

ARM/Circular MFSA-2 Number or SIR	Rule Identifier or SIR <u>Number</u>	<u>Complete</u>	<u>Incomplete</u>	Generalized Rule Content and <u>DEQ</u> Comments or Requests	<u>Response/Section Where Addressed</u>
Subchapter 8					
75-20-211		X		<u>1)(a)(i) Description of facility location (see Circular 2 and 17.20.1509)</u>	<u>Chapter 4, Section 4.5</u>
		X		<u>(ii)—summary of preexisting studies that have been made of the impact of the facility</u>	<u>Chapter 4, Section 4.3</u>
			X	<u>(iii) need reasonable alternate locations, comparison of alternatives, statement why the proposed location is best suited for the facility.</u>	<u>Further discussion/clarification needed</u>
			X	<u>(iv) baseline data for primary and reasonable alternate locations (see responses in Circular 2)</u>	<u>Further discussion/clarification needed</u>
		N/A		<u>2) Combined facilities</u>	<u>N/A</u>
		X		<u>3) Copy of Notice</u>	<u>Attachment F</u>
			X	4) Proof of public notice. <u>Provide a copy of the affidavits of publication from the newspapers that you ran your public notices in.</u>	<u>Chapter 5 - Section 5.3.1</u> <u>Generic notices previously supplied in Attachment F have been replaced with tear sheets.</u>
17.20.802	Number of copies	X		Hardcopy and electronic copies	Waiver - Ten copies + ten to libraries
		X		<u>Fewer copies for maps</u> <u>Still awaiting Cultural Resource Maps</u>	<u>Cultural Resource maps were submitted as confidential</u>
				<u>1) Copy of air photo contact prints</u>	<u>N/A</u>
<u>17.20.803</u>	<u>Application format</u>	X		<u>(1) Loose-leaf</u>	<u>Document is loose-leaf</u>
		X		<u>(2) Index for cross-reference:</u>	<u>Table starts on Page 1</u>
		X		<u>(3) Introduction, facility description, cost, purpose/benefits, need, alternatives, siting study, environmental concerns, maps</u>	<u>Chapter 1, Chapter 2, Chapter 3, Attachment A</u>

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17.20.804	Documentation			List of information sources:	Chapter 1 - Section 1.3.1, and References
		<u>X</u>		When field investigations conducted	Chapter 4 - Sections 4.3.4, 4.3.9
<u>17.20.805</u>	<u>Supplemental information</u>		<u>N/A</u>	<u>Substitute pages or insertions for application</u>	<u>Pages supplied February 2009 on yellow paper.</u>
<u>17.20.806</u>	<u>Changes to application</u>		<u>N/A</u>		<u>N/A</u>
<u>17.20.807</u>	<u>Amendment to application</u>		<u>N/A</u>		<u>N/A</u>
17.20.810	Related projects/Single facility		<u>N/A</u>	Related projects that address the same needs as proposed facility	N/A - No other related projects being built to be considered "single facility"
17.20.811	Estimated cost	<u>X</u>		1) Estimates and a description of total costs and expenses attributable to the engineering, construction, and startup of the proposed facility.	Confidential
				2) Estimates and description of total costs by category:	Confidential
		<u>X</u>		a) Engineering & overhead – planning, design, QC, permitting	Confidential
		<u>X</u>		b) Land acquisition	Confidential
		<u>X</u>		c) Plant costs	Confidential
				d) Transportation links (road costs).	Confidential
			<u>X</u>	<u>Include alternative locations for associated facility powerlines less than 10 miles in length.</u>	<u>Further discussion/clarification needed</u>
		<u>X</u>		e) Mitigation costs	Confidential
				f) Front end royalty payments.	Confidential
		<u>X</u>		<u>N/A</u>	
<u>X</u>		g) Initial inventories of coal, chemicals, or materials	Confidential		
<u>X</u>		h) Start up expenses and working capital	Confidential		

