

KEYSTONE XL PIPELINE PROJECT

0311-SD-P4-370.2-370.8-S

KEYSTONE XL PIPELINE PROJECT PIPELINE ROUTE VARIATION FORM			
1	<b>VARIATION TYPE:</b> Refinement: <input type="text"/> Reroute: <input checked="" type="checkbox"/> Footprint: <input checked="" type="checkbox"/> Design: <input type="text"/> Centerline: <input checked="" type="checkbox"/> Pump Station: <input type="text"/> Valve Site: <input type="text"/> CAR: <input checked="" type="checkbox"/>		
2	<b>LOCATION:</b> Sketch: <input type="text" value="Attached"/> Pictures: <input type="text" value="N/A"/> State: <input type="text" value="SD"/> County: <input type="text" value="Perkins"/> Quad Map: <input type="text" value="N/A"/> Township: <input type="text" value="13N"/> Range: <input type="text" value="10E"/> Aerial Map: <input type="text" value="See attached map sheet"/> Section: <input type="text" value="13,18"/> Centerline: <input type="text" value="3/14/2012"/> MP: <input type="text" value="370.17"/> to <input type="text" value="370.76"/>		
3	<b>REASON FOR ROUTE VARIATION</b> (Please include reason for route variation): The primary reason for this proposed route variation is to shift the centerline and workspaces away from a potential unmarked grave site and to a better creek crossing location (gentler slopes).  This reroute is requested by Engineering and is based on field civil survey data.		
	<b>DETAIL ROUTE VARIATION</b> (Please describe route variation in detail): The proposed route variation starts near MP 370.2 and deviates ~19° southeast of the current CL. It continues in this direction for ~2,218 ft. Then the reroute turns east and extends for ~1,141 ft. to rejoin the current CL near MP 370.8.		
	<b>ADDITIONAL IMPACTS</b> (Please include any additional impacts which may affect cost; crossings, induction bends, etc.): 2 tracts are impacted by the reroute: ML-SD-PE-00270.000 and ML-SD-PE-00290.000 (both Russ Wyant)  CAR-048A is impacted by this proposed reroute (will be shortened).  Cost savings are ~500,000 for a potential contractor move around.		
	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"/>		
	<b>COST ANALYSIS</b> (costs incurred or saved from the route variation)		
	Additional length of route realignment:	245 ft.	\$ 88,020.32 \$ 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' +	0 EA	\$ - \$ 185,000/EA
	10' - 19'	0 EA	\$ - \$ 77,250/EA
	Less than 10'	0 EA	\$ - \$ 32,500/EA
	Additional survey required:		
	Civil:	0.00 mile	\$ - \$ 5,000/mile
	Cultural:	0.54 mile	\$ 1,347.86 \$ 2,500/mile
	Biological:	0.54 mile	\$ 1,509.61 \$ 2,800/mile
	Miscellaneous costs saved or added due to route variation from <b>ADDITIONAL IMPACTS</b> listed above:		\$ (500,000)
	Overall estimated costs of the route variation:	\$ (409,122.21)	(See "Additional Impacts" above)

