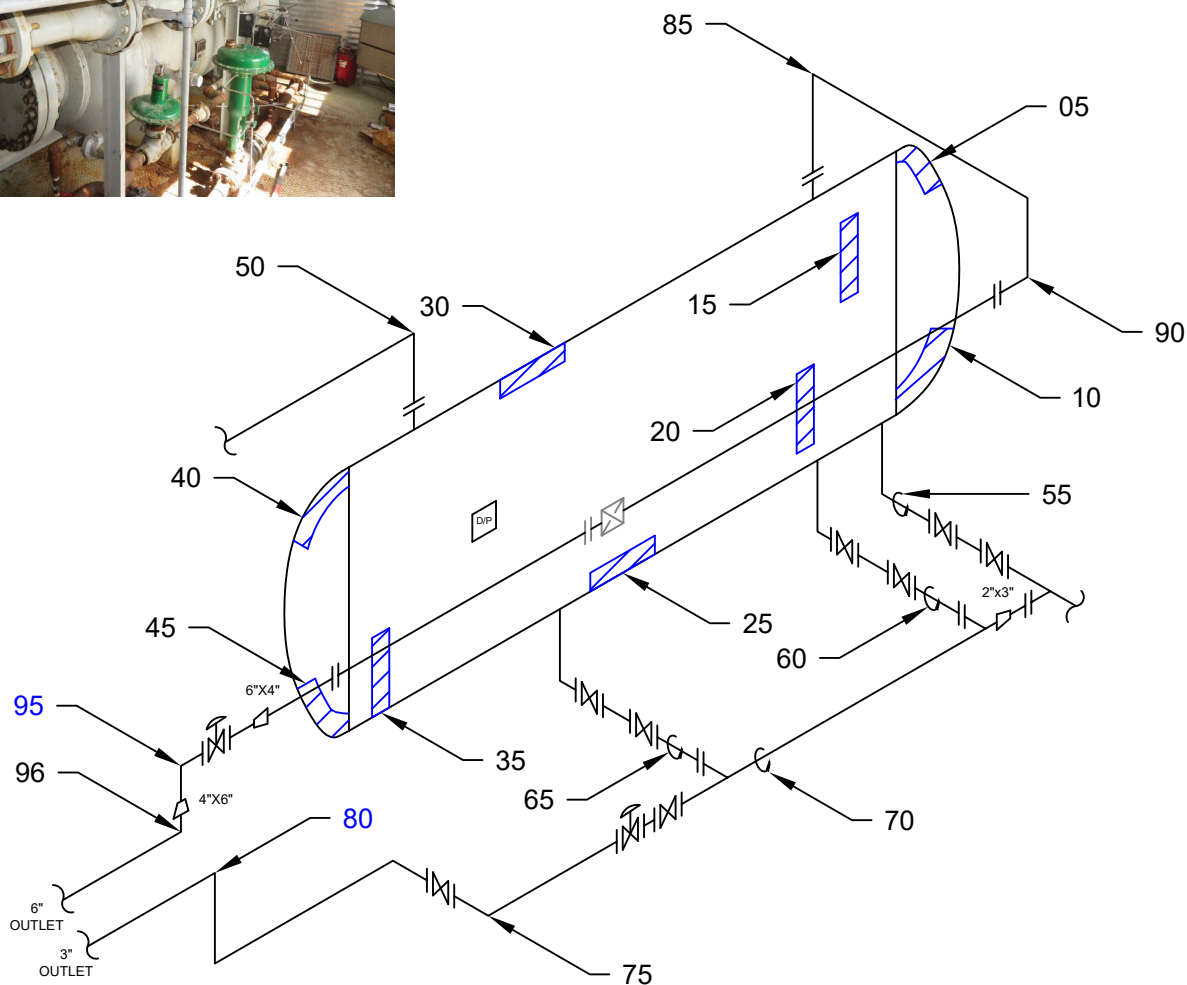


ITEM:

## SEPARATOR

481106



COMMENTS:

PROJECT:  
C81567

SYLVAN LAKE, AB (403) 887-3562  
WHITECOURT, AB (780) 778-5584  
GRANDE PRAIRIE, AB (780) 518-9757

TECHNICIAN:

SNT LEVEL II  
CGSB 48.9712  
LEVEL II # 11987  
S/N: GOPLS16030120

DATE: 08/25/21

CAD UPDATED BY : SG

CLIENT:

