

KEYSTONE XL PIPELINE PROJECT

0262-SD-P4-477-8-478-2-1

KEYSTONE XL PIPELINE PROJECT PIPELINE ROUTE VARIATION FORM			
1	VARIATION TYPE: Refinement: <input type="text"/> Reroute: <input checked="" type="checkbox"/> Footprint: <input type="text"/> Design: <input type="text"/> Centerline: <input checked="" type="checkbox"/> Pump Station: <input type="text"/> Valve Site: <input type="text"/> CAR: <input type="text"/>		
2	LOCATION: Sketch: <input type="text"/> Pictures: <input type="text" value="see attached"/> State: <input type="text" value="SD"/> County: <input type="text" value="Haakon"/> Quad Map: <input type="text" value="N/A"/> Township: <input type="text" value="02N"/> Range: <input type="text" value="24E"/> Aerial Map: <input type="text" value="See attached map sheet"/> Section: <input type="text" value="21"/> Centerline: <input type="text" value="3/12/2012"/> MP: <input type="text" value="477.78"/> to <input type="text" value="478.23"/>		
3	REASON FOR ROUTE VARIATION (Please include reason for route variation): The primary reason for this reroute is to shift CL and workspaces further away from spillway/man-made pond to improve constructability and avoid integrity issues in the future. While civil survey was surveying the reroute RV-0199-06, it was deemed that the CL needed to be shifted further away from the spillway. The reroute has been proposed based on a combination of Civil Survey data, LIDAR data, Pictometry and other aerals.		
DETAIL ROUTE VARIATION (Please describe route variation in detail): Route variation starts near MP 477.7 and deviates ~3° southeast. It continues in this direction for ~1,858 ft. This allows more distance (~223 ft.) between CL/workspaces and spillway/man-made pond. Then the reroute turns northeast and extends for ~533 ft. before rejoining the C/L near MP 478.2.			
ADDITIONAL IMPACTS (Please include any additional impacts which may affect cost; crossings, induction bends, etc.): No New Landowners are impacted by this route variation. One tract is impacted by reroute: ML-SD-HK-11560.000 (Gaylord Saucerman & Wilma Saucerman). The reroute will allow construction savings (~\$15,000). As well as keep the integrity of the pipeline.			
Is there an increase/decrease in the number of crossings? Yes <input type="text"/> No <input checked="" type="checkbox"/>			
If yes, please list: <input type="text"/> <input type="text"/>			
COST ANALYSIS (costs incurred or saved from the route variation)			
Additional length of route realignment:	<input type="text" value="16"/>	ft.	\$ 5,665.86 \$ 360/ft
Additional length of side-hill construction:	<input type="text"/>	ft.	\$ - \$ 19/ft
Additional length of wetland construction:	<input type="text"/>	ft.	\$ - \$ 195/ft
Additional bore length (Road, RR):	<input type="text"/>	ft.	\$ - \$ 540/ft
Additional foreign line/pipeline crossings:	<input type="text"/>	EA	\$ - \$ 30,000/EA
Additional water body crossing (streams, ponds, etc.):			
35 - 65' +	<input type="text"/>	EA	\$ - \$ 185,000/EA
10' - 19'	<input type="text"/>	EA	\$ - \$ 77,250/EA
Less than 10'	<input type="text"/>	EA	\$ - \$ 32,500/EA
Additional survey required:			
Civil:	<input type="text" value="0.45"/>	mile	\$ 2,264.35 \$ 5,000/mile
Cultural:	<input type="text" value="0.45"/>	mile	\$ 1,132.17 \$ 2,500/mile
Biological:	<input type="text" value="0.45"/>	mile	\$ 1,268.03 \$ 2,800/mile
Miscellaneous costs saved or added due to route variation from ADDITIONAL IMPACTS listed above:			\$ (15,000)
Overall estimated costs of the route variation:	\$ (4,669.59)		(See "Additional Impacts" above)

4 **LAND / TransCanada** *Tina Hall*

a) Is a new landowner affected by the proposed variation? Yes No

b) Is the affected landowner/tract a possible condemnation? Yes No

c) Does proposed route variation impact Tribal Lands? Yes No

d) Does proposed route variation impact any Federal/State Lands? Yes No

-If yes, name type (i.e. USFWS, BLM, etc.):

e) Is proposed realignment outside the easement/workspace? Yes No

f) Is realignment proposed to satisfy landowner request? Yes No

-If yes, name of landowner(s)/track number(s):

g) Has all the evaluation criteria been examined/provided for this specific discipline? Yes No

If no, please explain why:

5 **ENGINEERING/CONSTRUCTION - TransCanada** *Meera Kothari, Bobby Curbow*

a) Maximum deviation perpendicular to proposed alignment: ft.

b) Does variation (CL) (including workspaces) falls within 500 ft. MDEQ Corridor? Yes No

c) Has the centerline been staked for construction? Yes No

d) Does route variation affect HDD crossing alignment? Yes No

e) Is realignment proposed for engineering/construction reasons? Yes No

f) Will the route variation require the relocation of a pump station? Yes No

g) Has all the evaluation criteria been examined/provided for this specific discipline? Yes No