<b>4 LAND / TransCanada</b> <span style="float: right;"><i>Tina Hall</i></span>	
a) Is a new landowner affected by the proposed variation?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
b) Is the affected landowner/tract a possible condemnation?	Yes <input type="checkbox"/> No <input type="checkbox"/>
c) Does proposed route variation impact Tribal Lands?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
d) Does proposed route variation impact any Federal/State Lands?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
-If yes, name type (i.e. USFWS, BLM, etc.): <input type="text"/>	
e) Is proposed realignment outside the easement/workspace?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
f) Is realignment proposed to satisfy landowner request?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
-If yes, name of landowner(s)/track number(s): <input type="text"/>	
g) Has all the evaluation criteria been examined/provided for this specific discipline?	
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
If no, please explain why: <input type="text"/>	
<input type="text"/>	
<b>5 ENGINEERING/CONSTRUCTION - TransCanada</b> <span style="float: right;"><i>Meera Kothari</i></span>	
a) Maximum deviation perpendicular to proposed alignment:	<input type="text" value="701"/> ft.
b) Does variation (CL) (including workspaces) falls within 500 ft. MDEQ Corridor?	Yes <input type="text" value="N/A"/> No <input type="checkbox"/>
c) Has the centerline been staked for construction?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
d) Does route variation affect HDD crossing alignment?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
e) Is realignment proposed for engineering/construction reasons?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
f) Will the route variation require the relocation of a pump station?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
g) Has all the evaluation criteria been examined/provided for this specific discipline?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
If no, please explain why: <input type="text"/>	
<input type="text"/>	
<b>6 ENVIRONMENTAL - TransCanada</b> <span style="float: right;"><i>Sandra Barnett</i></span>	
a) Has the corridor been environmentally surveyed?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
b) Has the proposed variation been environmentally surveyed?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
c) Does proposed route variation impact Sage Grouse areas?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
d) Does route variation impact ABB areas?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
e) Was variation proposed to satisfy environmental issues?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
f) Was realignment proposed to satisfy agency request?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
-If yes, name of agency(s): <input type="text"/>	
g) Environmental features:	
Added (+): <input type="text"/>	Subtracted (-): <input type="text"/>
Wetland ID # for newly impacted wetlands: <input type="text"/>	
h) Has all the evaluation criteria been examined/provided for this specific discipline?	
Yes <input type="checkbox"/> No <input type="checkbox"/>	
If no, please explain why: <input type="text"/>	
<input type="text"/>	
<b>7 ENGINEERING / FACILITIES AND HYDRAULICS (if applicable)</b> <span style="float: right;"><i>Sandra Gigovic</i></span>	
a) Will the route variation require the relocation of a pump station?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
b) Will route variation impact hydraulics?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
c) Are additional valves required at HCA's or water crossing?	Yes <input type="checkbox"/> No <input type="checkbox"/>
d) Has all the evaluation criteria been examined/provided for this specific discipline?	Yes <input type="checkbox"/> No <input type="checkbox"/>
If no, please explain why: <input type="text"/>	
<b>8 STAKEHOLDER RELATIONS / TCPL (if applicable)</b> <span style="float: right;"><i>Bud Andersen</i></span>	
a) Does the variation result in any new stakeholders?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
b) Does the variation require follow-up with specific stakeholder groups?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
c) Was the variation proposed to satisfy stakeholder request?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
-If yes, please specify issue type (as it aligns to stakeholder database): <input type="text"/>	
d) Has all the evaluation criteria been examined/provided for this specific discipline?	
Yes <input type="checkbox"/> No <input type="checkbox"/>	
If no, please explain why: <input type="text"/>	
<input type="text"/>	
9 Originator: <input type="text" value="Engineering"/>	10 Received by: <input type="text"/>
Date: <input type="text" value="8/10/2012"/>	Date: <input type="text" value="8/10/2012"/>
Fax to: ?	
11 Assigned Tracking Number: <input type="text" value="0311-SD-P4-370.2-370.8-S"/>	12 Filed by: <input type="text"/>
Date: <input type="text"/>	
Fax to: ?	

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KEYSTONE XL PIPELINE PROJECT ROUTE VARIATION AUTHORIZATION FORM	
Date: <u>8/19/2012</u>	Tracking Number: <u>0311-SD-P4-370.2-370.8-S</u>
Description: <u>The primary reason for this proposed route variation is to limit the concrete and workpiece away from a potential washed grave site and to a better creek crossing location (greater depth).</u>	MP: <u>370.2</u> to <u>370.8</u> Originated By: <u>Engineering</u> Variation Form Attached: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
TransCanada - Lead: <u>Tina Hill</u>	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <u>Tina Hill</u> Date: <u>8/16/12</u>
Comments:	If Rejected Why?
TransCanada - Engineering: <u>Moira Kotihar</u>	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <u>Moira Kotihar</u> Date: <u>8/10/12</u>
Comments:	If Rejected Why?
Env. Assessment: <u>Jan Amodeo</u>	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <u>Jan Amodeo</u> Date: <u>8/16/12</u>
Comments:	If Rejected Why?
TransCanada - Environmental: <u>Sandra Glynn</u>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> <u>Sandra Glynn</u> Date: <u>8/16/12</u>
Comments:	If Rejected Why?
Risk Assessment: <u>Neil Thomas</u>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____
Comments: <u>N/A.</u>	If Rejected Why?
TransCanada - Facilities: <u>Sandra Glynn</u>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____
Comments: <u>N/A. Does not affect facilities.</u>	If Rejected Why?
TransCanada - PH (Montana): <u>Alan Lips</u>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____
Comments:	If Rejected Why?
TransCanada - PH (South Dakota): <u>Jason Oden</u>	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <u>Jason Oden</u> Date: <u>Aug 24/12</u>
Comments:	If Rejected Why?
TransCanada - PH (Nebraska): <u>Robert Bradley</u>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____
Comments:	If Rejected Why?
TransCanada - Area Manager: <u>Steve Marr</u>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____
Comments:	If Rejected Why?
Forward to: Tina Hill <input type="checkbox"/> Moira Kotihar <input type="checkbox"/> Jan Amodeo <input type="checkbox"/>	Sandra Glynn <input type="checkbox"/> Neil Thomas <input type="checkbox"/> Sandra Glynn <input type="checkbox"/> Alan Lips <input type="checkbox"/>
	Jason Oden <input type="checkbox"/> Robert Bradley <input type="checkbox"/> Steve Marr <input type="checkbox"/>

