

KEYSTONE XL PIPELINE PROJECT PIPELINE ROUTE VARIATION FORM			
1	VARIATION TYPE: Refinement: <input type="text"/> Reroute: <input type="text"/> Footprint: <input checked="" type="checkbox"/> Design: <input type="text"/> Centerline: <input type="text"/> Pump Station: <input type="text"/> Valve Site: <input checked="" type="checkbox"/> CAR: <input type="text"/>		
2	LOCATION: Sketch: <input type="text"/> N/A Pictures: <input type="text"/> N/A State: <input type="text"/> SD County: <input type="text"/> Harding and Haakon Quad Map: <input type="text"/> N/A Township: <input type="text"/> 21N, (006N) Range: <input type="text"/> 003E, (018E) Aerial Map: <input type="text"/> See attached map sheet Section: <input type="text"/> 20, (14) Centerline: <input type="text"/> 11/18/2012 MP: <input type="text"/> XXX.X to <input type="text"/> XXX.X		
3	REASON FOR ROUTE VARIATION (Please include reason for route variation): The primary reason for these footprint changes is to increase the dimension of CK-MLV valve sites to 40'x60' to accommodate new equipment layout/space requirements due to the actuation of previous manual valves (RV-0315-01 for CK-MLV-19) to comply with PHMSA conditions. These footprint change is requested by Engineering.		
DETAIL ROUTE VARIATION (Please describe route variation in detail): Current Valve Site dimensions for CK-MLV locations are 40 ft. by 50 ft. To accommodate equipment layout, these sites will now be 40 ft. by 60 ft. The additional 10 ft. will be added measured from the side closest to the Road for both CK-MLV-16 and CK-MLV-19. The locations impacted are listed under the supplemental section (next page). The Valve access roads (VARs) (VAR-16 and VAR-19) will be shortened 10 ft.			
ADDITIONAL IMPACTS (Please include any additional impacts which may affect cost; crossings, induction bends, etc.): No additional cost associated to Environmental and Civil Surveys.			
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"/>			
COST ANALYSIS (costs incurred or saved from the route variation)			
Additional length of route realignment:	<input type="text"/> 0	ft.	\$ - \$ 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"/> 0	EA	\$ - \$ 185,000/EA
10' - 19'	<input type="text"/> 0	EA	\$ - \$ 77,250/EA
Less than 10'	<input type="text"/> 0	EA	\$ - \$ 32,500/EA
Additional survey required:			
Civil:	<input type="text"/> 0.00	mile	\$ - \$ 5,000/mile
Cultural:	<input type="text"/> 0.00	mile	\$ - \$ 2,500/mile
Biological:	<input type="text"/> 0.00	mile	\$ - \$ 2,800/mile
Miscellaneous costs saved or added due to route variation from ADDITIONAL IMPACTS listed above: <input type="text"/>			
Overall estimated costs of the route variation:	<input type="text"/> \$	-	(See "Additional Impacts" above)

4 LAND / TransCanada Tina Hall	
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 type="checkbox"/> No <input checked="" 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"/>	
5 ENGINEERING/CONSTRUCTION - TransCanada Meera Kothari	
a) Maximum deviation perpendicular to proposed alignment:	<input type="text" value="N/A"/> 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"/>	
6 ENVIRONMENTAL - TransCanada Sandra Barnett	
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 checked="" type="checkbox"/> No <input 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"/>	
7 ENGINEERING / FACILITIES AND HYDRAULICS (if applicable) Sandra Gigovic	
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 checked="" type="checkbox"/>
d) 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"/>	
8 STAKEHOLDER RELATIONS / TCPL (if applicable) Bud Andersen	
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 checked="" 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="6/28/2013"/>	Date: <input type="text" value="6/28/2013"/>
Fax to: ?	
11 Assigned Tracking Number: <input type="text" value="0521-SD-P4-XXX.X-XXX.X-I"/>	12 Verified by: <input type="text"/>
Date: <input type="text"/>	
Fax to: ?	

0521-SD-P4-XXX.X-XXX.X-I

Keystone XL Pipeline - Supplemental Information for Route Variation Report 0521

Prepared: 2013-06-28

RV-ID	Previous Scenario (RV-0315-01)		New Scenario		Relocated Distance (miles)	Spread	Type	County	Tract Number	Owner	Closest Rd.	Side	New Scenario			Tag (Motor operated valve)	Tag (Check valve)
	Milepost	Valve ID	Milepost	Valve ID									Legal	Latitude	Longitude		
0521-01	301.7	CK-MLV-16	301.7	CK-MLV-16	0.0	8	CHECK AND MOV	Harding	ML-SD-HA-00790.000	PAINTERS, INC.	VAR-17/ BULLOCK ROAD/ROAD-733	Upstream	S020 T021N R003E	45° 46' 5.087" N 45° 46' 5.107" N	103° 46' 11.570" W 103° 46' 11.794" W	260-HRDNG-02A-B0-MLV-01	260-HRDNG-02A-B0-CKV-01
0521-01	436.1	CK-MLV-19	436.1	CK-MLV-19	0.0	10	CHECK AND MOV	Haakon	ML-SD-HK-00170.000	KELLY BLAIR	VAR-19 / 202ND STREET	Upstream	S014 T006N R018E	44° 28' 26.082" N 44° 28' 25.926" N	101° 54' 20.526" W 101° 54' 20.491" W	260-FAITH-02A-B0-MLV-01	260-FAITH-02A-B0-CKV-01