LSD:

INSPECTOR :

LOCATION : SOUTHWEST SASKATCHEWAN

DISTRICT UNIT : SOUTH

BLDG/SKID/LIC : PKG77415

PROCESS : SWEET

CODE : ASME SEC VIII DIV 1 / B31.3

SPECIFICATION : AS PER ASME SE 797

TECHNIQUE : UTT-01 REV. #01

METHOD : UT CONTINUOUS / A SCAN

SURFACE COND : PAINTED

SURFACE TEMP : AMBIENT

## VESSEL INFORMATION

VESSEL # : 481106

CRN # : P3264.213

SERIAL # : PE3264.213

MANUFACTURER : PENFABCO

DATE BUILT : 2002

CLIENT ID / TAG : -

M.A.W.P. : 720

M.A.W.T. : 130

JOINT EFFICIENCY/RT : RT 2

STRESS RELIEVED : N/S

INSULATED : NO

MANWAY : YES

## VESSEL SPECIFICATIONS

|              | OD  | NOMINAL | MATERIAL  | CA    |
|--------------|-----|---------|-----------|-------|
| VESSEL HEAD  | 42" | 1.125"  | SA-516-70 | .125" |
| VESSEL SHELL | 42" | 1.125"  | SA-516-70 | .125" |
| BOOT HEAD    | -   | -       | -         | -     |
| BOOT SHELL   | -   | -       | -         | -     |

## PIPING INFORMATION

| PIPING ID | SIZE   | SCH | NOM   | M.A.W.P.<br>(VESSEL) | M.A.W.T.<br>(VESSEL) | FLANGE<br>RATING |
|-----------|--------|-----|-------|----------------------|----------------------|------------------|
| 50        | 8.625" | XS  | .500" | 720 PSI              | 130°F                | -                |
| 55-65     | 2.375" | XS  | .218" | "                    | "                    | "                |
| 70-80     | 3.500" | STD | .216" | "                    | "                    | "                |
| 85-90     | 6.625" | XS  | .432" | "                    | "                    | "                |
| 95        | 4.500" | XS  | .337" | "                    | "                    | "                |
| 96        | 6.625" | XS  | .432" | "                    | "                    | "                |
|           |        |     |       |                      |                      |                  |
|           |        |     |       |                      |                      |                  |



## ULTRASONIC CORROSION SURVEY: LTA MANAGEMENT

|                                  |                        |                                    |                        |
|----------------------------------|------------------------|------------------------------------|------------------------|
| LSD:                             | Vessel Number: 481106  | Manufacturer: PENFABCO             | Survey Date: 8/25/2021 |
| District Unit: SOUTH             | Vessel Name: SEPARATOR | Serial Number: PE3264.213          | Inspector:             |
| Location: SOUTHWEST SASKATCHEWAN | Year Built: 2002       | Shell MAWP PSI: 720    MAWT F: 130 | Process: SWEET         |
| PKG/Skid: PKG77415               | Tag Number: -          | Tube MAWP PSI: 0    MAWT F: 0      | Project #:             |
|                                  | CRN: P3264.213         | Vessel CA: 0.1250                  | Report Number:         |