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<b>Date:</b> 8/10/2012 <b>Description:</b> The primary reason for the proposed route variation is to shift the easement and workspace away from a potential unexcavated grave site and to a better creek crossing location (greater depth).	<b>Tracking Number:</b> 0311-SD-P4-370.2-370.8-S <b>MP:</b> 370.2 to 370.8 <b>Originated By:</b> Engineering <b>Verified From:</b> <input checked="" type="checkbox"/> X <input type="checkbox"/> NO
<b>Transmittal Line:</b> Tena Hill <b>Comments:</b>	<b>Variation:</b> <input type="checkbox"/> Approved <input type="checkbox"/> Rejected <b>Date:</b>
<b>Transmittal Line:</b> Tena Hill <b>Comments:</b>	<b>Variation:</b> <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Rejected <b>Date:</b> 8/10/12 <b>Reviewed By:</b>
<b>Transmittal Line:</b> Tena Hill <b>Comments:</b>	<b>Variation:</b> <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Rejected <b>Date:</b> 8-10-2012 <b>Reviewed By:</b>
<b>Transmittal Line:</b> Tena Hill <b>Comments:</b>	<b>Variation:</b> <input type="checkbox"/> Approved <input type="checkbox"/> Rejected <b>Date:</b>
<b>Transmittal Line:</b> Tena Hill <b>Comments:</b> N/A	<b>Variation:</b> <input type="checkbox"/> Approved <input type="checkbox"/> Rejected <b>Date:</b>
<b>Transmittal Line:</b> Sandra Clavin <b>Comments:</b> N/A. Does not affect facilities	<b>Variation:</b> <input type="checkbox"/> Approved <input type="checkbox"/> Rejected <b>Date:</b>
<b>Transmittal Line:</b> Alan Lins <b>Comments:</b>	<b>Variation:</b> <input type="checkbox"/> Approved <input type="checkbox"/> Rejected <b>Date:</b>
<b>Transmittal Line:</b> Tena Hill <b>Comments:</b>	<b>Variation:</b> <input type="checkbox"/> Approved <input type="checkbox"/> Rejected <b>Date:</b>
<b>Transmittal Line:</b> Tena Hill <b>Comments:</b>	<b>Variation:</b> <input type="checkbox"/> Approved <input type="checkbox"/> Rejected <b>Date:</b>
<b>Transmittal Line:</b> Steve Marr <b>Comments:</b>	<b>Variation:</b> <input type="checkbox"/> Approved <input type="checkbox"/> Rejected <b>Date:</b>
<b>Reviewed By:</b> Tena Hill <input type="checkbox"/> Mason Kuffner <input type="checkbox"/> Jeff Anagnosto <input type="checkbox"/>	<b>Reviewed By:</b> Sandra Clavin <input type="checkbox"/> Alan Lins <input type="checkbox"/> Steve Marr <input type="checkbox"/>