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17.20.811 (Cont.)		<input checked="" type="checkbox"/>		i) Any other costs necessary and incidental to the construction of the facility and prep for initial operation	Confidential
		<input checked="" type="checkbox"/>		3) Estimation methods	Confidential
		<input checked="" type="checkbox"/>		4) Estimate of accuracy	Confidential
		<input checked="" type="checkbox"/>		5) Project costs provided for the facility both inside and outside of Montana	Confidential
		<input checked="" type="checkbox"/>		6) Costs escalated to start of construction	Confidential
17.20.815	Linear facilities estimated annual cost	<input checked="" type="checkbox"/>		1) Detailed costs of facility (capital and operating)	Confidential
			<input checked="" type="checkbox"/>	2) Construction costs escalated to start of construction. <u>Escalate construction costs to year 1.</u>	Confidential <u>Confidential Information</u>
			<input checked="" type="checkbox"/>	3) Methods of financing construction. <u>We did not find an explanation for how construction will be financed.</u>	Confidential <u>As stated in Section 2.2, project financing, including construction, is anticipated to be by a combination of contributions from the owners, bank financing, and access to the capital markets.</u>
		<input checked="" type="checkbox"/>		4) Amortization costs	Confidential
		<input checked="" type="checkbox"/>		5) Operational costs for years 1, 5 and 10 with annual costs by category	Confidential
			<input checked="" type="checkbox"/>	6) Design capacity and operational characteristics. <u>Describe design capacity and operational characteristics for associated facilities.</u>	Confidential <u>Further discussion/clarification needed</u>
		<input checked="" type="checkbox"/>		7) Pipelines – energy transport cost for the 1,5,10 full operational year	Confidential
		<input checked="" type="checkbox"/>		8) Pipelines - design and operational characteristics	Confidential

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17.20.815 (Cont.)			X	9) Pipeline - costs in constant dollars for a specified year. <u>Specifies the year for costs in 2-1 and 2-2.</u>	Confidential <u>Further discussion/clarification needed</u>
		X		10) Methods for estimating costs	Chapter 2.1, Confidential
			X	11) Estimate of accuracy <u>DEQ - Incomplete</u>	Confidential <u>As indicated in the ACE website, for which the link was provided in Chapter 2, Section 2.1, a Class 4 estimate can have a range of estimate accuracy between -30% to +50%.</u>
17.20.817	Pricing policy	X		How the product will be priced. <u>Chapter 2.3 has a very general discussion. Supplemental Information Request (SIR-1.27): Please provide a more detailed discussion of how revenues will cover costs over time. This includes how much of the capacity has to be used and under contract in order to remain profitable. It will also include the tariff rates that would be charged, and the likely lengths of contracts.</u>	Confidential <u>This is confidential information. Needs further discussion/clarification.</u>
		X		<u>How costs will be recovered</u>	<u>Chapter 2 – Section 2.3</u>
17.20.818	Evaluation of economic costs and benefits		X	Internal and external costs and benefits, including benefits to consumers, applicant, and Montana. <u>No external (social) costs were given. No benefits were discussed in section noted. Some fiscal benefits are discussed on page 4-159 and 4-160. DEQ requests an estimated annual breakout of revenues and internal costs. Social benefits and costs should also be estimated and quantified where needed.</u>	Chapter 2 - Sections 2.1, 2.2 <u>This is confidential information. Needs further discussion/clarification</u>

