle, PA 16102

Date: December 11, 2014  
 P/O Number: QAF  
 Report Number: 1  
 Project: Welder Qualification

**AWS - WELDER, WELDING OPERATOR OR TACK WELDER QUALIFICATION TEST RECORD**

Name: Paul Klamer Welding Code: AWS D15.1/D15.1M-2012  
 Type of Welder: Semi Automatic Identification Number: 836  
 Welding Procedure Specification No. K-401 Rev: 0 Date: 12-11-14

| Variables                    | Record Actual Values |     | Qualification Range                        |
|------------------------------|----------------------|-----|--|
|                              | A35                  | A36 |  |
| Process/Type                 | FCAW                 |     | FC/AW                                      |
| Electronic (single/multiple) | Single               |     | Single                                     |
| Current/Polarity             | DCBP                 |     | Flat, Vertical, Horizontal Fillet & Groove |
| Position                     | 3G                   |     | Vertical                                   |
| Weld Progression             | Up/Down              |     | Vertical                                   |
| Rocking (With or Without)    | With                 |     | With                                       |
| Material/Spec                | A35                  | A36 | All AWS Prequalified Material              |
| Base Metal                   |                      |     |  |
| Thickness: (Plate)           |                      |     |  |
| Groove                       | 1"                   |     | 1/8" to unlimited                          |
| Fillet                       | N/A                  |     | 1/8" to unlimited                          |
| Thickness: (Pipe/tube)       |                      |     |  |
| Groove                       | N/A                  |     | 1/8" to unlimited                          |
| Fillet                       | N/A                  |     | 1/8" to unlimited                          |
| Diameter: (Pipe)             |                      |     |  |
| Groove                       | N/A                  |     | 24" and greater                            |
| Fillet                       | N/A                  |     | Any Diameter                               |
| Filler Metal                 |                      |     |  |
| Spec. No.                    | A5.20                |     |  |
| Class                        | E71T-1               |     |  |
| F-No.                        | 6                    |     | 6  |
| Gas/Flux Type                | 100% CO <sub>2</sub> |     |  |
| Other                        | N/A                  |     | Not an essential variable                  |

**VISUAL INSPECTION** Acceptable:  Yes  No Date coupon welded: 12/11/14

**Guided Bend Test Results**

| Type      | Result            | Type | Result |
|-----------|-------------------|------|--------|
| Side Bend | No Defects - PASS |      |        |
| Side Bend | No Defects - PASS |      |        |

**Fillet Test Results**  
 Appearance: N/A Fillet Size:  
 Fracture Test Result: Microetch:  
 (Describe the location, nature, and size of any crack or tearing of the specimen):

**Radiographic Test Results**

| Film ID | Results | Remarks | Film ID | Results | Remarks |
|---------|---------|---------|---------|---------|---------|
| N/A     |         |         |         |         |         |

Film evaluated by: N/A Company:  
 Mechanical tests conducted by: Tom Pleso / Rich Portman Laboratory Test Number: 141586  
 Welding supervised by: Dan Gierch Company: TUV Rheinland Industrial Solutions

The welder identified above  PASSES  FAILS based on the requirements of the code listed above.

Reviewer's Signature: *Richard [Signature]* Date: 12/24/14

Client Approval: *Mark [Signature]* Date: 12/24/14

**TUV RHEINLAND INDUSTRIAL SOLUTIONS, INC.**

These test results report our findings at the time of inspection and shall be reviewed by the client for compliance to the project requirements. Due to the limitations of nondestructive testing in evaluating all of the factors that determine the overall component quality, no guarantee is made or liability assumed by TUV Rheinland Industrial Solutions, Inc. ("TRIS") for the component quality of any component.



Richard A. Portman  
 GWI 00001211  
 QC EXP. 03/2017

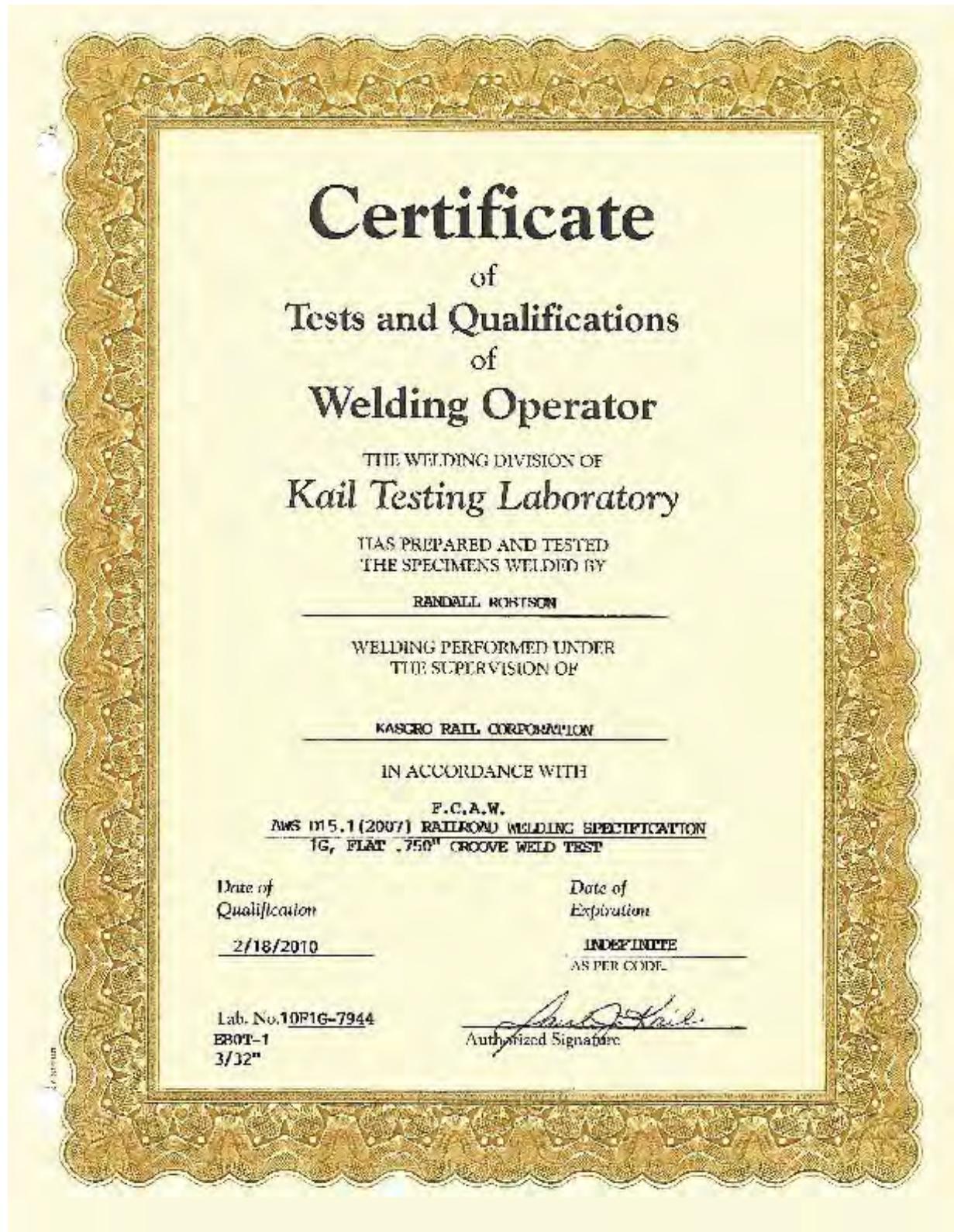
Revision 01/2013  
 AWS Welder Qualification

100 INDUSTRIAL BOULEVARD • ALBUQUERQUE, PA 15001 • TELEPHONE (724) 379-3900 • FAX (724) 379-3940



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

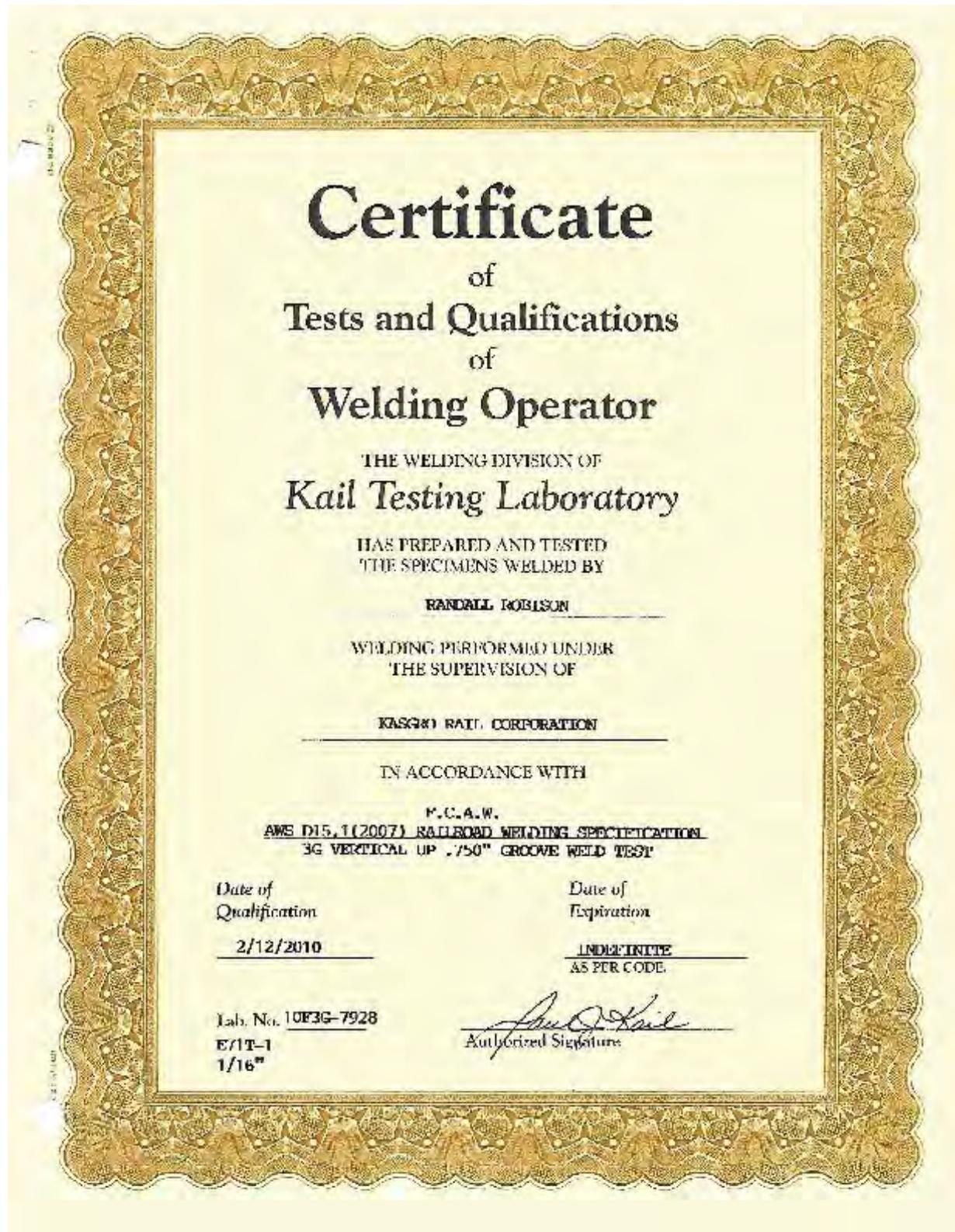






Orano Federal Services  
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Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

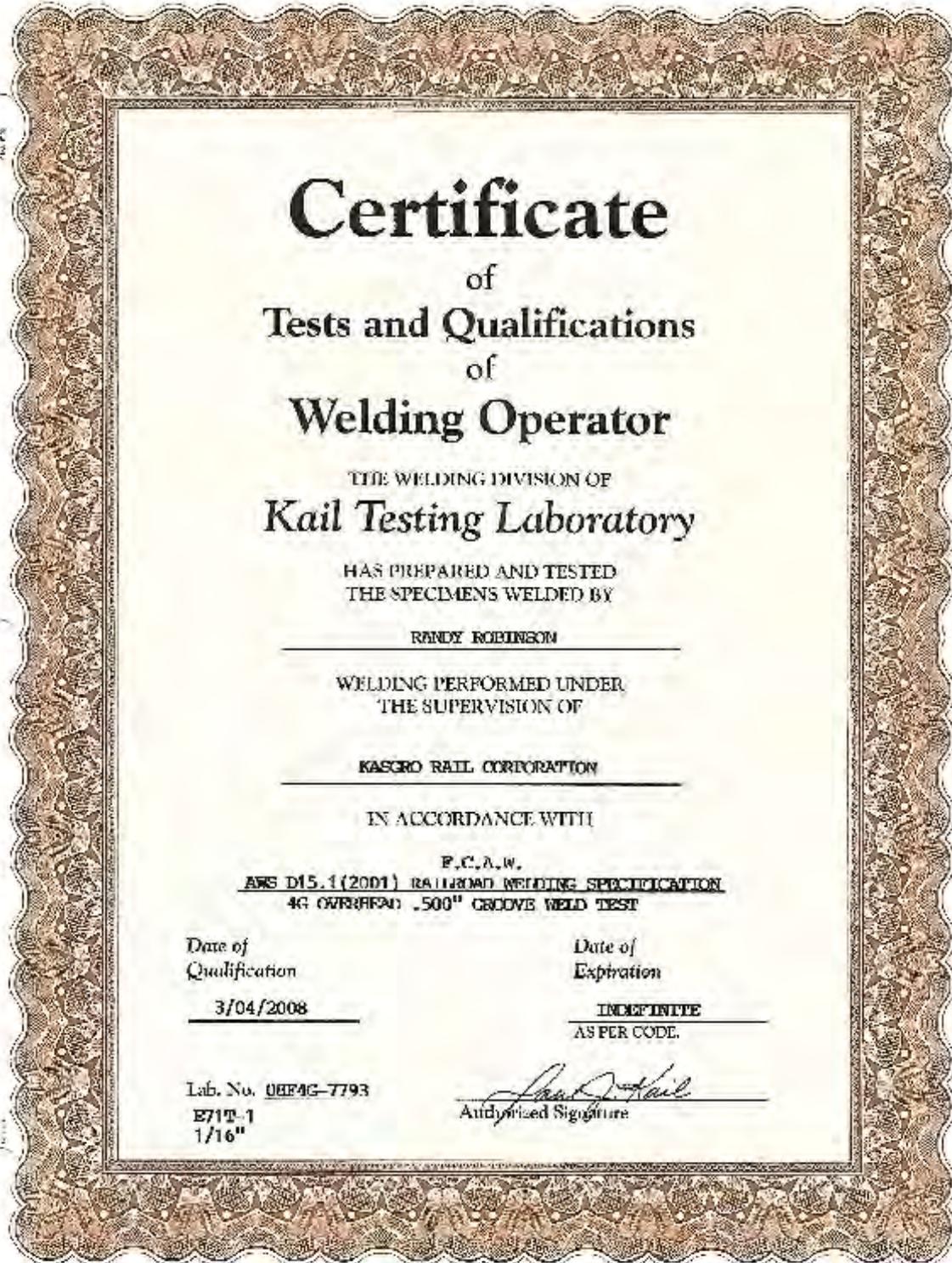






Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
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 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name: ROBERT WALKER Identification no. 057  
 Welding process: F.C.A.W. Manual  Semiautomatic  Machine   
 Position: 1G FLAT  
 (Flat, horizontal, overhead or vertical – if vertical, state whether upward or downward)  
 In accordance with procedure specification: Q1190-0129  
 Material specification: A-36  
 Diameter and wall thickness (if pipe) – otherwise, joint thickness: 1.0"  
 Thickness range the qualifies: UNLIMITED

**FILLER METAL**

Specification no.: 5.20 Classification: E70T-1 Form: 6  
 Describe filler metal (if not covered by AWS specification): \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name: 3/32" Lincoln Flux or submerged arc or gas for gas metal arc or flux  
 coated arc welding: 100% CO<sub>2</sub>

**VISUAL INSPECTION**

Appearance: SATISFACTORY Undercut: NONE Piping porosity: NONE

**Guided Bend Test Results**

| Type             | Result                  | Type | Result |
|------------------|-------------------------|------|--------|
| <u>SIDE BEND</u> | <u>1/6" tear/PASSED</u> |      |        |
| <u>SIDE BEND</u> | <u>NO DEFECTS</u>       |      |        |

Test conducted by: SAI TEST LAB Laboratory test no.: 01FLG 2196  
 per: [Signature] Test date: 11/03/01

**Fillet Test Results**

Appearance: \_\_\_\_\_ Fillet size: \_\_\_\_\_  
 Fracture test root penetration: \_\_\_\_\_ Macroetch: \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by: \_\_\_\_\_ Laboratory test no.: \_\_\_\_\_  
 per: \_\_\_\_\_ Test date: \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |
|                     |         |         |                     |         |         |

Test witnessed by: \_\_\_\_\_ Test no.: \_\_\_\_\_  
 per: \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS Q15.1, ( 93 year ).

Manufacturer or contractor: KASPER RAIL CORPORATION  
 Authorized by: [Signature]  
 Date: 11-3-01

Form D-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operators name ROBERT W. MATTHEW Identification no. 057  
 Welding process P, S, A, B Manual      Semi-automatic      Machine       
 Position SG Vertical Up  
 (Flat, horizontal, overhead or vertical — if vertical state whether upward or downward)  
 In accordance with procedure specification no: PROBABILITIES TEST PROC. CIR  
 Material specification A 29  
 Diameter and wall thickness (if pipe) otherwise joint thickness 3.0"  
 thickness range this qualifies 0.25-0.375"

**FILLER METAL**

Specification no. A 29 Classification E71T-1 F no. 8  
 Describe filler metal (if not covered by AWS specification)       
 Is backing strip used? Yes  
 Filler metal brand and trade name ESAB Rodin Flux for submerged arc or gas for gas metal arc or flux cored arc welding 100% O<sub>2</sub>

**VISUAL INSPECTION**

Appearance Good System Undercut None Piping activity None

**Colded Bent Test Results**

| Type             | Result                   | Type | Result |
|------------------|--------------------------|------|--------|
| <u>WIDE BEND</u> | <u>NO DEFECTS</u>        |      |        |
| <u>STAG BEND</u> | <u>1/16" bend/PERIOD</u> |      |        |

Test conducted by RAT. SYSTEMS LABORATORY Laboratory test no. 8222-1290  
 per [Signature] Test date 4/22/07

**Filler Test Results**

Appearance      Filler size       
 Fracture test: root penetration      Macroetch       
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by      Laboratory test no.       
 per      Test date     

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by      Test no.       
 per     

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1, ( ) of ( ) year.