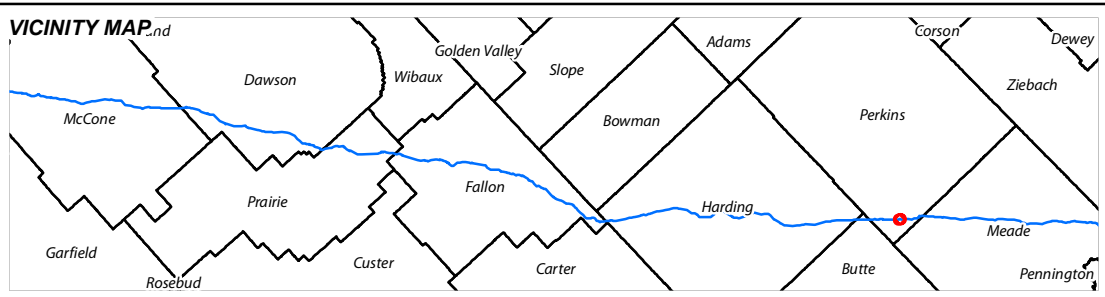
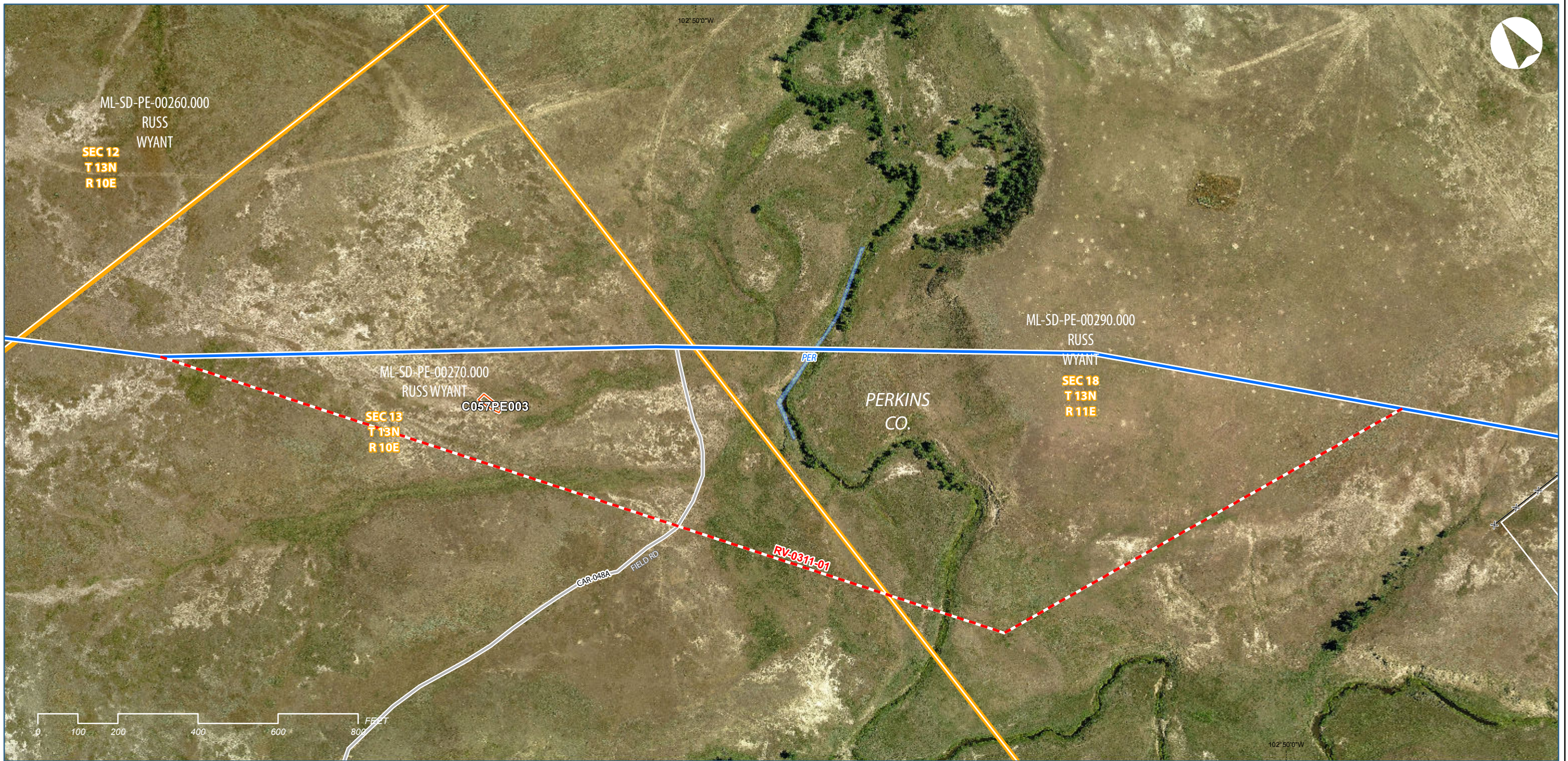
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Date: <u>8/10/2012</u>	Tracking Number: <u>0311-SD-P4-370.2-370.8-S</u>
Description: The primary reason for this proposed route variation is to shift the centerline and workspaces away from a potential unmarked grave site and to a better creek crossing location (gentler slopes).	MP: <u>370.2</u> to <u>370.8</u> Originated By: <u>Engineering</u> Variation Form Attached: Yes <input type="checkbox"/> X <input checked="" type="checkbox"/> No <input type="checkbox"/>
<u>TransCanada - Land</u> Tina Hall Comments: <input type="text"/>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why? <input type="text"/>
<u>TransCanada - Engineering</u> Meera Kothari Comments: <input type="text"/>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why? <input type="text"/>
<u>Exo - Engineering</u> Jeff Amelorsano Comments: <input type="text"/>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why? <input type="text"/>
<u>TransCanada - Environmental</u> Sandra Barnett Comments: <input type="text"/>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why? <input type="text"/>
<u>Stantec - Risk Assessment</u> Heidi Tilquist Comments: <u>N/A.</u>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why? <input type="text"/>
<u>TransCanada - Facilities</u> Sandra Givovic Comments: <u>N/A. Does not affect facilities</u>	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <u>Sandra Givovic</u> Date: <u>Sept 7, 2012</u> If Rejected Why? <input type="text"/>
<u>TransCanada - PM (Montana)</u> Alan Lielz Comments: <input type="text"/>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why? <input type="text"/>