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Subchapter 9					
17.20.928	Other linear facilities - explanation of need			Need for the facility <u>Should contact the Department for information requirements determining need</u>	Chapter 3 - Sections 3.1, 3.2, 3.3, 3.4, 3.5 <u>In process</u>
17.20.929	Interconnection agreements		<u>X</u>	1) Copy of any and all agreements or description of obligations, parties, time period, terms, financial <u>and financial</u> agreements. <u>Provide a copy of all agreements on the entire line, or (as an alternative) a description of how much of the proposed capacity on the line has been obligated so far (over what time periods) and how certain the agreements/contracts are.</u>	Chapter 3 - Section 3.6 <u>Keystone has secured firm, long-term contracts totalling 380,000 barrels per day for an average term of 17 years.</u>
			<u>X</u>	2) Current and planned negotiations, parties, status <u>DEQ – Incomplete</u>	Chapter 3 - Section 3.6 <u>TransCanada continues to discuss the Project with individual shippers to determine their requirements for transport capacity. No specific plans exist to hold another open season; however, that potential also exists.</u>
Subchapter 13					
17.20.1311	Pipeline Facilities Evaluation of Alternatives		<u>X</u>	1) Evaluation of alternatives including transportation modes, pump stations, starting points and ending points, pipeline diameter, etc. <u>Alternative border crossings are not addressed. Are there any alternative transportation modes? If not, explain why.</u>	Chapter 4 - Section 4.1 <u>In Section 4.1 Pipeline Expansion Options Considered, the New Pipeline - Adjacent Route would have a border crossing from Manitoba into North Dakota; however, this option was eliminated from further consideration early in the feasibility phase of the project because the option of connecting existing underutilized pipeline capacity did not exist. For route options through Montana, only the border crossing at Morgan was considered, taking advantage of paralleling existing pipeline facilities in Canada and for a short distance in Montana. Routes A, A1A, and B cross the Montana-South Dakota boundary in</u>

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					<p><u>different locations.</u></p> <p><u>In Section 4.1 Alternate Transportation Modes, transportation by train and truck are discussed, but not given consideration. These modes are not practical for transporting the volumes contemplated for the Project.</u></p> <p><u>Further discussion/clarification needed</u></p>
Subchapter 14					
17.20.1426	General Requirements	<u>N/A</u>		Refers to MFS-2 Circular-2: See Section 3.0	Chapter 4
Circular MFS-2 Section 3.0			X	<p><u>1) Alternative siting study and baseline study as specified</u></p> <p><u>SIR-1.28: Provide a description of the "two distinct phases" of the route selection process (4.1.2) that "had significant impacts on suitable routing alternatives." Provide more detailed information for the following:</u></p> <p><u>a) How co-location with the Foothills Pipeline in Canada (4.1.2.2) reduces environmental impact, reduces landowner impacts and reduces congestion in relation to population;</u></p> <p><u>b) Detailed information on construction limitations at Fort Peck Reservoir (4.1.2.2);</u></p> <p><u>c) A map showing the four route alternatives considered for the Steele City Segment (4.1.2.3) and</u></p> <p><u>d) For the route options eliminated for the Steele City Segment, more detailed qualitative and quantitative information on the increased environmental impact, increased landowner impacts, and increased congestion for these route options.</u></p>	<p><u>Attachment P, page 6 response to SIR-1.28.</u></p>

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Circular MFSA-2 Section 3.0 (Cont.)		X		<u>2a) Study area delineation</u>	<u>Chapter 4 - Section 4.2.1</u>
		X		<u>b) Overview survey</u>	<u>Chapter 4 – Section 4.2.2</u>
		X		<u>c.) Selection of alternative locations</u> <u>Section 3.5 of Circular MFSA-2 states that the applicant shall select at least 3 reasonable alternative locations for the proposed facility. Yet information presented in Table 4-87 (page 4-175) indicates that impacts to the Project schedule cannot be mitigated when crossing Tribal lands on Routes A and A1A, that it is likely the BLM would preclude or heavily condition the pipeline routing through the Bitter Creek ACEC/WSA, and that project schedule requirements could not be mitigated if crossing the Bitter Creek ACEC/WSA. In light of this information, how can Routes A and A1A be evaluated by the agencies as reasonable locations for the proposed facility? Provide documentation from BLM indicating whether or not the agency would or would not allow the Bitter Creek ACEC/WSA to be crossed and the reasons for allowing or not allowing the crossing.</u>	<u>Chapter 4</u> <u>Further discussion/clarification needed.</u> <u>Contacts for Bitter Creek on Page 9a in Attachment F.</u>
			X	<u>d) Baseline study & impact assessment</u> <u>See comments below regarding the baseline study.</u>	<u>Chapter 4, Section 4.3</u> <u>Further discussion/clarification needed.</u>
			X	<u>e) Comparison of alternatives</u>	<u>Chapter 4 – Section 4.4</u>
			X	<u>f) Selection of preferred location</u>	<u>Chapter 4 – Section 4.5.6</u>
			X	<u>3) Alternative locations with levelized costs no more than 35% higher than the facility or significant environmental advantages</u>	<u>Chapter 4</u>