Manufacturer or contractor NASSCO RAIL CORP.  
 Authorized by [Signature]  
 Date 5/25/07

Form D-1



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

186

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name ROBERT WALKER Identification no. 057  
 Welding process F.C.A.W. Manual  Semicautomatic  Machine   
 Position All Overhead  
 (Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification no. Prequalified joint fig. no. C18  
 Material specification A-36  
 Diameter and wall thickness (if pipe) otherwise, joint thickness .500"  
 Thickness range this qualifies 1.0"

**FILLER METAL**

Specification no. E-20 Classification E-1 F no. 8  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name .063" Lincoln Flux for submerged arc or gas for gas metal arc or flux cored arc welding 100% CXX

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bent Test Results**

| Type      | Result     | Type | Result |
|-----------|------------|------|--------|
| SIDE BEND | NO DEFECTS |      |        |
| SIDE BEND | NO DEFECTS |      |        |

Test conducted by KALO TESTING LABORATORY Laboratory test no. 04F43-2300  
 per [Signature] Test date 4/26/01

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test (root penetration) \_\_\_\_\_ Marcellch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D18.1, ( 2001 )  
 year

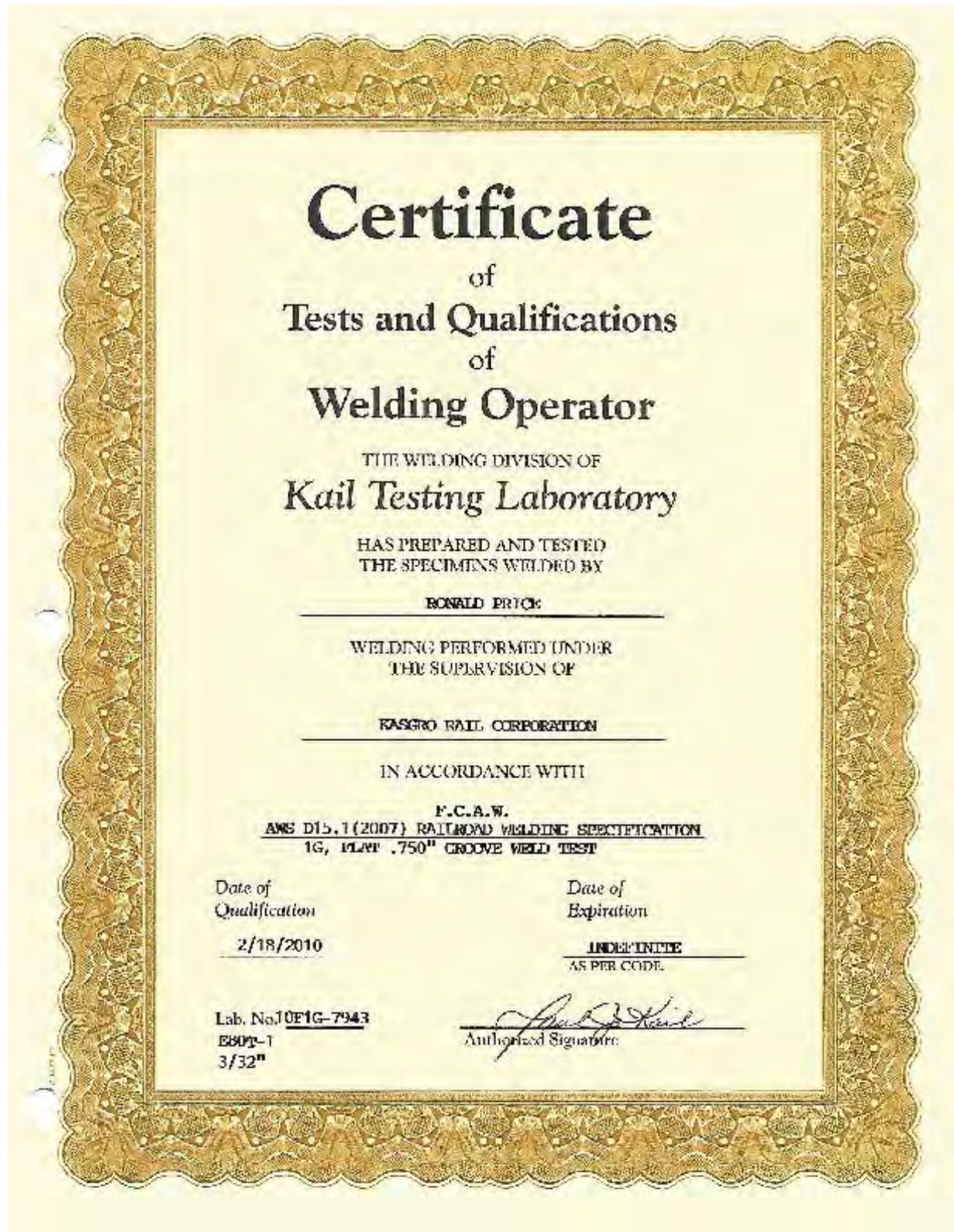
Manufacturer or contractor KANSAS RAIL CO.  
 Authorized by [Signature]  
 Date 4-26-01

Form D-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

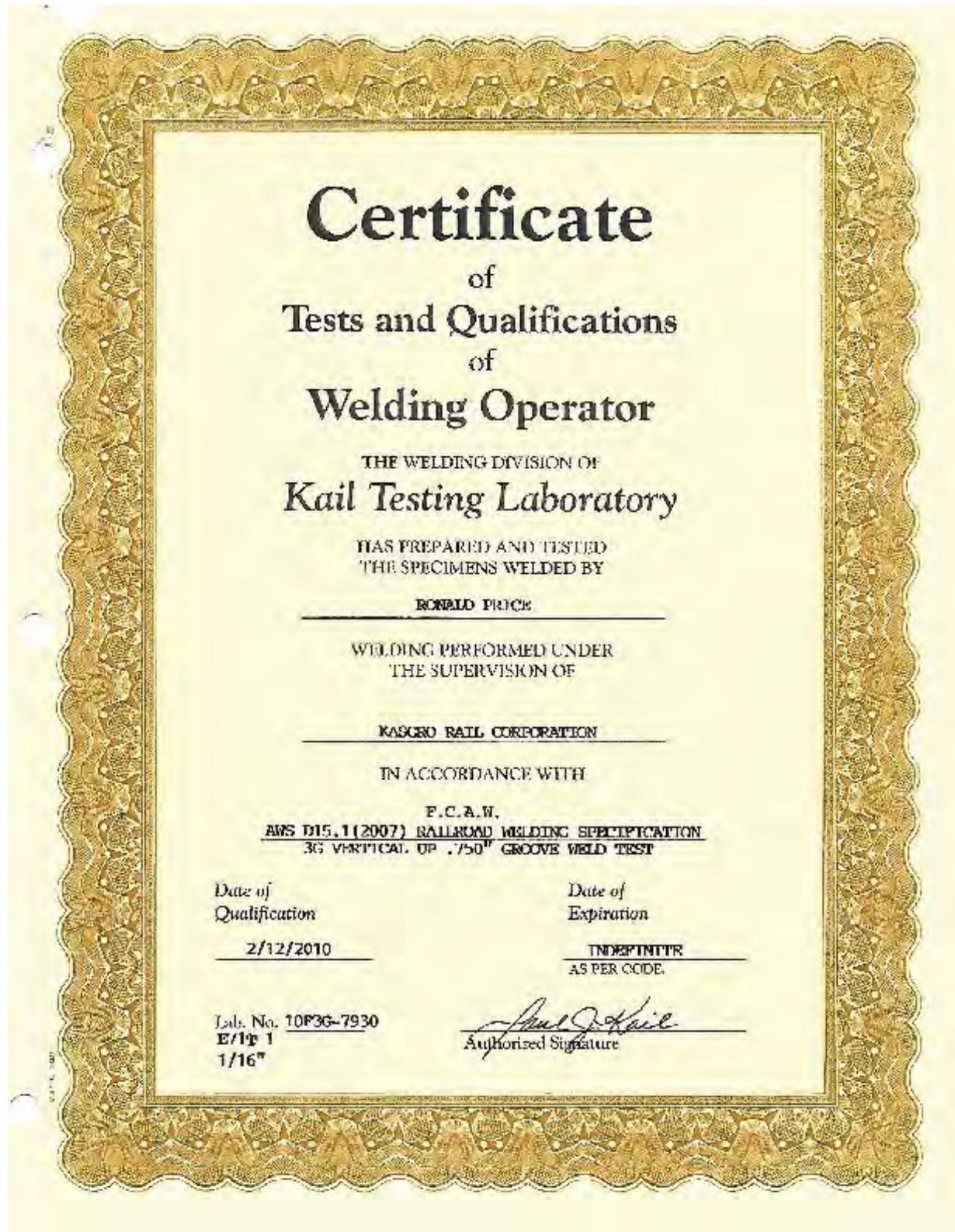






Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

AWS D15.10D15.1M2007

ANNEX D

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operators name RONALD PRICE Identification no. B24  
 Welding process PCAN Manual          Semi-automatic X Machine           
 (Flat, horizontal, overhead, or vertical. If vertical, state whether upward or downward.) 3G Vertical Up  
 In accordance with procedure specification no. W-001  
 Material specification A-36  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness .750"  
 Thickness range (if applicable) UNLIMITED

**FILLET METAL**

Specification no. A-20 Classification E71T-1 Filler G  
 Describe filler metal (if not covered by AWS specification)           
 Is backing strip used? Yes  
 Filler metal diameter and trade name 1/16" Lincoln Flux for submerged arc or gas for gas metal arc or flux cored arc welding 100% CO2

**VISUAL INSPECTION**

Appearance Satisfactory Unclear None Piping porosity None

**Guided Bent Test Results**

| Type      | Result     | Type | Result |
|-----------|------------|------|--------|
| SIDE BEND | NO DEFECTS |      |        |
| SIDE BEND | NO DEFECTS |      |        |

Test conducted by RAIL TESTING LABORATORY Laboratory test no. 10FRC-7930  
 per *Randy Pauli* Test date 2/12/2010

**Fillet Test Results**

Appearance          Fillet size           
 Fracture test, root penetration          Macroetch           
 (Describe the location, nature, and size of any crack or tearing of the specimen)  
 Test conducted by          Laboratory test no.           
 per          Test date         

**RADIOGRAPHIC TEST RESULTS**

| Flaw Identification | Results | Remarks | Flaw Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by          Laboratory test no.           
 per          Test date         

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of AWS D15.1, (2007)          Railcar Welding Specification for Cars and Locomotives.  
 (year)         

Manufacturer or Contractor, KANSAS CITY SOUTHERN RAIL CORPORATION

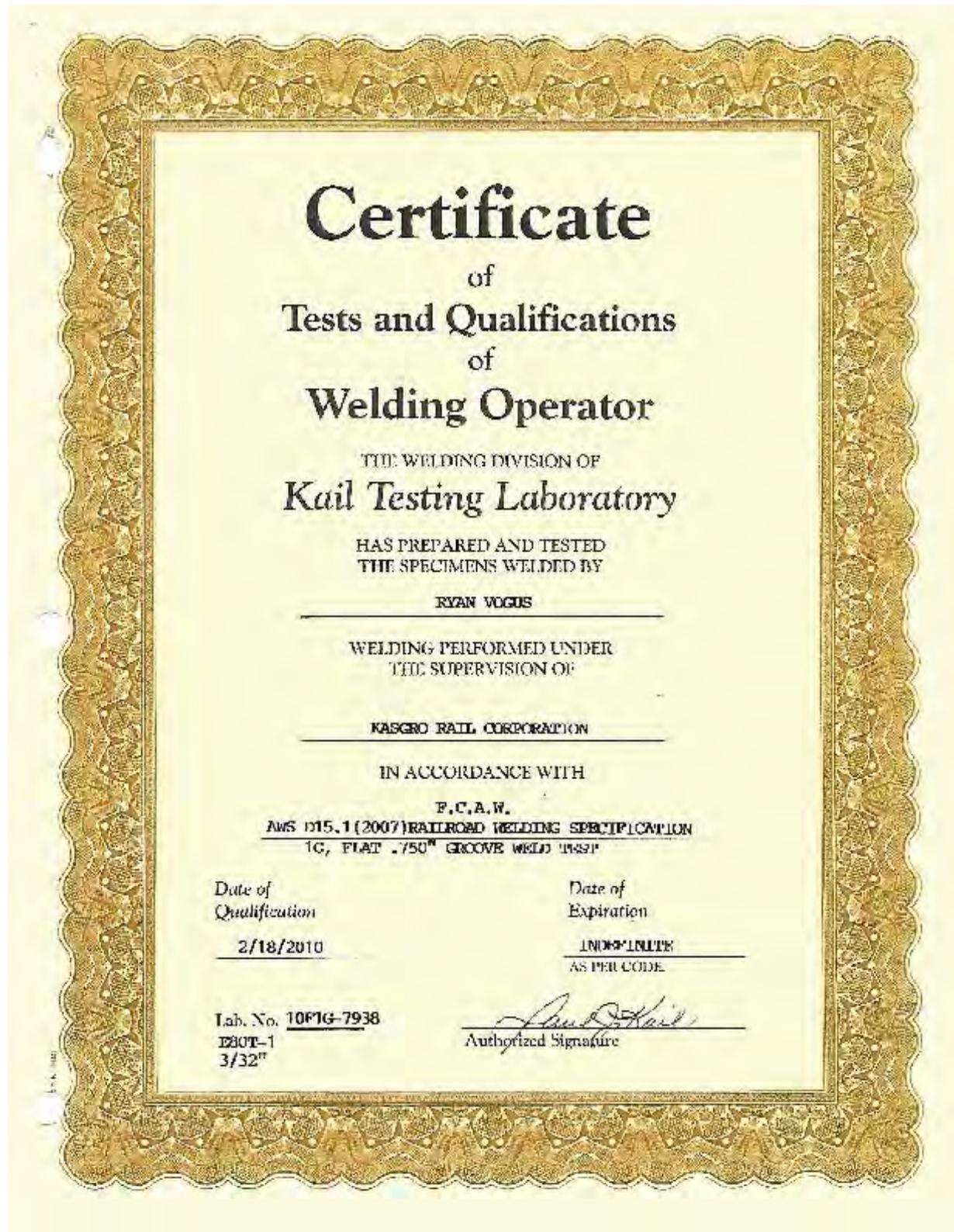
Authorized by *Mark Guff*  
 Date 2/12/10

Form D-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

AWS 118.1015.1M0007

ANNEX 11

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name RYAN VOGUS Identification no. 812  
 Welding process: PCAW Manual        Semiautomatic X Machine         
 (Flat, horizontal, overhead, or vertical—if vertical, state whether upward or downward) 1G, Flat  
 In accordance with procedure specification no. E-005  
 Material specification A-36  
 Diameter and wall thickness (if pipe)—otherwise, joint thickness .750"  
 Thickness range this qualifies: UNLIMITED

**FILLER METAL**

Specification no. E-29 Classification E80T-1 F no. 6  
 Describe filler metal (if not covered by AWS specification)         
 Is backing strip used? Yes  
 Filler metal diameter and trade name 3/32" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 shield arc welding 100% CO2

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Riping porosity None

**Guided Bend Test Results**

| Type             | Result            | Type | Result |
|------------------|-------------------|------|--------|
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |

Test conducted by KAPY TESTING LABORATORY Laboratory test no. 10F1G-7938  
 per *Fred J. Kopy* Test date 2/18/2010

**Fillet Test Results**

Appearance        Fillet size         
 Fracturing, root penetration        Match         
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by        Laboratory test no.         
 per        Test date       

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by        Laboratory test no.         
 per        Test date       

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of AWS D10.10 (2007) Railroad Welding Specification for Carbon Steel Components.

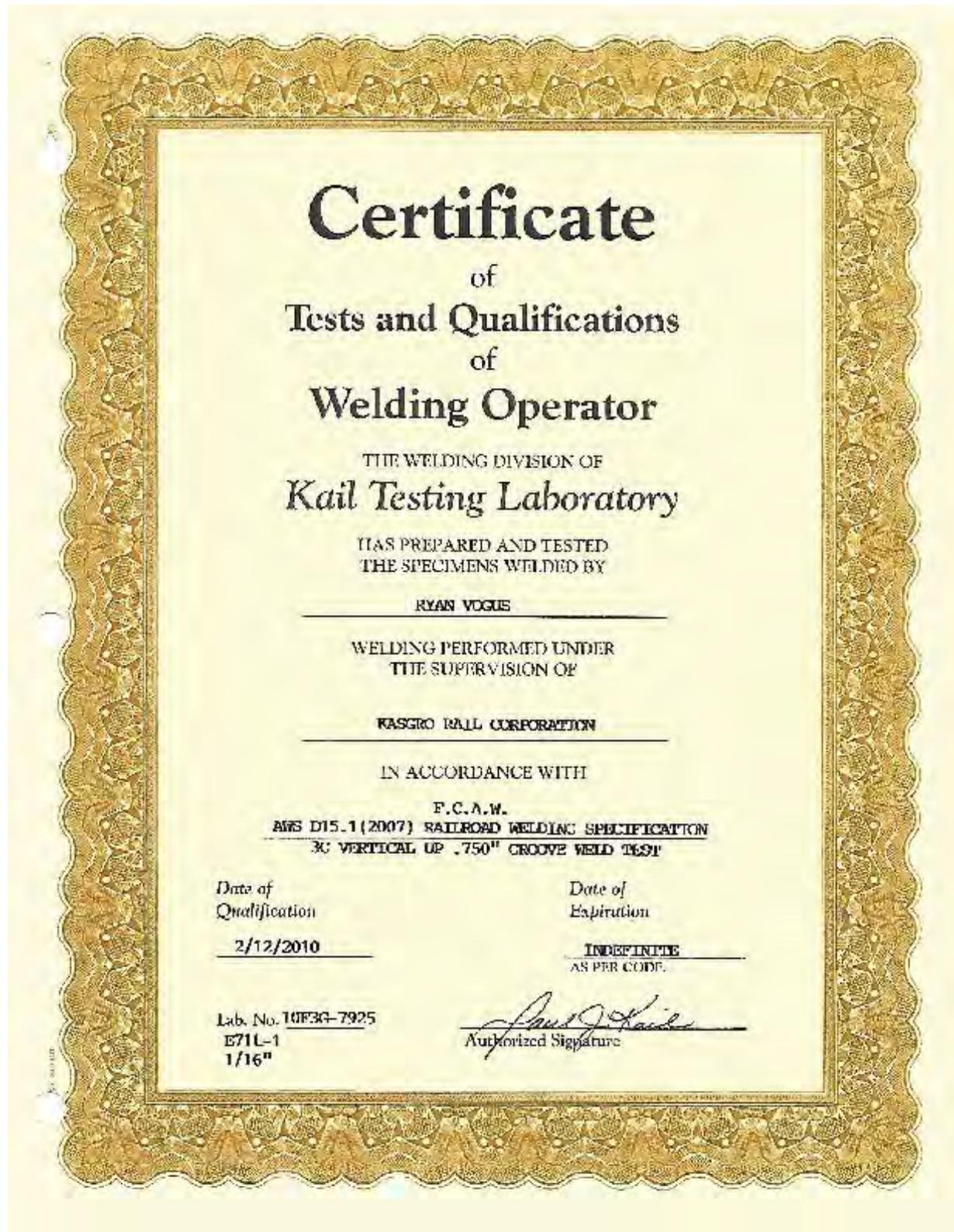
Manufacturer or Contractor KASBO RAIL CORP.  
 Authorized by *[Signature]*  
 Date 2-18-10

Form B-4



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

AWS D15.1M11.1M2007

ANNEX D

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name RYAN VOGLIS Identification no. 812  
 Welding process ECAN Manual                      Semi-automatic X Machine                       
 (Flat, horizontal, overhead, or vertical. If vertical, state whether upward or downward.) 3G Vertical Up  
 In accordance with procedure specification no. E-001  
 Material specification A-36  
 Diameter and wall thickness of pipe—fillet weld, joint thickness .750"  
 Thickness range this qualifies UNLIMITED

**FILLER METAL**

Specification no. 5.20 Classification E71T-1 F-in. 6  
 Describe filler metal (if not covered by AWS specification)                       
 Is backing strip used? Yes  
 Filler metal diameter and trade name 1/16" Lincoln Flux for submerged arc or gas for gas metal arc or flux cored arc welding 100% CO2

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bent Test Results**

| Type             | Result            | Type | Result |
|------------------|-------------------|------|--------|
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |

Test conducted by KATI TESTING LABORATORY Laboratory test no. 10F3G-7925  
 per *[Signature]* Test date 2/12/2010

**Fillet Test Results**

Appearance                      Fillet size                       
 Fracture test root penetration                      Macroetch                       
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by                      Laboratory test no.                       
 per                      Test date                     

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by                      Laboratory test no.                       
 per                      Test date                     

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of AWS D15.1M11.1M2007                      Railcar Welding Specification for Cars and Locomotives.  
 (year)                     

Manufacturer or Contractor KANSAS RAIL CORPORATION

Authorized by *[Signature]*  
 Date 2/12/10

Form D-4



Orano Federal Services  
**Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD**

812

Welder or welding operator's name EYAN VOGLS Identification no. \_\_\_\_\_  
 Welding process F.C.A.W. Manual \_\_\_\_\_ Semiautomatic X Machine \_\_\_\_\_  
 Position 4G Overhead Groove Weld  
 (Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification no. Prequalified Joint fig. no. C1E  
 Material specification A-36  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness .500"  
 Thickness range this qualifies 1.0"

**FILLER METAL**

Specification no. 5.20 Classification E71T-1 F no. 6  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name 1/16" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 coated arc welding 100% CO2

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bend Test Results**

| Type       | Result             | Type | Result |
|------------|--------------------|------|--------|
| STICH BEND | NO DEFECTS         |      |        |
| SIDE BEND  | Minor crack/PASSED |      |        |

Test conducted by RATI TESTING LABORATORY Laboratory test no. 20F4G-1045  
 per [Signature] Test date 9/11/2000

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Macroetch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1, ( 93 year ).