| CML      | Description | Year        | Avg Inches | Min Inches | Scanning surface operational status during UT survey | Nominal            | CA          | Pressure TMIN | Recommended Retirement Date | Piping Structural TMin |
|----------|-------------|-------------|------------|------------|--|--------------------|-------------|---------------|-----------------------------|------------------------|
| 05       | Head        | Baseline    | 08/25/21   | 1.114      | 1.085  | External (Offline) | 1.1250      | 0.1250        | 0.7181                      | 2041                   |
| Shape    | Ellipsoidal | Shell Side  | Previous   |            |  |                    | Comments--> | OK            |                             |                        |
| OD       | 42          | Current     | 08/25/21   | 1.114      | 1.085  | External (Offline) |             |               |                             |                        |
| Spec.    | VIII Div 1  | ST Loss MPY |            |            |  |                    |             |               |                             |                        |
| Material | SA 516 - 70 | LT Loss MPY |            | 2          |  |                    |             |               |                             |                        |
| 10       | Head        | Baseline    | 08/25/21   | 1.105      | 1.085  | External (Offline) | 1.1250      | 0.1250        | 0.7181                      | 2041                   |
| Shape    | Ellipsoidal | Shell Side  | Previous   |            |  |                    | Comments--> | OK            |                             |                        |
| OD       | 42          | Current     | 08/25/21   | 1.105      | 1.085  | External (Offline) |             |               |                             |                        |
| Spec.    | VIII Div 1  | ST Loss MPY |            |            |  |                    |             |               |                             |                        |
| Material | SA 516 - 70 | LT Loss MPY |            | 2          |  |                    |             |               |                             |                        |
| 15       | Shell       | Baseline    | 08/25/21   | 1.152      | 1.144  | External (Offline) | 1.1250      | 0.1250        | 0.7313                      | 2041                   |
| Shape    | Cylindrical | Shell Side  | Previous   |            |  |                    | Comments--> | OK            |                             |                        |
| OD       | 42          | Current     | 08/25/21   | 1.152      | 1.144  | External (Offline) |             |               |                             |                        |
| Spec.    | VIII Div 1  | ST Loss MPY |            |            |  |                    |             |               |                             |                        |
| Material | SA 516 - 70 | LT Loss MPY |            | 0          |  |                    |             |               |                             |                        |
| 20       | Shell       | Baseline    | 08/25/21   | 1.156      | 1.144  | External (Offline) | 1.1250      | 0.1250        | 0.7313                      | 2041                   |
| Shape    | Cylindrical | Shell Side  | Previous   |            |  |                    | Comments--> | OK            |                             |                        |
| OD       | 42          | Current     | 08/25/21   | 1.156      | 1.144  | External (Offline) |             |               |                             |                        |
| Spec.    | VIII Div 1  | ST Loss MPY |            |            |  |                    |             |               |                             |                        |
| Material | SA 516 - 70 | LT Loss MPY |            | 0          |  |                    |             |               |                             |                        |



## ULTRASONIC CORROSION SURVEY: LTA MANAGEMENT

|                                  |                        |                                    |                        |
|----------------------------------|------------------------|------------------------------------|------------------------|
| LSD:                             | Vessel Number: 481106  | Manufacturer: PENFABCO             | Survey Date: 8/25/2021 |
| District Unit: SOUTH             | Vessel Name: SEPARATOR | Serial Number: PE3264.213          | Inspector:             |
| Location: SOUTHWEST SASKATCHEWAN | Year Built: 2002       | Shell MAWP PSI: 720    MAWT F: 130 | Process: SWEET         |
| PKG/Skid: PKG77415               | Tag Number: -          | Tube MAWP PSI: 0    MAWT F: 0      | Project #:             |
|                                  | CRN: P3264.213         | Vessel CA: 0.1250                  | Report Number:         |

| CML      | Description | Year        | Avg Inches | Min Inches | Scanning surface operational status during UT survey | Nominal            | CA     | Pressure TMIN  | Recommended Retirement Date | Piping Structural TMin |
|----------|-------------|-------------|------------|------------|--|--------------------|--------|----------------|-----------------------------|------------------------|
| 25       | Shell       | Baseline    | 08/25/21   | 1.143      | 1.133  | External (Offline) | 1.1250 | 0.1250         | 0.7313                      | 2041                   |
| Shape    | Cylindrical | Shell Side  | Previous   |            |  |                    |        | Comments--> OK |                             |                        |
| OD       | 42          | Current     | 08/25/21   | 1.143      | 1.133  | External (Offline) |        |                |                             |                        |
| Spec.    | VIII Div 1  | ST Loss MPY |            |            |  |                    |        |                |                             |                        |
| Material | SA 516 - 70 | LT Loss MPY |            | 0          |  |                    |        |                |                             |                        |
| 30       | Shell       | Baseline    | 08/25/21   | 1.161      | 1.152  | External (Offline) | 1.1250 | 0.1250         | 0.7313                      | 2041                   |
| Shape    | Cylindrical | Shell Side  | Previous   |            |  |                    |        | Comments--> OK |                             |                        |
| OD       | 42          | Current     | 08/25/21   | 1.161      | 1.152  | External (Offline) |        |                |                             |                        |
| Spec.    | VIII Div 1  | ST Loss MPY |            |            |  |                    |        |                |                             |                        |
| Material | SA 516 - 70 | LT Loss MPY |            | 0          |  |                    |        |                |                             |                        |
| 35       | Shell       | Baseline    | 08/25/21   | 1.137      | 1.125  | External (Offline) | 1.1250 | 0.1250         | 0.7313                      | 2041                   |
| Shape    | Cylindrical | Shell Side  | Previous   |            |  |                    |        | Comments--> OK |                             |                        |
| OD       | 42          | Current     | 08/25/21   | 1.137      | 1.125  | External (Offline) |        |                |                             |                        |
| Spec.    | VIII Div 1  | ST Loss MPY |            |            |  |                    |        |                |                             |                        |
| Material | SA 516 - 70 | LT Loss MPY |            | 0          |  |                    |        |                |                             |                        |
| 40       | Head        | Baseline    | 08/25/21   | 1.123      | 1.109  | External (Offline) | 1.1250 | 0.1250         | 0.7181                      | 2041                   |
| Shape    | Ellipsoidal | Shell Side  | Previous   |            |  |                    |        | Comments--> OK |                             |                        |
| OD       | 42          | Current     | 08/25/21   | 1.123      | 1.109  | External (Offline) |        |                |                             |                        |
| Spec.    | VIII Div 1  | ST Loss MPY |            |            |  |                    |        |                |                             |                        |
| Material | SA 516 - 70 | LT Loss MPY |            | 1          |  |                    |        |                |                             |                        |



