

Engineering Integrity inspection performed on November 4th, 2021 in response FIRR #402820906 from inspection #695300003 corrective actions.

Inspection aimed at examining the repair of the flowline in response to spill ID #476987. The previous inspection reported a potential issue with the pre-tensioned misalignment of the previous repair, potential future rust issues related to buried Victaulic-style clamps, and improperly abandoned flowlines. Based on FIRR document # 402820906, it was unclear if 2/3 of the Corrective Actions from inspection #695300003 had been addressed. Engineer arrived on site, in a clearing within the cornfield, to a fenced excavation with two combined portions (trench and roughly-circular, both appearing the same as noted in inspection #695300003).

KPK personnel coincidentally arrived on site shortly after engineer's arrival. After a short discussion noting recently-filed inspection (#697601638) and form 27 (#402843842 from COGCC environmental staff), the CA's and COA's associated with this report were unknown to KPK staff on site.

A quick examination verified the pipe wrap on the north tie-in around the Victaulic clamp and partially on the adjacent piping. Visual confirmation of fulfilled CA at this north tie-in, from inspection #695300003 and FIRR #402820906.

From the perspective at the south end of the excavation looking northward, the improper alignment of the tie-in with the fiberglass stub remained (at the south end). Further, the previously unused pipe support was being utilized in conjunction with an angular rock to support the pipe. This appeared to be the only solution for the support and improper alignment; this was in-lieu of properly embedding the pipe in soil with consistent vertical support across the larger and deeper excavation area.

The two (2) 3' fiberglass lines exposed inside of the southwest edge of the larger excavated area remained exposed. Overgrowth set in and it was difficult to locate the second 3" pipe, but neither abandonment had been conducted.

Details of the corrective actions identified during this field inspection are located in the flowline section of this report. Photo log uploaded.

Inspected Facilities

Facility ID: 476987 Type: SPILL OR API Number: - Status: CL Insp. Status: CL

Flowline

#1	Type: Non-Well Site	of Lines	
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Flowline Description

Flowline Type: <u>Non-Well Site</u>	Size: <u>3"</u>	Material: <u>Fiberglass</u>
Variance: <u>No</u>	Age: <u>New</u>	Contents: <u>Crude Oil</u>

Integrity Summary

Failures: <u>Other</u>	Spills: <u>Yes</u>	Repairs Made: <u>Yes</u>
Coatings: <u>No</u>	H2S: <u>No</u>	Cathodic Protection: <u>No</u>

Pressure Testing

Witnessed:	Test Result:	Charted:
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COGCC Rules(check all that apply)

1101. Installation and Reclamation 1102. Operations, Maintenance, and Repair 1103. Abandonment

Comment: COGCC Integrity Engineer was on site 11/4/2021. Inspection on this repair was requested by KPK after a previous repair of this Nesssu consolidation line, as a result of spill ID # 476987. The south tie-in still appeared to have a kink or bowed tie-in that did not match the alignment of the existing stub.

The previously unused pipe support (in the larger excavation area) was utilized at the time of inspection, but in conjunction with a piece of angular rock. The pipe support does not appear to be tall enough to support the pipe in the vertical direction. The pipe support was not secured directly to the pipe to simultaneously relieve the tension at the stub tie-in and provide continuous vertical support. The use of an angular rock for additional vertical height on the pipe support does not meet current bedding standards and poses greater risk than if an appropriate pipe support was used alone.

Corrective Action: Comply with COGCC rule 1102 Installation:
 (1) Embed pipe in a material that will both structurally support it (after proper compaction) and avoid inducing excess stresses on the pipe itself or the joints, which currently exist (1102.d.(10) and d.(12)).
 (2) Additionally, the backfill covering the pipe must ensure long-term stability from external loads, including the backfill installation itself (1102.e).
 (3) Contact COGCC Inspector with schedule of post repair pressure testing. Test to be witnessed by COGCC staff. Provide pressure testing charts for all (active) flowline(s) repaired; email to COGCC Inspector (See rule 1102.O).

Date: 09/30/2021

#2	Type: Non-Well Site	of Lines	
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Flowline Description

Flowline Type: <u>Non-Well Site</u>	Size: <u>3"</u>	Material: <u>Fiberglass</u>
Variance: <u>No</u>	Age: <u>20+ Yrs</u>	Contents:

Integrity Summary

Failures: <u>Other</u>	Spills: <u>No</u>	Repairs Made: <u>No</u>
Coatings: <u>No</u>	H2S: <u>No</u>	Cathodic Protection: <u>No</u>

Pressure Testing

Witnessed:	Test Result:	Charted:
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COGCC Rules(check all that apply)

1101. Installation and Reclamation 1102. Operations, Maintenance, and Repair 1103. Abandonment

Comment:	During field inspection six (6) flowlines were observed exposed in the excavation. First, the main 3" fiberglass line in question which was repaired. Three (3) flowlines had been capped and abandoned including two (2) 3' fiberglass lines (one northeast and one southwest of the repaired line) and one (1) 1.5' PVC line (also southwest of the repaired line). Both fiberglass caps were fused and held in place with Victaulic-style clamps. Additionally two (2) 3 fiberglass flowlines had been exposed along the west edge of the larger excavation. One (1) of these two additional fiberglass lines had been cut and resided open-ended.	
Corrective Action:	Comply with COGCC rule 1105 Abandonment; Repair all active flowlines intended for return to service; or Historically abandoned/ out of service flowlines exposed in the excavation must be abandoned per COGCC rule 1105 (ends sealed per 1105.e.4). Provide confirmation documentation of completion (photos) to COGCC Integrity Inspector and Engineer.	Date: <u>09/30/2021</u>

COGCC Comments

Comment	User	Date
<p>It appears that the CA's and COA's related to inspection # 697601638 and form 27 #402843842, need to be partially addressed in order to properly satisfy unfulfilled CA's from inspection #695300003. Proper clean backfill and potentially further excavation (plus soils testing) is needed per these CA's and COA's.</p> <p>It is imperative that KPK coordinate with COGCC environmental and integrity engineering staff to ensure that CA's are met in the correct order.</p>	wheelers	11/04/2021

Attached Documents

You can go to COGCC Images (<https://cogcc.state.co.us/weblink/>) and search by document number:

Document Num	Description	URL
402864666	INSPECTION SUBMITTED	http://ogccweblink.state.co.us/DownloadDocumentPDF.aspx?DocumentId=5574808
695300008	Photo Log	http://ogccweblink.state.co.us/DownloadDocumentPDF.aspx?DocumentId=5574799