<u>TransCanada - PM (South Dakota)</u> James Odom Comments: <input type="text"/>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why? <input type="text"/>
<u>TransCanada - PM (Nebraska)</u> Robert Bradley Comments: <input type="text"/>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why? <input type="text"/>
<u>TransCanada - Area Manager</u> Steve Marr Comments: <input type="text"/>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why? <input type="text"/>
Forward to: Tina Hall <input type="checkbox"/> Sandra Barnett <input type="checkbox"/> James Odom <input type="checkbox"/> Meera Kothari <input type="checkbox"/> Heidi Tilquist <input type="checkbox"/> Robert Bradley <input type="checkbox"/> Jeff Amelorsano <input type="checkbox"/> Sandra Givovic <input type="checkbox"/> Steve Marr <input type="checkbox"/> Alan Lielz <input type="checkbox"/>	

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**LEGEND**

- MILEPOST
- KEYSTONE XL CL (2012-07-13)
- - - PROPOSED ROUTE VARIATION
- ▭ SECTION LINE
- ACCESS ROAD
- PUMP STATION
- ⊗ VALVE
- WATERLINE
- ▭ PROPERTY PARCEL
- ▭ CULTURAL SITE
- ▨ WETLAND
- ▨ WATERBODY
- ▭ 500FT MDEQ CORRIDOR
- HDD ENTRY / EXIT

**KEYSTONE XL PROJECT**

*Proposed Route Variation 0311-01*

COUNTY:	PERKINS	DRAWN BY:	PD
STATE:	SOUTH DAKOTA	CHECKED BY:	JP
REV. NO.:	REVISION	DATE	
0	ISSUED FOR REVIEW.	2012-08-09	
<b>PRELIMINARY</b>			
DATE:	2012-08-09	PROJECTION:	NAD83   UTM13 N

PREPARED BY:  
**exp Energy Services Inc.**  
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• INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY •

DWG: XL-30-P-9200 SHEET: 1