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Circular MFSA-2 Section 3.0 (Cont.)		X		4) Summary of consultations with government agencies	Attachment F, Chapter 5 - Sections 5.1, 5.2
		X		5) Valid and useful studies	No applicable existing studies or reports for linear facilities exist within the project area. Relevant databases were used to determine existing resources in the project area, as well as ground and aerial field surveys.
Circular MFSA-2 Section 3.1	Preferred location criteria		X	1a) Greatest potential for local acceptance. <u>Provide documentation where local acceptance was taken into account. If this was not done then say so.</u>	Chapter 4 - Section 4.2 <u>Responses to open houses indicates that public acceptance is positive to neutral. Responses to subsequent public notices across all routes also indicate that public acceptance is positive to neutral.</u>
		X		b) <u>Utilize or parallel existing utility &/or transportation corridors</u> <u>SIR-1.29: Why was paralleling the pipeline corridor in the Baker area not considered? b) — Parallel existing corridors</u>	Chapter 1 - Section 1.3.7 <u>Further discussion/clarification needed.</u>
		X		e) Logged forest	Chapter 4 - Section 4.3.2
				f) Geologically stable; non-erosive soils; flat area	Chapter 4 - Section 4.3.6, 4.3.7
		X		g) Roaded areas	Chapter 1 - Section 1.4.5
		X		i) Least visual impact	Chapter 4 - Section 4.3.10
		X		j) Safe distance from residences	Chapter 4 - Section 4.3.2
		X		k) In accordance with public land managemen management plans. <u>What do BLM, USFWS, DFWP, DNRC, BIA, and USACE plans say about crossing agency lands with this pipeline? How would such a crossing be consistent (or not) with each plan?</u>	Chapter 4 – Section 4.3.2 <u>See Attachment P, Response to SIR-1, Section 3.1(k)</u>

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Circular MFSA-2 Section 3.1 (Cont.)				<u>2a) Conform to criteria listed above in 3.1(1)</u>	
			X	<u>Missing 3.1(1)(a) and (g).</u>	<u>See Response to 3.1(1)(a) and (g)</u>
		X		<u>b) Cross lands which can be returned to original condition after reclamation.</u>	<u>With the exception of aboveground facilities, all lands disturbed on the Keystone XL Pipeline will be restored.</u>
Circular MFSA-2 Section 3.2	Delineation of study area	X		1a) Endpoints	Chapter 4 - Section 4.2.1 Attachment A - Figure 1 Montana to the Gulf Coast
		X		b) Endpoints outside Montana	Chapter 4 - Section 4.2.1 Attachment A - Figure 1 Montana to the Gulf Coast
		X		c) Area between endpoints	Chapter 4 - Section 4.2.1 Attachment A - Figure 1 Montana to the Gulf Coast
				d) Avoidance areas	Chapter 4 - Section 4.2.2 Attachment A - Figure 2 Project Area Overview - Ownership and Avoidance
		X		(i) National wilderness areas	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		(ii) National primitive areas	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		(iii) National wildlife refuge	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		(iv) State wildlife management areas and wildlife habitat protection areas	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		(v) National parks and monuments	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		(vi) State parks	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		(vii) National recreation areas	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
X		(viii) Wild and scenic rivers, corridors, and eligible rivers	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance		