KEYSTONE XL PIPELINE PROJECT

KEYSTONE XL PIPELINE PROJECT ROUTE VARIATION AUTHORIZATION FORM	
Date: 6/28/2013	Tracking Number: 0521-SD-P4-XXX-X-XXX-X-1
Description: The primary reason for these footprint changes is to increase the dimension of CK-MLV valve sites to 40'x60' to accommodate new equipment layout/space requirements due to the actuation of manual valves.	MP: XXX X to XXX X 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: 7-8-13 If Rejected Why?
TransCanada - Engineering Meera Kothari	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: 7-8-13 If Rejected Why?
Exp - Engineering Kevin McGlynn	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: 8-12-13 If Rejected Why?
TransCanada - Environmental Sandra Barnett	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: 7/10/13 If Rejected Why?
Stantec - Risk Assessment Heidi Tillquist	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: If Rejected Why?
TransCanada - Facilities Sandra Gigovic	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: If Rejected Why? call p4 2
TransCanada - PM (Montana) Alan Lietz	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: If Rejected Why?
TransCanada - PM (South Dakota) James Odom	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: 05-July-13 If Rejected Why?
TransCanada - PM (Nebraska) Robert Bradley	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: If Rejected Why?
TransCanada - Area Manager Steve Marr	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: If Rejected Why?
Forward to:	Tina Hall <input type="checkbox"/> Sandra Barnett <input type="checkbox"/> James Odom <input type="checkbox"/> Meera Kothari <input type="checkbox"/> Heidi Tillquist <input type="checkbox"/> Robert Bradley <input type="checkbox"/> Kevin McGlynn <input type="checkbox"/> Sandra Gigovic <input type="checkbox"/> Steve Marr <input type="checkbox"/> Alan Lietz <input type="checkbox"/>

0521-SD-P4-XXX-X-XXX-X-1

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TransCanada - Land Tina Hall	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why? _____
TransCanada - Engineering Meera Kohari	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why? _____
Exec - Evaluation Keshu Moolgani	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why? _____
TransCanada - Environmental Sandra Barnett	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why? _____
States - Risk Assessment Heidi Tikousi	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why? _____
TransCanada - Facilities Sandra Glovic	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why? _____
TransCanada - PM (Montana) Alan Lietz	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why? _____
TransCanada - PM (South Dakota) James Odom	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why? _____
TransCanada - PM (Nebraska) Robert Bradley	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why? _____
TransCanada - Area Manager Steve Mar	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why? _____
Forward to: Tina Hall <input type="checkbox"/> Meera Kohari <input type="checkbox"/> Keshu Moolgani <input type="checkbox"/>	Sandra Barnett <input type="checkbox"/> Heidi Tikousi <input type="checkbox"/> Sandra Glovic <input type="checkbox"/> Alan Lietz <input type="checkbox"/>
	James Odom <input type="checkbox"/> Robert Bradley <input type="checkbox"/> Steve Mar <input type="checkbox"/>

0521-SD-P4-XXXX-XXXX-1

Signature A, Date July 8, 2013

Environmental OS

MOC #	Mile Post	Tracks	Approved	Rejected	Comments	Recommendations
0520-01		27.9 CK-MLV-02	X			
		72.6 CK-MLV-04	X			
		85.6 CK-MLV-06	X			
		90.6 CK-MLV-06B	X			
		91.7 CK-MLV-07	X			
		198.3 CK-MLV-11	X			
0519-MT-P4		ML-MT-FA-00060	X			
		ML-MT-FA-00475	X			
		ML-MT-FA-00670	X			
		ML-MT-FA-00330	X			
		ML-MT-DA-00150	X			
		ML-MT-DA-00270	X			
		ML-MT-DA-00415	X			
		ML-MT-DA-20025	X			
		ML-MT-VA-00830	X			
		ML-MT-VA-00015	X			
		ML-MT-VA-30500	X			
		ML-MT-PR-00035	X			
		ML-MT-MC-00245	X			
		ML-MT-MC-20800	X			
0453-MT-P4		7.14 CAR-001A	X			
		14.39 CAR-002A	X			
		19.44 CAR-004A	X			
		54.34 CAR-016	X		Pending survey	
		56.87 CAR-084	X			
		212.39 CAR-032	X			
		224.6 CAR-034	X			
		CAR-327	X		Pending survey	
0526-MT-P4		86 Kasa Point	X			
		205.2 Bluffport	X		Pending Survey	
		178.8 Fisher Gravel	X		Pending Survey	
		87.7 Frazer	X		Pending Survey	
0521-SD-P4		301.7 CK-MLV-16	X			
		436.1 CK-MLV-19	X			
0464-SD-P4		ML-SD-HA-00530	X			
		ML-SD-HA-11425	X			
		ML-SD-PN-10040	X			
		ML-SD-TR-10320	X			
		ML-SD-TR-11820	X			
		ML-SD-JO-10840	X			
0524-SD-P4		522 Reliance	X			
		430.8 Harrold	X			
		471 Box Elder	X		Pending Full Survey of Site	
		538 Kimbal Spur	X		Pending Site	