## ULTRASONIC CORROSION SURVEY: LTA MANAGEMENT

|                                  |                        |                                    |                        |
|----------------------------------|------------------------|------------------------------------|------------------------|
| LSD:                             | Vessel Number: 481106  | Manufacturer: PENFABCO             | Survey Date: 8/25/2021 |
| District Unit: SOUTH             | Vessel Name: SEPARATOR | Serial Number: PE3264.213          | Inspector:             |
| Location: SOUTHWEST SASKATCHEWAN | Year Built: 2002       | Shell MAWP PSI: 720    MAWT F: 130 | Process: SWEET         |
| PKG/Skid: PKG77415               | Tag Number: -          | Tube MAWP PSI: 0    MAWT F: 0      | Project #:             |
|                                  | CRN: P3264.213         | Vessel CA: 0.1250                  | Report Number:         |

| CML      | Description | Year        | Avg Inches | Min Inches | Scanning surface operational status during UT survey | Nominal            | CA          | Pressure TMIN | Recommended Retirement Date | Piping Structural TMin |
|----------|-------------|-------------|------------|------------|--|--------------------|-------------|---------------|-----------------------------|------------------------|
| 45       | Head        | Baseline    | 08/25/21   | 1.124      | 1.106  | External (Offline) | 1.1250      | 0.1250        | 0.7181                      | 2041                   |
| Shape    | Ellipsoidal | Shell Side  | Previous   |            |  |                    | Comments--> | OK            |                             |                        |
| OD       | 42          | Current     | 08/25/21   | 1.124      | 1.106  | External (Offline) |             |               |                             |                        |
| Spec.    | VIII Div 1  | ST Loss MPY |            |            |  |                    |             |               |                             |                        |
| Material | SA 516 - 70 | LT Loss MPY |            | 1          |  |                    |             |               |                             |                        |
| 50       | Piping      | Baseline    | 08/25/21   | 0.491      | 0.462  | External (Offline) | 0.5000      | 0.0625        | 0.1525                      | 2041                   |
| Shape    | 90° Elbow   | Shell Side  | Previous   |            |  |                    | Comments--> | OK            |                             | 0.11                   |
| OD       | 8.625       | Current     | 08/25/21   | 0.491      | 0.462  | External (Offline) |             |               |                             |                        |
| Spec.    | B31.3       | ST Loss MPY |            |            |  |                    |             |               |                             |                        |
| Material | A 234 - WPB | LT Loss MPY |            | 2          |  |                    |             |               |                             |                        |
| 55       | Piping      | Baseline    | 08/25/21   | 0.223      | 0.206  | External (Offline) | 0.2180      | 0.0272        | 0.0420                      | 2041                   |
| Shape    | Cylindrical | Shell Side  | Previous   |            |  |                    | Comments--> | OK            |                             | 0.07                   |
| OD       | 2.375       | Current     | 08/25/21   | 0.223      | 0.206  | External (Offline) |             |               |                             |                        |
| Spec.    | B31.3       | ST Loss MPY |            |            |  |                    |             |               |                             |                        |
| Material | A 106 - B   | LT Loss MPY |            | 1          |  |                    |             |               |                             |                        |
| 60       | Piping      | Baseline    | 08/25/21   | 0.211      | 0.197  | External (Offline) | 0.2180      | 0.0272        | 0.0420                      | 2041                   |
| Shape    | Cylindrical | Shell Side  | Previous   |            |  |                    | Comments--> | OK            |                             | 0.07                   |
| OD       | 2.375       | Current     | 08/25/21   | 0.211      | 0.197  | External (Offline) |             |               |                             |                        |
| Spec.    | B31.3       | ST Loss MPY |            |            |  |                    |             |               |                             |                        |
| Material | A 106 - B   | LT Loss MPY |            | 1          |  |                    |             |               |                             |                        |