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Circular MFSA-2 Section 3.2 (Cont.)		<u>X</u>		(ix) Managed roadless areas greater than 5,000 acres	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		<u>X</u>		(x) Rugged topography greater than 30% slope	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		<u>X</u>		(xi) Specially managed buffer areas	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		<u>X</u>		e) For pipelines add active faults unless it is demonstrated that no adverse significant impacts are likely to result.	Attachment A - Mapbook 4, Geologic Formations
		<u>X</u>		f) Permission to cross wilderness or primitive areas	Permission will be requested upon the selection of the approved route.
		<u>X</u>		2) Determine boundaries of study area considering:	Chapter 4 - Section 4.2.1
		<u>X</u>		<u>a) Avoidance areas listed in (1)(d)&(e)</u>	<u>Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance</u>
		<u>X</u>		b) Preferred location criteria	Chapter 4 - Section 4.2.1
		<u>X</u>		c) Cost	Chapter 4 - Section 4.2.1
		<u>X</u>		d) Reliability and engineering concerns	Chapter 4 - Section 4.2.1
		<u>X</u>		e) Other factors important to applicant	Chapter 4 - Section 4.2.1
		<u>X</u>		3) Base map and electronic submittal	Copy of maps, GIS data, and metadata will be provided via DVD
		<u>X</u>		4) Explanation of methods	Chapter 4 - Section 4.1, 4.2, 4.3, 4.4, 4.5
Circular MFSA-2 Section 3.3	General requirements of overview surveys	<u>N/A</u>		1) Overview survey	Chapter 4 - Section 4.2
		<u>N/A</u>		2) Public Meetings	Chapter 5 - Section 5.3 Waiver

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Circular MFSA-2 Section 3.3 (Cont.)		<u>N/A</u>		3) Base maps:	Waiver
		<u>N/A</u>		<u>Mylar overlays</u>	<u>Waiver</u>
			<u>X</u>	<u>Electronic equivalent acceptable to the department.</u>	Metadata was provided for each featured class in the database on the 3-disk DVD set. The database is a "File Geodatabase" structure with Feature Datasets (similar to folders) containing Feature Classes (similar to shapefiles). The user must use Arc Map or Arc Catalog to view the metadata.
		<u>X</u>		5) Alternative location selection	Chapter 4 - Section 4.3
		<u>X</u>		6) Any areas listed in 3.2 (1)(d) or 3.4 considered in selection of alternative locations.	Chapter 4 - Section 4.2
		<u>X</u>		7) Factors used to determine alternative locations	Chapter 4 - Section 4.2
		<u>X</u>		8) Delineation of alternative locations to within 40 feet	Chapter 4 - Section 4.2
			<u>X</u>	9) Rationale (methods for determining alternative routes and how public input was incorporated). <u>While information presented on pages 4-6 and 4-7 for the overview survey does include a very brief explanation of the methods used, it does not include an explanation of how preferred location criteria, cost, reliability and engineering considerations, and other factors were considered and weighed when selecting alternative locations.</u>	Chapter 4 - Section 4.2 Chapter 5 - Section 5.3 <u>Further discussion/clarification needed.</u>