Manufacturer or contractor KASPRO RAIL CORP.  
 Authorized by [Signature]  
 Date 9-11-00

Form D-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



Date of Qualification  
 10/16/01

Date of Expiration  
 INDEFINITE  
 AS PER CODE.

Lab. No. 01F1G-21B3

*[Signature]*  
 Authorized Signature



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name: J. SCOTT KEELY Identification no.: 056  
 Welding process: FC-A-W Manual  Semi-automatic  Machine   
 Position: IG Flat  
 (Flat, horizontal, overhead or vertical - if vertical, state whether upward or downward)  
 In accordance with procedure specification no. 01KRC-0129  
 Material specification: A 36  
 Diameter and wall thickness (if pipe) - otherwise, joint thickness: 1.0"  
 Thickness range this qualifies: UNLIMITED

**FILLER METAL**  
 Specification no.: 5.20 Classification: E70T-1 Fing: 6  
 Describe filler metal (if not covered by AWS specification):  
 Is backing also used? Yes  
 Filler metal diameter and trade name: 3/32" E70T-1 Flux for submerged arc or gas for gas metal arc or flux cored arc welding: 100% Co2

**VISUAL INSPECTION**  
 Appearance: Satisfactory Undercut: None Filing porosity: None

**Guided Bend Test Results**

| Type        | Result     | Type | Result |
|-------------|------------|------|--------|
| SIDE BEND   | NO DEFECTS |      |        |
| STRIKE BEND | NO DEFECTS |      |        |

Test conducted by: KATI TESTING LABORATORY Laboratory test no.: 01FIG-2183  
 per: [Signature] Test date: 10/18/01

**Fillet Test Results**  
 Appearance: \_\_\_\_\_ Fillet size: \_\_\_\_\_  
 Fracture test metal orientation: \_\_\_\_\_ Macroetch: \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by: \_\_\_\_\_ Laboratory test no.: \_\_\_\_\_  
 per: \_\_\_\_\_ Test date: \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by: \_\_\_\_\_ Test no.: \_\_\_\_\_  
 per: \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D5.1, ( 93 year ).

Manufacturer or contractor: EMBERO RAIL CORP.  
 Authorized by: [Signature]  
 Date: 10-16-01

Form D-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name: J. SCOTT HUBBY Identification no. 056  
 Welding process: F. O. A. W. Manual  Semiautomatic  Machine   
 Position: 2G Vertical Up  
 (Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification in: Welding Joint (WJ) per CW  
 Material specification: A-38  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness: 1.0"  
 Thickness range this qualifies: UNLIMITED

**FILLER METAL**  
 Specification no.: E. 20 Classification: A710-2 Flux: E  
 Describe filler metal (if not covered by AWS specification): \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name: 1/16" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 coated arc welding: 100% CO<sub>2</sub>

**VISUAL INSPECTION**  
 Appearance: Satisfactory Undercut: None Piping porosity: None

**Guided Bent Test Results**

| Type      | Result     | Type | Result |
|-----------|------------|------|--------|
| SIDE BEND | NO DEFECTS |      |        |
| FACE BEND | NO DEFECTS |      |        |

Test conducted by: KALLI ZEPHYR LABORATORY Laboratory test no.: 2753-1728  
 per: [Signature] Test date: 8/28/97

**Fillet Test Results**

Appearance: \_\_\_\_\_ Fillet size: \_\_\_\_\_  
 Fracture test root penetration: \_\_\_\_\_ Macroetch: \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by: \_\_\_\_\_ Laboratory test no.: \_\_\_\_\_  
 per: \_\_\_\_\_ Test date: \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |
|                     |         |         |                     |         |         |

Test witnessed by: \_\_\_\_\_ Test no.: \_\_\_\_\_  
 per: \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1, ( 80 year ).

Manufacturer or contractor: KANSAS RAIL CORP.  
 Authorized by: [Signature]  
 Date: 8/28/97

Form D-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name J. SCOTT WELBY Identification no. 056  
 Welding process GTAW Manual  Semi-automatic  Machine   
 Position 3G Overhead  
 (Flat, horizontal, overhead or vertical. If vertical, state whether upward or downward)  
 In accordance with procedure specification no. Prequalified joints, fig. no. 41B  
 Material specification A-36  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness 1/2"  
 Thickness range thickness .750"

**FILLER METAL**

Specification no. E-20 Classification E7017 F no. 6  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing or preheat? Yes  
 Filler metal diameter and trade name .045" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 core arc welding 100% O2

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bend Test Results**

| Type      | Result           | Type | Result |
|-----------|------------------|------|--------|
| FACE BEND | 1/8" Tear/PASSED |      |        |
| ROOT BEND | NO DEFECTS       |      |        |

Test conducted by KAIL TESTING LABORATORY Laboratory test no. 03FAC-2268  
 per [Signature] Test date 9/24/2003

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture: no root penetration \_\_\_\_\_ Match \_\_\_\_\_  
 (Describe the location, nature, and extent of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D16.1 (—2001—).  
 year

Manufacturer or contractor KANSAS RAIL CORP  
 Authorized by [Signature]  
 Date 9/29/03

Form D-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



Date of Qualification

9/11/2000

Date of Expiration

INDEFINITE

AS PER CODE.

Labs. No.

20FYK2097

Authorized Signature



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD**

Welder or welding operator's name JOHN SCOTT NEELY Identification no. 056  
 Welding process F.C.A.W. Manual \_\_\_\_\_ Semiautomatic X Machine \_\_\_\_\_  
 Position 4G Overhead Groove Weld  
 (Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification no. Pregualified joint fig. no. C1B  
 Material specification A-36  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness .500"  
 Thickness range this qualifies 1.0"

**FILLED METAL**

Specification no. 5.20 Classification E71<sup>th</sup> 1 F no. 6  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name 1/16" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 cored arc welding 100% CO<sub>2</sub>

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bent Test Results**

| Type      | Result     | Type | Result |
|-----------|------------|------|--------|
| SIDE BEND | NO DEFECTS |      |        |
| SIDE BEND | NO DEFECTS |      |        |

Test conducted by RAIL TESTING LABORATORY Laboratory test no. 9/11/2000  
 per [Signature] Test date 2003-20-01

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Marcatch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D16.1, ( 93 year ).

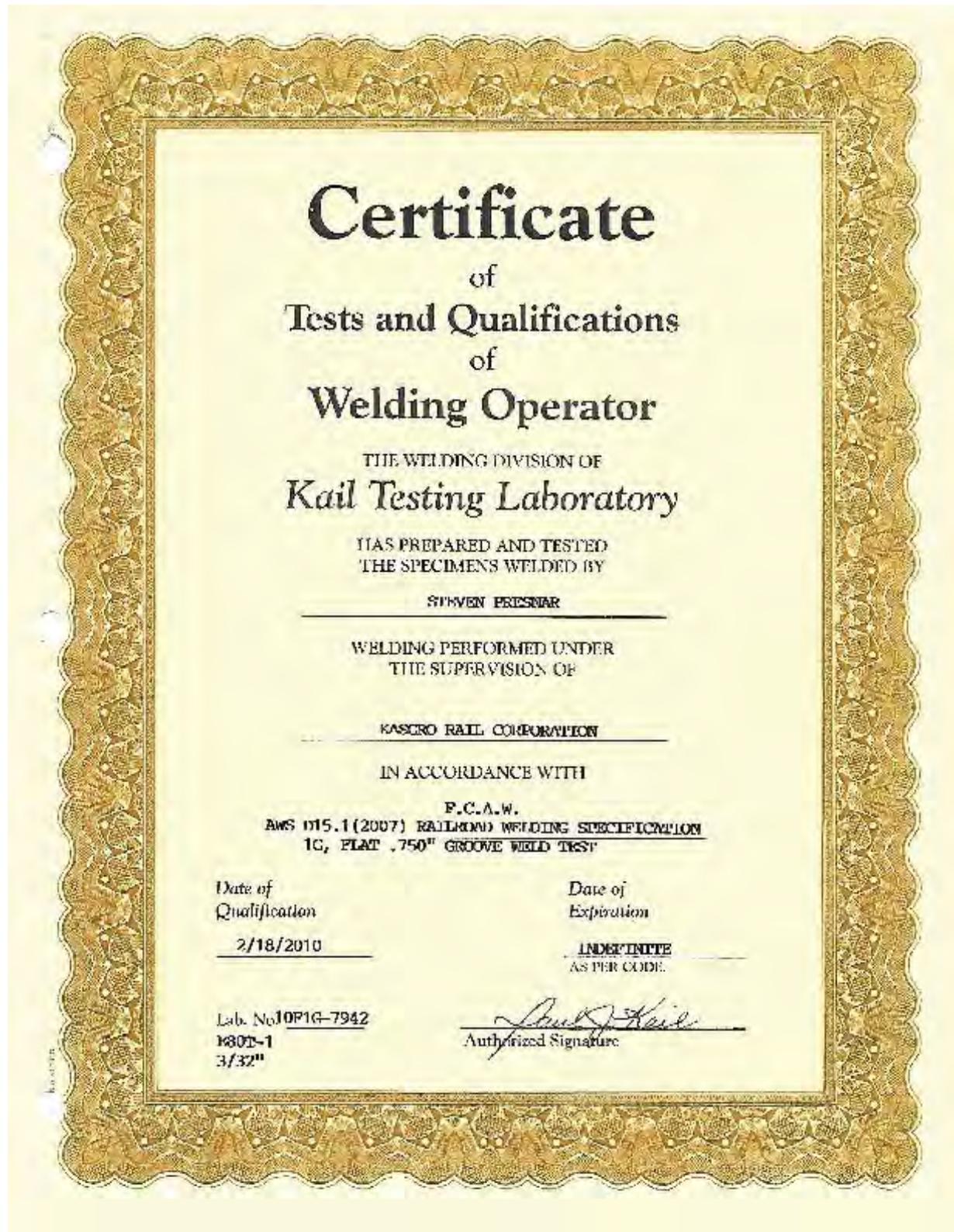
Manufacturer or contractor KASPRO RAIL CORP.  
 Authorized by [Signature]  
 Date 9-11-00

Form D-4



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

AWS D15.1:2015.1M.2007

ANNEX D

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name STEVEN PRINSENER identification no. **823**  
 Welding process (FCAW) Manual \_\_\_\_\_ Semi-automatic  Machine \_\_\_\_\_  
 (Flat, horizontal, overhead, or vertical - if vertical, state whether upward or downward) 1G, Flat  
 In accordance with procedure specification no. E-005  
 Material specification A-36  
 Diameter and wall thickness (if pipe)—otherwise, joint thickness .750"  
 Thickness range (if applicable) UNLIMITED

**FILLER METAL**

Specification no. E-29 Classification E80T-1 F-number 6  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trace name: 3/32" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 used arc welding 100% CO2

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bend Test Results**

| Type                 | Result            | Type | Result |
|----------------------|-------------------|------|--------|
| <u>SIDE BEND</u>     | <u>NO DEFECTS</u> |      |        |
| <u>SHOULDER BEND</u> | <u>NO DEFECTS</u> |      |        |

Test conducted by KATE TESTING LABORATORY Laboratory test no. 10F1G-7942  
 per [Signature] Test date 2/18/2010

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Microetch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of AWS D15.1 (2007) Handed Welding Specification for Cars and Loaders, (2007)

Manufacturer or Contractor KASPRO RAIL CORP.

Authorized by [Signature]

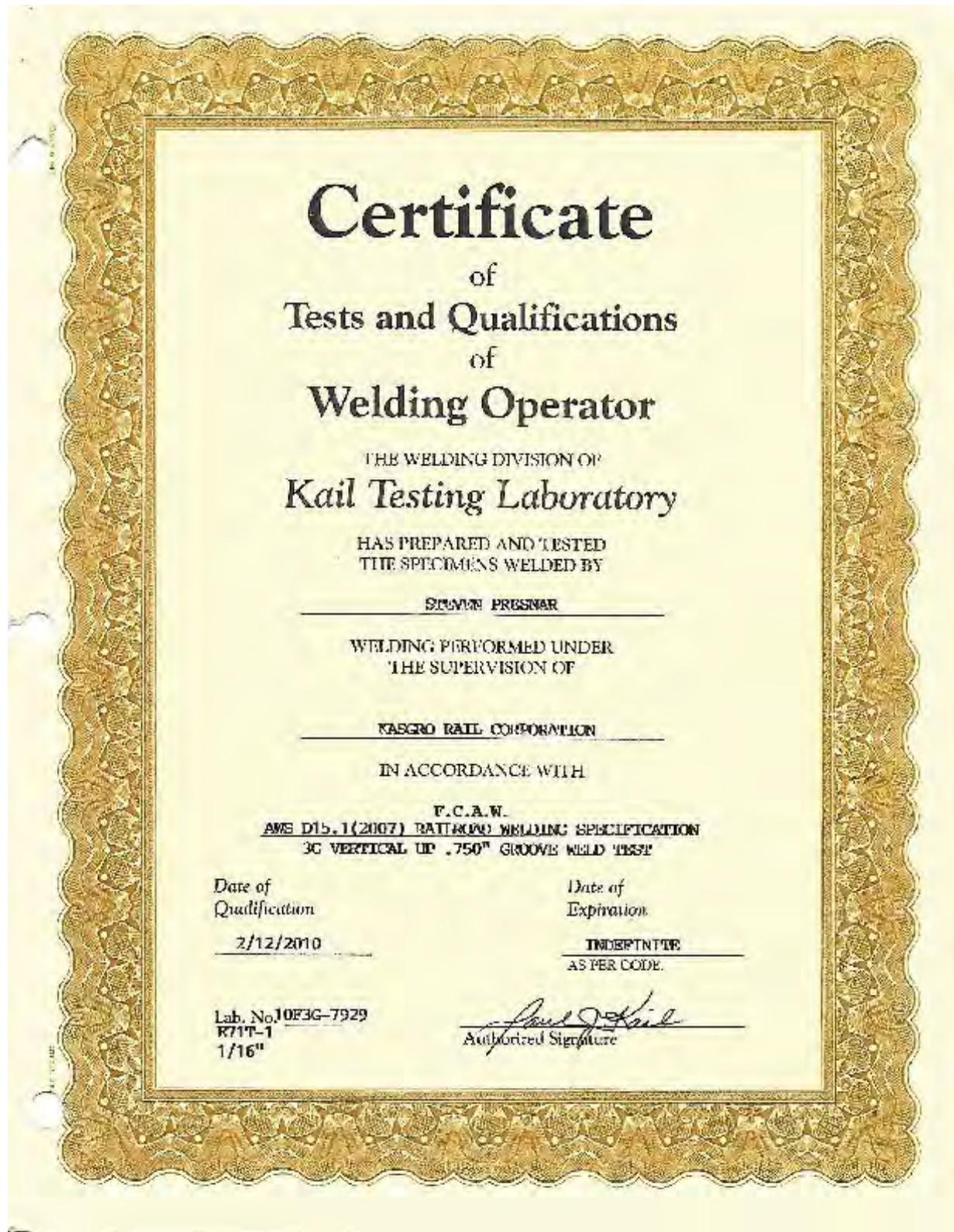
Date 2/18/10

Form D-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

AWS D15.1:15 (M,2007)

APP-X-D

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name: STEVEN PRISNAR Identifying no. 823  
 Welding process: MAN Manual        Semi-automatic: X Machine         
 (List, horizontal, overhead, or vertical—If vertical, state whether upward or downward.) 3X Vertical Up  
 In accordance with procedure specification no. E-001  
 Material specification: A-36  
 Diameter and wall thickness (if pipe); otherwise, joint thickness: .750"  
 Thickness range that qualifies: UNLIMITED

**FILLER METAL**

Specification no.: 5.20 Classification: E71T-1 Form: G  
 Describe filler metal (if not covered by AWS specification):         
 Is backing strip used? YES  
 Filler metal diameter and trade name: 1/16" LINCOLN Flux for submerged arc or gas for gas metal arc or flux:  
 core arc welding: 100% CO2

**VISUAL INSPECTION**

Appearance: Satisfactory Undercut: None Piping porosity: NONE

**Guided Bend Test Results**

| TYPE      | Result     | Type | Result |
|-----------|------------|------|--------|
| STDR BEND | NO DEFECTS |      |        |
| SIDE BEND | NO DEFECTS |      |        |