## ULTRASONIC CORROSION SURVEY: LTA MANAGEMENT

|                                  |                        |                                    |                        |
|----------------------------------|------------------------|------------------------------------|------------------------|
| LSD:                             | Vessel Number: 481106  | Manufacturer: PENFABCO             | Survey Date: 8/25/2021 |
| District Unit: SOUTH             | Vessel Name: SEPARATOR | Serial Number: PE3264.213          | Inspector:             |
| Location: SOUTHWEST SASKATCHEWAN | Year Built: 2002       | Shell MAWP PSI: 720    MAWT F: 130 | Process: SWEET         |
| PKG/Skid: PKG77415               | Tag Number: -          | Tube MAWP PSI: 0    MAWT F: 0      | Project #:             |
|                                  | CRN: P3264.213         | Vessel CA: 0.1250                  | Report Number:         |

| CML      | Description | Year                | Avg Inches | Min Inches | Scanning surface operational status during UT survey | Nominal     | CA      | Pressure TMIN | Recommended Retirement Date | Piping Structural TMin |
|----------|-------------|---------------------|------------|------------|--|-------------|---------|---------------|-----------------------------|------------------------|
| 65       | Piping      | Baseline 08/25/21   | 0.221      | 0.204      | External (Offline)                                   | 0.2180      | 0.0272  | 0.0420        | 2041                        | 0.07                   |
| Shape    | Cylindrical | Shell Side Previous |            |            |  | Comments--> | OK      |               |                             |                        |
| OD       | 2.375       | Current 08/25/21    | 0.221      | 0.204      | External (Offline)                                   |             |         |               |                             |                        |
| Spec.    | B31.3       | ST Loss MPY         |            |            |  |             |         |               |                             |                        |
| Material | A 106 - B   | LT Loss MPY         |            | 1          |  |             |         |               |                             |                        |
| 70       | Piping      | Baseline 08/25/21   | 0.217      | 0.199      | External (Offline)                                   | 0.2160      | 0.0270  | 0.0619        | 2041                        | 0.08                   |
| Shape    | Cylindrical | Shell Side Previous |            |            |  | Comments--> | OK      |               |                             |                        |
| OD       | 3.5         | Current 08/25/21    | 0.217      | 0.199      | External (Offline)                                   |             |         |               |                             |                        |
| Spec.    | B31.3       | ST Loss MPY         |            |            |  |             |         |               |                             |                        |
| Material | A 106 - B   | LT Loss MPY         |            | 1          |  |             |         |               |                             |                        |
| 75       | Piping      | Baseline 08/25/21   | 0.204      | 0.195      | External (Offline)                                   | 0.2160      | 0.0270  | 0.0619        | 2041                        | 0.08                   |
| Shape    | 90° Elbow   | Shell Side Previous |            |            |  | Comments--> | OK      |               |                             |                        |
| OD       | 3.5         | Current 08/25/21    | 0.204      | 0.195      | External (Offline)                                   |             |         |               |                             |                        |
| Spec.    | B31.3       | ST Loss MPY         |            |            |  |             |         |               |                             |                        |
| Material | A 234 - WPB | LT Loss MPY         |            | 1          |  |             |         |               |                             |                        |
| 80       | Piping      | Baseline 08/25/21   | 0.195      | 0.176      | External (Offline)                                   | 0.2160      | 0.0270  | 0.0619        | 2041                        | 0.08                   |
| Shape    | 90° Elbow   | Shell Side Previous |            |            |  | Comments--> | Caution |               |                             |                        |
| OD       | 3.5         | Current 08/25/21    | 0.195      | 0.176      | External (Offline)                                   |             |         |               |                             |                        |
| Spec.    | B31.3       | ST Loss MPY         |            |            |  |             |         |               |                             |                        |
| Material | A 234 - WPB | LT Loss MPY         |            | 2          |  |             |         |               |                             |                        |