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Circular MFSA-2 Section 3.4 Explanation in 4.2 as to why MFSA Circular 3.4, 3.5 process was modified. Information components of Circular 3.4 are addressed in detail as part of Circular 3.6 and 3.7	Environmental information for overview survey (MAPS)	<u>X</u>		1) Any avoidance areas from 3.2 above	Attachment A - Figure 2 Project Area Overview - Ownership and Avoidance
		<u>X</u>		a) Items from 3.2 (1)(d).	Attachment A - Figure 2 Project Area Overview - Ownership and Avoidance
		<u>X</u>		b) State and federal waterfowl production areas	Attachment A - Figure 3 Big Game, Fisheries and Avian Distribution and Habitats
		<u>X</u>		c) National natural landmarks, areas of critical environmental concern, special interests areas, research botanical areas, outstanding natural areas	Attachment A - Figure 2 Project Area Overview - Ownership and Avoidance
		<u>X</u>		d) Critical habitat	Attachment A - Figure 3 Big Game, Fisheries and Avian Distribution and Habitats
		<u>X</u>		e) Habitats of listed threatened & endangered species occupied seasonally	Attachment A - Figure 3 Big Game, Fisheries and Avian Distribution and Habitats
		<u>X</u>		f) National historic landmarks, National register districts	Attachment A - Sensitive Mapbook 1, Sensitive Cultural and Biologic Data
		<u>X</u>		g) National register historic districts and sites nominated to or designated by SHPO	Attachment A - Sensitive Mapbook 1, Sensitive Cultural and Biologic Data
		<u>X</u>		h) Municipal watersheds	Attachment A - Mapbook 3, Hydrologic Features
		<u>X</u>		i) Streams and rivers listed in Montana Department of Fish, Wildlife, and Parks (FWP) rivers database as being Class 1 or 2 streams or rivers	Attachment A - Figure 3, Big Game, Fisheries and Avian Distribution and Habitats

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Circular MFSA-2 Section 3.4 (Cont.)		X		j) Streams listed by DEQ pursuant to 75-5-702, MCA that are not attaining beneficial uses of water	Attachment A – Mapbook 3, Hydrologic Features
		X		k) Highly erodible soils and areas with severe reclamation constraints	Attachment A – Mapbook 5, Severe Soil Erosion Potential
		X		l) Incompatible with published visual management plans	Attachment A - Figure 4, Visual Resource Management Areas
		X		m) Winter distribution of elk, deer, moose...	Attachment A - Figure 3, Big Game, Fisheries and Avian Distribution and Habitats
			X	n) Major elk summer security areas_ <u>DEQ - Incomplete</u>	Attachment A - Figure 3, Big Game, Fisheries and Avian Distribution and Habitats <u>No major elk summer security areas are crossed by the Project.</u>
		X		o) Seasonally occupied mountain sheep and mountain goat habitats	Attachment A - Figure 3, Big Game, Fisheries and Avian Distribution and Habitats
			X	p) Sage and sharp-tailed grouse leks and winter habitats. <u>Missing winter habitats</u>	Attachment A - Figure 3 & Sensitive Mapbook 1, Big Game, Fisheries and Avian Distribution and Habitat & Sensitive Cultural and Biologic Data <u>In process.</u>
			X	q) High waterfowl densities (prime waterfowl habitat) <u>DEQ - Incomplete</u>	Attachment A - Figure 3, Big Game, Fisheries and Avian Distribution and Habitats <u>No prime waterfowl habitat (e.g., waterfowl production areas) are crossed on the project.</u>
		X		r) Undeveloped land or water areas with natural features of unusual scientific.	None identified
	X		s) Geologic units of formations with a high probability of including paleontological resources	Chapter 4 - Section 4.3.8 (Tables 4.3-34 to 36) Attachment A – Mapbook 4	

