

## **Appendix W**

### **Summary Tables of Route Changes**

- **Between Feb. 15, 2009 and Mar. 26, 2010 Centerlines**
- **Between March 2010 and May 2011 Centerlines**



# Keystone XL Steele City & Gulf Coast Segments - Route Changes Between Feb. 15, 2009 and Mar. 26, 2010 Centerlines

Prepared: 2010-05-13

Segment	Route Variation ID	State	County	Start MP	End MP	Corresponding base route length (miles)	Length of reroute (miles)	Maximum Perpendicular distance from Centerline (ft)	New landowners ? YES/NO	Culturally Surveyed ? YES/NO	Biologically surveyed ? YES/NO	Reroute proposed on ? (date)	Reason for Route variation	Landowner approval?	Part of MDEQ Variations (#)
<b>Steele City Segment</b>															
Steele City	0051-01	Montana	Phillips	0.0	0.2	0.2	0.2	600	NO	YES	YES	3/25/2009	The route variation is proposed in order to adjust the location of the Canada - United States border crossing. The currently issued route simply follows the path of the Foothills / Northern Border Pipeline through the existing compressor station and valve site. The proposed route variation removes the Keystone XL centerline from the compressor station boundaries by shifting the border crossing approximately 595 ft west.	yes	
Steele City	0122-01	Montana	Phillips	16.6	20.0	3.4	3.4	1500	YES	YES	YES	10/6/2009	This reroute is proposed in order to avoid any construction impacts to the Cultural Resource features that were identified by pedestrian surveys along with their designated buffers (assigned by SWCA, Environmental Consultants). The proposed reroute has been verified by pedestrian cultural surveys.	yes	MTV-1
Steele City	0132-01	Montana	Phillips	20.8	21.3	0.5	0.6	80	NO	PARTIAL	YES	10/9/2009	To minimize construction impacts on Cultural Resource features near MP 21.	yes	MTV-1
Steele City	0092-01	Montana	Phillips	21.1	21.7	0.6	0.7	185	NO	PARTIAL	YES	8/4/2009	The current centerline crosses a steep terrain feature near MP 21.5. This reroute is proposed to avoid construction across this steep feature. This reroute is proposed by a Field Engineer. (Attached are images of the locations of original route and the proposed route)	yes	MTV-1
Steele City	0112-01	Montana	Phillips	21.7	23.7	2.0	2.0	850	NO	YES	YES	9/26/2009	This reroute is proposed to avoid cultural resource features near MP 21.9 and MP 23.3 and to the southwest of the centerline near MP 22.25.  The proposed route has been verified by environmental field surveys.	yes	MTV-1
Steele City	0131-01	Montana	Phillips, Valley	24.9	27.1	2.2	2.1	2370	NO	PARTIAL	PARTIAL	10/9/2009	This reroute is proposed to cross Frenchman creek at a preferred crossing location based on site reconnaissance by a field engineer. The proposed reroute is parallel (~100 ft offset) with Northern Border pipeline for ~7,000 ft. The proposed reroute also avoids any construction impacts to a Cultural Resource Feature near MP 25.1.  This reroute is proposed by a field engineer based on site reconnaissance.	yes	MTV-1
Steele City	0132-02	Montana	Valley	35.8	36.8	1.0	1.0	75	NO	NO	NO	10/9/2009	To minimize construction impacts on Cultural Resource features near MP 36.3.	yes	
Steele City	0133-01	Montana	Valley	38.5	40.1	1.6	1.8	1170	NO	NO	NO	10/9/2009	This reroute is proposed to cross terrain features near Rock Creek at a less severe location. The proposed reroute crosses Rock Creek at a preferred location suited for construction. The proposed reroute impacts a Cultural Resource feature near MP 38.9 and the complete extent of the impact will be verified by Environmental Consultants (SWCA).  This reroute is proposed by a field engineer based on site reconnaissance.	yes	MTV-2
Steele City	0125-01	Montana	Valley	40.9	41.2	0.4	0.4	170	NO	NO	NO	10/6/2009	To avoid construction on side hills.	yes	
Steele City	0134-01	Montana	Valley	43.2	46.1	2.9	2.9	840	NO	YES	PARTIAL	10/9/2009	This reroute is proposed to avoid any construction impacts on Cultural Resource features (near MP 44.8) and their designated buffer (assigned by SWCA, Environmental Consultants). These Cultural Resource features were identified by pedestrian surveys. The proposed reroute also crosses Lime Creek at a preferred spot which minimizes the construction impacts to the feature. It was recommended by Environmental Consultants (Entrix) to avoid crossing Lime Creek at its current location.  The proposed reroute has been verified by pedestrian cultural surveys.	yes	
Steele City	0123-01	Montana	Valley	50.0	50.4	0.4	0.4	40	NO	YES	YES	10/6/2009	To avoid Cultural features near MP 50.25.	yes	
Steele City	0132-03	Montana	Valley	53.5	54.5	1.0	1.0	70	NO	PARTIAL	PARTIAL	10/9/2009	To minimize construction impacts on Cultural Resource features near MP 54.2.	yes	
Steele City	0088-01	Montana	Valley	54.5	55.2	0.8	0.8	230	NO	YES	YES	7/31/2009	The current centerline passes along a drainage feature (tributary to Buggy Creek) near MP 55. This reroute is proposed to accommodate a Bureau of Land Management (BLM) request to avoid construction along this feature, and also save cost in construction/reclamation.	yes	
Steele City	0075-01	Montana	Valley	62.9	64.3	1.5	1.5	300	NO	YES	YES	7/10/2009	This reroute is proposed to avoid cultural resource features that were identified by pedestrian surveys near MP 63.3 and MP 63.5.  The proposed route has been verified by environmental field surveys.	2 yes, 2 no	
Steele City	0061-01	Montana	Valley	65.0	68.3	3.3	3.3	1400	YES	YES	YES	5/21/2009	This reroute is proposed to accommodate a landowners request to move away from wetlands near MP 66.8 and a natural spring near MP 67.1. The proposed reroute also places the centerline away from high alkali content soil (~MP 67) which the current centerline passes through.  This reroute was requested by landowner William Andersen.	yes	
Steele City	0059-01	Montana	Valley	69.2	70.9	1.7	1.7	1450	YES	YES	YES	5/21/2009	This reroute is proposed to accommodate a landowner's request to avoid passing through springs and wetlands close to ~MP 70.3. This was requested by Richard Kinzell of tract ML-MT-VA-00600.000.	yes	
Steele City	0076-01	Montana	Valley	77.1	79.0	1.9	2.0	880	NO	YES	YES	7/16/2009	This reroute is proposed to avoid cultural resource features that were identified by pedestrian surveys near MP 77.7, MP 78.1 and MP 78.5.	yes	

# Keystone XL Steele City & Gulf Coast Segments - Route Changes Between Feb. 15, 2009 and Mar. 26, 2010 Centerlines

Prepared: 2010-05-13

Segment	Route Variation ID	State	County	Start MP	End MP	Corresponding base route length (miles)	Length of reroute (miles)	Maximum Perpendicular distance from Centerline (ft)	New landowners ? YES/NO	Culturally Surveyed ? YES/NO	Biologically surveyed ? YES/NO	Reroute proposed on ? (date)	Reason for Route variation	Landowner approval?	Part of MDEQ Variations (#)
Steele City	0073-01	Montana	McCone	90.9	93.1	2.2	2.3	1240	NO	YES	YES	7/10/2009	The centerline currently runs along a very steep and long side hill near MP 91.6. This reroute is proposed to avoid construction along this side hill and save the substantial cost of construction and reclamation.  This reroute is proposed and verified by a field engineer.	yes	
Steele City	0123-02	Montana	McCone	93.5	94.3	0.8	0.8	280	NO	YES	YES	10/6/2009	To avoid Cultural features near MP 93.9.	yes	
Steele City	0132-04	Montana	McCone	96.1	97.2	1.1	1.1	100	NO	NO	NO	10/9/2009	To avoid construction impacts on Cultural Resource features near MP 96.7.	yes	
Steele City	0132-05	Montana	McCone	97.2	98.2	1.0	1.0	250	NO	NO	NO	10/9/2009	To avoid construction impacts on Cultural Resource features near MP 97.7.	2 yes, 1 no	
Steele City	0123-03	Montana	McCone	101.1	102.0	0.8	0.8	180	NO	YES	YES	10/6/2009	To avoid Cultural features near MP 101.2.	yes	
Steele City	0074-01	Montana	McCone	111.9	115.5	3.5	3.6	520	YES	YES	YES	7/10/2009	The centerline currently routes through rough terrain near MP 112.34, MP 112.76 & MP 115 and is close to small ponds. This reroute is proposed to route around these rough terrain features. The cost of reclamation in these areas of rough terrain after construction would be significant and can be avoided by the proposed reroute.  This reroute is proposed and verified by a field engineer.	yes	
Steele City	0126-01	Montana	McCone	120.0	120.5	0.5	0.5	220	NO	NO	NO	10/6/2009	The current centerline passes through a steep butte near ~MP 120.35. This reroute is proposed to avoid this butte and save cost of reclamation of land. This reroute is proposed by a field engineer.	yes	
Steele City	0085-01	Montana	McCone	121.0	122.3	1.3	1.3	210	NO	YES	YES	7/27/2009	To avoid water wells/tanks	yes	
Steele City	0129-01	Montana	McCone	123.4	125.6	2.2	2.2	1100	NO	NO	NO	10/6/2009	The current centerline gets very close (~25 ft) to a water well near MP 124.64. The primary reason for the proposed reroute is to accommodate landowner's (Arnston Ranch) request to stay away from this water well. The proposed reroute also avoids construction through a pond at a ~120 ft long crossing section.  A different option for this reroute was proposed and approved in Route Variation 0095. However, based on additional field reconnaissance, the field engineer has suggested this reroute as a better option for construction.	yes	
Steele City	0125-02	Montana	McCone	127.6	128.3	0.8	0.8	240	YES	NO	NO	10/6/2009	To avoid construction impacts on East Fork of Prairie Creek.	yes	MTV-5
Steele City	0125-03	Montana	McCone	143.4	144.9	1.5	1.5	420	NO	NO	NO	10/6/2009	To accommodate Landowner (Groh Ranch, Inc. (ML-MT-MC-00560)) request to avoid Corrals.	yes	MTV-6
Steele City	0082-01	Montana	McCone	146.7	148.7	2.0	2.0	2700	YES	YES	YES	7/24/2009	The primary reason for is reroute is to accommodate landowner's request to stay farther away from residence of Judith James. The proposed reroute avoids passing through wetlands and streams near MP 147.6 and also lessens the degree of Pls.	yes	MTV-6
Steele City	0089-01	Montana	McCone	153.4	154.3	0.8	0.9	670	NO	PARTIAL	PARTIAL	7/31/2009	The current centerline passes through a rough drainage wash area near MP 153.7. This reroute is proposed to avoid construction across this feature.		MTV-6
Steele City	0084-01	Montana	Dawson	161.3	164.4	3.1	3.1	560	NO	PARTIAL	PARTIAL	7/24/2009	This reroute is proposed to accommodate Landowner's request to keep away from water wells near MP 162.2 and MP 162.9 and from a treeline near MP 163.2.	yes	
Steele City	0078-01	Montana	Dawson	182.2	184.6	2.4	2.3	760	NO	YES	YES	7/16/2009	The current centerline passes through landowner's grain bins near MP 183.1. This reroute is proposed to accommodate landowner's request to stay away from these bins and to shorten the route.	2 yes, 2 no	MTV-9
Steele City	0083-01	Montana	Dawson	196.3	197.0	0.8	0.9	815	NO	PARTIAL	PARTIAL	7/17/2009	The centerline currently passes through very rough drainage and terrain features between ~MP 196.4 and ~MP 197. This reroute is proposed to avoid construction on this difficult terrain and save substantially on the cost of reclamation.  This reroute is proposed by a field engineer through field reconnaissance and a thorough assessment of the surrounding area. Several alternatives were investigated, with the one presented here being the most viable.	yes	
Steele City	0053-01	Montana	Prairie	197.0	199.7	2.7	2.5	1750	YES	YES	YES	4/6/2009	The current centerline passes through three pivot areas between MP 197.0 and MP 199.7, and Prairie Pump Station (PS-13) at MP 198.7 is located relatively close to residences (~1,800 ft). The relocation of the pump station and the reroute are proposed to accommodate the landowner's requests based on these issues.	5 yes, 5 no	
Steele City	0087-01	Montana	Prairie	200.8	203.2	2.4	2.3	2950	YES	PARTIAL	PARTIAL	7/31/2009	The current centerline passes through multiple dikes and stream crossings around MP 202 as verified by a Field Engineer. A reroute is proposed to accommodate landowner's (Ulrich, Donald, Judith, Kurt & Judy) request to avoid crossing these areas.	yes	MTV-11
Steele City	0085-02	Montana	Prairie	203.4	204.4	0.9	0.9	170	NO	NO	NO	7/27/2009	To avoid water wells/tanks.	no	MTV-11
Steele City	0072-01	Montana	Prairie	213.8	214.9	1.1	1.1	630	NO	YES	YES	7/10/2009	The current centerline crosses a cliff (>100 ft tall) at ~MP 214.4. It also passes through a corral at ~MP 214.81. A reroute is proposed to route around these features.	yes	
Steele City	0090-01	Montana	Fallon	224.8	227.3	2.6	2.6	1400	NO	PARTIAL	PARTIAL	7/31/2009	The current centerline passes through a reservoir near MP 226.9 which supplies water to the landowner's cattle all year round. The current centerline also comes close to landowner's dams. This reroute is proposed to accommodate landowner's request and avoid construction on the aforementioned features.	4 yes, 1 no	