## ULTRASONIC CORROSION SURVEY: LTA MANAGEMENT

|                                  |                        |                                    |                        |
|----------------------------------|------------------------|------------------------------------|------------------------|
| LSD:                             | Vessel Number: 481106  | Manufacturer: PENFABCO             | Survey Date: 8/25/2021 |
| District Unit: SOUTH             | Vessel Name: SEPARATOR | Serial Number: PE3264.213          | Inspector:             |
| Location: SOUTHWEST SASKATCHEWAN | Year Built: 2002       | Shell MAWP PSI: 720    MAWT F: 130 | Process: SWEET         |
| PKG/Skid: PKG77415               | Tag Number: -          | Tube MAWP PSI: 0    MAWT F: 0      | Project #:             |
|                                  | CRN: P3264.213         | Vessel CA: 0.1250                  | Report Number:         |

| CML      | Description | Year                | Avg Inches | Min Inches | Scanning surface operational status during UT survey | Nominal     | CA     | Pressure TMIN | Recommended Retirement Date | Piping Structural TMin |
|----------|-------------|---------------------|------------|------------|--|-------------|--------|---------------|-----------------------------|------------------------|
| 85       | Piping      | Baseline 08/25/21   | 0.456      | 0.436      | External (Offline)                                   | 0.4320      | 0.0540 | 0.1171        | 2041                        | 0.11                   |
| Shape    | 90° Elbow   | Shell Side Previous |            |            |  | Comments--> |        | OK            |                             |                        |
| OD       | 6.625       | Current 08/25/21    | 0.456      | 0.436      | External (Offline)                                   |             |        |               |                             |                        |
| Spec.    | B31.3       | ST Loss MPY         |            |            |  |             |        |               |                             |                        |
| Material | A 234 - WPB | LT Loss MPY         |            | 0          |  |             |        |               |                             |                        |
| 90       | Piping      | Baseline 08/25/21   | 0.466      | 0.447      | External (Offline)                                   | 0.4320      | 0.0540 | 0.1171        | 2041                        | 0.11                   |
| Shape    | 90° Elbow   | Shell Side Previous |            |            |  | Comments--> |        | OK            |                             |                        |
| OD       | 6.625       | Current 08/25/21    | 0.466      | 0.447      | External (Offline)                                   |             |        |               |                             |                        |
| Spec.    | B31.3       | ST Loss MPY         |            |            |  |             |        |               |                             |                        |
| Material | A 234 - WPB | LT Loss MPY         |            | 0          |  |             |        |               |                             |                        |
| 95       | Piping      | Baseline 08/25/21   | 0.305      | 0.288      | External (Offline)                                   | 0.3370      | 0.0421 | 0.0796        | 2041                        | 0.09                   |
| Shape    | 90° Elbow   | Shell Side Previous |            |            |  | Comments--> |        | Caution       |                             |                        |
| OD       | 4.5         | Current 08/25/21    | 0.305      | 0.288      | External (Offline)                                   |             |        |               |                             |                        |
| Spec.    | B31.3       | ST Loss MPY         |            |            |  |             |        |               |                             |                        |
| Material | A 234 - WPB | LT Loss MPY         |            | 3          |  |             |        |               |                             |                        |
| 96       | Piping      | Baseline 08/25/21   | 0.454      | 0.436      | External (Offline)                                   | 0.4320      | 0.0540 | 0.1171        | 2041                        | 0.11                   |
| Shape    | 90° Elbow   | Shell Side Previous |            |            |  | Comments--> |        | OK            |                             |                        |
| OD       | 6.625       | Current 08/25/21    | 0.454      | 0.436      | External (Offline)                                   |             |        |               |                             |                        |
| Spec.    | B31.3       | ST Loss MPY         |            |            |  |             |        |               |                             |                        |
| Material | A 234 - WPB | LT Loss MPY         |            | 0          |  |             |        |               |                             |                        |