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Circular MFSA-2 Section 3.4 (Cont.)			X	t) Sites that have religious or heritage significance to Native Americans <u>DEQ - Incomplete</u>	Chapter 4 - Section 4.3.9 Attachment A - Confidential Mapbook 1, and Confidential Attachment M <u>Traditional cultural properties will be developed through the Department of State (as lead federal agency) government-to-government consultation with the tribes. Also see Section 4.3.9.2, paragraph 2.</u>
		X		u) Standing water bodies	Attachment A - Mapbook 3 Attachment J Hydrologic Features
		X		v) Surface supplies of potable water	Chapter 4 - Section 4.3.5
		X		w) Active faults near substations, switchyards, or terminus points	Chapter 4 - Section 4.3.6
				2) Pipeline information	Attachment A - Mapbook 2 & Figure 3, Farmland Classifications, Steep Slopes and Low Revegetation Potential & Big Game, Fisheries and Avian Distribution and Habitats
			X	a) <u>Areas with slope greater than 15%</u> <u>Mapbook 5 has steep slopes and cretaceous shales combined.</u>	<u>Slope classifications are indicated in Mapbook 2. Cretaceous shales were considered in the analysis of mass movement potential for Mapbook 5. Mapbook 5 was adjusted per 3.7(8)(b).</u>
		X		b) <u>Any liquid pipeline crossing a river/stream located w/in 15 miles upstream of Class I stream.</u>	<u>The Yellowstone River is the only Class I stream within 15 miles downstream of the project. Chapter 4 – Section 4.3.4.1.</u>
		X		3) <u>Overlays of land use and land cover with 20-acre resolution.</u>	<u>Included with GIS/metadata files.</u>
		X		a) Cities & towns/incorporated communities	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		b) Developed areas adjoining communities	Attachment A - Mapbook 1, Landuse/Landcover
X		c) Designated residential growth areas	Attachment A - Mapbook 1, Landuse/Landcover		

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Circular MFS-2 Section 3.4 (Cont.)		X		d) Federal and state highways and county roads	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		e) Railroads and ROW's	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		f) Transmission lines 50kV and greater	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		g) Non-timbered grassland or rangeland	Attachment A - Mapbook 1, Landuse/Landcover
		X		h) Forested lands	Attachment A - Mapbook 1, Landuse/Landcover
		X		i) Communication facilities	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		j) Military installations	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		k) Land areas covered by conservation easements	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		l) Public and private airports and airfields	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		m) National trails	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		n) Cropland	Attachment A - Mapbook 1, Landuse/Landcover
		X		o) Prime and unique farmland and orchards	Attachment A - Mapbook 2, Farmland Classifications, Steep Slopes and Low Revegetation Potential
		X		p) Permitted mines	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		4a) Public lands	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
	X		b) Tribal and reservation lands	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance	

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Circular MFSA-2 Section 3.4 (Cont.)			X	5) Slope categories. <u>Slope is not indicated in Mapbook 2.</u>	Attachment A - Mapbook 2, Farmland Classifications, Steep Slopes and Low Revegetation Potential <u>Slope is indicated as 3 classifications less than 15%; 15%-30%; and greater than 15%.</u>
		X		6) Population estimates	Chapter 4 - Section 4.3.12
		X		7) Social characteristics. <u>No discussion of social opinions, trends, etc.</u>	Chapter 4 - Section 4.3.12 <u>Text inserted in Section 4.3.12.4 to clarify.</u>
		X		a) Relationship between land uses and economic/social activities. <u>They have addressed Compensation for Damages to Land Use and Property on page 4-158.</u>	Chapter 4 - Section 4.3.12.3 <u>Further discussion/clarification needed.</u>
		X		b) Land Use plans. <u>SIR-1.30: Route A1A will cross a 300-foot-wide strip of land for the Medicine Lake NWR that contains a man-made diversion ditch. Information on page 4-10 notes that this diversion canal will be directionally drilled. In crossing this area what types of mitigation will be needed?</u>	Chapter 4 - Section 4.3.2 <u>Surface disturbance for directional drill is limited to entrance and exit drill pits. These pits would not be located within the NWR. Therefore, no mitigation within the NWR would be required.</u>
		X		c) Population/demographic characteristics. <u>No discussion of population or demographics is provided. Only general population numbers and minority numbers are given.</u>	Chapter 4 - Section 4.3.12.1 <u>Text inserted in Section 4.3.12.1 to clarify.</u>