Test conducted by: KAL PHOSPHOR LABORATORY Laboratory test no.: 10130-7929  
 per: [Signature] Test date: 2/12/2010

**Flillet Test Results**

Appearance:        Fillet size:         
 Fillet root penetration:        Max depth:         
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by:        Laboratory testing:         
 per:        Test date:       

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by:        Laboratory test no.:         
 per:        Test date:       

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of AWS D15.1, (2007)        Railroad Welding Specification for Cars and Locomotives, (year)

Manufacturer or Contractor: KASCRO RAIL CORPORATION

Authorized by: [Signature]

Date: 2-12-10

Form D-4



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

ANNEX U

AWS D15.1:2001

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name SIEVE PRASNAR Identification no. 823  
 Welding process F, C, P, M, Manual Subautomatic  Machine  
 (Flat, horizontal, overhead, or vertical—If vertical, state whether upward or downward) 4G Overhead  
 In accordance with procedure specification no. E-001  
 Material specification A-36  
 Diameter and wall thickness (if pipe)—otherwise, joint thickness .500"  
 Thickness range this qualifies 1.0"

**FILLET METAL**

Specification no. 5-20 Classification R711-1 F-no. 6  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name 1/16" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 cored arc welding 100% CO<sub>2</sub>

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Tying porosity None

**Guided Bend Test Results**

| Type             | Result            | Type | Result |
|------------------|-------------------|------|--------|
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |

Test conducted by KALIE WISHING LABORATORY Laboratory test no. 08T45-7797  
 per Paul J. Kaul Test date 3/04/2008

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Macroetch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or flawing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of AWS D15.1: ( 2001 ) Railroad Working Specification—Cars and Locomotives, (year)

Manufacturer or Contractor KASIRO RAIL CORP.  
 Authorized by Mark Saha  
 Date 3/4/08

Form D-4



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|                              |   |   |                 |
|------------------------------|---|---|-----------------|
| AREVA                        |   | AREVA Federal Services LLC  |                 |
| <b>DATA TRANSMITTAL FORM</b> |   |   |                 |
| Supplier:                    | KASGRO RAIL CORP., INC.   | DTF No:   | 021             |
| P.O./SC No: 15C3011916       |   | Date:   | 03/27/18        |
| Type of Submittal:           | <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal                                   | SDRL List Item No:  | 20              |
| Submitted for:               | <input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted:   | 1               |
| Submitted By:                | <b>RICK FORD</b>  | <small>Digitally signed by Rick Ford<br/>Date: 2018.03.27 15:33:07<br/>-0402</small><br>Rick Ford | PROJECT MANAGER |
|                              | (Name)  | (Signature)   | (Title)         |

| ITEM NUMBER | DOCUMENT NUMBER | REVISION NUMBER | DOCUMENT DESCRIPTION                              | AFS DISPOSITION   |
|-------------|-----------------|-----------------|---|---|
| 1           | KAS W28         |                 | Clock # 814 Thomas Cummings Welder Qualifications | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 2           | KAS W29         |                 | Clock #81 Trevor Barker Welding Qualifications    | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 3           | KAS W30         |                 | Clock #821 Triston Mills Welding Qualifications   | <input type="checkbox"/> AP <input checked="" type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |

|  |  |
|--|--|
| Comments:<br>Triston Mills, 1G and 3G use ID #9980, 4G uses ID #673. Please provide clarification. | Technical Reviewer (I.e., RE, PTL, SME, QA, etc.)<br><b>KLEIN Slade</b> KLEIN Slade<br><small>2018.04.10 07:04:15 -0700</small><br>Date: 4/10/2018 |
|--|--|

| AFS DISPOSITION CODES AND DEFINITIONS |                                |  |                             |
|---------------------------------------|--------------------------------|--|-----------------------------|
| AP                                    | Approved                       | Work may proceed.  | Resubmittal is not required |
| AWC                                   | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| REV                                   | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| RWC                                   | Reviewed with Comment          | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit        |
| DS                                    | Disapproved                    | Work may <u>not</u> proceed.   | Correct and resubmit        |
| RSA                                   | Receipt Submittal Acknowledged | No other action required.  |                             |

If, in the judgment of the Supplier, the incorporation of AFS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to AFS' C&P Representative describing the change.

|  |   |
|--|---|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval<br> | <small>Digitally signed by DENTON Mark<br/>DN: c=AREVA GROUP,<br/>2.5.4.49=187437512804102021700,<br/>ou=DENTON Mark,<br/>Date: 2018.04.10 10:00:40 -0400</small><br>Date: 04/10/2018 |
|--|---|

AFS-EN-FRM-023 Rev 01 (Effective August 18, 2014)  
 Refer to AFS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

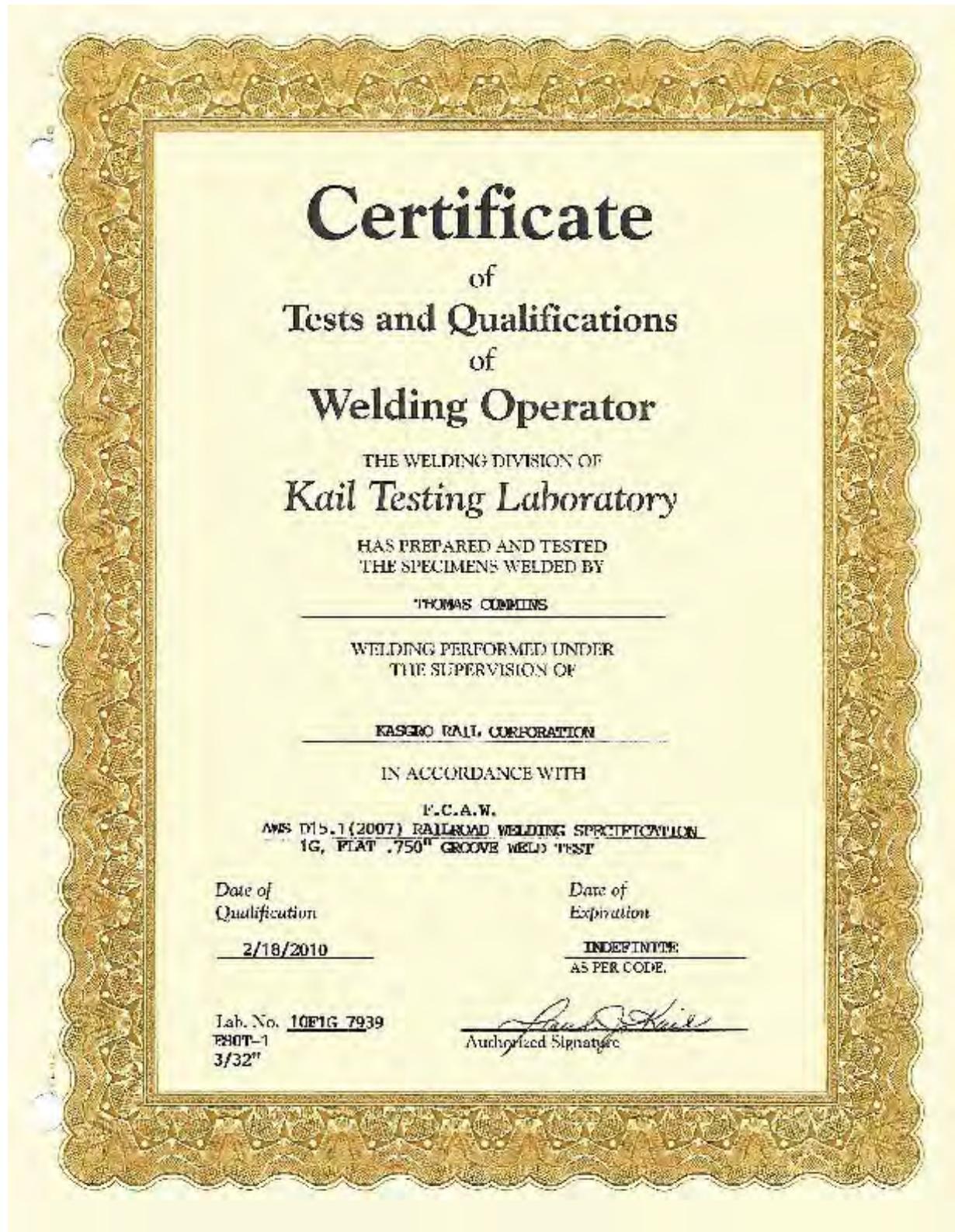
Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |                                    |   |
|--|------------------------------------|---|
|  | AREVA Federal Services LLC         |   |
|  | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:   | Kasgro Rail / 15C3011916           | DTF No. / Rev: 021  |
| Charge No:   | 00225.03.0050.02.00001             | Due Date: 4/10/2018   |
| Document(s):   | See DTF No.: 021                   |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. AFS Spec and Dwg. Codes, Stds, etc.)                 |                                    |   |
| PE   | Slade Klein                        |   |
| REVIEWERS  | Slade Klein, Bernie Counterman     |   |
| QA   | Bernie Counterman                  |   |
| <b>Technical Review</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No comments  |                                    |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b>  |                                    | KLEIN Slade<br>2018.04.10 05:12:28 -07'00'                                  |
| <b>Quality Assurance Review (As Applicable)</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| Triston Mills - 1G & 3G use ID #9980, 4G uses ID #673  |                                    |   |
| QA Reviewer(s) (Sign/Date): <b>Bernard Counterman</b>  |                                    | Digitally signed by Bernard Counterman<br>Date: 2018.04.05 16:14:48 -07'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary) |                                    |   |
|  |                                    |   |
|  |                                    |   |



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

AWS D15.1 (11) 1612207

ANNEX D

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name: THOMAS CUMMINS Identification no. 814  
 Welding process: PCBW Manual  Semi-automatic  Machine   
 (Flat, horizontal, overhead, or vertical—if vertical, state whether upward or downward.) Flat  
 In accordance with procedure specification no. E-005  
 Material specification A-36  
 Diameter and wall thickness (if pipe) otherwise, joint thickness .750"  
 Thickness range this qualifies UNLIMITED

**FILLER METAL**

Specification no. E-29 Classification E60T-1 F-no. 6  
 Describe filler metal (if not covered by AWS specification):  
 Is backing strip used? Yes  
 (Filler metal diameter and trade name) 3/32" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 cored arc welding 100% CO<sub>2</sub>

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Riping porosity None

**Guided Bend Test Results**

| Type      | Result     | Year | Result |
|-----------|------------|------|--------|
| SIDE BEND | NO DEFECTS |      |        |
| SIDE BEND | NO DEFECTS |      |        |

Test conducted by KATH HENSHAW LABORATORY Laboratory test no. 10F1G-7939  
 per [Signature] Test date 2/18/2018

**Filler Test Results**

Appearance \_\_\_\_\_ Filler size \_\_\_\_\_  
 Fracture test (no penetration) \_\_\_\_\_ Macroetch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

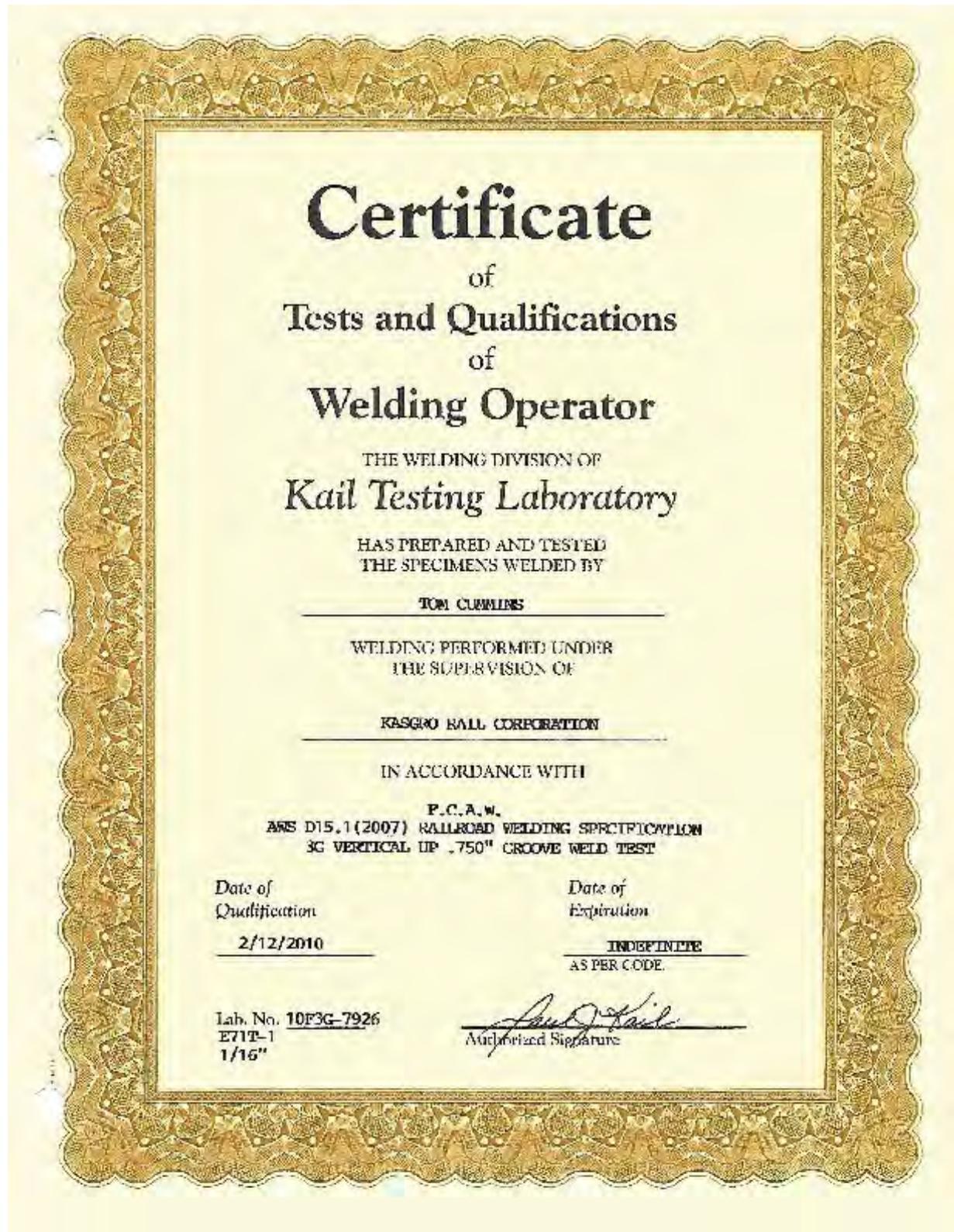
We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of AWS D15.1, ( 2007 ) Railroad Welding Specification for Cars and Locomotives, (yes)

Manufacturer or Contractor KAGAN RAIL CORP.  
 Authorized by [Signature]  
 Date 2-18-18



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

AWS D15.1/D15 (M)2007

ANNEX D

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name: THOMAS CUMMINS Classification no. 814  
 Welding process: ECW Manual  Semi-automatic  Machine   
 (Flat, horizontal, overhead, or vertical; if vertical, state whether upward or downward) 3G Vertical Up  
 In accordance with procedure specification no. C-001  
 Material specification A-36  
 Diameter and wall thickness (if pipe) - otherwise, joint thickness .750"  
 Thickness range this qualifies UNLIMITED

**FILLER METAL**

Specification no. 5.20 Classification E/UT-1 Filler 6  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name 1/16" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 cured arc welding 100% CO<sub>2</sub>

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bend Test Results**

| Type             | Result            | Type | Result |
|------------------|-------------------|------|--------|
| <u>STIR BEND</u> | <u>NO DEFECTS</u> |      |        |
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |

Test conducted by KATE TESTING LABORATORY Laboratory test no. 10130-7926  
 per [Signature] Test date 2/12/2010

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture (at root penetration) \_\_\_\_\_ Macroetch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Pin Identification | Results | Remarks | Pin Identification | Results | Remarks |
|--------------------|---------|---------|--------------------|---------|---------|
|                    |         |         |                    |         |         |

Test witnessed by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of AWS D15.1, ( 2007 ) Manual Welding Specification for Cars and Locomotives (year)

Manufacturer or Contractor: KASCRO RAIL CORPORATION

Authorized by [Signature]  
 Date 2-12-10

Form 024



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD**

Welder or welding operator's name TEENOR BARKER Identification no. 081  
 Welding process MIG Manual  Semi-automatic  Machine   
 Position CG FLAT  
 (Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification no. 01383-0129  
 Material specification A-36  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness 1.0"  
 Thickness range this qualifies UNLIMITED

**FILLER METAL**

Specification no. E-30 Classification GTAW-L F no. 6  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? YES  
 Filler metal diameter and trade name 3/32" LINCOLN Flux for submerged arc or gas for gas metal arc or flux  
 cored arc welding 100% CO<sub>2</sub>

**VISUAL INSPECTION**

Appearance: Satisfactory Undercut None Ripping porosity None

**Guided Bend Test Results**

| Type      | Result     | Type | Result |
|-----------|------------|------|--------|
| SHOE BEND | NO DEFECTS |      |        |
| SIDE BEND | NO DEFECTS |      |        |

Test conducted by RAZ TESTING LABORATORY Laboratory test no. 02PLG-2259  
 per Paul J. Hall Test date 7/14/2003

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Marcobatch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D15.1, ( \_\_\_\_\_ 2001 \_\_\_\_\_ )  
 year

Manufacturer or contractor KASSIRO RAIL CORP.  
 Authorized by Mark Yeigh  
 Date 7-14-03

Form D-4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project







Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name THOMAS HANSON Identification no. 081  
 Working process TIG Manual  Semi-automatic \_\_\_\_\_ Machine \_\_\_\_\_  
 Position BC Vertical Up  
 (Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 in accordance with procedure specification no. Insulated joint fig. no. 018  
 Material specification A 307  
 Diameter and wall thickness (if pipe) — otherwise joint thickness .875"  
 Thickness range this qualifies .75"

**FILLER METAL**

Specification no. B. I. K. 3. 3 Class/location A 7023 F no. 4  
 Describe filler metal (if not covered by AWS specification): \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name 1/8" EXXOTIG Flux for submerged arc or gas for gas metal arc or flux  
 cored arc welding \_\_\_\_\_

**VISUAL INSPECTION**

Appearance Good/Pass Undercut None Piping porosity None

**Guided Bend Test Results**

| Type             | Result                 | Type | Result |
|------------------|------------------------|------|--------|
| <u>FACE BEND</u> | <u>NO DEFECTS</u>      |      |        |
| <u>BACK BEND</u> | <u>1/8" TEAR/FACED</u> |      |        |

Test conducted by WELDER TESTING LABORATORY Laboratory test no. 300602230  
 per Frank Schul Test date 6/26/20

**Filler Test Results**

Appearance \_\_\_\_\_ Filler size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Marbatch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| File identification | Results | Remarks | File identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS Q16.1, ( 2018 ) year.

