

Hamre, John G.

From: Fahn, Patrick J.
Sent: Friday, February 06, 2009 9:53 AM
To: Hamre, John G.
Subject: FW: PSC Project PU-06-421
Attachments: North Spread Report 2-5-09.pdf; 100_1320 2-5-09.jpg; 100_1328 2-5-09.jpg; 100_1333 2-5-09.jpg

John - please docket in 06-421 from KLJ and then forward to Commissioners, PUD and Legal

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-----Original Message-----

From: Mark Anderson [mailto:mark.anderson@kljeng.com]
Sent: Friday, February 06, 2009 9:40 AM
To: Fahn, Patrick J.
Subject: PSC Project PU-06-421

Patrick:

Attached is Dennis' report from yesterday, 2-5-09. I am also attaching Dennis' email message as well as 3 additional pictures from yesterday. Dennis indicated that Keystone and their representatives were going to continue to review the situation today however, we felt it was unnecessary for us to be out on-site today. One concern that Dennis notes is that the sink holes continue to cave in and one of the cave-ins is in the Terault State Forest. Thank you Patrick.

Mark

Following are 2 of Dennis' emails to me. Thanks Patrick

Mark,

I spent the day with on-site inspectors yesterday, who were fact finding for a general report for the company. A company engineer for Keystone said they would first of all look for the cause of the problem, and then develop a plan to restore the area. He indicated in his experience, this was very uncommon to see a problem such as this. He felt the restoration would be a challenge. Not only do they need to be concerned with the loss of ground material, but also they have to be cautious that they do not damage the underlying pipe, in the restoration process.

I have requested that they keep us informed, and that they forward reports to us including any corrective plan that may develop.

Dennis Markusen, PLS

Another describing the pictures:

638 PU-06-421 Filed: 2/6/2009 Pages: 8
Keystone Independent North Spread Report - Sink Holes at Pembina River HDD Site

Mark,

Sampling of yesterdays site visit. Material is still caving in.

Picture 1333 is a hole 55' in dia, 45' deep

picture 1320 is trench collapse near exit on north, and is hollow under the grass, all the way to the exit point.

picture 1328 is a sinkhole 205 feet in diameter, 40 feet deep, located under a stand of pines in the Terault State Forest.

DM

Mark Anderson, PE

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PSC CASE NUMBER: PU-06-421

Kadrmass
Lee &
Jackson
Engineers Surveyors
Planners

DAILY REPORT

1/3

Job Site: North Spread

Date: 2-5-2009

Location and Operations Observed: mi. 7 Pembina River

General Notes: I met on site today with
Dean DiThomasso, Fernando H. & Team of Keystone sub-contracted
land Surveyors, for the purpose of reviewing the
Sink-holes, quantifying there size & volume, & sharing a
time line with Fernando, who is a Civil Engineer, working
for a subsidiary of Keystone Pipeline. His involvement
is to do a pre-liminary assessment of the
problem area & search for other evidence of additional
potential problem areas. Fernando indicated to me that
his investigation will take a 2 phase approach.
Phase I being, what caused the sinkholes to develop?
Phase II ... a plan to repair & restore damaged area.

Fernando asked the survey team to place offset lath at the quarter points of each sink-hole to monitor any additional activity, or movement of the cavity. He also would like to know the specific volume of each hole. We discussed ways to do that safely, ... suggested a laser scanner would be a useful tool to accomplish that. We also looked at the terrain over the balance of the route, ... looking for signs of additional subsidence or earth strain. We walked the route over the Pembina River looking both directions for any signs of future problems. None was evident today. I asked that their repair plan of action be forwarded to us.

Bill Laffoon said they would keep us in the loop. Fernando believed his report would be forwarded, along with boring records to a geo-technical consulting firm, used frequently by Key Stone to assist in the development of a corrective plan.

Other activity observed today was the continued dismantling of shelters at Exit & Entrance points to the bore.

- End Report

PSC CASE NUMBER: PU-06-421

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Lee &
Jackson
Engineers Surveyors
Planners

DAILY REPORT (Cont.)

Date 2-5-2009

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The following deviations from the finding of facts were found:

No additional deviations found.

Signature: Dennis Markusen

Print Name: Dennis Markusen





