## Section 4 — Structural Defect Coding

### Appendix B - Color Coded Chart

**NASSCO’S PIPELINE ASSESSMENT CERTIFICATION PROGRAM® (PACP®)**

#### C     CRACK 4-3
- CL Longitudinal
- CC Circumferential
- CM Multiple
- CS Spiral
- CH Hinge (2, 3, 4)

#### F     FRACTURE 4-9
- FL Longitudinal
- FC Circumferential
- FM Multiple
- FS Spiral
- FH Hinge (2, 3, 4)

#### B     BROKEN 4-17
- BSV Soil Visible
- BVV Void Visible

#### H     HOLE 4-21
- HSV Soil Visible
- HVV Void Visible

#### D     DEFORMED 4-25 (Rigid)
- DR Deformed Rigid
  - No modifiers used.

#### D     DEFORMED 4-25 (Flexible)
- DFBR Bulging Round
- DFBII Bulging Inv. Curv.
- DFC Creasing
- DFE Elliptical

#### D     DEFORMED 4-25 (Brick)
- DTBR Bulging Round
- DTBI Bulging Inv. Curv.

#### X     COLLAPSE 4-37
- X Collapse
  - No descriptors and no modifiers used.

#### J     JOINT 4-43
- JOS Offset Small
- JOM Offset Medium
- JOL Offset Large

#### J     JOINT 4-43
- JOSD Offset Small Defect
- JOMD Offset Medium Defect
- JOLD Offset Large Defect

#### J     JOINT 4-43
- JSS Separation Small
- JSM Separation Med.
- JSL Separation Large

#### J     JOINT 4-43
- JAS Angular Small
- JAM Angular Medium
- JAL Angular Large

#### S     SURFACE 4-51
- SRI Roughness Increased
- SAV Aggregate Visible
- SAP Aggregate Projecting
- SAM Aggregate Missing

#### S     SURFACE 4-51
- SRV Reinforcement Visible
- SRP Reinforcement Projecting
- SRC Reinforcement Corroded
- SMW Missing Wall

#### LF     LINING FEATURES 4-67
- LFAC Abd'n'd Connection
- LFAS Annular Space
- LFB Blistered Lining
- LFCS Service Cut Shifted

#### LF     LINING FEATURES 4-67
- LFC Overcut Service
- LFDC Discoloration
- LFDE Defective End
- LFDL Delamination

#### LF     LINING FEATURES 4-67
- LFOC Overcut Service
- LFRC Resin Slug
- LFUC Undercut Service
- LFUW Wreathed
- LFZ Other

#### LF     LINING FEATURES 4-67
- LFOC Overcut Service
- LFRC Resin Slug
- LFUC Undercut Service
- LFUW Wreathed
- LFZ Other

#### LF     LINING FEATURES 4-67
- LFOC Overcut Service
- LFRC Resin Slug
- LFUC Undercut Service
- LFUW Wreathed
- LFZ Other