Manufacturer or contractor VERBIC DATA CORP.  
 Authorized by [Signature]  
 Date 3-5-20

Form B.4



Orano Federal Services  
 Title: Design and Prototype Fabrication of Railcars for Transport of  
 High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

186

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name TRAVOR BARNER Identification no. 081  
 Welding process E.C.A.E. Manual  Semi-automatic  Machine   
 Position 3G Vertical Up  
 (Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)  
 In accordance with procedure specification no. Unqualified joint req. no. C18  
 Material specification A-5C  
 Diameter and wall thickness (if pipe) — otherwise, joint thickness 1.5"  
 Thickness range this qualifies UNLIMITED

**FILLER METAL**

Specification no. E.80 Classification E77C-7 F no. 6  
 Describe filler metal (if not covered by AWS specification)  
 Is backing strip used? Yes  
 Filler metal diameter and trade name 1/16" Lincoln Flux for submerged arc or gas for gas metal arc or flux  
 cored arc welding 100% AWS

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bend Test Results**

| Type             | Result                    | Type | Result |
|------------------|---------------------------|------|--------|
| <u>SIDE BEND</u> | <u>Minor check/PASSED</u> |      |        |
| <u>SIDE BEND</u> | <u>1/16" Pass/PASSED</u>  |      |        |

Test conducted by KALYANESH KANAKAVART Laboratory test no. 26130-1299  
 per Paul J. Kahl Test date 2/02/03

**Fillet Test Results**

Appearance \_\_\_\_\_ Fillet size \_\_\_\_\_  
 Fracture test root penetration \_\_\_\_\_ Marcatch \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per \_\_\_\_\_ Test date \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |
|                     |         |         |                     |         |         |

Test witnessed by \_\_\_\_\_ Test no. \_\_\_\_\_  
 per \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of the American Welding Society AWS D18.1, ( 03 ) year.

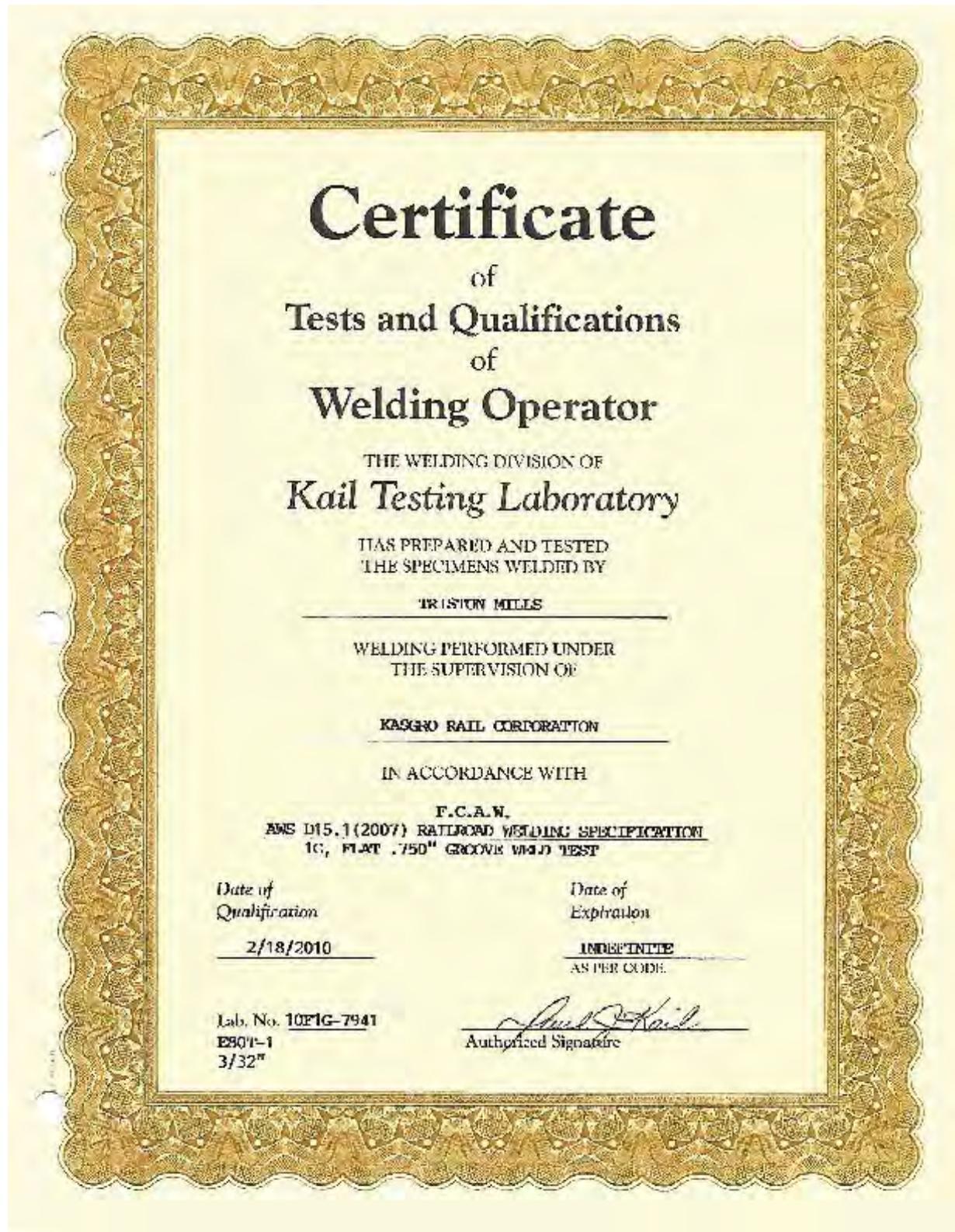
Manufacturer or contractor MASCOR F/TT CORP.  
 Authorized by [Signature]  
 Date 2/02/03

Form 2-4



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

AWS D15.1:2011:10-2007

ANNEX D

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator name: TRISTON MILLS Identification no. 821  
 Welding process: FCM Manual  Semiautomatic  Machine   
 (Flat, horizontal, overhead, or vertical—if vertical state whether upward or downward) 1G, 6Lat  
 In accordance with procedure specification no. E-005  
 Material specification: A-36  
 Diameter and wall thickness (if pipe) otherwise, joint thickness: .750"  
 Thickness range this qualifies: UNLIMITED

**FILLER METAL**

Specification no. B-29 Classification: E8011 F no. G  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name: 3/32" Lincoln Flux for submerged arc or gas for gas metal arc or flux cored arc welding: 100% CO2

**VISUAL INSPECTION**

Appearance: Satisfactory Undercut: None Piping porosity: None

**Guided Bent Test Results**

| Type      | Result     | Type | Result |
|-----------|------------|------|--------|
| SIDE BEND | NO DEFECTS |      |        |
| SLID-BEND | NO DEFECTS |      |        |

Test conducted by: KATE TESTING LABORATORY Laboratory test no. 10E1G-7941  
 per: [Signature] Test date: 2/10/2010

**Fitot Test Results**

Appearance: \_\_\_\_\_ Filler size: \_\_\_\_\_  
 Fraction test root penetration: \_\_\_\_\_ Macroetch: \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen)  
 Test conducted by: \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per: \_\_\_\_\_ Test date: \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film identification | Results | Remarks | Film identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by: \_\_\_\_\_ Laboratory test no. \_\_\_\_\_  
 per: \_\_\_\_\_ Test date: \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of AWS D15.1:2011:10-2007, *Manual Welding Specification for Cars and Tankcars*, by:

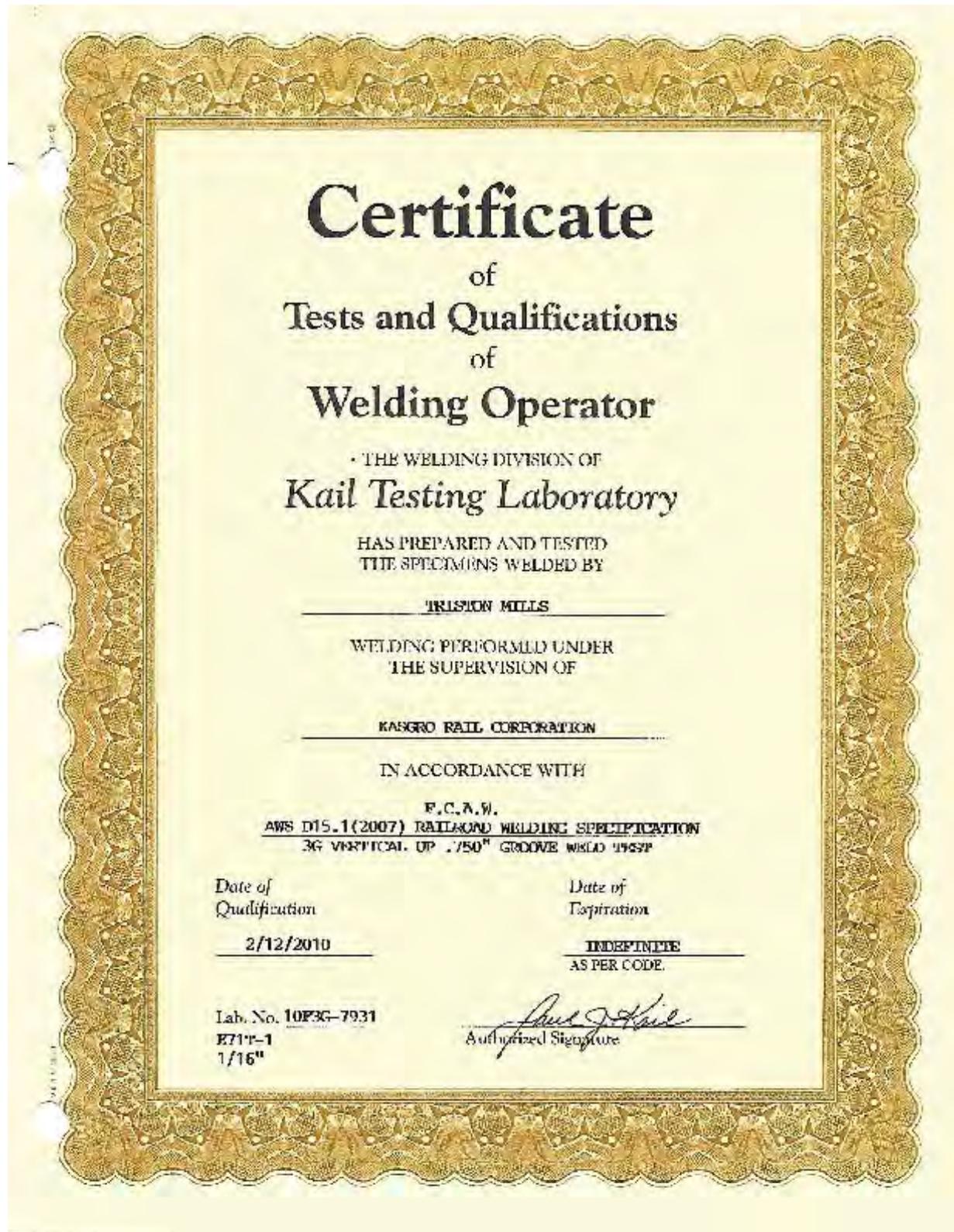
Manufacturer or Contractor: KASCO RAIL CORP.  
 Authorized by: [Signature]  
 Date: 2-18-10

Form D-1



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

AWS D15.10:1918 (M2007)

ANNEX D

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name TRISTON MILLS Identification no. 821  
 Welding process MIGW Manual                      Semi-automatic X Machine                       
 (Flat, horizontal, overhead, or vertical—if vertical, state whether upward or downward) 3C Vertical Up  
 In accordance with procedure specification no. F-001  
 Material specification A-36  
 Diameter and wall thickness (if pipe) otherwise joint thickness: .750"  
 Thickness range (if applicable) UNLIMITED

**FILLER METAL**

Specification no. 5.20 Classification E71T-1 Filler 6  
 Describes filler metal (if not covered by AWS specification)                       
 Is backing strip used?                      YES  
 Filler metal diameter and trade name 1/16" Lincoln Flux for submerged arc or gas for this metal and on line  
 coated arc welding 100% CB2

**VISUAL INSPECTION**

Appearance Satisfactory Undercut None Piping porosity None

**Guided Bend Test Results**

| Type             | Result            | Type | Result |
|------------------|-------------------|------|--------|
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |

Test conducted by KAIL TESTING LABORATORY Laboratory test no. 10F2G-7931  
 per [Signature] Test date 2/12/2011

**Fillet Test Results**

Appearance                      Fillet size                       
 Describe test root orientation                      Macroetch                       
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by                      Laboratory test no.                       
 per                      Test date                     

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by                      Laboratory test no.                       
 per                      Test date                     

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of AWS D15.1, ( 2007 ) ( Manual Welding Specification for Cars and Locomotives; year:                     

Manufacturer or Contractor KANSAS RAIL CORPORATION

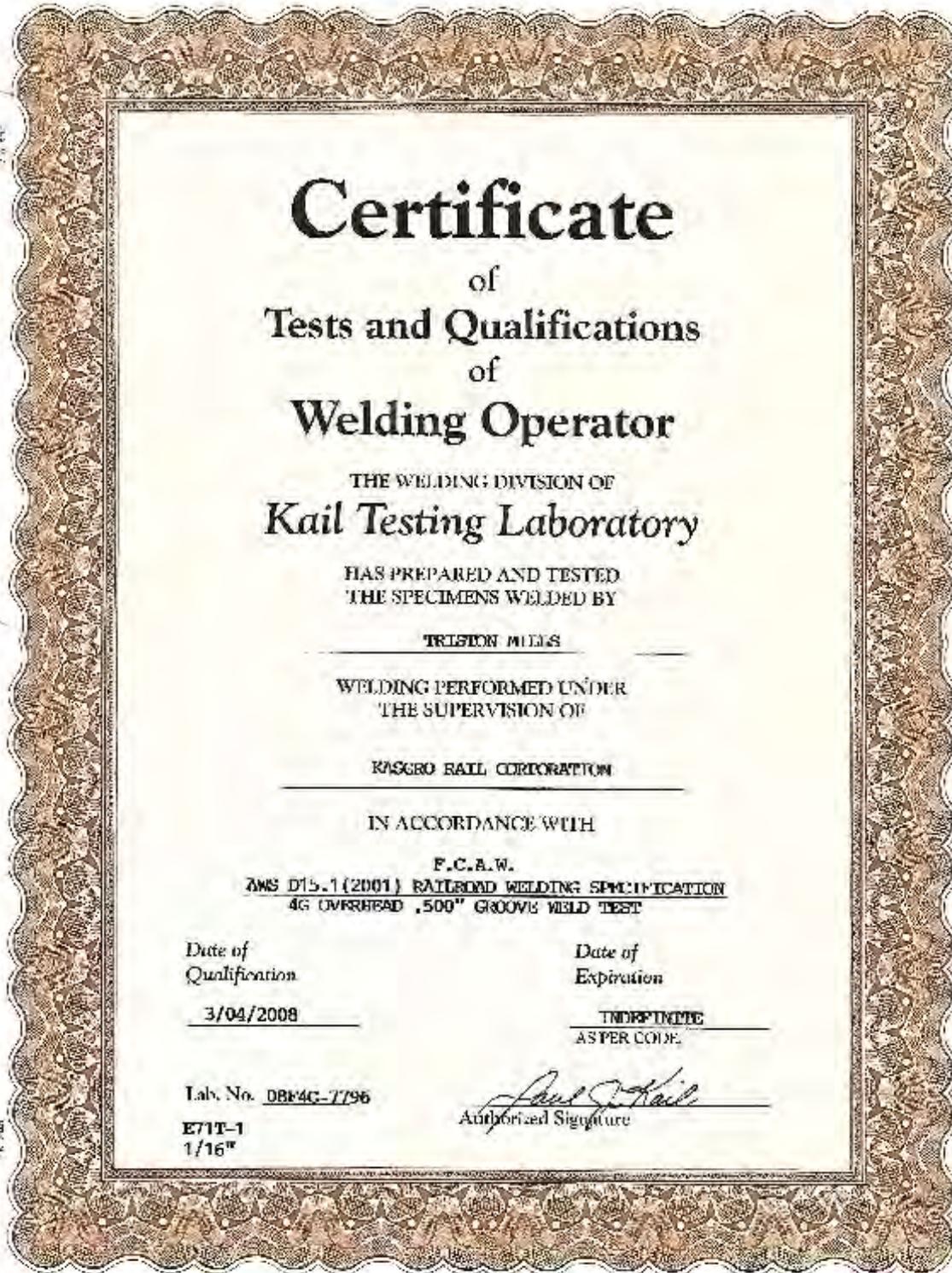
Authorized by [Signature]  
 Date 2-12-10

Form D-1



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

APPENDIX B

AWS D15, 19904

**WELDER AND WELDING OPERATOR QUALIFICATION RECORD**

Welder or welding operator's name: TRISTON MILLS Identification no. 821  
 Welding process: F, C, A, W, Manual Semi-automatic  Machine   
 (Flat, horizontal, overhead, or vertical - if vertical, state whether upward or downward.) 4G Overhead  
 In accordance with procedure specification no. E-001  
 Material specification A-36  
 Diameter and wall thickness (if pipe) - otherwise, joint thickness: .500"  
 Thickness range this qualifies: 1.0"

**FILLER METAL**

Specification no. 5.20 Classification E71T-1 F.no. 6  
 Describe filler metal (if not covered by AWS specification) \_\_\_\_\_  
 Is backing strip used? Yes  
 Filler metal diameter and trade name: 1/16" TIGRODIN Flux for submerged arc or gas for gas metal arc or flux-cored arc welding: 100% CO2

**VISUAL INSPECTION**

Appearance: Satisfactory Undercut: None Piping porosity: None

**Guided Bend Test Results**

| Type             | Result            | Type | Result |
|------------------|-------------------|------|--------|
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |
| <u>SIDE BEND</u> | <u>NO DEFECTS</u> |      |        |

Test conducted by: KATHY THOMPSON LABORATORY Laboratory test no.: 08F46-7796  
 per: [Signature] Test date: 3/04/2008

**Fillet Test Results**

Appearance: \_\_\_\_\_ Fillet size: \_\_\_\_\_  
 Fracture test root penetration: \_\_\_\_\_ Macroetch: \_\_\_\_\_  
 (Describe the location, nature, and size of any crack or tearing of the specimen.)  
 Test conducted by: \_\_\_\_\_ Laboratory test no.: \_\_\_\_\_  
 per: \_\_\_\_\_ Test date: \_\_\_\_\_

**RADIOGRAPHIC TEST RESULTS**

| Film Identification | Results | Remarks | Film Identification | Results | Remarks |
|---------------------|---------|---------|---------------------|---------|---------|
|                     |         |         |                     |         |         |

Test witnessed by: \_\_\_\_\_ Laboratory test no.: \_\_\_\_\_  
 per: \_\_\_\_\_ Test date: \_\_\_\_\_

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of AWS D15.1, (2001) Rail Road Welding Specification—Cars and Locomotives. (year)