# Keystone XL Steele City & Gulf Coast Segments - Route Changes Between Feb. 15, 2009 and Mar. 26, 2010 Centerlines

Prepared: 2010-05-13

Segment	Route Variation ID	State	County	Start MP	End MP	Corresponding base route length (miles)	Length of reroute (miles)	Maximum Perpendicular distance from Centerline (ft)	New landowners ? YES/NO	Culturally Surveyed ? YES/NO	Biologically surveyed ? YES/NO	Reroute proposed on ? (date)	Reason for Route variation	Landowner approval?	Part of MDEQ Variations (#)
Steele City	0071-01	Montana	Fallon	228.6	232.7	4.1	4.1	3350	YES	YES	YES	7/9/2009	The current centerline passes through Tracts ML-MT-FA-00160.00, ML-MT-FA-00170.00 and ML-MT-FA-00180.00. The landowner of these tracts, Clayton Wenz has expressed the following concerns. i) The centerline currently lies along the only road the landowner can use to take farm equipment to his pastures. He is concerned that construction and erosion in this area due to heavy rains would tear up this road. ii) The current centerline lies very close (~100 ft) to a dam which the landowner uses as a reservoir. ii) The current centerline passes through a number of fences which segregate the landowner's cattle. The landowner is concerned about isolating his cattle during construction.  The current centerline also passes through rough terrain with steep hills near MP 229.5  This reroute is proposed to accommodate Landowner's request and to construct on less severe terrain.	8 yes, 1 no	
Steele City	0091-01	Montana	Fallon	234.5	235.7	1.2	1.3	240	NO	PARTIAL	PARTIAL	8/4/2009	The current centerline comes close (< 50 ft) to Landowner's water wells near MP 235.47 (Geving, Doris) and near MP 234.55 (Robert R. & Melissa A.). This reroute is proposed to accommodate Landowner's request to keep sufficient distance (~150 ft) away from these water wells.	1 yes, 2 no	
Steele City	0079-01	Montana	Fallon	262.9	266.2	3.3	3.3	480	NO	YES	YES	7/16/2009	The centerline currently passes through a pond (~400 ft) at ~MP 264.5. This reroute is proposed to stay away from this pond and to avoid any construction impacts in its vicinity.	2 yes, 2 no	
Steele City	0085-03	Montana	Fallon	265.2	266.6	1.4	1.4	108	NO	YES	YES	7/27/2009	To avoid water wells/tanks.	2 yes, 2 no	
Steele City	0085-04	Montana	Fallon	267.9	269.1	1.2	1.2	100	NO	YES	YES	7/27/2009	To avoid gas wells.	2 yes, 1 no	
Steele City	0085-05	Montana	Fallon	271.4	271.7	0.3	0.3	70	NO	PARTIAL	YES	7/27/2009	To avoid water wells/tanks.	yes	
Steele City	0085-06	Montana	Fallon	272.1	273.4	1.3	1.3	105	NO	PARTIAL	YES	7/27/2009	To avoid gas wells.	yes	
Steele City	0086-01	Montana	Fallon	274.2	276.1	1.9	1.9	820	NO	YES	YES	7/31/2009	The current centerline passes through natural springs at ~MP 275.1 and ~MP 275.7. It is the landowner's request to keep a sufficient distance from the springs to avoid any disturbances (due to construction) in these areas. This reroute is proposed to keep away from these natural springs and thus satisfy the landowner.	yes	
Steele City	0124-01	Montana	Fallon	278.2	281.9	3.7	3.5	1970	YES	PARTIAL	PARTIAL	10/6/2009	This reroute is proposed to cross South Fork Coal Bank Creek (~MP 279.3) and Box Elder Creek (~MP 281.5) at a preferred location (with more gentle slopes on banks). These locations are proposed by a field engineer along with Environmental Consultants (Entrix) based on site reconnaissance.	7 yes, 1 no	MTV-19
Steele City	0149-01	Montana, South Dakota	Fallon, Harding	282.1	283.9	1.9	1.8	650	NO	NO	NO	3/8/2010	The reasons for the proposed reroute are to shorten the route, to move the crossing of the tributary to Box Elder Creek at a preferred location, and to match the civil surveyed centerline.	no	
Steele City	0118-01	South Dakota	Harding	282.1	288.2	6.1	6.1	1150	NO	PARTIAL	PARTIAL	10/7/2009	This reroute is proposed to avoid terrain and drainage features and to locate the centerline on preferred terrain based on field reconnaissance. This reroute is also proposed to stay on the property of the existing Landowners (as advised) which were listed in the Temporary Restraining Order list that was presented by the Court.  This reroute is proposed by a field engineer.	no	
Steele City	0107-01	South Dakota	Harding	289.4	289.9	0.4	0.4	120	NO	YES	NO	9/29/2009	To cross a stream feature at a preferred location.	yes	
Steele City	0107-02	South Dakota	Harding	290.5	290.8	0.3	0.3	200	NO	YES	PARTIAL	9/29/2009	To avoid crossing pond and cross the drainage feature at a preferred location.	no	
Steele City	0108-01	South Dakota	Harding	295.1	296.0	1.0	1.0	600	NO	PARTIAL	YES	9/29/2009	To cross River road at a preferred angle and to avoid being on Landowner's (Wayne and Susan Nelson) driveway.	no	
Steele City	0107-03	South Dakota	Harding	300.5	300.7	0.2	0.2	75	NO	NO	NO	9/29/2009	To avoid water wells.	no	
Steele City	0108-02	South Dakota	Harding	301.9	303.5	1.7	1.6	950	NO	YES	YES	9/29/2009	To avoid severe rugged terrain and shorten route.	no	
Steele City	0107-04	South Dakota	Harding	307.2	308.1	0.9	0.9	130	NO	NO	NO	9/29/2009	To cross a stream feature at a preferred location.	no	
Steele City	0108-03	South Dakota	Harding	310.7	312.3	1.6	1.5	1230	YES	YES	YES	9/29/2009	To avoid severe terrain and drainage features and shorten route.	no	

# Keystone XL Steele City & Gulf Coast Segments - Route Changes Between Feb. 15, 2009 and Mar. 26, 2010 Centerlines

Prepared: 2010-05-13

Segment	Route Variation ID	State	County	Start MP	End MP	Corresponding base route length (miles)	Length of reroute (miles)	Maximum Perpendicular distance from Centerline (ft)	New landowners ? YES/NO	Culturally Surveyed ? YES/NO	Biologically surveyed ? YES/NO	Reroute proposed on ? (date)	Reason for Route variation	Landowner approval?	Part of MDEQ Variations (#)
Steele City	0109-01	South Dakota	Harding	316.1	325.2	9.1	9.5	5200	YES	PARTIAL	YES	9/29/2009	The primary reason for this reroute was to avoid construction through sandhills, avoid terrain features and to locate the pipeline on the property as per the landowner's request (Ludlow Cooperative Grazing Dist. Inc.).  This reroute is proposed by field engineer based on site reconnaissance and landowner's direction.	yes	
Steele City	0119-01	South Dakota	Harding	332.4	334.0	1.6	1.6	420	NO	PARTIAL	PARTIAL	10/1/2009	The primary reason for the proposed reroute is to make the centerline parallel to the east edge of the Buffalo Pump Station (PS-16) as requested by Colt/Worley Parsons for the Pump Station layout design. This reroute also avoids construction through a pond near MP 333.0.  This reroute has been verified by a field engineer.	no	
Steele City	0110-01	South Dakota	Harding	336.3	339.9	3.6	3.7	660	NO	YES	YES	9/30/2009	The primary reason for this reroute is to avoid a butte at ~MP 336.6 and to avoid construction along drainage features near MP 337.35 and MP 338.5. This reroute is also laid out to stay on the property of the existing landowners which were listed in the Temporary Restraining Order list that was presented by the Court.  This reroute is proposed by a field engineer in consultation with landowners.	no	
Steele City	0111-01	South Dakota	Harding	342.0	346.2	4.2	4.2	1750	YES	PARTIAL	YES	10/1/2009	This reroute is proposed to avoid a severe drainage feature and cross it at a preferred location, as well as to accommodate a landowner's request to locate the pipeline through his property at a location specified by him.  This reroute is proposed by a field engineer by site reconnaissance and landowner consultation.	yes	
Steele City	0107-05	South Dakota	Harding	348.6	349.5	0.8	0.8	360	NO	YES	YES	9/29/2009	To avoid Cultural feature (at ~MP 349.2).	yes	
Steele City	0107-06	South Dakota	Harding	352.0	353.4	1.3	1.3	690	NO	NO	YES	9/29/2009	To avoid Cultural features (at ~MP352.5 and ~MP352.7).	yes	
Steele City	0142-01	South Dakota	Butte	356.3	357.6	1.3	1.3	440	NO	NO	NO	2/19/2010	This reroute is proposed to avoid cultural resource features near MP 356.7 and MP 357, as recommended by SWCA Environmental Consultants Inc. These cultural resource features were identified by pedestrian surveys conducted by SWCA Consultants.	yes	
Steele City	0150-01	South Dakota	Perkins	359.1	359.9	0.8	0.8	225	NO	NO	NO	2/22/2010	This reroute is proposed to avoid construction through a pond (~100 ft wide).	no	
Steele City	0152-01	South Dakota	Perkins	366.2	366.9	0.7	0.7	220	NO	NO	NO	3/1/2010	The current centerline lies along the side slopes of a stream (Beverly Creek) near MP 366.53. The proposed reroute crosses Beverly Creek at a preferred location. This reroute is proposed by Westech Environmental Consultants based on field reconnaissance.	no	
Steele City	0097-01	South Dakota	Meade	374.3	375.7	1.4	1.4	430	NO	PARTIAL	PARTIAL	8/31/2009	The current centerline passes through sandhills near MP 375 and gets very close to landowner's waterwells near MP 375.3. This reroute is proposed to avoid these features.	yes	
Steele City	0103-01	South Dakota	Meade	380.5	384.7	4.2	4.2	520	NO	NO	NO	9/3/2009	The proposed reroute avoids a drainage wash area near MP 380.8. The current centerline gets very close and parallels the landowner's waterlines and valves from ~MP 383.0 to ~MP 384.5. At its current location, it lies on a water well at MP 384.4 just east of Maurine Road. This reroute is proposed to accommodate Landowner's (Lyle D. Weiss, Etux) request to avoid these aforementioned features. The proposed reroute also just clips the landowner's alfalfa field as opposed to passing through it at a wider section near MP 381.15.	no	
Steele City	0064-01	South Dakota	Meade	392.0	393.6	1.6	1.7	390	NO	YES	YES	7/7/2009	This reroute is proposed through drainage features near MP 392.5, a pond near MP 392.9, and to maintain a sufficient distance (>500 ft) from a residence near MP 393.4.	yes	
Steele City	0077-01	South Dakota	Meade	394.9	395.7	0.8	0.8	230	NO	YES	YES	7/16/2009	The current centerline runs along a drainage feature near MP 395.4. This reroute is proposed to avoid more difficult construction and save the cost of reclamation by avoiding routing along this drainage feature. This reroute has been verified by a field engineer and civil survey.	yes	
Steele City	0058-01	South Dakota	Meade	397.9	401.2	3.3	3.1	2500	NO	YES	PARTIAL	5/19/2009	This reroute is proposed to shorten the pipeline route and avoid the steep, unstable banks of Sulphur Creek at the current crossing location. This relocation greatly improves the ease of construction and reclamation around the Sulphur Creek crossing.	no	
Steele City	0067-01	South Dakota	Meade	406.6	413.0	6.4	6.3	4500	YES	PARTIAL	PARTIAL	5/23/2009	This reroute is proposed to shorten the route, eliminate several sharp Pis, and accommodate a landowner's (Harold Kilness) request to stay away from his calving fields near MP 411.	yes	
Steele City	0130-01	South Dakota	Meade	407.5	408.9	1.4	1.4	205	YES	NO	NO	10/9/2009	The reason for this route variation is to avoid any construction impacts to a cemetery near MP 408.65. This cemetery was identified on field during the survey of Route Variation RV-0067.  The proposed reroute is based on civil survey data.	yes	
Steele City	0065-01	South Dakota	Meade	413.5	417.6	4.1	4.0	3000	YES	PARTIAL	PARTIAL	5/23/2009	This reroute is proposed to shorten the route, avoid drainage features, minimize routing through crop fields, and avoid crossing a buried cable line four times between MP 413.7 to MP 414.9.	no	