#### WF     WELD 4-85
- WFC Circumferential
- WFL Longitudinal
- WFM Multiple
- WFS Spiral
- WFZ Other

#### RP     POINT REPAIR 4-89
- RPL Liner
- RPLD Liner Defective
- RPP Patch
- RPPD Patch Defective

#### RP     POINT REPAIR 4-89
- RPR Replacement
- RPRD Replmt. Defective
- RP2 Other
- RPZ Other Defective

---

**Pipeline Assessment Certification Program**

Version 7.0.3 January 2018

**Copyright © 2016, NASSCO**
### Section 5 — Operation and Maintenance

<table>
<thead>
<tr>
<th>D DEPOSITS (Attached)</th>
<th>D DEPOSITS (Settled)</th>
<th>D DEPOSITS (Ingress)</th>
<th>R ROOTS (Fine)</th>
<th>R ROOTS (Medium)</th>
<th>R ROOTS (Bail)</th>
<th>R ROOTS (Tap)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAE Encrustation</td>
<td>DSF Fine</td>
<td>DNF Fine (silt/sand)</td>
<td>RFB Barrels</td>
<td>RMB Barrels</td>
<td>RBB Barrels</td>
<td>RTB Barrels</td>
</tr>
<tr>
<td>DAGS Grease</td>
<td>DSGV Gravel</td>
<td>DNGV Gravel</td>
<td>RFL Lateral</td>
<td>RML Lateral</td>
<td>RBL Lateral</td>
<td>RLT Lateral</td>
</tr>
<tr>
<td>DAR Ragging</td>
<td>DSC Hard/Compact</td>
<td>DNZ Other</td>
<td>RFC Connection</td>
<td>RMC Connection</td>
<td>RBC Connection</td>
<td>RTC Connection</td>
</tr>
<tr>
<td>DAZ Other</td>
<td>DSZ Other</td>
<td></td>
<td>RFJ Joint</td>
<td>RMJ Joint</td>
<td>RBJ Joint</td>
<td>RTJ Joint</td>
</tr>
</tbody>
</table>

### Section 6 — Construction Features

<table>
<thead>
<tr>
<th>T TAP 6-3</th>
<th>T TAP 6-3</th>
<th>T TAP 6-3</th>
<th>T TAP 6-3</th>
<th>IS INTRUDING SEALING MATERIAL 6-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB Break-In/Hammer</td>
<td>TF Factory Made</td>
<td>TR Rehabsitiated</td>
<td>TS Saddle</td>
<td>ISSR Sealing Ring</td>
</tr>
<tr>
<td>TBI Intruding</td>
<td>TFI Intruding</td>
<td>TRI Intruding</td>
<td>TSI Intruding</td>
<td>ISSRB Broken</td>
</tr>
<tr>
<td>TDB Defective</td>
<td>TFD Defective</td>
<td>TRD Defective</td>
<td>TSD Defective</td>
<td>ISSRH Hanging</td>
</tr>
<tr>
<td>TBC Capped</td>
<td>TFC Capped</td>
<td>TRC Capped</td>
<td>TSC Capped</td>
<td>ISSRL Loose</td>
</tr>
<tr>
<td>TBA Activity</td>
<td>TFA Activity</td>
<td>TRA Activity</td>
<td>TSA Activity</td>
<td>ISG Grout</td>
</tr>
<tr>
<td>TBB Abandoned</td>
<td>TFB Abandoned</td>
<td>TRB Abandoned</td>
<td>TSB Abandoned</td>
<td>ISZ Other</td>
</tr>
</tbody>
</table>

### Section 7 — Miscellaneous Features

<table>
<thead>
<tr>
<th>M MISCELLANEOUS FEATURES</th>
<th>M MISCELLANEOUS FEATURES</th>
<th>M MISCELLANEOUS FEATURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCU Camera Underwater</td>
<td>MLC Lining Change</td>
<td>MWLS Water Level Sag</td>
</tr>
<tr>
<td>MGO General Observation</td>
<td>MMC Material Change</td>
<td>MWM Water Mark</td>
</tr>
<tr>
<td>MGP General Photograph</td>
<td>MSA Survey Abandoned</td>
<td>MY Test</td>
</tr>
<tr>
<td>MJA Joint Length</td>
<td>AEC End of Pipe</td>
<td>MYV Dye Visible</td>
</tr>
<tr>
<td>MOL Object In Joint</td>
<td>AEP Junction Box</td>
<td>MYN Not Visible</td>
</tr>
<tr>
<td>OBI Object In Joint</td>
<td>AM Discharge Point</td>
<td>NHW Wastewater Access</td>
</tr>
<tr>
<td>OBM Object Through</td>
<td>AMC Meter</td>
<td>MMA Manhole</td>
</tr>
<tr>
<td>OBN Construction Debris</td>
<td>AOC Other Structure</td>
<td>AWA Manhole</td>
</tr>
<tr>
<td>OBP External Pipe Cable</td>
<td>ATC Tee Connection</td>
<td>AZ Other</td>
</tr>
</tbody>
</table>

### Appendix B - Color Coded Chart

NASSCO’S PIPELINE ASSESSMENT CERTIFICATION PROGRAM® (PACP)®
## NASSCO’S PIPELINE ASSESSMENT CERTIFICATION PROGRAM® (PACP)®