If no, please explain why:

6 **ENVIRONMENTAL / exp** *Jonathan Minton*

a) Has the corridor been environmentally surveyed? Yes No

b) Has the proposed variation been environmentally surveyed? Yes No

c) Does proposed route variation impact Sage Grouse areas? Yes No

d) Does route variation impact ABB areas? Yes No

e) Was variation proposed to satisfy environmental issues? Yes No

f) Was realignment proposed to satisfy agency request? Yes No

-If yes, name of agency(s):

g) Environmental features:

Added (+): Subtracted (-):

Wetland ID # for newly impacted wetlands:

h) Has all the evaluation criteria been examined/provided for this specific discipline? Yes No

If no, please explain why:

7 **ENGINEERING / FACILITIES AND HYDRAULICS (if applicable)** *Sandra Gigovic*

a) Will the route variation require the relocation of a pump station? Yes No

b) Will route variation impact hydraulics? Yes No

c) Are additional valves required at HCA's or water crossing? Yes No

d) Has all the evaluation criteria been examined/provided for this specific discipline? Yes No

If no, please explain why:

8 **STAKEHOLDER RELATIONS / TCPL (if applicable)** *Bud Andersen*

a) Does the variation result in any new stakeholders? Yes No

b) Does the variation require follow-up with specific stakeholder groups? Yes No

c) Was the variation proposed to satisfy stakeholder request? Yes No

-If yes, please specify issue type (as it aligns to stakeholder database):

d) Has all the evaluation criteria been examined/provided for this specific discipline? Yes No

If no, please explain why:

9

Originator:

Date:

10

Received by:

Date:

Fax to: ?

11

Assigned Tracking Number:

12

Filed by:

Date:

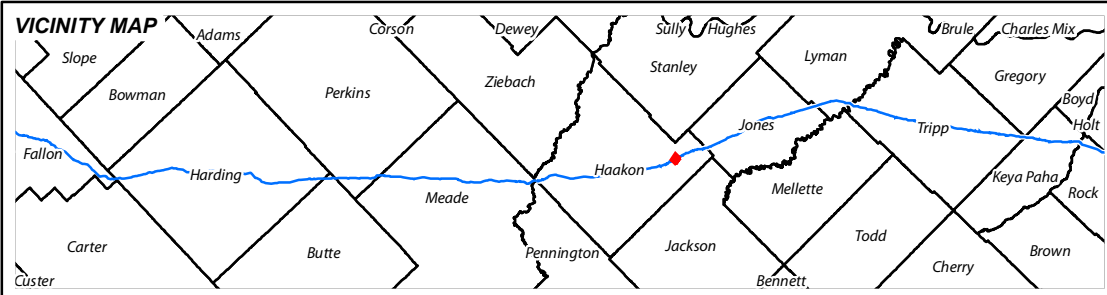
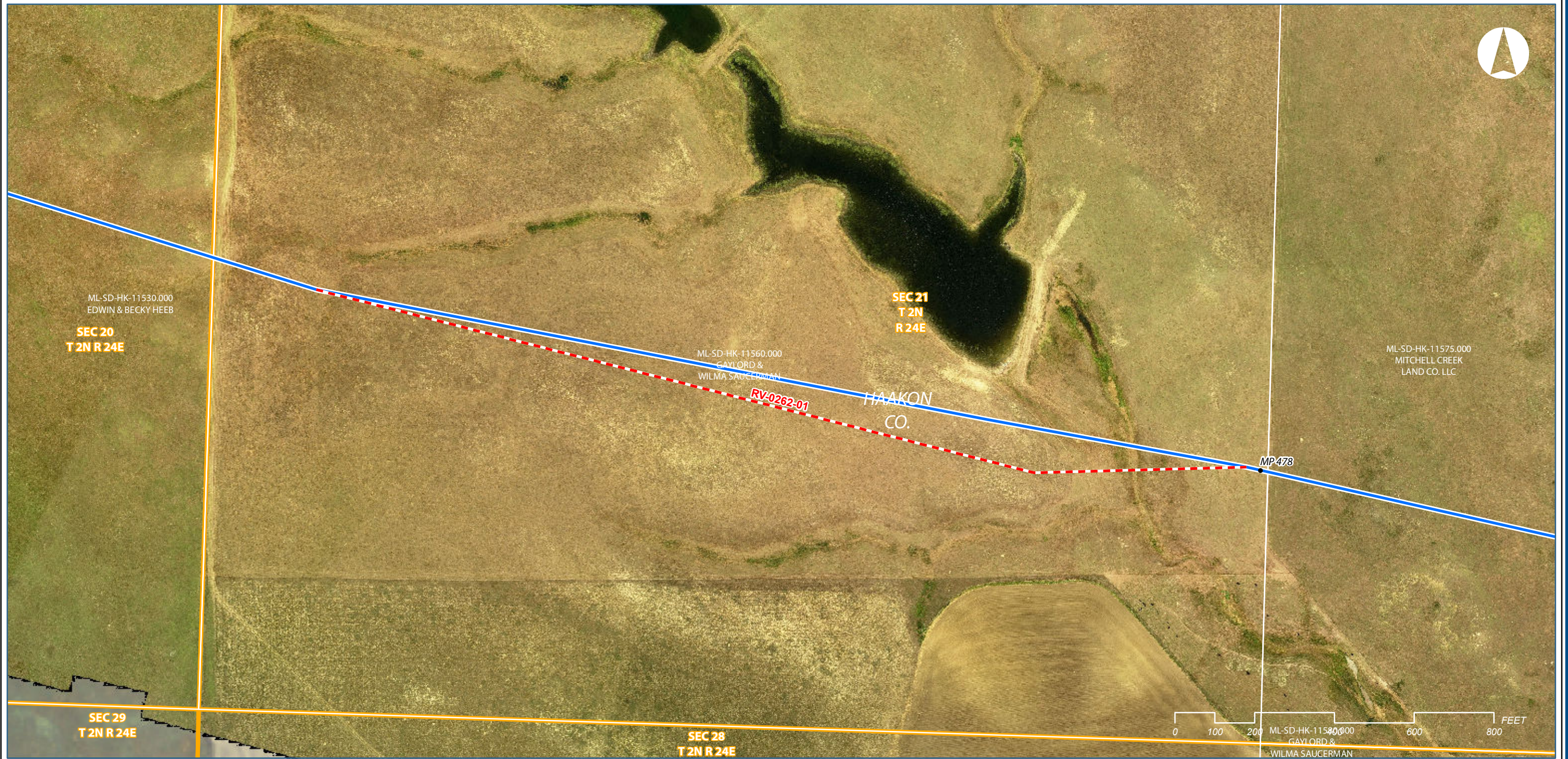
Fax to: ?