# Keystone XL Steele City & Gulf Coast Segments - Route Changes Between Feb. 15, 2009 and Mar. 26, 2010 Centerlines

Prepared: 2010-05-13

Segment	Route Variation ID	State	County	Start MP	End MP	Corresponding base route length (miles)	Length of reroute (miles)	Maximum Perpendicular distance from Centerline (ft)	New landowners ? YES/NO	Culturally Surveyed ? YES/NO	Biologically surveyed ? YES/NO	Reroute proposed on ? (date)	Reason for Route variation	Landowner approval?	Part of MDEQ Variations (#)
Steele City	0096-01	South Dakota	Meade	414.0	418.0	4.1	4.0	1350	YES	PARTIAL	PARTIAL	9/3/2009	At the time of field survey of Route Variation RV-0065 - Hwy 34 Reroute, refinements were made by Field Engineers to make the route shorter and reduce the number of PIs based on discussions with landowners.  This reroute is proposed to match the surveyed route data.	no	
Steele City	0141-01	South Dakota	Meade	418.7	419.3	0.5	0.5	75	NO	YES	YES	2/19/2010	This reroute is proposed to avoid a cultural resource feature near MP 418.9. This cultural resource feature was identified by pedestrian surveys conducted by SWCA Consultants. The temporary easement of the proposed reroute lies within the surveyed corridor of the original route and is clear of any other cultural resource features.	no	
Steele City	0070-01	South Dakota	Meade	420.3	420.9	0.7	0.7	275	NO	NO	YES	7/9/2009	The centerline currently clips a very small portion of a BLM tract in Meade, South Dakota at ~MP 420.5. A route variation is proposed to avoid any activity on this tract.	yes	
Steele City	0121-01	South Dakota	Meade, Pennington, Haakon	423.5	426.3	2.9	2.9	700	NO	NO	NO	10/1/2009	The primary reason for this reroute is to realign the HDD at the Cheyenne River (~MP 425.6) based on comments by Entec Engineering Technology, Inc. This realignment was proposed to shorten the length of the HDD and to locate the centerline further north.	no	
Steele City	0163-01	South Dakota	Haakon	454.0	454.7	0.6	0.6	100	NO	YES	YES	3/4/2010	This reroute is proposed to eliminate unnecessary PIs and straighten the current centerline at a location that was once thought to be a road crossing.	no	
Steele City	0068-01	South Dakota	Haakon	456.9	460.4	3.5	3.5	615	NO	YES	YES	5/23/2009	This reroute is proposed to accommodate a landowner's (Martin and Vera Nelson) request to avoid routing the centerline through his stock pond near MP 459. This reroute also avoids passing through a pond and wetlands near MP 457.3 and allows the route to be on higher ground near MP 459.1.	yes	
Steele City	0120-01	South Dakota	Haakon	481.0	481.3	0.3	0.3	75	NO	YES	PARTIAL	10/1/2009	This reroute is proposed to refine the alignment across the Bad River to situate the pipeline on a location preferable for construction by the conventional Open Cut method.	no	
Steele City	0069-01	South Dakota	Jones	494.9	496.4	1.4	1.5	550	NO	YES	PARTIAL	5/23/2009	The current location of Murdo Pump Station (PS-19) is not practical for construction as determined by a field engineer. The proposed location is preferable for construction reasons and also places the pump station further away from residences to the east of it.  A reroute is also proposed to accommodate the pump station relocation.	yes	
Steele City	0054-01	South Dakota	Tripp	552.0	553.0	1.0	1.0	90	NO	YES	PARTIAL	4/24/2009	The 300 ft survey corridor of the current centerline lies in an Individually Owned Indian Allotment (ML-SD-TR-10475.000). A route variation is proposed to avoid any activity on this tract.	yes	
Steele City	0146-01	South Dakota	Tripp	562.9	564.2	1.3	1.3	225	NO	PARTIAL	PARTIAL	2/19/2010	This reroute is proposed to avoid construction through a pond and a dam near MP 563.8. This reroute is proposed by a field engineer and has been civil surveyed.	no	
Steele City	0055-01	South Dakota	Tripp	566.3	569.0	2.6	2.6	1150	NO	YES	YES	5/5/2009	Near MP 567.5, the current centerline passes through the middle of tract ML-SD-TR-11120.00. The owner of this tract intends to develop subdivisions on the property in the area that the route currently passes through. A reroute is proposed to accommodate the landowner's request and cross this tract at the location suggested by him (southwest corner of the same property).	no	
Steele City	0063-01	South Dakota	Tripp	577.0	578.4	1.4	1.4	190	NO	YES	YES	7/7/2009	This reroute is proposed to accommodate Landowner's (Alan R. Steinke) request to route around his Buffalo Pens near MP 577.9 (ML-SD-TR-11520.000).	yes	
Steele City	0128-01	Nebraska	Keya Paha	597.2	597.9	0.6	0.6	130	NO	NO	NO	10/8/2009	The centerline currently crosses a minor stream at a low (wet) spot near MP 597.5. The proposed reroute places the centerline at a preferred crossing location ~130 ft southwest of the current location.  This reroute is proposed by a field Engineer.	yes	
Steele City	0145-01	Nebraska	Keya Paha	598.5	599.6	1.1	1.1	180	NO	PARTIAL	PARTIAL	2/19/2010	This reroute is proposed to avoid a cultural resource feature near MP 599.3. This cultural resource feature was identified by pedestrian surveys conducted by ARG Consultants. The proposed reroute has been culturally surveyed and is cleared for any cultural resource features.	yes	
Steele City	0106-01	Nebraska	Keya Paha	599.2	600.1	1.0	0.9	550	NO	PARTIAL	NO	9/29/2009	The primary reason for this reroute is to accommodate the conventional Open Cut construction method through the Keya Paha River (~MP 599.5) as opposed to the Horizontal Directional Drill as previously planned. This reroute is proposed to situate the centerline at a location most favorable for construction by the conventional Open Cut method.  This location is proposed by a field engineer after site reconnaissance.	yes	