### Section 2 — Header Form Fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
</table>
| Weather | 2-5 | 1 = Dry  
2 = Heavy Rain  
3 = Light Rain  
4 = Snow  
5 = Dry Weather/Wet Ground |
| Pre-Cleaning | 2-5 | H = Heavy Cleaning  
L = Light Cleaning (Jetting)  
X = No Pre-Cleaning  
Z = Other |
| Flow Control | 2-6 | B = Bypassed  
D = Dewatered Using Jetter  
L = Lift Station  
N = No Control  
P = Plugged |
| Purpose | 2-7 | A = Maintenance  
G = Capital Improvement Program Assessment  
B = Infiltration/Inflow Invest.  
H = Resurvey  
C = Post-Rehabilitation  
I = SSES  
D = Pre-Rehabilitation  
J = Pre-Existing Video  
E = Pre-Acceptance  
K = Visual  
P = Routine Assessment |
| Direction | 2-7 | D = Downstream  
U = Upstream |
| Inspection Status | 2-8 | BM = Buried & Marked  
CI = Complete Inspection  
NA = No Access  
NE = Does Not Exist |
| Shape | 2-13 | A = Arched  
B = Barrel  
C = Circular  
E = Egg-Shaped  
H = Horsehoe  
O = Oval (elliptical) |
| Shape | 2-13 | A = Arched  
B = Barrel  
C = Circular  
E = Egg-Shaped  
H = Horsehoe  
O = Oval (elliptical) |
| Purpose | 2-7 | A = Maintenance  
G = Capital Improvement Program Assessment  
B = Infiltration/Inflow Invest.  
H = Resurvey  
C = Post-Rehabilitation  
I = SSES  
D = Pre-Rehabilitation  
J = Pre-Existing Video  
E = Pre-Acceptance  
P = Routine Assessment |
| Location Code | 2-11 | F = Sidewalk  
G = Parking Lot  
H = Alley  
I = Ditch  
J = Building  
K = Creek (or any waterway)  
L = Railway  
M = Airport  
N = Levee/Floodwall  
O = Dam  
P = Levee Pump Station  
Y = Yard  
Z = Other |
| Location Code | 2-11 | F = Sidewalk  
G = Parking Lot  
H = Alley  
I = Ditch  
J = Building  
K = Creek (or any waterway)  
L = Railway  
M = Airport  
N = Levee/Floodwall  
O = Dam  
P = Levee Pump Station  
Y = Yard  
Z = Other |
| Inspection Technology | 2-8 | CC = CCTV  
LA = Laser  
SS = Sidewall Scanning  
ZM = Zoom  |
| Inspection Status | 2-8 | BM = Buried & Marked  
CI = Complete Inspection  
NA = No Access  
NE = Does Not Exist  
NF = Not Found  
NI = Traffic  |
| Inspection Status | 2-8 | BM = Buried & Marked  
CI = Complete Inspection  
NA = No Access  
NE = Does Not Exist  
NF = Not Found  
NI = Traffic  |
| Lining Method | 2-15 | CIP = Cured-In-Place Pipe  
FF = Fold and Form  
FP = Formed-In-Place Liner  
GP = Grout-In-Place Liner  
GRC = Glass Reinforced Cement  |
| Lining Method | 2-15 | SE = Sectional Slip Liner  
SL = Spray Liner  
SN = Segmented Panel  
SP = Segmented Pipe  
SW = Spiral Wound  |
| Coating Method | 2-16 | CT = Coal Tar  
CM = Cement Mortar  
EP = Epoxy  
PE = Polyethylene  
PO = Polyurethane  
PU = Polyurea  |
| Coating Method | 2-16 | CT = Coal Tar  
CM = Cement Mortar  
EP = Epoxy  
PE = Polyethylene  
PO = Polyurethane  
PU = Polyurea  |
| GPS Accuracy | 2-27 | L = Survey Level  
M = Sub-Meter  
N = Nearest Meter |
| GPS Accuracy | 2-27 | L = Survey Level  
M = Sub-Meter  
N = Nearest Meter |
Appendix B - Color Coded Chart

Measure Rim to Grade (Fields 44 & 51)

Grade

Calculate Grade to Invert (Fields 45 & 52)

Rim

Measure Rim to Invert (Fields 43 & 50)

Invert for Field 50 when downstream end of pipe is a drop inlet

FLOW

Invert

FLOW