Manufacturer or Contractor: KAGRO BATH CORP.  
 Authorized by: [Signature]  
 Date: [Signature]

Form D-1



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.4.4 – Kasgro Personnel AAR S-486 Brake Test Certification**

| Orano Federal Services   |   |   |   |   |
|--|---|---|---|---|
| <b>DATA TRANSMITTAL FORM</b>   |   |   |   |   |
| Supplier: <b>KASGRO RAIL CORP., INC.</b>   | DTF No: <b>038</b> Page <u>1</u> of <u>1</u>  |   |   |   |
| P.O./SC No: <b>15C3011916</b>  | <b>KLEIN Slade</b> Date: 2019.02.27 14:12:31 -08'00' Date: <b>2/19/2019</b>                             |   |   |   |
| Type of Submittal: <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal   | SDRL List Item No: <b>24</b>  |   |   |   |
| Submitted for: <input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information   | Number of Copies Submitted: <b>1</b>  |   |   |   |
| Submitted By: <b>RICK FORD</b>   | <b>Rick Ford</b> Digitally signed by Rick Ford Date: 2019.02.19 13:31:27 -08'00' <b>PROJECT MANAGER</b> |   |   |   |
| (Name) (Signature) (Title)   |   |   |   |   |
| ITEM NUMBER  | DOCUMENT NUMBER   | REVISION NUMBER   | DOCUMENT DESCRIPTION  | FS DISPOSITION  |
| 1  | KAS 127   |   | ATLAS CASK CAR CMS LASER DIMENSIONS FOR PIN BLOCK ATTACHMENT BLOCKS | <input type="checkbox"/> AP <input checked="" type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 2  | KAS 128   |   | FRA S-2044 INPSECTION FOR BUFFER CARS                               | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 3  | KAS 129   |   | AAR S-486 BRAKE TEST CERTIFICATION                                  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 4  | KAS 130   |   | TRACK SCALE CALIBRATION RECORDS                                     | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 5  | KAS 131   |   | TUV UT NDE REPORT CASK CAR  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 6  | KAS 132   |   | TUV PT NDE REPORT CASK CAR  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 7  | KAS 133   |   | TUV MT NDE REPORT CASK CAR  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input checked="" type="checkbox"/> DS <input type="checkbox"/> RSA |
| 8  | KAS 143 <b>134</b>  |   | TUV VT NDE REPORT CASK CAR  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input checked="" type="checkbox"/> DS <input type="checkbox"/> RSA |
| Comments:<br>1) NOTE: KAS 127 provides as-built railcar dimensions. Kasgro rework modified some of these. Kasgro to submit final dimensions separately.<br>2) KAS 133 does not include the shear block or outer pin block weld MT.<br>3) KAS 134 does not include VT of the shear block welds. |   |   |   | Technical Reviewer (i.e., RE, PTL, SME, QA, etc.)<br><b>KLEIN Slade</b> Date: 2019.02.27 13:47:33 -08'00'<br>Date <b>2/27/2019</b>  |
| FS DISPOSITION CODES AND DEFINITIONS   |   |   |   |   |
| AP   | Approved  | Work may proceed.   | Resubmittal is not required   |   |
| AWC  | Approved with Comment   | Work may proceed; comments provided for Supplier's consideration only.  | Resubmittal is not required   |   |
| REV  | Reviewed  | Work may proceed; comments provided for Supplier's consideration only.  | Resubmittal is not required   |   |
| RWC  | Reviewed with Comment   | Work may proceed; subject to incorporation and compliance w/ Buyer comments.  | Correct and resubmit  |   |
| DS   | Disapproved   | Work may <u>not</u> proceed.  | Correct and resubmit  |   |
| RSA  | Receipt Submittal Acknowledged  | No other action required.   |   |   |
| If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change.                          |   |   |   |   |
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval<br>   |   | Digitally signed by Mark A. Denton<br>DN: cn=Mark A. Denton, o=Orano Federal Services, email=mark.denton@orano.gov, c=US<br>Date: <b>02/27/2019</b> |   |   |

FS-EN-FRM-023 Rev 02 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|   |                                    |   |
|---|------------------------------------|---|
|   | Orano Federal Services             |   |
|   | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:  | KASGRO / 15C3011916                | DTF No. / Rev: 038  |
| Charge No:  | 00225.03.0050.02.00001             | Due Date: 3/8/2019  |
| Document(s):  | See DTF No.: 038                   |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)   |                                    |   |
| PE  | Slade Klein                        |   |
| REVIEWERS   | Slade Klein, Bernie Counterman     |   |
| QA  | Bernie Counterman                  |   |
| <b>Technical Review</b>   |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                                    |   |
| Technical Reviewer Comments:  |                                    |   |
| KAS 133 does not include the required MT inspection of the shear blocks and outer pin blocks. This was required by Kasgro drawing 1155-41.  |                                    |   |
| Technical Reviewer(s) (Sign/Date): KLEIN Slade  |                                    | Date: 2019.02.26 07:23:43 -08'00'   |
| <b>Quality Assurance Review (As Applicable)</b>   |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                                    |   |
| Technical Reviewer Comments:  |                                    |   |
| Only potential question was regarding missing signature by the technician on the UT report. Discussed with TUV Rheinland Level III (Randy @ 616-818-8188). The technician signature is not required provided the report is signed by his supervisor. This report is signed by the individuals supervisor. |                                    |   |
| QA Reviewer(s) (Sign/Date):   |                                    | Digitally signed by COUNTERMAN Bernard<br>Date: 2019.02.25 09:29:24 -08'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary)  |                                    |   |
|   |                                    |   |
|   |                                    |   |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Wabtec CORPORATION**

This is to certify that  
Mark Butler  
 (First and Last Name)

of Wabtec  
 (Name of Company)

has met the requirements for testing in accordance with FRA Regulation Part 49 232.203 for testing freight equipment on the date and for the process specified on reverse.

| PROCESS                | DATE    | INSTR. INITIALS | RETEST DUE |
|------------------------|---------|-----------------|------------|
| MANUAL SCT             | 1-10-19 |                 | 1-10-2     |
| AUTOMATED SCT          |         |                 |            |
| SCP - SCT              |         |                 |            |
| TERMINAL BRAKE TESTING |         |                 |            |

[Signature] **Wabtec CORPORATION**  
 (Inspector Signature)



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000

Project: 00225.03.0050 DOE Atlas Project

Written Exam on Freight Air Brake  
Single Car Tests per AAR S-486 - 13



NAME: MARK BAKER DATE: 1-9-18  
COMPANY: WABTEC RAIL CORP. MARK: 28 93%

Circle the letter next to the most correct answer for each question or will make the statement correct per AAR S-486-13. There is only one answer that is the most correct for each question or will make the statement correct in each case. READ THE QUESTIONS CAREFULLY BEFORE ANSWERING.

1. What is the minimum brake cylinder pressure that must be obtained for a full service brake application on a loaded car? .....

  - a. 85 psi
  - b. 80 psi
  - c. 70 psi
  - d. 50 psi
  - e. None of the above.

2. To secure reliable and uniform results with the Manual Single Car Test Device, it must be kept free from leakage and must be disassembled, cleaned and tested not less frequently than \_\_\_\_\_ after being placed into service or more often if necessary (AAR 2.2.2)?

  - a. 365 days.
  - b. 60 days
  - c. 30 days
  - d. 92 days
  - e. None of the above.

3. The hose combination hose and pipe between the test device and the outlet hose coupling must be  $\frac{3}{4}$ " I.D. with  $\frac{1}{2}$ " connections, nipples and not exceed \_\_\_\_\_ in length (AAR 2.2.2).

  - a. 4 feet.
  - b. 6 feet.
  - c. 8 feet
  - d. 2 feet
  - e. None of the above.

4. When applying the brake cylinder gauge it must be applied to the correct tap on the freight car. Which location is correct?

  - a. Any tap on the car will work
  - b. The tap downstream from the empty/load equipment
  - c. The tap upstream from the empty/load equipment
  - d. None of the above.

5. The Daily Test 2.3 allows for how much leakage from the test device rotary valve exhaust?

  - a. no leakage
  - b. 1 psi in one minute
  - c. 3 psi
  - d. a 1" bubble in 5 seconds

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(1 of 4)



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000

Project: 00225.03.0050 DOE Atlas Project

Written Exam - AAR S-486-13



6. Why is it necessary to blow out the supply line before any connection is made to the Single Car Test Device?
- a. To remove moisture from the air line.
  - b. To remove dirt from the air line.
  - c. To remove any foreign object from the air line.
  - d. All of the above.
  - e. None of the above.
7. When performing a daily test, what variance between the brake cylinder pressure gauge and the test device is allowed per the Daily Test (2.3.4)?
- a. +/- 3psi.
  - b. +/- 5psi.
  - c. +/- 6psi.
  - d. All of the above.
  - e. None of the above.
8. In the Brake Pipe Leakage Test (3.3) with the cut-out cock closed, the brake pipe is charged to 90 psi and the brake pipe is checked for leakage. The reservoirs are completely drained of air for this test, why?
- a. To check for leakage from the reservoirs.
  - b. To check for leakage in the brake cylinder.
  - c. To check for leakage in the brake pipe.
  - d. To check for leakage at the angle cock.
  - e. To check for leakage past the dirt collector/cutoff cock.
9. When checking brake cylinder piston travel in accordance with Piston Travel & Rigging Test 3.9, a car equipped with empty/load brake equipment must have the equipment in the \_\_\_\_\_ position.
- a. Empty
  - b. Loaded
  - c. Empty or loaded does not matter
  - d. Whatever the car is empty or loaded
  - e. None of the above
10. Cars with an A-1 Reduction Relay Valve and less than \_\_\_\_\_ feet of brake pipe must have the B-1 Quick Service valve nulled when performing the Separate Vent Valve Test 3.4.
- a. 100
  - b. 90
  - c. 85
  - d. Any length of foot
  - e. Not required to plug

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(2 of 6)



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

Written Exam - AAR S-486-13



11. During the Service Stability Test 3.8, if the car goes into emergency, the most probable cause of failure would be the \_\_\_\_\_.
- a. Emergency portion.
  - b. Service portion
  - c. # 8 vent valve.
  - d. Empty/load valve.
  - e. None of the above.
12. Before performing the Service Stability Test 3.8 on a car equipped with a #8 Vent Valve, the vent valve must be nullified by \_\_\_\_\_.
- a. Removing the valve
  - b. Closing the cut out cock
  - c. Removing the vent on the valve and inserting the plug portion of the vent into the body of the vent valve
  - d. Hitting it with a hammer
  - e. None of the above
13. When checking piston travel during the Piston Travel & Rigging Test 3.9, the piston travel must be in accordance with what standards?
- a. The bridge plate
  - b. The decal on the car
  - c. 7 – 9 inches
  - d. AAR Rule 3
  - e. The standard for that car, which may be a, b, c or d or any combination thereof.
14. The Hand Brake Inspection (AAR 3.6) includes the following requirements.
- a. An air brake application to check the piston travel
  - b. Oil the handbrake with 30W oil, apply the handbrake, check the bell crank, check the shoes with a bar, release the handbrake
  - c. Checking the brake shoes for wear
  - d. Checking the operation of the empty/load equipment
  - e. All of the above
15. In the Emergency Test 3.10, once the 3/8" cock has been opened, the brake cylinder pressure must be \_\_\_\_\_ compared to the pressure noted in the Service Stability Test?
- a. The same
  - b. A minimum of 5 psi higher than full service pressure
  - c. A minimum of 5 psi lower than full service pressure
  - d. Zero psi
  - e. None of the above.

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(3 of 6)



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000

Project: 00225.03.0050 DOE Atlas Project

Written Exam - AAR S-486-13



16. For the Service Stability Test 3.8, brake pipe pressure is reduced to \_\_\_\_\_?
- a. 10 psi
  - b. 40 psi
  - c. 50 psi
  - d. Reduce pressure to zero
  - e. None of the above.
17. During the Release After Emergency Test 3.11, brake pipe is charged to 28 psi, the rotary valve is placed in position 3. Brake pipe must rise. This verifies the \_\_\_\_\_ is functioning correctly?
- a. Service Accelerated Release Feature
  - b. Brake cylinder
  - c. Reservoir
  - d. Single Car Test Device
  - e. Emergency Accelerated Release Feature
18. How long must the brake cylinder remain extended during the Retaining Valve Test 3.12?
- a. Five minutes
  - b. Ten minutes
  - c. Four minutes
  - d. Four hours
  - e. Does not have to remain applied
19. Brake cylinder pressure at the end of the waiting period described in question 18 for the Retaining Valve Test 3.12 must be \_\_\_\_\_?
- a. 25 psi
  - b. 2 psi
  - c. 15 psi
  - d. Between 60 - 70 psi
  - e. Higher than full service
20. The flowrator is used to verify the car is charged when performing the Minimum application and Quick Service Limiting Valve Test 3.13. What is the minimum point that the car must be charged to perform this test?
- a. The ball floats below the top of the tube
  - b. The ball is below the red line.
  - c. The ball is at the bottom of the tube.
  - d. The ball is two lines below the red line.
  - e. None of the above.

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(4 of 6)



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000

Project: 00225.03.0050 DOE Atlas Project

Written Exam - AAR S-486-13



21. Brake Cylinder Leakage Test 3.14, after the brake pipe pressure has stabilized wait \_\_\_\_\_?
- a. One minute.
  - b. Two minutes.
  - c. Three minutes.
  - d. 60 seconds.
  - e. None of the above.
22. Test 3.14.2 allows no more than 1 psi increase or decrease in pressure variation from the noted in 3.14.1. If the brake cylinder pressure drops more than one psi the problem is \_\_\_\_\_?
- a. You did not wait long enough.
  - b. You waited too long.
  - c. There is a leak in the brake cylinder or associated piping.
  - d. The vent valve has failed.
  - e. None of the above.
23. Which air brake valves (emergency portions) do not have an AAV valve?
- a. ABDW, ABDWS, ABDW-2.
  - b. ABDX, ABDXR, ABDX-L, ABDXR-L.
  - c. AB, ABD, ABDS.
  - d. DB-20, DR-20-L.
  - e. All of the above.
24. In the Slow Release Test 3.15, what is the maximum release time for a car with 108 ft of brake pipe?
- a. 45 seconds
  - b. 55 seconds
  - c. 60 seconds
  - d. 75 seconds
  - e. 100 seconds
25. Test 3.10 Recheck of Piston Travel, piston travel must be within \_\_\_\_\_ of length measured in Test 3.9.1?
- a. +/- 1 inch
  - b. +/- 1/2 inch
  - c. +/- 3/4 inch
  - d. exactly the same
  - e. whatever you get for a measurement is fine

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(5 of 6)



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000

Project: 00225.03.0050 DOE Atlas Project

Written Exam - AAR S-486-73



26. When completing the Empty/Load Test 3.20, the brake cylinder pressure noted in 3.20.2 must be at least \_\_\_\_\_ lower than pressure noted in Test 3.9.4.
- a. 5 psi
  - b. 10 psi.
  - c. 17 psi.
  - d. 20 psi.
  - e. None of the above.
27. After removing the brake cylinder measurement gauge from the brake cylinder pressure tap, in Test 3.21.1, the tap must be checked for leakage. How much leakage is allowed on the brake cylinder pressure tap?
- a. 3 psi.
  - b. 2 psi.
  - c. 1 psi.
  - d. No leakage is allowed
  - e. None of the above.
28. When performing the Slack Adjuster & Piston Travel Adjustment Test 4.1, you reduce brake pipe pressure to \_\_\_\_\_ on the test device gauge to make the brake applications.
- a. 50 psi
  - b. 60 psi
  - c. 80 psi
  - d. zero psi
  - e. 20 psi
29. When performing the Brake Cylinder Leakage Test 4.5 in the Special Tests, an empty car with empty/load brake equipment must have the empty/load sensor in the \_\_\_\_\_.
- a. Empty position
  - b. Loaded position
  - c. Empty or loaded does not matter
  - d. Removed
  - e. None of the above
30. During the Single Car Test when reducing the brake pipe pressure, if the brake pipe continues to reduce after the test device handle is placed in Position 3, the person performing the test is instructed to do what?
- a. Change the emergency portion
  - b. Change the service portion
  - c. Move the test device handle to position 2 to stop the reduction in pressure, then move the handle back to position 3. Perform this procedure once.
  - d. Get a new test device, last one has failed
  - e. Let the brake pipe pressure drop as far as it wants, it does not matter

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(6 of 6)



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Practical Exam of Single Car Test**  
**Procedures per S-486-13**



Name: Mark Buckles Company: Kosco  
 Date: 1-10-2018 Mark: Pass

The instructor must observe the person taking the test. Depending upon the type of car under test, indicate in the space provided if the person taking the test passed each section of the test. If any part of an individual test is not performed in accordance with applicable standards or the instructor/teacher is not satisfied with the procedure, indicate in the fail column. At the end of the test, the instructor/teacher may add any notes that will qualify a pass or fail situation. Note test 3.12.3.1 is not applicable for cars tested to AAR Specifications.

| TEST   | PASS | FAIL |
|--|------|------|
| <b>2.0 - SINGLE CAR TEST DEVICE</b><br>1. Test device within date allowed by AAR standard.<br>2. Air supply to minimum 90 psi, recommended 100 psi for testing.<br>3. Test device within 15 degrees of vertical.<br>4. Hook up test device no longer than 8 feet.  | X    |      |
| <b>2.3 - DAILY TEST</b><br>1. Blow out air supply before coupling to test device.<br>2. Device in high pressure.<br>3. Close 3/8" cock.<br>4. Handle to Position 2.<br>5. Close & open flowmeter, ball rises and falls, does not stick.<br>6. Handle to Position 3.<br>7. Attach dummy coupling and brake cylinder gauge.<br>8. Handle to Position 1, pressure at 90 psi.<br>9. Set to Low Pressure, gauge reads 80 psi.<br>10. Brake cylinder measurement gauge within +/-3 psi of test device gauge.<br>11. Reset to High Pressure.<br>12. Change to 90 psi, Position 3.<br>13. Time 1 minute, leakage < 1 psi or check with soap suds < 1" bubble in 5 seconds.<br>14. Open 3/8" cock, remove dummy coupling.<br>15. Apply coupling with .28 mm opening.<br>16. Close 3/8" cock, handle to Position 1.<br>17. Check flowmeter. Ball floats between centering line and top of tube.<br>18. Position 3, open flowmeter and 3/8" cock.<br>19. Remove coupling, close 3/8" cock.<br>20. Leakage at BP coil and rotary valve not less than 1" bubble in 5 seconds. | X    |      |
| <b>3.0 - TESTS - STANDARD FREIGHT BRAKE</b><br><b>3.1 - Preliminary Procedures &amp; Inspections</b><br>1. Wheels checked, car protected from movement.<br>2. Handbrake released, brake cylinder push rod returned into brake cylinder.<br>3. Check shoes, brake levers, pins, rods, rigging for wear and does not bind or foul.<br>4. Check chafes on air hoses, if not charged, replace hose gaskets.<br>5. Both angle cocks open.<br>6. Apply brake cylinder measurement tap, if not installed.<br>7. Apply brake cylinder measurement gauge to tap.<br>8. Retainer valve in Direct Exhaust (EX)<br>9. Jockey vent protection & elbow on vent valve if equipped.<br>10. Completely drain reservoir.<br>11. Close branch pipe cut out cock.<br>12. Set empty/load equipment to loaded position as required.  | X    |      |