# Keystone XL Steele City & Gulf Coast Segments - Route Changes Between Feb. 15, 2009 and Mar. 26, 2010 Centerlines

Prepared: 2010-05-13

Segment	Route Variation ID	State	County	Start MP	End MP	Corresponding base route length (miles)	Length of reroute (miles)	Maximum Perpendicular distance from Centerline (ft)	New landowners ? YES/NO	Culturally Surveyed ? YES/NO	Biologically surveyed ? YES/NO	Reroute proposed on ? (date)	Reason for Route variation	Landowner approval?	Part of MDEQ Variations (#)
Steele City	0062-01	Nebraska	Keya Paha	600.6	601.7	1.1	1.1	630	NO	PARTIAL	PARTIAL	5/21/2009	The centerline currently passes through natural springs at ~MP 600.95 and ~MP 601.27. The landowner has consulted Lower Niobrara Natural Resources District and University of Nebraska, Lincoln and has provided documents supporting the relocation of the pipeline (see attached letters). This reroute is proposed to accommodate landowner's request and route through the locations specified by the landowner, away from the natural springs.  This route was selected by a Field Engineer with consultation with the landowner (Ernest Fellows, ML-NE-KP-10065.000).	yes	
Steele City	0160-01	Nebraska	Keya Paha	611.3	613.3	2.0	2.1	710	NO	PARTIAL	PARTIAL	3/3/2010	This reroute is proposed to avoid having any construction impacts to the habitat of an endangered orchid species (Western Prairie Fringed Orchid).	yes	
Steele City	0117-01	Nebraska	Keya Paha	614.5	616.2	1.6	1.7	660	NO	PARTIAL	PARTIAL	10/1/2009	The primary reason for the proposed reroute is to realign the HDD at the Niobrara River (~MP 615) based on comments from Entec Engineering Technology, Inc. The proposed reroute also avoids a cultural feature near MP 614.6.  Based on site visits, it was proposed by Entec Engineering Technology, Inc. to move the Exit point of the HDD ~500 ft to the east and the move Entry point of the HDD by ~150 ft to the North. This was proposed to shorten the overall HDD length and to prevent the risk of a frac-out at the original HDD Exit point.	yes	
Steele City	0060-01	Nebraska	Holt	645.3	646.6	1.2	1.3	1100	NO	YES	YES	5/21/2009	The current location of the centerline interferes with the landowner's ranching operations. The current route also lies close to an artesian well at ~MP 646.27 and passes through a pond in this area. A reroute is proposed to accommodate the landowner's request and to route around these features. This was requested by Daniel Kramer of tract ML-NE-HT-10365.000.  The centerline currently lies on a sandhill ridge and the proposed reroute is beneficial for ease of construction and reclamation.	yes	
Steele City	0098-01	Nebraska	Holt	656.3	657.5	1.2	1.2	515	NO	PARTIAL	PARTIAL	8/31/2009	To route around Sandhill Blowouts	yes	
Steele City	0099-01	Nebraska	Holt	665.9	667.6	1.7	1.8	340	NO	NO	NO	8/31/2009	The current centerline passes through sandhill blowouts near MP 666.1, MP 666.8, MP 667.26 and MP 667.37. The primary reason of the proposed reroute is to avoid construction through these features and thus save the cost of reclamation.  This reroute is proposed by Field Engineers after hiking through these sandhill areas.	yes	
Steele City	0098-02	Nebraska	Garfield	670.0	671.2	1.2	1.2	350	NO	NO	NO	8/31/2009	To route around Sandhill Blowouts	no	
Steele City	0162-01	Nebraska	Garfield	672.6	675.8	3.2	3.3	2470	YES	NO	NO	3/8/2010	The current centerline passes through 3 tracts (ML-NE-GR-00035, ML-NE-GR-00045, and ML-NE-GR-00055) which are registered with the NRCS Wetland Reserve Program (WRP). This reroute is proposed to route around and avoid any construction impacts on these tracts.	no	
Steele City	0100-01	Nebraska	Garfield	675.0	676.7	1.7	1.7	550	NO	NO	NO	9/3/2009	The current centerline passes through Sandhill blowouts near MP 675.3, MP 676 and MP 676.3. This reroute is proposed to avoid these areas and thus save cost on reclamation.	no	
Steele City	0101-01	Nebraska	Garfield	676.7	678.8	2.2	2.2	190	NO	NO	NO	9/3/2009	The current centerline passes through a steep ditch near MP 676.95, a sandhill blowout near MP 677.76 and couple of large, old (~4 ft diameter) Cottonwood trees. This reroute is proposed to avoid these features and save cost on reclamation.	no	
Steele City	0105-01	Nebraska	Wheeler	686.8	687.2	0.3	0.3	150	NO	NO	NO	9/26/2009	To avoid large knob, ~60 ft high with 40% slopes.	no	
Steele City	0105-02	Nebraska	Wheeler	687.4	687.6	0.2	0.2	210	NO	NO	NO	9/26/2009	To avoid deep bowl, ~30 ft deep with 50% slopes.	no	
Steele City	0105-03	Nebraska	Wheeler	687.9	688.5	0.5	0.5	205	NO	NO	NO	9/26/2009	To avoid steep slopes and construction along a sandhill ridge.	no	
Steele City	0105-04	Nebraska	Wheeler	688.7	689.0	0.3	0.3	140	NO	NO	NO	9/26/2009	To avoid deep bowl, ~40 ft deep with 50% slopes.	no	
Steele City	0113-01	Nebraska	Wheeler	689.0	689.8	0.7	0.7	375	NO	NO	NO	9/26/2009	To avoid deep blowouts, steep and complex topography	no	
Steele City	0113-02	Nebraska	Wheeler	689.8	690.0	0.2	0.2	90	NO	NO	NO	9/26/2009	To avoid steep feature.	no	
Steele City	0113-03	Nebraska	Wheeler	690.6	691.1	0.5	0.5	240	NO	NO	NO	9/26/2009	To avoid ridges, blowouts and large hills.	no	
Steele City	0147-01	Nebraska	Wheeler	691.7	693.1	1.4	1.5	770	NO	NO	NO	2/22/2010	The primary reason for this reroute is to avoid a water well and several steep & tall sand hills and blowouts. This reroute is proposed to route the centerline on more gentle terrain which would require moving less soil material, lower maintenance and save cost of reclamation through these areas.  This reroute is proposed by a field engineer and Westech Environmental Services, Inc. by site reconnaissance.	yes	
Steele City	0148-01	Nebraska	Wheeler	693.4	693.8	0.4	0.5	300	NO	NO	NO	2/22/2010	The primary reason for this reroute is to avoid tall sand hills and blowouts. This reroute is proposed to route the centerline on more gentle terrain which would require moving less soil material, lower maintenance and save cost of reclamation through these areas.  This reroute is proposed by a field engineer and Westech Environmental Services, Inc. by site reconnaissance.	no	



# Keystone XL Steele City & Gulf Coast Segments - Route Changes Between Feb. 15, 2009 and Mar. 26, 2010 Centerlines

Prepared: 2010-05-13

Segment	Route Variation ID	State	County	Start MP	End MP	Corresponding base route length (miles)	Length of reroute (miles)	Maximum Perpendicular distance from Centerline (ft)	New landowners ? YES/NO	Culturally Surveyed ? YES/NO	Biologically surveyed ? YES/NO	Reroute proposed on ? (date)	Reason for Route variation	Landowner approval?	Part of MDEQ Variations (#)
Steele City	0158-01	Nebraska	Wheeler	694.5	694.9	0.4	0.4	420	NO	NO	NO	3/3/2010	There is rough terrain (~60 ft) on the south side of the previous location of Ericson Pump Station (PS-23) for which an extensive excavation of dirt/sand would be required. The proposed relocation of PS-23 (Ericson) locates the pump station on relatively flat ground, and the proposed location is based on site reconnaissance by Colt/Worley Parsons and a field engineer.  The reroute associated with PS-23 locates the centerline within the pump station in order to minimize suction and discharge piping.	no	
Steele City	0113-04	Nebraska	Greeley	697.3	697.8	0.4	0.4	205	NO	NO	NO	9/26/2009	To avoid stock pond and small blowout.	yes	
Steele City	0114-01	Nebraska	Greeley	699.1	699.4	0.3	0.3	90	NO	NO	NO	9/26/2009	To avoid Sandhill Blowout.	yes	
Steele City	0115-01	Nebraska	Greeley	699.6	701.2	1.7	1.7	490	YES	NO	NO	9/26/2009	The primary reason for this reroute is to avoid several steep, tall hills and blowouts. This reroute is proposed to route the centerline on more gentle terrain which would require moving less soil material, lower long term maintenance, and to save the cost of reclamation through these areas.  This reroute is proposed by a field engineer and Westech Environmental Services, Inc. by site reconnaissance.	yes	
Steele City	0116-01	Nebraska	Greeley	701.3	702.0	0.6	0.7	295	NO	NO	NO	9/26/2009	The primary reason for this reroute is to avoid steep slopes in favor of more gentle topography. This reroute is proposed to route the centerline on more favorable terrain which would require moving less soil material and thus save the cost of reclamation through these areas.  This reroute is proposed by a field engineer and Westech Environmental Services, Inc. by site reconnaissance.	yes	
Steele City	0114-02	Nebraska	Greeley	702.1	702.9	0.8	0.8	200	NO	PARTIAL	PARTIAL	9/26/2009	To avoid steep features and a windmill.	yes	
Steele City	0157-01	Nebraska	Greeley	709.0	710.3	1.3	1.4	1100	YES	NO	NO	3/4/2010	This reroute is proposed to locate the pipeline on a tract which is now owned by a landowner (Mark Cockerill) that is willing to sign on the easements of the proposed reroute and the existing easements that our current centerline passes through on his other property. The proposed reroute locates the centerline off of the tract ML-NE-GY-00145 (State of Nebraska Board of Educational Lands & Fund) which is a condemnation tract.  The proposed reroute now lies on a tract that was part of a previous centerline and was a denial earlier (Northwest corner of Sec 15-19N-10W), but it is now owned by Mark Cockerill of ML-NE-GY-00155 and he is willing to locate the pipeline on it.	yes	
Steele City	0155-01	Nebraska	Greeley	716.1	716.9	0.8	0.8	340	NO	NO	NO	3/1/2010	The current centerline passes through a pond near MP 716.6. This reroute is proposed to avoid construction through the pond and also avoids clipping a tree line near MP 716.3.	yes	
Steele City	0161-01	Nebraska	Merrick	746.4	747.2	0.8	0.9	520	NO	NO	NO	3/3/2010	The centerline currently passes through a dump site near MP 746.8 identified by cultural survey. This reroute is proposed to accommodate landowner's request to keep a sufficient distance to avoid any construction impacts to this dump site. It is also a concern for the integrity of the pipeline when passing through a dump site with metal scraps.	yes	
Steele City	0159-01	Nebraska	Merrick	751.0	752.2	1.1	1.1	260	NO	NO	NO	3/3/2010	The proposed increase in size of Central City Pump Station (PS-24) is to accommodate the pump station layout as designed by Colt/Worley Parsons.  The triangular shape of the pump station is to accommodate landowner's request of avoiding of the pivot area.  The proposed reroute associated with PS-24 is to accomodate the design from Colt/Worley Parsons for the pump station layout.	yes	
Steele City	0056-01	Nebraska	Merrick	751.3	753.3	2.0	2.0	1460	YES	PARTIAL	PARTIAL	5/13/2009	This reroute is proposed to avoid cultural sites at ~MP 752.9 as well as to accomodate a landowner request. The current centerline passes through treelines at mileposts ~MP 751.72 and ~MP 751.85, and the landowners have requested the proposed routing through the treeline at R Road. This tree line already has a small break in this area (not visible on attached map).	yes	
Steele City	0127-01	Nebraska	Merrick, Hamilton	756.9	757.4	0.6	0.6	350	NO	NO	NO	10/8/2009	The current centerline passes through natural springs near MP 757. This reroute is proposed to keep sufficient distance from these springs to avoid any construction impacts to them.	yes	
Steele City	0143-01	Nebraska	Hamilton	758.3	759.9	1.6	1.5	1150	NO	PARTIAL	PARTIAL	2/6/2010	This reroute is proposed to avoid cultural resource features near MP 758.8 (Pawnee Indian Burial Site) and MP 759.5. These cultural resource features were identified by pedestrian surveys conducted by ARG Consultants. The proposed reroute has been culturally surveyed and cleared for any cultural resource features.	yes	