0262-SD-P4-477.8-478.2-I

KEYSTONE XL PIPELINE PROJECT

0262-SD-P4-477.8-478.2-1

KEYSTONE XL PIPELINE PROJECT ROUTE VARIATION AUTHORIZATION FORM		
Date: 3/19/2012	Tracking Number: 0262-SD-P4-477.8-478.2-1	MP: 477.8 to 478.2
Description: The primary reason for this reroute is to shift CL and workspaces further away from spillway/man-made pond to improve constructability and avoid integrity issues in the future. Reroute was field shot by civil survey.	Originated By: Engineering	Variation Form Attached: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
TransCanada - Land Tina Hall	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	Date: 4-16-12
Comments:	If Rejected Why?	
TransCanada - Engineering Meera Kothari	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	Date: 3/20/12
Comments:	If Rejected Why?	
Exp - Engineering Butch Wallace	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	Date: 3/22/2012
Comments:	If Rejected Why?	
Exp - Environmental Jonathan Minton	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	Date:
Comments: Pending Survey	If Rejected Why?	
Stantec - Risk Assessment Heidi Tillquist	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	Date:
Comments:	If Rejected Why?	
Facilities - TransCanada Sandra Gigovic	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	Date:
Comments:	If Rejected Why?	
TransCanada - PM (Montana) Alan Lietz	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	Date:
Comments:	If Rejected Why?	
TransCanada - PM (South Dakota) James Odom	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	Date: 5/23/12
Comments:	If Rejected Why?	
TransCanada - PM (Nebraska) Robert Bradley	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	Date:
Comments:	If Rejected Why?	
TransCanada - Keystone XL Manager Steve Marr	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	Date: Jun 15/12
Comments:	If Rejected Why?	
Forward to: Tina Hall <input type="checkbox"/> Meera Kothari <input type="checkbox"/> Butch Wallace <input type="checkbox"/>	Jonathan Minton <input type="checkbox"/> Heidi Tillquist <input type="checkbox"/> Sandra Gigovic <input type="checkbox"/> Alan Lietz <input type="checkbox"/>	James Odom <input type="checkbox"/> Robert Bradley <input type="checkbox"/> Steve Marr <input type="checkbox"/>



LEGEND

- MILEPOST
- PHASE IV CL (2010-09-21)
- - - PROPOSED ROUTE VARIATION
- ▭ SECTION LINE
- ACCESS ROAD
- PUMP STATION
- ⊗ VALVE
- ▭ PROPERTY PARCEL
- ▭ CULTURAL SITE
- ▨ WETLAND
- ▨ WATERBODY
- ▭ 500FT MDEQ CORRIDOR
- HDD ENTRY / EXIT

KEYSTONE PHASE IV, US

Proposed Route Variation 0262-01

COUNTY:	HAAKON	DRAWN BY:	PD
STATE:	SOUTH DAKOTA	CHECKED BY:	JP
REV. NO.:	REVISION	DATE	
0	ISSUED FOR REVIEW.	2011-11-28	

PRELIMINARY

DATE:	2011-11-28	PROJECTION:	NAD83 UTM14 N
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PREPARED BY:

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- INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY •

DWG:	XL-30-P-9200	SHEET:	1
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RV-0262-01 - Looking West at minute 00:12.712