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(1 of 5)



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Practical Exam per S-486-13**



| TEST  | PASS | FAIL |
|---|------|------|
| <b>3.2 - Connecting Device to Car</b><br>1. Confirm Daily Test completed.<br>2. Supply line blown out.<br>3. Test device reads 90 in TR, 80 in L.P.<br>4. 3/8" cock closed.<br>5. Flowwater open.<br>6. Close branch pipe cut out cock.<br>7. Reservoir drained.<br>8. Connect test device to car air hoses - prefer B end.<br>9. Angle cocks open, handle in Position 1.<br>10. Continuous blow at angle cock open end.<br>11. Close angle cock, attach demity, reopn. | X    |      |
| <b>3.3 - Brake Pipe Leakage Test</b><br>1. Position 1, charge brake pipe to 90 psi.<br>2. Close flowwater, top of flowwater ball below condemning line.<br>3. Open flowwater.   | X    |      |
| <b>3.4 - Separate Brake Pipe Venting Devices - OPTIONAL -</b><br><b>3.4.1 - Continuous Quick Service Test - OPTIONAL -</b><br>1. Control valve cut out, charged to 90 psi, handle to Position 4.<br>2. Pressure reduces on gauge, must not produce emergency.<br>3. Intermittent exhaust at quick service vent. No exhaust = failure.<br>3. Handle to Position 1, recharge to 90 psi.   | N/A  |      |
| <b>3.4.2, 3.4.3 - Separate Vent Valve Test - OPTIONAL -</b><br>1. A-1 Reduction Relay end < 85" of BP plug B-1 Quick Service.<br>2. Position 5, reduce BP to 50 psi then to 3. BP pressure does not reduce to zero.<br>3. Separate emergency vent valve, BP < 75" use Position 5, > 75" use Position 6.<br>4. BP no lower than 40 psi, open 3/8" cock. BP pressure must reduce to zero.<br>5. Close 3/8" cock.  | N/A  |      |
| <b>3.5 - System Leakage Test</b><br>1. Handle in Position 1.<br>2. Cut in control valve, charge to 90 psi.<br>3. During charge, no venting or retained brake cylinder remains in release.<br>4. Close flowwater, ball below condemning line.<br>5. Soap reservoir pipe fittings and gaskets for leaks. No leakage allowed.<br>6. Open flowwater.  | X    |      |
| <b>3.6 - Hand Brake Inspection</b><br>1. Lubricate handbrake - if required.<br>2. IRB released, piston pushed into hollow rod.<br>3. Apply handbrake, check ball crank position.<br>4. Use bar, all shoes all locations HD applies are tight. No binding or fouling.<br>5. Whitecaps/Nycopac tracks one shoe per beam tight.<br>6. Release handbrake, chain fully upward.<br>7. Chain upward, bell crank drops to lower limit, horizontal chain has slack.              | X    |      |

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(2 of 5)



Orano Federal Services  
**Title: Design and Prototype Fabrication of Railcars for Transport of High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
 Appendix B

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Practical Exam per S-486-13**



| TFSI   | PASS | FAIL |
|--|------|------|
| <b>3.7 - Slack Adjuster Conditioning</b><br>1. Install block(s) between shoe(s) and wheel(s).<br>2. Charge to 90 psi, make 15 psi reduction, immediately return to Position 1.<br>3. Wait for cylinder to release.<br>4. Make 30 psi reduction, Position 5, immediately return to Position 1.<br>5. Wait for cylinder to release.<br>6. Charge to 90 psi, flow rate ball below top of tube. Open Flowmeter.  | X    |      |
| <b>3.8 - Service Stability Test</b><br>1. Vent valve plugged as applicable. VV bleed stem pulled, air blow noticed r.s applicable.<br>2. Cars up to 75', 40 psi reduction in Position 5, @ 55 psi use Position 4, lap @ 50 psi. <u>No Emergency</u> . Use Position 2 to stop reduction r.s applicable.<br>3. Cars > 75', 40 psi reduction in Position 6, @ 55 psi use Position 4, lap @ 50 psi. <u>No Emergency</u> . Use Position 2 to stop reduction r.s applicable.<br>4. Bleed stem of VV valve reset as applicable. | X    |      |
| <b>3.9 - Piston Travel (W/Blocks), Rigging &amp; BC Pressure</b><br>1. Measure & note piston travel per AAR Standards.<br>2. Check brake levers for regularity.<br>3. Determine all shoes firmly set against wheels, verify no leaking in linkage.<br>4. Brake cylinder pressure must be higher than 20 psi, (except cars with blind valves).<br>5. Modulating valves and emergency valves unable to set to loaded must develop minimum 25 psi BC pressure.<br>6. Note brake cylinder pressure.                          | X    |      |
| <b>3.10 - Emergency Test</b><br>1. Cars with < 100ft of BP, BP no lower than 40 psi, quickly open 3/8" cock.<br>2. Cars with > 100 ft of BP, BP no lower than 40 psi, Position 4 open 3/8" cock.<br>3. Must produce emergency application, BP to zero.<br>4. BC pressure must be at least 5 psi higher than full service 3.9.5.  | X    |      |
| <b>3.11 - Release Test after Emergency</b><br>1. Release handle to high pressure (HP) position.<br>2. Close 3/8" cock, handle to Position 3, watch BP for 2 minutes.<br>3. Open 3/8" cock, no air exhaust, close 3/8" cock.<br>4. Handle to Position 1, charge BP to 26 psi, immediately return handle to Position 3.<br>5. Brake pipe pressure must continue to rise.   | X    |      |
| <b>3.12 - Retaining Valve Test</b><br>1. Handle to Position 1, charge for four minutes.<br>2. Brakes manual applied, BC pressure must be equal to or greater than 12 psi.<br>3. Return to direct exhaust (DX), blow of air noted at exhaust valve exhaust.   | X    |      |
| <b>3.13 - Mfn. Application &amp; Quick Service Limiting Valve</b><br>1. Position 1, charge to 90 psi, flow rate ball below top of tube.<br>2. Handle to Position 4, reduce to 87 psi, Position 3.<br>3. Brakes manual apply.<br>4. BP drops below to 86 psi, use Position 2 then lap to stop as required - only cars.<br>5. Reducing valve to low pressure, device handle to Position 1.   | X    |      |

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(3 of 5)



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Practical Exam per S-486-13**



| UNST  | PASS | FAIL |
|---|------|------|
| <b>3.14 - Brake Cylinder Leakage Test</b><br>1. Pressure stabilized @ 80 psi, wait 3 minutes.<br>2. Note BC pressure. Brake cylinder pressure must be greater than 12 psi.<br>3. Wait another minute, check BC pressure.<br>4. No more than 1 psi increase or decrease is allowed.<br>5. Close flowrate, observe ball stabilizes.<br>6. Top of flowrate ball must stay below conditioning line.<br>7. Open flowrate by-pass cock.   | X    |      |
| <b>3.15 - Slow Release Test</b><br>1. BP pressure @ 80 psi, brakes applied, handle in Position 3.<br>2. Reducing valve handle to high pressure, check BP length.<br>3. Position 2, brakes must release within time specified by BP length. note exhaust @ retained.<br>4. Position 1, change to 90 psi.<br>5. Remove block(s) between stack(s) and wheel(s).  | X    |      |
| <b>3.16 - Slack Adjuster Conditioning (without blocks)</b><br>1. Make 15 psi reduction, immediately return to Position 1.<br>2. Wait for cylinder to release.<br>3. Make 30 psi reduction, Position 5, immediately return to Position 1.<br>4. Wait for cylinder to release.<br>5. Change to 90 psi, flowrate ball below top of tube. Open flowrate.  | X    |      |
| <b>3.17 - Accelerated Application Valve (AAV) Test</b><br>1. Handle to Position 4, BP pressure reducing, note exhaust at emergency portion.<br>2. No emergency application.<br>3. Reduce BP to 60 psi, Position 3. No exhaust - filled emergency portion.<br>4. BP continues to drop, use Position 2 thru tap to stop as required - only once.<br>5. BP reduction must stop.  | X    |      |
| <b>3.18 - Recheck of Piston Travel (WO blocks, cars with auto slack adjusters)</b><br>1. If BP unit at 60 psi, reduce to 60 psi in Position 5.<br>2. Use Position 5, 4 and tap to reach 60 psi.<br>3. Recheck piston travel.<br>4. Piston travel must be within +/- 1/2" of travel noted in 3.9.1.<br>5. May require to cycle slack adjuster with several applications. Last time BP to 90 psi flowrate ball below top of tube.<br>6. Slack adjuster defective, finish test before replacing.   | X    |      |
| <b>3.19 - Manual Release Valve Test</b><br>1. Handle to Position 5. BP drops to zero. (remove strap on ELX-S as applicable)<br>2. Pull release rod for 3 seconds, brakes release. (check lockout button on ELX-S)<br>3. Verify release rod does not bind or fail.<br>4. Brake cylinder piston must return to release.<br>5. Position 1, High Pressure position.<br>6. Brake cylinder piston must remain in release.<br>7. <del>Car supply rod has supply load go to 3.20</del><br>8. Position 1, change to 80 psi.<br>9. Position 5, reduce BP to zero.<br>10. Brakes must apply Gu to 3.21 | X    |      |

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(4 of 5)





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.4.5 – AWS Weld Examination Inspector Certification**

|                              |  |                             |                        |
|------------------------------|--|-----------------------------|------------------------|
|                              |  | Orano Federal Services      |                        |
| <b>DATA TRANSMITTAL FORM</b> |  |                             |                        |
| Supplier:                    | KASGRO RAIL CORP., INC.  | DTF No:                     | 044                    |
| P.O./SC No:                  | 15C3011916   | Date:                       | 2/26/2019              |
| Type of Submittal:           | <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal  | SDRL List Item No:          | 20                     |
| Submitted for:               | <input checked="" type="checkbox"/> Approval <input checked="" type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted: | 1                      |
| Submitted By:                | <b>RICK FORD</b>   | Rick Ford                   | PROJECT MANAGER        |
|                              | <small>(Name)</small>  | <small>(Signature)</small>  | <small>(Title)</small> |

| ITEM NUMBER | DOCUMENT NUMBER | REVISION NUMBER | DOCUMENT DESCRIPTION                 | FS DISPOSITION  |
|-------------|-----------------|-----------------|--------------------------------------|---|
| 1           | KAS 183 179     |                 | TUV CWI QUALIFICATION D. GJURICH     | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 2           | KAS 184 180     |                 | AMSTED CWI QUALIFICATION J. CALLAHAN | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
|             |                 |                 |                                      | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |                                      | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |                                      | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |                                      | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |                                      | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |                                      | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |                                      | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |                                      | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |
|             |                 |                 |                                      | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |

|             |   |
|-------------|---|
| Comments:   | Technical Reviewer (I.e., RE, PTL, SME, QA, etc.)       |
| No comments | <b>KLEIN Slade</b> Date: 2019.03.12<br>11:18:42 -07'00' |
|             | Date 3/12/2019  |

| FS DISPOSITION CODES AND DEFINITIONS |                                |  |                             |
|--------------------------------------|--------------------------------|--|-----------------------------|
| AP                                   | Approved                       | Work may proceed.  | Resubmittal is not required |
| AWC                                  | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| REV                                  | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| RWC                                  | Reviewed with Comment          | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit        |
| DS                                   | Disapproved                    | Work may <u>not</u> proceed.   | Correct and resubmit        |
| RSA                                  | Receipt Submittal Acknowledged | No other action required.  |                             |

If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change.

|  |  |  |                  |
|--|--|--|------------------|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval |  | Digitally signed by Mark A. Denton<br>DN: cn=Mark A. Denton, o=Orano Federal Services, email=mark.denton@orano-group.com, ou=US<br>Date: 2019.03.12 15:32:52 -0400 | Date: 03/12/2019 |
|--|--|--|------------------|

FS-EN-FRM-023 Rev 02 (Effective March 1, 2018)  
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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|   |   |                |
|---|---|----------------|
|   | Orano Federal Services                    |                |
|   | <b>SUPPLIER DOCUMENT SUBMITTAL REVIEW</b> |                |
| Supplier / PO No.:  |   | DTF No. / Rev: |
| Charge No:  |   | Due Date:      |
| Document(s):  |   |                |
| REVIEW INSTRUCTIONS (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)                          |   |                |
| PE  |   |                |
| REVIEWERS   |   |                |
| QA  |   |                |
| <b>Technical Review</b>   |   |                |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input type="checkbox"/>                                 |   |                |
| Technical Reviewer Comments:  |   |                |
|   |   |                |
| Technical Reviewer(s) (Sign/Date):  |   |                |
| <b>Quality Assurance Review (As Applicable)</b>   |   |                |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input type="checkbox"/>                                 |   |                |
| Technical Reviewer Comments:  |   |                |
|   |   |                |
| QA Reviewer(s) (Sign/Date):   |   |                |
| <b>COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary)</b> |   |                |
|   |   |                |
|   |   |                |

*FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012*



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



**Certification of NDT Qualification:**

**Dan Gjurich**

*The education, training and experience of the individual named above has been reviewed, and found to meet or exceed the requirements as listed below.*

**Professional Qualifications/Certifications**

| <u>Description</u>   | <u>Original Cert Date</u> | <u>Re-Cert Date</u> | <u>Exp Date</u> |
|--|---------------------------|---------------------|-----------------|
| ENF-TC-1A, Liquid Penetrant, Level II                                    | 01/20/2007                | 11/20/2014          | 11/20/2019      |
| T5074-GIB-010/271, Liquid Penetrant, Level II, Limited Solvent Removable | 11/20/2014                | 01/20/2018          | 01/09/2021      |
| ENF-TC-1A, Magnetic Particle, Level II Limited – Yoke Only               | 08/27/2008                | 08/23/2014          | 08/23/2016      |
| T5074-GIB-010/271, Magnetic Particle Level II Limited – Yoke Only        | 08/23/2014                | 01/09/2018          | 01/09/2021      |
| AWIS, Certified Welding Inspector  | 04/01/1995                | 04/01/2017          | 04/01/2020      |

**Eye Examination Record**

Last Test Date: 02/09/2015      Correction Required:      Expiration: 02/25/2015

The individual named above has satisfactorily demonstrated the ability to read the J-4 letters on a standard Jaeger test chart, and the capacity to distinguish and differentiate colors used in the NDE methods for which the individual is qualified.

The individual named above is certified in the indicated NDE Method(s) and Level(s). The certification(s) will expire on the date(s) listed above, or upon termination of employment.

*I hereby certify that, to the best of my knowledge, the information listed above is true and correct.*

Claude D. Davis  
Name

**Certification Program  
 Manager, Level III**  
Title

*Claude D. Davis*  
Signature

14 MAR 2018  
Date

**FOR VERIFICATION OF CERTIFICATION  
 CONTACT 206-938-3313**



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

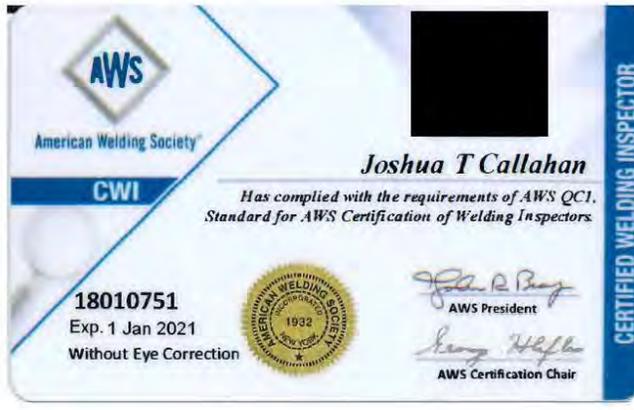
Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

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Wednesday, February 22, 2019

AWS Certification information received from Jennifer Novak  
Amsted Rail Quality Assurance Manager, Worldwide Sourcing.

Verification of Amsted Rail AWS Certified Welding Inspector Qualification for Joshua Callahan.