# Keystone XL Steele City & Gulf Coast Segments - Route Changes Between Feb. 15, 2009 and Mar. 26, 2010 Centerlines

Prepared: 2010-05-13

Segment	Route Variation ID	State	County	Start MP	End MP	Corresponding base route length (miles)	Length of reroute (miles)	Maximum Perpendicular distance from Centerline (ft)	New landowners ? YES/NO	Culturally Surveyed ? YES/NO	Biologically surveyed ? YES/NO	Reroute proposed on ? (date)	Reason for Route variation	Landowner approval?	Part of MDEQ Variations (#)
Steele City	0080-01	Nebraska	York	765.6	768.8	3.2	3.2	1200	YES	PARTIAL	PARTIAL	7/17/2009	<p>This reroute is proposed to route around the following features.</p> <ol style="list-style-type: none"> <li>1. The landowner (Jason Schneider) of tract ML-NE-YK-00100 has an expensive drip irrigation system on a part of this tract near MP 767.1 where the centerline currently passes through. The proposed reroute accommodates landowners requests and circumvents the part of the property with the irrigation system.</li> <li>2. The current centerline clips a corner of the tract ML-NE-YK-00120 near MP 768, which is enrolled in the NRCS Wetlands Reserve Program (WRP). It is intended to avoid any activity on this tract with the proposed reroute.</li> </ol>	yes	
Steele City	0102-01	Nebraska	Fillmore	797.9	800.0	2.1	2.2	2100	YES	NO	NO	9/3/2009	<p>The current centerline lies on Tract ML-NE-FM-00145 owned by Melvin W. &amp; Lee Ann Taylor for ~3,500 ft. This tract is leased out to a Wetlands Conservation Organization (Ducks Unlimited) who have made modifications (constructed berms) to restore wetlands on this tract and promote hunting. This reroute is proposed to avoid construction through this wetland area and save cost of concrete weighting for the length (~1,700 ft) of pipe.</p> <p>The restored wetland area is represented in the attached PDF file with an older aerial image provided by the landowner. The trees shown in the older aerial map have been removed as seen on the reroute map.</p>	yes	
Steele City	0140-01	Nebraska	Fillmore	800.0	801.0	1.0	1.0	95	NO	NO	NO	2/19/2010	<p>The proposed increase of acreage of PS-25 (Murdo) is to accommodate the Pump Station Layout design as requested by Colt/Worley Parsons. The reason for the proposed route variation through the Pump Station is due to the shifting of the Pump Station layout to the south in order to maintain a minimum setback distance (100ft + 33ft) between any structures (within the Pump Station) from the centerline of Road F.</p>	yes	
Steele City	0081-01	Nebraska	Fillmore, Saline	807.4	808.9	1.5	1.4	490	YES	PARTIAL	PARTIAL	7/17/2009	<p>The current centerline passes through a Pig Farm which was recently built (not seen on the aerial imagery) on Tract ML-NE-FM-00365 at ~MP 807.7, verified by a Field Engineer. This reroute is proposed to avoid construction across this structure and to cross a severe drainage feature near MP 808.73 at a preferred location.</p> <p>This route has been verified by a Field Engineer.</p>	yes	
Steele City	0094-01	Nebraska	Saline	813.4	814.1	0.6	0.6	240	NO	NO	NO	8/21/2009	<p>The centerline currently lies on the side slope and wash area of a waterbody near MP 813.7. This reroute is proposed to situate the centerline on flat ground and avoid the side slope and wash area of the waterbody. The reroute also avoids crossing a stream multiple times.</p>	yes	
Steele City	0093-01	Nebraska	Jefferson	843.0	850.3	7.3	7.2	205	NO	PARTIAL	PARTIAL	8/17/2009	<p>The centerline was adjusted to properly parallel the Keystone Mainline between MP 843.0 and 850.3 (at a distance of 40 ft). This change was included in the Aug. 11, 2009 issue of the centerline since it was required to fulfill the original intention for this portion of the route.</p>	yes	
Steele City	0144-01	Nebraska	Jefferson	849.2	850.0	0.8	0.8	155	NO	PARTIAL	PARTIAL	2/19/2010	<p>This reroute is proposed to avoid a cultural resource feature near MP 849.3. This cultural resource feature was identified by pedestrian surveys conducted by ARG Consultants. The proposed reroute has been culturally surveyed and is cleared for any cultural resource features.</p>	yes	
Steele City	0166-01	South Dakota	Harding	295.1	295.7	0.6	0.6	700	NO	NO	NO	4/23/2010	<p>This reroute is proposed to avoid a lengthy (320 ft long) bore crossing across County Road 988 (Ladner road) and Tributary to Kimble Creek near MP 295.31. Another reason for the proposed reroute is that the current location of the bore crossing (due to change in elevation) requires deep bore pits (&gt;20 ft deep) on either side, which presents a safety, cost and integrity concern.</p> <p>Some of the reasons for the proposed route variation due to Safety and Engineering design concerns are listed below.</p> <p>The current bore crossing presents</p> <ul style="list-style-type: none"> <li>- High safety risk for project bore pits depths (&gt;20 ft deep).</li> <li>- High costs and integrity concerns associated with engineered bore pit (&gt;20 ft deep).</li> <li>- Bore length greater than 300' reduces the accuracy and integrity of the bore by the contractor.</li> <li>- Shortening the length of the bore locates the bore pit within the Trib. Kimble Creek.</li> </ul>		

# Keystone XL Steele City & Gulf Coast Segments - Route Changes Between Feb. 15, 2009 and Mar. 26, 2010 Centerlines

Prepared: 2010-05-13

Segment	Route Variation ID	State	County	Start MP	End MP	Corresponding base route length (miles)	Length of reroute (miles)	Maximum Perpendicular distance from Centerline (ft)	New landowners ? YES/NO	Culturally Surveyed ? YES/NO	Biologically surveyed ? YES/NO	Reroute proposed on ? (date)	Reason for Route variation	Landowner approval?	Part of MDEQ Variations (#)
Steele City	0167-01	South Dakota	Jones	509.6	513.3	3.8	3.6	2640	YES	NO	NO	4/23/2010	<p>The primary reason for this reroute is due to the current crossing location at Interstate highway (I-90) near MP 511.4, which has steep slopes on the north side and a broad right of way. This crossing location will require a deep bore pit (&gt; 20 ft deep which requires an engineered hole on the north side) and a very long bore (~470 ft at current location). The deep bore pit (&gt; 20 ft) presents a high safety risk, high costs and integrity concerns. Long bores (&gt; 300 ft) reduce the accuracy and integrity of the bore by the contractor. Hence it is proposed to relocate the crossing location ~4,190 ft to the east which has gentle slopes (which requires regular bore pits) on either side and has a relatively narrow Interstate highway right of way.</p> <p>Another reason for the proposed reroute due to the current crossing location of Hwy 16 and South Dakota State Railroad near MP 510.1 which is combined into a single bore, 340 ft long. This bore &gt; 300 ft is an accuracy and integrity concern, hence it is proposed to relocate this crossing location ~1,100 ft to the northeast in order to bore the railroad and highway independent of each other. This relocation shortens the individual bore lengths and allows us to independently cross the railroad with a cased crossing, if required.</p>		
Steele City	0169-01	Nebraska	Greeley	709.2	709.8	0.6	0.6	140	NO	PARTIAL	PARTIAL	5/5/2010	The centerline currently lies at the corner of Tract ML-NE-GY-00145 (State of Nebraska Board of Educational Lands & Fund). This reroute is proposed to completely avoid locating the pipeline and/or its easement (Temporary or Permanent) on the aforementioned tract and relocate it on to a willing landowner (Mark Cockerill). The landowner is willing to sign on the easements of the proposed reroute and the existing easements which our current centerline passes through on his property subject to the approval of the proposed reroute.		
<b>Gulf Coast Segment</b>															
Gulf Coast	273-OK-P1-0.00-0.759-S	Oklahoma	Lincoln	0.0	0.8	0.8	0.7	658		Yes	Yes	1/14/2010	Pump station 32 location has changed	Yes	
Gulf Coast	261-OK-P1-1.25-2.14-S	Oklahoma	Lincoln	1.3	2.1	0.9	0.9	601		Yes	Yes	11/16/2009	Where we were crossing a deep ditch by the open-cut method, they drilled the 12" New Pecan Pipeline and the near by County Road. We will have to move our line to the east.	Yes	
Gulf Coast	252-OK-P1-14.12-14.89-S_HD_CM	Oklahoma	Lincoln	14.1	14.9	0.8	0.8	94		Yes	Yes	11/6/2009	To eliminate crossing of existing septic system leach fields, 3 conventional bores, numerous bends and over bends, utilities, and the threat of relocation due to the construction in progress and future construction of the School District property.	Yes	
Gulf Coast	246-OK-P1-47.24-47.33-S	Oklahoma	Seminole	47.2	47.3	0.1	0.1	21		Yes	Yes	8/10/2009	To avoid other pipeline valves from being in our permanent easement.	Yes	
Gulf Coast	229-OK-P1-63.55-64.01-S	Oklahoma	Hughes	63.6	64.0	0.5	0.5	125		Yes	Yes	7/1/2009	Moving the line due to the landowner not wanting the line on the west side. Also we wont have to move the trailer. And we will avoid a steep contour.	Yes	
Gulf Coast	138-OK-P1-64.13-64.32-S	Oklahoma	Hughes	64.1	64.3	0.2	0.2	248		Yes	Yes	1/20/2009	Avoidance of a large pond in the MP 64.2 area.	Yes	
Gulf Coast	156-OK-P1-65.44-65.84-S	Oklahoma	Hughes	65.4	65.8	0.4	0.4	231		Yes	Yes	2/13/2009	Avoidance of a Cultural site (CARC1HUX.005), a pond and, a creek bridge abutment in close proximity of a road. Also, avoids a wetland area south of road. This proposed MOC will replace MOC 12, in part.	Yes	
Gulf Coast	139-OK-P1-67.15-67.70-S	Oklahoma	Hughes	67.2	67.7	0.6	0.6	402		Yes	Yes	1/20/2009	Avoidance of a house under construction and active water well located in the MP 67.4 area.	Yes	
Gulf Coast	243-OK-P1-67.7-68.46-S	Oklahoma	Hughes	67.7	68.5	0.8	0.8	172		Yes	Yes	8/10/2009	We will miss about 500 feet of rock and ditches, unuseable workspace. Miss a pond with the TWS.	Yes	
Gulf Coast	266-OK-P1-74.5-74.81-S	Oklahoma	Hughes	74.5	74.8	0.3	0.3	80		Yes	Yes	11/17/2009	To cross the AT&T toll cable at a angle better than 45 degrees as per AT&T specs.	Yes	
Gulf Coast	274-OK-P1-74.92-75.03-S	Oklahoma	Hughes	74.9	75.0	0.1	0.1	111		Yes	Yes	1/14/2010	To avoid crossing the end of a 25' high ridge where there would not be any room for construction equipment to operate that is not on a sideling.	Yes	
Gulf Coast	268-OK-P1-75.65-76.76-S	Oklahoma	Hughes	75.7	76.8	1.1	1.1	930		Partially complete, access denied to tracts HU-213, 214	Partially complete, access denied to tracts HU-213, 214	11/17/2009	To avoid crossing the AT&T toll line two different times. Both crossing are at bad angles that will need to be changed.	Yes, Parcel 214 now off line. Received verbal permission on 213.	
Gulf Coast	195-OK-P1-76.27-77.25-S	Oklahoma	Hughes	76.3	77.3	1.0	1.0	982		Yes	Yes	4/24/2009	Avoidance of Cultural site (CARC1AHUX.007) located in the MP 76.8 area.	Yes	
Gulf Coast	267-OK-P1-76.76-76.95-S	Oklahoma	Hughes	76.8	77.0	0.2	0.2	936		Yes	Yes	11/17/2009	To cross AT&T toll cable at a better angle. As per AT&T specs.	Yes	

# Keystone XL Steele City & Gulf Coast Segments - Route Changes Between Feb. 15, 2009 and Mar. 26, 2010 Centerlines

Prepared: 2010-05-13

Segment	Route Variation ID	State	County	Start MP	End MP	Corresponding base route length (miles)	Length of reroute (miles)	Maximum Perpendicular distance from Centerline (ft)	New landowners ? YES/NO	Culturally Surveyed ? YES/NO	Biologically surveyed ? YES/NO	Reroute proposed on ? (date)	Reason for Route variation	Landowner approval?	Part of MDEQ Variations (#)
Gulf Coast	259-OK-P1-80.32-80.69-S	Oklahoma	Hughes	80.3	80.7	0.4	0.4	279		Yes	Yes	11/9/2009	This reroute is to avoid a cultural site. Also will try to avoid a pond. Trying to keep line in cultural survey area as best possible.	Yes	
Gulf Coast	223-OK-P1-80.94-81.39-S	Oklahoma	Hughes	80.9	81.4	0.5	0.5	568		Yes	Yes	6/17/2009	Land owner of tract HU-00282.000 trains horses for clients.If the construction splits the property he will have to move the horses somewhere else to train at a cost of 30.00 a day per horse and 80 horses.He is okay with the reroute.	Yes	
Gulf Coast	193-OK-P1-82.6-83.5-S	Oklahoma	Hughes	82.6	83.5	0.9	0.9	413		Yes	Yes	4/22/2009	Upon further research, there is no need to avoid cultural site and land owner request line to be collocated with foreign pipeline. Please NOTE: This will replace MOC 102-OK-P1-82.93-83.81-S	Yes	
Gulf Coast	202-OK-P1-84.77-85.23-S	Oklahoma	Hughes	84.8	85.2	0.5	0.5	431		Yes	Yes	5/4/2009	Avoidance of Cultural site (CARC1AHUx.009), pond, and Antenna tower in the MP 85 area.	Yes	
Gulf Coast	175-OK-P1-91.17-92.20-S	Oklahoma	Coal	91.2	92.2	1.0	1.1	336		Yes	Yes	3/27/2009	Avoidance of stock pens and a Radio tower with guy line anchors in the MP 91.17 area. Note: Land owner request that we miss the stock pens.	Yes	
Gulf Coast	151-OK-P1-98.77-99.53-S	Oklahoma	Coal	98.8	99.5	0.8	0.7	812		Yes	Yes	2/6/2009	Avoidance of Cultural site (CARC2ACOX.002) located in the MP 98.92 area. This route deletes the need for one crossover/crossback.	Yes	
Gulf Coast	183-OK-P1-99.04-101.83-S	Oklahoma	Coal	99.0	101.8	2.8	2.6	1944		Yes	Yes	4/15/2009	Avoidance of Cultural site (CARC1ACOX.002), a home, and to obtain a better HDD crossing of Oklahoma City's 60 inch water line.	Yes	
Gulf Coast	255-OK-P1-102.93-103.09-S	Oklahoma	Coal	102.9	103.1	0.2	0.2	180		Yes	Yes	11/9/2009	To avoid going over a hill by going around the hill.All bends can be field bent and we won't have to order sags and overbends for construction. The hill has a elevation change of 48 feet, and the reroute will only have a change of 7 feet.	Yes	
Gulf Coast	149-OK-P1-110.00-110.28-S	Oklahoma	Coal	110.0	110.3	0.3	0.3	226		Yes	Yes	1/28/2009	Avoidance of a waterbody/wetland in the MP 110.19 area	Yes	
Gulf Coast	176-OK-P1-121.04-121.57-S	Oklahoma	Atoka	121.0	121.6	0.5	0.5	516		Yes	Partially complete, access denied to tract AT-100	4/1/2009	Avoidance of Cultural site (CARC1AATX.010)	Yes. Received verbal on 100.	
Gulf Coast	162-OK-P1-124.00-125.26-S	Oklahoma	Atoka	124.0	125.3	1.3	1.3	596		Yes	Yes	2/17/2009	Avoidance of Cultural site CARC1AATx.002 (Cemetery), Well pad, a barn, a wetland/waterbody, and Mark West/Arkoma pipeline station. This MOC replaces MOC #140..	Yes	
Gulf Coast	132-OK-P1-125.34-125.57-S	Oklahoma	Atoka	125.3	125.6	0.2	0.3	266		Yes	Yes	1/10/2009	Avoidance of Cultural site (CHSS1AATx.001) located in the MP 125.5 area.	Yes	
Gulf Coast	231-OK-P1-125.9-126.17-S	Oklahoma	Atoka	125.9	126.2	0.3	0.3	115		Partially complete, access denied to tract AT-175	Partially complete, access denied to tract AT-175	7/21/2009	Replaces MOC 132. Land owner is going to build a pond where the reroute is. Also he says that he wants to build a new house very near where the reroute is. Best way to avoid all these is to move the line to the east sided of the OG&E line	Yes. 175 is not at this MP it is at 127.5 to 127.8.	
Gulf Coast		Oklahoma	Atoka	127.4	128.0	0.6	0.8	1291		No	Yes		Route variation to avoid WRP tract.	Yes with TRO	
Gulf Coast		Oklahoma	Bryan	147.0	147.2	0.2	0.3	265		Yes	Yes		Route variation for PS-35. Alignment changed to match facility layout.	YES	
Gulf Coast	147-OK-P1-149.38-150.08-S	Oklahoma	Bryan	149.4	150.1	0.7	0.7	481		Yes	Yes	1/26/2009	Avoidance of three (4) Gulf South/Boardwalk foreign pipeline crossings and workspace in one (1) pond	YES	
Gulf Coast	148-OK-P1-154.66-154.87-S	Oklahoma	Bryan	154.7	154.9	0.2	0.2	191		Yes	Yes	1/26/2009	Avoidance of one 132 ft. pond crossing and headwall with elevated ranch road.	YES	
Gulf Coast	135-TX-P1-170.21-171.617-S	Texas	Lamar	170.2	171.6	1.4	1.4	515		Yes	Yes	1/19/2009	STRAIGHTEN ROUTE AND SHORTEN HDD.	YES	
Gulf Coast	226-TX-P1-176.26-176.53-I	Texas	Lamar	176.3	176.5	0.3	0.2	288		Yes	Yes	6/22/2009	Pond Mitigation at Land Owners request, keeps KXL pipeline co-located with Kinder Morgan/Mid Con Express. Removes multiple PI'S.	YES	
Gulf Coast	238-TX-P1-187.35-188.14-S_CM	Texas	Lamar	187.4	188.1	0.8	0.3	521		Yes	Yes	7/30/2009	avoid HDD of Mallory Creek and cross at constructable angle sufficient for 100 year flood plan	YES	
Gulf Coast	276-TX-P1-188.92-189.54-S	Texas	Lamar	188.9	189.5	0.6	0.7	743		Yes	Yes	2/2/2010	To avoid WRP property and reduce angle of Justice Creek Crossing. Work Space will be on the east side from start to finish	YES	

# Keystone XL Steele City & Gulf Coast Segments - Route Changes Between Feb. 15, 2009 and Mar. 26, 2010 Centerlines

Prepared: 2010-05-13

Segment	Route Variation ID	State	County	Start MP	End MP	Corresponding base route length (miles)	Length of reroute (miles)	Maximum Perpendicular distance from Centerline (ft)	New landowners ? YES/NO	Culturally Surveyed ? YES/NO	Biologically surveyed ? YES/NO	Reroute proposed on ? (date)	Reason for Route variation	Landowner approval?	Part of MDEQ Variations (#)
Gulf Coast	253-TX-P1-198.29-198.57-S	Texas	Delta	198.3	198.6	0.3	0.3	87		Yes	Yes	11/9/2009	Avoids proximity to structure, returns to existing pipeline corridor, avoids removal of large trees, avoids crossing of county road and eliminates 3 PI'S.	Yes	
Gulf Coast		Texas	Hopkins	201.7	202.1	0.4	0.4	283		Yes	Yes		Route variation to avoid cultural site.	Yes	
Gulf Coast	152-TX-P1-205.92-206.52-S	Texas	Hopkins	205.9	206.5	0.6	0.6	542		Yes	Yes	2/6/2009	AVOID MULTIPLE CREEK CROSSINGS WITH NO WORKSPACE.	Yes	
Gulf Coast	258-TX-P1-206.02-206.14-S	Texas	Hopkins	206.0	206.1	0.1	0.1	160		Yes	Yes	11/9/2009	eliminate induction bends, hold centerline in existing pipeline corridor	Yes	
Gulf Coast	214-TX-P1-217.06-217.38-S	Texas	Hopkins	217.1	217.4	0.3	0.3	329		Yes	No	5/13/2009	AVOID CREEK.	Yes	
Gulf Coast	137-TX-P1-223.36-223.82-S	Texas	Franklin	223.4	223.8	0.5	0.5	136		Yes	Yes	1/20/2009	AVOID POND AND PARALLEL CREEK.	Yes	
Gulf Coast	192-TX-P1-225.41-226.15-S	Texas	Franklin	225.4	226.2	0.7	0.7	394		Yes	Yes	4/21/2009	AVOID CULTURAL SITE CARC7BFK102.001.	Yes	
Gulf Coast	201-TX-P1-227.05-228.83-S	Texas	Franklin	227.1	228.8	1.8	1.9	2668		Yes	Yes	5/4/2009	AVOID CULTURAL SITES.	Yes	
Gulf Coast	198-TX-P1-234.41-234.95-S	Texas	Wood	234.4	235.0	0.5	0.5	500		Yes	Yes	4/29/2009	MITIGATION OF LANDOWNER ISSUES BY CONSTRUCTION REALIGNMENT.	Yes	
Gulf Coast	210-TX-P1-236.15-236.49-S	Texas	Wood	236.2	236.5	0.3	0.3	133		Yes	Yes	5/13/2009	AVOID EXISTING POND AND PLANNED POND AND DAM PER LANDOWNER REQUEST.	Yes	
Gulf Coast	228-TX-P1-240.85-241.28-S	Texas	Wood	240.9	241.3	0.4	0.5	174		Yes	Yes	7/1/2009	Avoids land owner concerns with multiple springs paralell to centerline south of FM 2088. Avoids wetland configuration lay, Reduces grade cut on north side FM 2088, eliminates water entering bore on south side FM 2088,	Yes	
Gulf Coast	199-TX-P1-249.83-250.66-S	Texas	Wood	249.8	250.7	0.8	1.0	873		Yes	Yes	5/1/2009	AVOID LAKE,POND AND NEW CONSTRUCTION.	Yes	
Gulf Coast	230-TX-P1-261.87-262.4-S_HD	Texas	Upshur	261.9	262.4	0.5	0.5	380		Not required, in Bore	Yes	7/2/2009	Avoid deep bored crossing of Highway 155, Union Pacific Rail Road, River Road and West Texas Gulf Pipeline. Avoid Sabine River flooding issues, RailRoad Traffic and Highway 155 traffic. Straightens centerline	Yes	
Gulf Coast	237-TX-P1-262.99-263.41-S_HD	Texas	Upshur/ Smith	263.0	263.4	0.4	0.4	196		Yes	Yes	7/29/2009	avoid contours at HDD entry, avoid drilling under Chevron Pipeline, avoid conflict with Chevron for maintenance of Chevron or KXL pipeline in river, avoid equipment crossing of Chevron during HDD construction, easy access from CR 356.	Yes	
Gulf Coast	160-TX-P1-275.81-276.4-S	Texas	Smith	275.8	276.4	0.6	0.6	379		Yes	Yes	2/17/2009	AVOID CONGESTION AT OIL WELL AND NEW CONSTRUCTION AT UNKNOWN CREEK CROSSING AND WETLAND AREAS.	Yes	
Gulf Coast	257-TX-P1-277.88-278.65-S	Texas	Smith	277.9	278.7	0.8	0.8	279		Yes	Yes	11/9/2009	Avoid Culture Site at SM-00290.000. And to avoid parallel creek.	Yes	
Gulf Coast	194-TX-P1-280.67-281.01-S	Texas	Smith	280.7	281.0	0.3	0.3	126		Yes	Yes	4/24/2009	AVOID RECENTLY CONSTRUCTED PONDS.	Yes	
Gulf Coast	165-TX-P1-287.81-288.93-S	Texas	Smith	287.8	288.9	1.1	1.1	152		Yes	Yes	2/19/2009	STRAIGHTEN ROUTE.	Yes	
Gulf Coast	178-TX-P1-290.13-290.36-S	Texas	Smith	290.1	290.4	0.2	0.2	242		Yes	Yes	4/14/2009	AVOID PROXIMITY TO RESIDENCE AND OPENS WORKSPACE.	Yes	
Gulf Coast	256-TX-P1-292.28-292.6-S	Texas	Smith	292.3	292.6	0.3	0.3	212		Yes	Yes	11/9/2009	Land Owner Request to complete agreement and avoid condimnation. Moves centerline back to existing pipeline corridor.This proposed centerline has been environmentally surveyed with original route and civil surveyed 10/30/09.	Yes	
Gulf Coast	174-TX-P1-MP 301.25-MP 301.49-S	Texas	Rusk	301.3	301.4	0.2	0.3	398		Yes	Yes	3/17/2009	There is a large cultural site to avoid not only to the west but to the east as well.	Yes	
Gulf Coast	189-TX-P1-MP 305.36-MP 305.68-S	Texas	Rusk	305.4	305.6	0.2	0.3	340		Yes	Yes	4/20/2009	Move C/L to the west to avoid snakey creek and also cut down on PI's. This location would have been a push.	Yes	
Gulf Coast	242-TX-P1-320.17-320.55-S	Texas	Nacogdoches	320.2	320.6	0.4	0.4	378		Yes	Yes	8/7/2009	MOC 105 is routed in the TXDOT ROW needs to be moved. This MOC replaces 105	Yes	