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.4.6 – Measuring and Test Equipment Calibration Record, Kasgro Form 14 for Track Scale**

|                       |   |                             |                 |
|-----------------------|---|-----------------------------|-----------------|
|                       |   | Orano Federal Services      |                 |
| DATA TRANSMITTAL FORM |   |                             |                 |
| Supplier:             | KASGRO RAIL CORP., INC.   | DTF No:                     | 038             |
| P.O./SC No:           | 15C3011916  | Date:                       | 2/19/2019       |
| Type of Submittal:    | <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal                                   | SDRL List Item No:          | 24              |
| Submitted for:        | <input checked="" type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information | Number of Copies Submitted: | 1               |
| Submitted By:         | RICK FORD   | Rick Ford                   | PROJECT MANAGER |
|                       | (Name)  | (Signature)                 | (Title)         |

| ITEM NUMBER | DOCUMENT NUMBER    | REVISION NUMBER | DOCUMENT DESCRIPTION  | FS DISPOSITION  |
|-------------|--------------------|-----------------|---|---|
| 1           | KAS 127            |                 | ATLAS CASK CAR CMS LASER DIMENSIONS FOR PIN BLOCK ATTACHMENT BLOCKS | <input type="checkbox"/> AP <input checked="" type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 2           | KAS 128            |                 | FRA S-2044 INSPECTION FOR BUFFER CARS                               | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 3           | KAS 129            |                 | AAR S-488 BRAKE TEST CERTIFICATION                                  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 4           | KAS 130            |                 | TRACK SCALE CALIBRATION RECORDS                                     | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 5           | KAS 131            |                 | TUV UT NDE REPORT CASK CAR  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 6           | KAS 132            |                 | TUV PT NDE REPORT CASK CAR  | <input checked="" type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA |
| 7           | KAS 133            |                 | TUV MT NDE REPORT CASK CAR  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input checked="" type="checkbox"/> DS <input type="checkbox"/> RSA |
| 8           | KAS 143 <b>134</b> |                 | TUV VT NDE REPORT CASK CAR  | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input checked="" type="checkbox"/> DS <input type="checkbox"/> RSA |
|             |                    |                 |   | <input type="checkbox"/> AP <input type="checkbox"/> AWC <input type="checkbox"/> REV<br><input type="checkbox"/> RWC <input type="checkbox"/> DS <input type="checkbox"/> RSA            |

|   |   |
|---|---|
| Comments:   | Technical Reviewer (i.e., RE, PTL, SME, QA, etc.)       |
| 1) NOTE: KAS 127 provides as-built railcar dimensions. Kasgro rework modified some of these. Kasgro to submit final dimensions separately.<br>2) KAS 133 does not include the shear block or outer pin block weld MT.<br>3) KAS 134 does not include VT of the shear block welds. | <b>KLEIN Slade</b> Date: 2019.02.27<br>13:47:33 -08'00' |
|   | Date: 2/27/2019   |

| FS DISPOSITION CODES AND DEFINITIONS |                                |  |                             |
|--------------------------------------|--------------------------------|--|-----------------------------|
| AP                                   | Approved                       | Work may proceed.  | Resubmittal is not required |
| AWC                                  | Approved with Comment          | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| REV                                  | Reviewed                       | Work may proceed; comments provided for Supplier's consideration only.       | Resubmittal is not required |
| RWC                                  | Reviewed with Comment          | Work may proceed; subject to incorporation and compliance w/ Buyer comments. | Correct and resubmit        |
| DS                                   | Disapproved                    | Work may <u>not</u> proceed.   | Correct and resubmit        |
| RSA                                  | Receipt Submittal Acknowledged | No other action required.  |                             |

If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change.

|  |  |   |                  |
|--|--|---|------------------|
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval |  | Digitally signed by Mark A. Denton<br>DN: cn=Mark A. Denton, o=Orano Federal Services, email=mark.denton@orano.gov, ou=ORF<br>Date: 2019.02.27 17:04:03 -0800 | Date: 02/27/2019 |
|--|--|---|------------------|

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 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|   |                                |   |
|---|--------------------------------|---|
| <br><b>orano</b>   | Orano Federal Services         |   |
| <b>SUPPLIER DOCUMENT SUBMITTAL REVIEW</b>   |                                |   |
| Supplier / PO No.:  | <b>KASGRO / 15C3011916</b>     | DTF No. / Rev: <b>038</b>   |
| Charge No:  | <b>00225.03.0050.02.00001</b>  | Due Date: <b>3/8/2019</b>   |
| Document(s):  | <b>See DTF No.: 038</b>        |   |
| <small>REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)</small>  |                                |   |
| PE  | Slade Klein                    |   |
| REVIEWERS   | Slade Klein, Bernie Counterman |   |
| QA  | Bernie Counterman              |   |
| <b>Technical Review</b>   |                                |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                                |   |
| Technical Reviewer Comments:  |                                |   |
| KAS 133 does not include the required MT inspection of the shear blocks and outer pin blocks. This was required by Kasgro drawing 1155-41.  |                                |   |
| Technical Reviewer(s) (Sign/Date): <b>KLEIN Slade</b>   |                                | Date: 2019.02.26 07:23:43 -08'00'   |
| <b>Quality Assurance Review (As Applicable)</b>   |                                |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                                |   |
| Technical Reviewer Comments:  |                                |   |
| Only potential question was regarding missing signature by the technician on the UT report. Discussed with TUV Rheinland Level III (Randy @ 616-818-8188). The technician signature is not required provided the report is signed by his supervisor. This report is signed by the individuals supervisor. |                                |   |
| QA Reviewer(s) (Sign/Date):    |                                | Digitally signed by COUNTERMAN Bernard<br>Date: 2019.02.25 09:29:24 -08'00' |
| COMMENT DISPOSITION (If Applicable. Attached further comments and disposition correspondence as necessary)  |                                |   |
|   |                                |   |
|   |                                |   |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project



**TRACK SCALE - TEST AND INSPECTION REPORT**

As per NIST Handbook 44 Testing Standards

**DATE OF TEST**

05/16/2018

| Location Information |                           |
|----------------------|---------------------------|
| Railroad             | CSX                       |
| City/State           | New Castle, PA            |
| Owner/Industry Name  | Kasgro Rail Corp. (Plt 1) |

| Location Information |          |
|----------------------|----------|
| House Condition      | Good     |
| Pit Condition        | Good     |
| Pit Foundation Type  | Concrete |
| Pit Drainage Type    | Drain    |

| Location Information                           |                       |                       |                    |
|--|-----------------------|-----------------------|--------------------|
| Manufacturer                                   | Length of Weight Rail | Date of Last RSI Test |                    |
| Fairbanks Scale                                | 10'                   | 05/17/2017            |                    |
| Instrument Serial Number                       | # of Sections         | Total Capacity        | Sectional Capacity |
| 100470050013                                   | 2                     | 125 Tons              | 85 Tons            |
| Type/Condition of Scale                        |                       |                       |                    |
| Operation Type                                 | Static                | Display Type          | Digital            |
| Control Type                                   | Digital               | Dead Rail             | No                 |
| Girder Type                                    | Continuous            | Girder Condition      | Good               |
| Deck Type                                      | Live                  | Deck Condition        | Good               |
| Condition of Pivots and Bearings or Load Cells |                       |                       | Good               |
| Condition of Approach Rail Right End           |                       |                       | Good               |
| Condition of Approach Rail Left End            |                       |                       | Good               |

| Test Vehicle Information |                |                             |              |                  |
|--------------------------|----------------|-----------------------------|--------------|------------------|
| Test Car(t) #            | Nominal Weight | Wheel Base                  | Jacks        | Calibration Date |
| WC 210500                | 80000          | 5'3"                        | N/A          | 2017-10-02       |
| Balance as Found         |                | S.R. Test (Beam Scale Only) |              |                  |
| Indicator Reading (lbs.) | -200           | SR at Zero Load             | SR at M Load |                  |
|                          |                | SR Meets Requirements?      | N/A          |                  |
| Master Scale Location    |                | State of Minnesota W & M    |              |                  |

| Strain/Buildup Test |                    |
|---------------------|--------------------|
| Sub. Weight         |                    |
| Cal. Weight         | 80000              |
| Total Weight        | 0                  |
| Disp. Weight        |                    |
| Error               | 0                  |
| Comples?            | No Power Available |

**TEST RESULTS**

| First 2 Runs As Found |             | Sections |       |       |      |  |  |  |  |  |  |  |  |
|-----------------------|-------------|----------|-------|-------|------|--|--|--|--|--|--|--|--|
| Run Info              | Test Load   | Zero     | 1     | 2     | Zero |  |  |  |  |  |  |  |  |
| →                     | 80,000 lbs. | 0        | 80000 | 80000 | 0    |  |  |  |  |  |  |  |  |
| ←                     | 80,000 lbs. | 0        | 80000 | 80000 | 0    |  |  |  |  |  |  |  |  |
|                       |             |          |       |       |      |  |  |  |  |  |  |  |  |
|                       |             |          |       |       |      |  |  |  |  |  |  |  |  |

Weather Conditions:  Wind Factor:  Temperature:

**REMARKS**

Test is billable by RSI to:  Industry PO #:  This test is:

UNDER CONDITIONS STATED ABOVE THIS TEST HAS BEEN LEFT

*Bill Baker*  
 Owner/Industry Representative  
 Bill Baker

*N/A*  
 State Representative  
 N/A

*Frank Spencer*  
 Scale Company Representative  
 Frank Spencer

*Keith Pearce*  
 RSI Representative  
 Keith Pearce



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**Appendix B.4.7 – Safety Monitoring System Installation and Testing Results**

| Orano Federal Services  |  |  |   |  |                              |                              |
|---|--|--|---|--|------------------------------|------------------------------|
| <b>DATA TRANSMITTAL FORM</b>  |  |  |   |  |                              |                              |
| Supplier: <b>KASGRO RAIL CORP., INC.</b>  | DTF No: <b>39</b> Page <b>1</b> of <b>1</b>  |  |   |  |                              |                              |
| P.O./SC No: <b>15C3011916</b>   | Date: <b>2/22/2019</b>   |  |   |  |                              |                              |
| Type of Submittal: <input checked="" type="checkbox"/> First <input type="checkbox"/> Re-Submittal  | SDRL List Item No: <b>24</b>   |  |   |  |                              |                              |
| Submitted for: <input type="checkbox"/> Approval <input type="checkbox"/> Review <input type="checkbox"/> Information   | Number of Copies Submitted: <b>1</b>   |  |   |  |                              |                              |
| Submitted By: <b>RICK FORD</b><br>(Name)  | <b>Rick Ford</b> Digitally signed by Rick Ford<br>Date: 2019.02.27 09:16:40<br>(Signature) <b>PROJECT MANAGER</b><br>(Title) |  |   |  |                              |                              |
| ITEM NUMBER   | DOCUMENT NUMBER  | REVISION NUMBER  | DOCUMENT DESCRIPTION  | FS DISPOSITION                         |                              |                              |
| 1   | KAS 138  |  | ATLAS CASK/BUFFER CARS LATLON INSTALLATION AND TEST DATA  | <input checked="" type="checkbox"/> AP | <input type="checkbox"/> AWC | <input type="checkbox"/> REV |
| 2   | KAS 139  |  | ATLAS CASK BODY MATERIAL HEAT IDENTIFICATION, FORMS 42, 42A, 44B  | <input checked="" type="checkbox"/> AP | <input type="checkbox"/> AWC | <input type="checkbox"/> REV |
| 3   | KAS 140  |  | ATLAS BUFFER IDOX 20001 BODY MATERIAL HEAT IDENTIFICATION, FORM 44B   | <input checked="" type="checkbox"/> AP | <input type="checkbox"/> AWC | <input type="checkbox"/> REV |
| 4   | KAS 141  |  | ATLAS BUFFER IDOX 20002 BODY MATERIAL HEAT IDENTIFICATION, FORM   | <input checked="" type="checkbox"/> AP | <input type="checkbox"/> AWC | <input type="checkbox"/> REV |
| 5   | KAS 142  |  | ATLAS CASK CAR FORM 36 STATIC FORCE BRAKE TEST  | <input checked="" type="checkbox"/> AP | <input type="checkbox"/> AWC | <input type="checkbox"/> REV |
| 6   | KAS 143  |  | ATLAS CASK CAR IDOX 10001, FORM 5-13-B NEW CAR INSPECTION   | <input checked="" type="checkbox"/> AP | <input type="checkbox"/> AWC | <input type="checkbox"/> REV |
| 7   | KAS 144  |  | ATLAS CASK IDOX 10001 SUPPLIER CERTIFICATION/ AMSTED RAIL SEDARSKI / MCCABE   | <input checked="" type="checkbox"/> AP | <input type="checkbox"/> AWC | <input type="checkbox"/> REV |
|   |  |  |   | <input type="checkbox"/> RWC           | <input type="checkbox"/> DS  | <input type="checkbox"/> RSA |
|   |  |  |   | <input type="checkbox"/> AP            | <input type="checkbox"/> AWC | <input type="checkbox"/> REV |
|   |  |  |   | <input type="checkbox"/> RWC           | <input type="checkbox"/> DS  | <input type="checkbox"/> RSA |
|   |  |  |   | <input type="checkbox"/> AP            | <input type="checkbox"/> AWC | <input type="checkbox"/> REV |
|   |  |  |   | <input type="checkbox"/> RWC           | <input type="checkbox"/> DS  | <input type="checkbox"/> RSA |
| Comments:<br>No comments  |  |  | Technical Reviewer (i.e., RE, PTL, SME, QA, etc.)<br><b>KLEIN Slade</b> Date: 2019.02.26<br>07:33:08 -08'00'<br>Date: <b>2/26/2019</b>  |  |                              |                              |
| FS DISPOSITION CODES AND DEFINITIONS  |  |  |   |  |                              |                              |
| AP  | Approved   | Work may proceed.  |   | Resubmittal is not required            |                              |                              |
| AWC   | Approved with Comment  | Work may proceed; comments provided for Supplier's consideration only.       |   | Resubmittal is not required            |                              |                              |
| REV   | Reviewed   | Work may proceed; comments provided for Supplier's consideration only.       |   | Resubmittal is not required            |                              |                              |
| RWC   | Reviewed with Comment  | Work may proceed; subject to incorporation and compliance w/ Buyer comments. |   | Correct and resubmit                   |                              |                              |
| DS  | Disapproved  | Work may <u>not</u> proceed.   |   | Correct and resubmit                   |                              |                              |
| RSA   | Receipt Submittal Acknowledged   | No other action required.  |   |  |                              |                              |
| If, in the judgment of the Supplier, the incorporation of FS' comments will result in a change to the Purchase Order/Subcontract, work shall not proceed and the Supplier shall immediately provide a written notice to FS' C&P Representative describing the change. |  |  |   |  |                              |                              |
| Project Manager (PM) / Engineering Manager (EM) or Designated Individual (DI) Approval<br>  |  |  | Digitally signed by Mark A. Denton<br>DN: cn=Mark A. Denton, o=Orano Federal Services, email=mark.denton@orano.gov, ou=US<br>Date: 2019.02.28 10:28:54 -0800<br>Date: <b>02/28/2019</b> |  |                              |                              |

FS-EN-FRM-023 Rev 02 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

|  |                                    |   |
|--|------------------------------------|---|
|  | Orano Federal Services             |   |
|  | SUPPLIER DOCUMENT SUBMITTAL REVIEW |   |
| Supplier / PO No.:   | KASGRO / 15C3011916                | DTF No. / Rev: 039  |
| Charge No:   | 00225.03.0050.02.00001             | Due Date: 3/8/2019  |
| Document(s):   | See DTF No.: 039                   |   |
| REVIEW INSTRUCTIONS: (List Supplier Doc. No. and Rev. FS Spec and Dwg. Codes, Stds, etc.)                  |                                    |   |
| PE   | Slade Klein                        |   |
| REVIEWERS  | Slade Klein, Bernie Counterman     |   |
| QA   | Bernie Counterman                  |   |
| <b>Technical Review</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| No comments  |                                    |   |
| Technical Reviewer(s) (Sign/Date): KLEIN Slade   |                                    | Date: 2019.02.25 15:52:04 -08'00'   |
| <b>Quality Assurance Review (As Applicable)</b>  |                                    |   |
| Comments/Markup Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               |                                    |   |
| Technical Reviewer Comments:   |                                    |   |
| KAS 142 Cask Car Form 36 Brake Test - Why is the Gross Shoe Force = 0                                      |                                    |   |
| QA Reviewer(s) (Sign/Date):  |                                    | Digitally signed by COUNTERMAN Bernard<br>Date: 2019.02.25 10:22:16 -08'00' |
| COMMENT DISPOSITION (if Applicable. Attached further comments and disposition correspondence as necessary) |                                    |   |
|  |                                    |   |
|  |                                    |   |

FS-EN-FRM-026 Rev 01 (Effective March 1, 2018)  
 Refer to FS-EN-PRC-012



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix B

Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

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February 15, 2019

Rick Ford  
Kasgro Rail Corp.  
121 Rundle Road  
New Castle, PA 16102

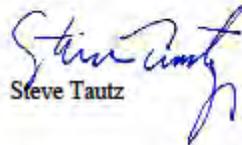
Dear Rick,

Lat-Lon, LLC has completed the AAR-S-2043 System Safety Monitoring (SSM) installation on three Atlas Project DOE railcars. The installation took place on February 12<sup>th</sup> through 15<sup>th</sup> and the first rail car is IDOX 10001 and has two systems, one on each end. The second and third railcars, IDOX 20001 and IDOX 20002, have one system each, installed on the "A" end of both cars for a total of four units.

I have attached System Health Reports data from each of the units as of the morning of February 15<sup>th</sup> to demonstrate that the systems are operational. I have also attached a few photos.

Please let me know if you need any additional information.

Regards,

  
Steve Tautz





**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.: EIR-3021970-000**  
**Project: 00225.03.0050 DOE Atlas Project**

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**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000  
**Project:** 00225.03.0050 DOE Atlas Project

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## Appendix B.4.8 – Fabrication Specifications

The following list of specifications encompasses both the fabrication of the prototype railcars and future fabrication activities. A detailed discussion of railcar specifications is included in the Phase 3 Report, Section 3.2.

### *Railroad Transportation Requirements*

- AAR's *Manual of Standards and Recommended Practices*
- AAR's *Manual of Standards and Recommended Practices*, Section J – Quality Assurance M-1003 (2014)
- AAR Standard S-2043, *Performance Specification for Trains Used to Carry High-Level Radioactive Material*
- AAR Standard S-2044, *Safety Appliance Requirements for Freight Cars*

### *Other DOE Requirements*

- Oak Ridge National Laboratory (ORNL) report, *Cask Railcar System Requirements Document*.
  - Note that in AFS' Request for Information (RFI) AFS-RFI-00225-0001-00 [6], Table 3-3 of the ORNL requirements document [5] was questioned regarding the establishment of bounding design requirements specifically for the conceptual cradle designs. The DOE responded to the RFI that the table "simply lists the largest and heaviest cradle characteristics that exist at this time," hence, the word "bounding" is used to describe these characteristics. As a result, AFS has not limited its conceptual cradle designs specifically to the values in this table and has determined bounding conditions necessary to meet AAR S-2043 and AAR Plate E requirements.
  - Cask cradles are to be tall enough and open-ended so that the impact limiters can be attached to a cask after the cask is secured to the cradle while on the Atlas railcar with a clearance of at least 1 inch above the cask car deck
  - The cask cradle must be specifically designed to meet the requirements of AAR Rule 88 (which specifies the minimum mechanical requirements for railcars used in interchange commerce service), as included in the AAR 2015 Field Manual of the AAR Interchange Rules
  - The Atlas railcar, including a cradle and a cask, and buffer car clearances must fit within AAR Plate E, except when loaded with casks that are more than 128 inches wide with impact limiters attached



**Orano Federal Services**  
**Title: Design and Prototype Fabrication of Railcars for Transport of**  
**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix B**

**Doc./Rev.:** EIR-3021970-000

**Project:** 00225.03.0050 DOE Atlas Project

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- Refer to AAR Standards S-2028, S-2029, S-2030, and S-2031 for railcar plate requirements

### *Nuclear Regulatory Commission (NRC) Requirements*

For shipments under subtitle A or subtitle C of the NWPA, HLRM must be shipped in transport casks certified by the NRC in accordance with 10 CFR Part 71 [14]. The cask cradle and its attachments are to meet commercial grade requirements.

### *Code Requirements*

The following design codes were used in the development of the conceptual cradle design:

ANSI N14.6 used to provide a lifting criteria for the cradles

ASME Boiler and Pressure Vessel Codes and ASTM codes for material properties, material yield, and ultimate strengths

### *Project Quality Requirements*

- Atlas and buffer railcar fabrication activities are performed in accordance with the fabricator's AAR M-1003-approved QA program

### *Specific Project Quality Requirements*

A summary of specific project quality requirements includes:

QA requirements of AAR Standard S-2043, *Performance Specification for Trains Used to Carry High-Level Radioactive Material*

AAR *Manual of Standards and Recommended Practices (MSRP)*, Section J – *Specification for Quality Assurance, Specification M-1003*

Orano Federal Services *Quality Assurance Program Description (QAPD)*, AFS-QA-PMD-001 (Note: for prototype railcar production only)

Orano Federal Services Project Specific QA Plan, QA-3014737, *Design and Prototype Fabrication of Atlas Railcars for HLRM* (Note: for prototype railcar production only)

Orano Federal Services *Quality Assurance Surveillance Plan* as incorporated into DOE contract DE-NE0008390, Part III, Attachment J-C (Note: for prototype railcar production only)

*Kasgro Rail's Quality Assurance Manual for AAR Specification M-1003* (Note: for prototype railcar production only)