# Keystone XL Steele City & Gulf Coast Segments - Route Changes Between Feb. 15, 2009 and Mar. 26, 2010 Centerlines

Prepared: 2010-05-13

Segment	Route Variation ID	State	County	Start MP	End MP	Corresponding base route length (miles)	Length of reroute (miles)	Maximum Perpendicular distance from Centerline (ft)	New landowners ? YES/NO	Culturally Surveyed ? YES/NO	Biologically surveyed ? YES/NO	Reroute proposed on ? (date)	Reason for Route variation	Landowner approval?	Part of MDEQ Variations (#)
Gulf Coast		Texas	Nacogdoches	322.4	322.7	0.3	0.3	239		Partially complete, access denied to tracts NA-160, 169	Yes		Route variation to avoid cultural site.	Yes. Parcels NA-160 & 169 are located at 323.0 to 323.9.	
Gulf Coast	196-TX-P1-MP 326.85- MP 327.18-S	Texas	Nacogdoches	326.9	327.1	0.3	0.3	353		Yes	Yes	4/25/2009	This is a historical cultural site to avoid.	Yes	
Gulf Coast	275-TX-P1-330.02- 330.87-S	Texas	Nacogdoches	330.0	330.9	0.9	0.8	1064		Partially complete, access denied to tracts NA-315, 318	Partially complete, access denied to tracts NA-315, 318	1/29/2010	Center line to move because of pond (small lake) water is too deep and wide. New route will stay along side of existing pipeline ROW.	No	
Gulf Coast	260-TX-P1-332.47- 333.02-S	Texas	Nacogdoches	332.5	333.0	0.6	0.5	207		Yes	Yes	11/12/2009	Current route travels through an environmentally sensitive area (cultural site) that must be avoided while also avoiding existing DeSoto, BP, and Sunoco foreign pipelines in the area.	Yes	
Gulf Coast	171-TX-P1-MP332.80- MP 333.50-S	Texas	Nacogdoches	332.8	333.5	0.7	0.8	244		Yes	Yes	3/13/2009	This is a very large cultural site CARC6BNA201.002 needs to be avoided	Yes	
Gulf Coast	265-TX-P1-334.09- 334.42-S	Texas	Nacogdoches	334.1	334.4	0.3	0.3	186		Yes	Yes	11/16/2009	Anglelina River HDD exit. PS 39 is moving so we do not need to have PI's. By straightening out center line the pull back piping can be laid out in existing center line ROW and we will not need TWS for pull back piping.	Yes	
Gulf Coast	187-TX-P1-MP 334.71- MP 335.91-S	Texas	Cherokee	334.7	335.9	1.2	1.2	571		Yes	Yes	4/18/2009	This is a large cultural site to be avoided CARC6BNA201.003	Yes	
Gulf Coast	262-TX-P1-335.15- 335.38-S	Texas	Cherokee	335.2	335.4	0.2	0.2	561		Yes	Yes	11/16/2009	Moving line due to cultural site.	Yes	
Gulf Coast	270-TX-P1-336.25- 336.34-I	Texas	Cherokee	336.3	336.3	0.1	0.1	104		Yes	Yes	12/21/2009	Need to move Pipeline centerline due to additional foreign pipeline found at existing location.	Yes	
Gulf Coast	161-TX-P1-337.6- 338.3-S	Texas	Cherokee	337.6	338.3	0.7	0.7	487		Yes	Yes	2/17/2009	The landowner has requested to miss this family senic area this route has been surveyed as MOC 40.	Yes	
Gulf Coast	184-TX-P1-MP 339.79- MP 340.04-S	Texas	Cherokee	339.8	340.0	0.2	0.2	190		Yes	Yes	4/16/2009	At landowners request they would like for the Keystone to collocate with the other P/L's to save on trees.	Yes	
Gulf Coast	209-TX-P1-345.57- 346.15-S	Texas	Angelina	345.6	346.2	0.6	0.6	134		Yes	Yes	5/12/2009	To avoid the two tracts to the west AN 86.001 and AN 86.002 and stay on Crown Pine property	Yes	
Gulf Coast	263-TX-P1-346.92- 347.47-S	Texas	Angelina	346.9	347.5	0.6	0.6	684		Yes	Yes	11/16/2009	Avoid (2) water wells and cultural site and eliminate PI's.	Yes	
Gulf Coast	200-TX-P1-350.32- MP 350.56-S	Texas	Angelina	350.3	350.5	0.2	0.3	288		Yes	Yes	5/1/2009	This is a large cultural site to avoid.	Yes	
Gulf Coast	222-TX-P1-352.76- 353.47-S	Texas	Angelina	352.8	353.5	0.7	0.8	598		Yes	Yes	6/9/2009	To avoid pond. Landowner had requested This MOC will replace 216	Yes	
Gulf Coast	179-TX-P1-354.64- 355.69-S	Texas	Angelina	354.6	355.7	1.1	1.3	1768		Yes	Yes	4/15/2009	This is starting of a new subdivision from FM 94 to tract AN 00207.000 roads have been cut through timber land and water lines laid. Need to avoid this area	Yes	
Gulf Coast	264-TX-P1-355.92- 356.64-S	Texas	Angelina	355.9	356.6	0.7	0.6	1156		Yes	Yes	11/16/2009	Center line was to go through a deer camp. Land owner request proposed re-route.	Yes	
Gulf Coast	204-TX-P1-357.55- 357.81-S	Texas	Angelina	357.6	357.8	0.3	0.3	449		Yes	Yes	5/9/2009	This is a cultural site to avoid (CEMETERY) CCUL8BAG23.001	Yes	
Gulf Coast	205-TX-P1-362.32- 362.46-S	Texas	Angelina	362.3	362.5	0.1	0.2	148		Yes	Yes	5/9/2009	This is a very large pond or lake need to be avoided for construction	Yes	
Gulf Coast	248-TX-P1-366.61- 372.27-S	Texas	Angelina/ Polk	366.6	372.3	5.7	6.6	11837		Yes	Yes	8/11/2009	The reason for this route is to avoid the Piney Woods Mitigation Bank	Yes	

# Keystone XL Steele City & Gulf Coast Segments - Route Changes Between Feb. 15, 2009 and Mar. 26, 2010 Centerlines

Prepared: 2010-05-13

Segment	Route Variation ID	State	County	Start MP	End MP	Corresponding base route length (miles)	Length of reroute (miles)	Maximum Perpendicular distance from Centerline (ft)	New landowners ? YES/NO	Culturally Surveyed ? YES/NO	Biologically surveyed ? YES/NO	Reroute proposed on ? (date)	Reason for Route variation	Landowner approval?	Part of MDEQ Variations (#)
Gulf Coast	251-TX-P1-367.058-370.71-S	Texas	Angelina/ Polk	367.1	370.7	3.7	3.9	10710		Partially complete, access denied to tract PO.00005.01	Partially complete, access denied to tract PO.00005.01	10/9/2009	Eliminate HDD at Fiberboard Lake and avoid wet areas adjacent to US-59.	Yes. Received written permission on PO-5.01.	
Gulf Coast	197-TX-P1-MP 372.68-372.99-S	Texas	Polk	372.7	372.9	0.2	0.3	191		Yes	Yes	4/25/2009	This is a snakey creek needs to be avoided, the foreign lines in this area have been washed out	Yes	
Gulf Coast	203-TX-P1-MP 375.04-375.24-S	Texas	Polk	375.0	375.2	0.2	0.2	207		Yes	Yes	5/6/2009	This is a cultural site to avoid CARC9BPK 10.001	Yes	
Gulf Coast	188-TX-P1-MP 380.29-380.45-S	Texas	Polk	380.3	380.4	0.1	0.2	190		Yes	Yes	4/18/2009	To avoid this cultural site move C/L inward staying 25 ft off of existing P/L	Yes	
Gulf Coast	167-TX-P1-386.58-386.90-S	Texas	Polk	386.6	386.9	0.3	0.4	170		Yes	Yes	3/3/2009	To avoid oxbows of Big Sandy that snakes down the C/L line of proposed ROW .	Yes	
Gulf Coast	164-TX-P1-429.81-430.42-I	Texas	Liberty	429.8	430.4	0.6	0.6	75		Yes	Yes	2/18/2009	Centerline is in or adjacent to the flow line of large ditch on tracts ML-TX-LB-00087.000, ML-TX-LB-00091.000, and ML-TX-LB-00094.000.	Yes	
Gulf Coast	155-TX-P1-457.97-458.566-S	Texas	Jefferson	458.0	458.6	0.6	0.6	279		Yes	Yes	2/12/2009	This will shorten the line, and miss underground power supply to home on Tract # ML-TX-JE-00139.000. In addition it will avoid the underground pressurized Aerobic sewer treatment plant and aeration system on the same tract.	Yes	
Gulf Coast	75-TX-P1-463.546-463.831-S	Texas	Jefferson	463.6	463.8	0.3	0.3	340		Yes	Yes	10/23/2008	To eliminate the bore on Smith road. To eliminate the bore pit in ditch between Walden Rd. and Smith Rd. To shorten the bore with a better crossing angle on Walden Rd.	Yes	
Gulf Coast	250-TX-P1-468.16-468.67-S	Texas	Jefferson	468.2	468.7	0.5	0.7	1455		Yes	Yes	10/1/2009	Avoid golf course property and eliminate need for HDD.	Yes	
Gulf Coast	166-TX-P1-474.99-475.53-I	Texas	Jefferson	475.0	475.5	0.5	0.5	83		Yes	Yes	2/20/2009	1.This will eliminate about 21 pipeline crossings that we know of at this time. Some would have to be combined into a bore crossing about, 500' long and some by open cut method on tract ML-TX-JE-00441.000. 2.This will also eliminate the West Port	Yes	
Gulf Coast	269-TX-P1-478.6-481.51-S_HD	Texas	Jefferson	478.6	481.5	2.9	3.5	7169		Partially complete	Yes	12/18/2009	Avoid crossings at Entergy Corridor.	No	
Gulf Coast	277-TX-P1-482.283-482.665-I_HD	Texas	Jefferson	482.3	482.7	0.4	0.3	403		Yes	Yes	4/9/2010	Easier construction method for multiple pipeline crossings, High tension power line crossing, and avoid city of Nederland old dump site.	Yes	

## Steele City Segment - Pump Station Revisions

Segment	Route Variation ID	State	County	MP	Pump Station ID	Name of Pump Station	Previous Acreage (acres)	Current Acreage (acres)	New landowners ? YES/NO	Culturally Surveyed ? YES/NO	Biologically surveyed ? YES/NO	Reroute proposed on ? (date)	Reason for Change	Landowner approval?	Part of MDEQ Variations (#)
Steele City	0156-01	Montana	Phillips	1.3	PS-09	Phillips	8.4	11.9	NO	YES	NO	3/1/2010	The previous location of Phillips Pump Station (PS-09) was very close to a wetland to its north. The proposed relocation of PS-09 (Phillips) is to avoid this wetland. The area of proposed site for PS-09 (Phillips) is extended to the west edge of property parcel (ML-MT-PH-00010) in order to lease the complete corner of the property parcel without having any gaps between the Pump Station boundary and the parcel boundary.	yes	
Steele City		Montana	Valley	49.5	PS-10	Valley	5.0	7.6	NO	YES	PARTIAL		To accommodate detailed Pump Station layout based on detail design by Colt/Worley Parsons.	yes	
Steele City		Montana	McCone	148.9	PS-12	Circle	6.9	8.6	NO	YES	PARTIAL		To accommodate detailed Pump Station layout based on detail design by Colt/Worley Parsons.	no	MTV-6
Steele City	0118-01	South Dakota	Harding	285.7	PS-15	Harding	7.4	9.2	NO	YES	YES	10/7/2009	To accommodate detailed Pump Station layout based on detail design by Colt/Worley Parsons.	yes	
Steele City	0119-01	South Dakota	Harding	333.7	PS-16	Buffalo	5.0	8.5	NO	YES	YES	9/30/2009	To accommodate detailed Pump Station layout based on detail design by Colt/Worley Parsons.	no	
Steele City	0137-01	South Dakota	Meade	387.3	PS-17	Faith	5.0	11.0	NO	YES	PARTIAL	2/13/2010	The proposed relocation and increase of acreage of PS-17 (Faith) is to accommodate the Pump Station Layout design as requested by Colt/Worley Parsons. The west edge of the proposed Pump Station is offset (to the east) by ~40 ft from the west edge of Section 22. This offset is made to accommodate landowner's (John & Carmen Heidler) request for construction (by landowner) of an access road to his property to the North.	yes	

## Keystone XL Steele City & Gulf Coast Segments - Route Changes Between Feb. 15, 2009 and Mar. 26, 2010 Centerlines

Prepared: 2010-05-13

Segment	Route Variation ID	State	County	Start MP	End MP	Corresponding base route length (miles)	Length of reroute (miles)	Maximum Perpendicular distance from Centerline (ft)	New landowners ? YES/NO	Culturally Surveyed ? YES/NO	Biologically surveyed ? YES/NO	Reroute proposed on ? (date)	Reason for Route variation	Landowner approval?	Part of MDEQ Variations (#)
Steele City	0138-01	South Dakota	Haakon	440.1	PS-18	Haakon	5.0	8.5	NO	PARTIAL	PARTIAL	2/13/2010	The proposed increase of acreage of PS-18 (Haakon) is to accommodate the Pump Station Layout design as requested by Colt/Worley Parsons.	yes	
Steele City	0139-01	South Dakota	Jones	496.1	PS-19	Murdo	6.5	9.1	NO	YES	YES	2/13/2010	The proposed increase of acreage of PS-19 (Murdo) is to accommodate the Pump Station Layout design as requested by Colt/Worley Parsons. One of the reasons for the increased acreage of PS-19 is due to the requirement of maintaining a minimum setback distance (50' + 33') between any structures and section lines/roads in Jones County.	yes	
Steele City	0151-01	Nebraska	Holt	642.3	PS-22	Atkinson	7.5	10.4	NO	YES	PARTIAL	2/22/2010	The reason for the proposed increase in acreage of PS-22 (Atkinson) is to have a minimum setback distance (100 ft + 33 ft) between any structures (within the Pump Station) and the section line to the south.	yes	
Steele City	0158-01	Nebraska	Wheeler	694.7	PS-23	Ericson	6.8	10.4	NO	YES	YES	3/3/2010	There is a terrain feature (~60 ft) at the south side of previous location of Ericson Pump Station (PS-23) for which an extensive excavation of dirt/sand would be required. The proposed relocation of PS-23 (Ericson) locates the Pump Station on a flat ground, the proposed location is based on site reconnaissance with Colt/Worley Parsons and Field engineer.	yes	
Steele City	0159-01	Nebraska	Merrick	751.8	PS-24	Central City	5.0	7.8	NO	YES	YES	3/3/2010	The proposed increase in size of Central City pump station (PS-24) is to accommodate the pump station layout as designed by Colt/Worley Parsons. The shape of the pump station is to accommodate landowner's request of staying clear of the pivot area.	yes	
Steele City	0140-01	Nebraska	Fillmore	800.5	PS-25	Exeter	5.0	8.0	NO	YES	YES	2/13/2010	The proposed increase of acreage of PS-25 (Murdo) is to accommodate the Pump Station Layout design as requested by Colt/Worley Parsons. The reason for the proposed route variation through the Pump Station is due to the shifting of the Pump Station layout to the south in order to maintain a minimum setback distance (100ft + 33ft) between any structures (within the Pump Station) from the centerline of Road F.	yes	



## Keystone XL Steele City Segment - Route Changes Between Mar. 26, 2010 and Current Centerlines

Prepared: 2011-05-27

STATE	COUNTY	RV ID	MP Start	MP End	Orig. Length (ft)	New Length (ft)	Length Change (ft)	Max Perp. Dist. (ft)	Reason for variation
MT	Valley	MTV-2	39.21	40.22	5,300	4,602	-699	1,540	Environmental
MT	Valley	0191-01	84.87	86.06	6,280	6,271	-8	220	Stakeholder/Agency
MT	Valley	MT-LO-02	88.12	88.66	2,848	2,754	-94	380	Landowner
MT	Valley, McCone	MT-LO-03	89.95	92.31	12,483	13,438	955	2,600	Environmental
MT	McCone	0182-01	113.57	114.04	2,462	2,451	-11	110	Cultural
MT	McCone	MT-LO-04	114.75	116.08	6,994	8,379	1,385	2,500	Landowner
MT	McCone, Dawson	MTV-6	130.55	161.22	161,953	164,458	2,505	8,400	Environmental
MT	Dawson	MT-LO-05	161.69	164.79	16,362	16,461	99	1,050	Landowner
MT	Dawson	MT-LO-06	193.56	195.06	7,925	8,126	200	720	Landowner
MT	Prairie	MT-LO-07	214.54	215.29	3,932	4,368	435	610	Landowner
MT	Fallon	0173-01	236.63	237.18	2,938	3,036	98	325	Facility
MT	Fallon	MTV-15	248.51	251.39	15,206	15,080	-127	2,800	Environmental
MT	Fallon	MT-LO-10	252.56	256.13	18,889	19,126	237	2,760	Landowner
MT	Fallon	MTV-17	258.85	260.73	9,930	11,166	1,236	2,230	Environmental
MT	Fallon	MTV-19	278.46	281.89	18,133	19,764	1,631	2,100	Environmental
SD	Harding	0166-01	295.13	295.74	3,209	3,262	53	700	Engineering/Construction
SD	Harding	0190-01	308.76	315.32	34,642	37,073	2,430	6,010	Landowner
SD	Harding	0179-01	329.26	338.63	49,458	52,063	2,606	6,540	Environmental
SD	Haakon	0181-01	446.85	447.47	3,286	3,121	-165	290	Engineering/Construction
SD	Haakon	0187-01	464.81	465.37	3,000	3,007	7	100	Landowner
SD	Haakon	0188-01	470.59	471.48	4,700	4,705	4	100	Landowner
SD	Jones	0167-01	509.58	513.34	19,849	19,108	-740	2,640	Engineering/Construction
SD	Tripp	0172-01	590.99	592.90	10,046	9,379	-667	2,300	Engineering/Construction
SD	Tripp	0178-01	593.25	594.58	6,978	7,031	53	470	Cultural
NE	Holt	0175-01	645.30	645.77	2,479	2,557	78	360	Landowner
NE	Holt	0176-01	647.81	648.04	1,198	1,202	4	50	Landowner
NE	Holt	0183-01	648.63	651.17	13,372	13,409	37	860	Landowner
NE	Garfield	0168-01	673.34	675.92	13,635	13,295	-340	2,470	Landowner
NE	Greeley	0169-01	709.25	709.84	3,117	3,129	12	140	Landowner
NE	Greeley	0189-01	717.64	718.39	3,921	3,947	26	620	Landowner
NE	Boone	0170-01	723.59	724.14	2,942	2,940	-2	100	Landowner
NE	Merrick	0180-01	747.60	748.36	4,016	4,019	3	70	Landowner
NE	Merrick	0171-01	753.77	754.36	3,118	3,162	44	230	Landowner
NE	York	0185-01	781.26	783.45	11,567	12,251	685	1,780	Environmental
NE	Fillmore	0184-01	801.86	802.75	4,694	4,674	-20	210	Landowner

# Keystone XL Gulf Coast Segments - Route Changes Between March 2010 and May 2011 Centerlines

Prepared: 2011-05-27

Prepared By: Lee Davis

Segment	State	County	Start MP	End MP	Corresponding base route length (miles)	Length of reroute (miles)	Maximum Perpendicular distance from Centerline (ft)
<b>Gulf Coast</b>							
Gulf Coast	Oklahoma	Lincoln	0.02	0.14	0.12	0.13	62
Gulf Coast	Oklahoma	Okfuskee	36.86	37.35	0.49	0.55	500
Gulf Coast	Oklahoma	Okfuskee	38.07	38.38	0.31	0.35	427
Gulf Coast	Oklahoma	Seminole	48.87	49.05	0.18	0.18	21
Gulf Coast	Oklahoma	Seminole	55.18	56.09	0.91	0.97	629
Gulf Coast	Oklahoma	Hughes	79.52	79.76	0.24	0.28	240
Gulf Coast	Oklahoma	Coal	98.34	99.25	0.91	0.93	773
Gulf Coast	Oklahoma	Atoka	132.49	132.58	0.09	0.09	15
Gulf Coast	Oklahoma	Bryan	133.25	133.36	0.11	0.11	16
Gulf Coast	Oklahoma	Bryan	149.92	150.08	0.16	0.17	153
Gulf Coast	Texas	Fannin	158.63	162.35	3.72	3.75	2430
Gulf Coast	Texas	Wood	248.08	248.35	0.27	0.28	112
Gulf Coast	Texas	Upshur	262.09	262.75	0.66	0.74	520
Gulf Coast	Texas	Smith	276.83	276.96	0.13	0.13	47
Gulf Coast	Texas	Cherokee	299.36	299.60	0.23	0.25	130
Gulf Coast	Texas	Rusk	307.51	307.60	0.09	0.09	78
Gulf Coast	Texas	Nacogdoches	316.29	316.39	0.10	0.11	133
Gulf Coast	Texas	Polk	367.82	371.28	3.46	3.12	2900
Gulf Coast	Texas	Polk	376.46	376.87	0.41	0.41	90
Gulf Coast	Texas	Polk	378.66	378.88	0.22	0.22	477
Gulf Coast	Texas	Polk	382.68	382.76	0.08	0.08	31
Gulf Coast	Texas	Jefferson	468.53	468.62	0.09	0.09	152
Gulf Coast	Texas	Jefferson	469.74	469.82	0.08	0.09	71
Gulf Coast	Texas	Jefferson	477.27	477.64	0.37	0.51	665
Gulf Coast	Texas	Jefferson	477.64	479.63	1.99	2.08	1250
Gulf Coast	Texas	Jefferson	480.78	481.36	0.58	0.67	523
Gulf Coast	Texas	Jefferson	481.63	481.92	0.29	0.29	167
Gulf Coast	Texas	Jefferson	482.08	483.81	1.73	1.71	1200