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Circular MFSA-2 Section 3.4 (Cont.)			X	d) Sub-groups, social structures, values and lifestyles that may be differentially affected by the project. <u>There is no discussion of social structures that may be affected or how communities might be affected.</u>	Chapter 4 - Section 4.3.12.2 <u>Discussion of social structure as defined by race, ethnicity, and income status is included in Section 4.3.12.5. Impacts to communities are discussed in Sections 4.3.12.6 and 4.3.12.7.</u>
		X		e) Local economy, income, and labor force characteristics (availability of skilled/semi-skilled labor, wage levels, employment/unemployment rates).	Chapter 4 - Section 4.3.12.1
		X		f) Availability, adequacy, capacity and cost of public services (roads, education, health, social, public safety, & sanitary services). <u>No discussion of adequacy of services (from interviews or other sources), nor the capacity of services.</u>	Chapter 4 - Section 4.3.12.3 <u>Further discussion/clarification needed.</u>
		X		g) Fiscal characteristics (revenue & expenditures) of local government and school districts.	Chapter 4 - Section 4.3.12.3
		X		h) Availability, adequacy, and capacity of housing and private sector health services. <u>No discussion of private sector health services.</u>	Chapter 4 - Section 4.3.12.1, 4.3.12.2 <u>Text has been added to Sections 4.3.12.3 and 4.3.12.7 highlighting that one or more medical facilities (public and/or private) is located in each of the potential affected communities.</u>

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Circular MFSA-2 Section 3.4 (Cont.)		X		8) Nature and magnitude of public concerns. <u>SIR-1.31: Text on page 5-11 of the application states that "stakeholders raised a wide range of issues related to route locations and the route refinement process." Provide information that characterizes the nature and magnitude of public comments and concerns and written comments raised during open house meetings in Montana. Also summarize and characterize the nature of comments received from county commissioners in the 6 counties along the proposed route.</u>	Chapter 5 - Section 5.3 <u>Text has been added to Section 5.3.1 to clarify.</u>		
				9) Landscape aesthetics	Chapter 4 - Section 4.3.10		
				X		a) Description of study area landscape, physiographic provinces, landscape character, scenic integrity. <u>This description is provided in Section 4.3.10 baseline study requirements for visual resources. SIR-1.32: Describe how this information was incorporated into the overview survey for the pipeline.</u>	Chapter 4 - Section 4.3.10 <u>In process.</u>
						b) Existing landscape inventory maps. <u>Existing landscape inventory maps are not provided that show scenic quality, visual sensitivity or distance zones for specified viewpoints. Text in Section 4.3.10 indicates that 'BLM documentation is lacking' for VRM classes. Please clarify whether any existing landscape inventory maps were obtained from the BLM.</u>	Attachment A - Figure 4, Visual Resource Management Areas <u>See Attachment F for communications documenting the lack of BLM landscape inventory classification maps.</u>

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Circular MFSA-2 Section 3.4 (Cont.)			<u>X</u>	c) Overlay of land areas categorized for visual quality. <u>DEQ - Incomplete</u>	Attachment A - Figure 4, Visual Resource Management Areas <u>Further discussion/clarification needed</u>
			<u>X</u>	d) Overlay of land areas categorized for visual compatibility. <u>DEQ - Incomplete</u>	Attachment A - Figure 4, Visual Resource Management Areas <u>Further discussion/clarification needed</u>
		<u>X</u>		10) Overview of history and prehistory of study area	Chapter 4 - Section 4.3.9
		<u>X</u>		a) State and federal agency file search results.	Chapter 4 - Section 4.3.9 (Confidential) Attachment M
		<u>X</u>		b) Summary of existing databases	Chapter 4 - Section 4.3.9
		<u>X</u>		c) Sites likely to be encountered	Chapter 4 - Section 4.3.9
		<u>X</u>		d) Map showing location of previous survey work	Attachment A - Confidential Mapbook 1, Sensitive Cultural and Biological Data
Circular MFSA-2 Section 3.5	Selection of alternative locations	<u>X</u>		1) Alternative locations-Select at least three <u>It is not clear whether any information required for the overview survey was considered when identifying alternative locations for the pipeline. The application states that 'much of the formal process laid out in Circular MFSA-2, Sections 3.4 and 3.5 for the overview survey was rendered moot.' Information pertaining to Circular MFSA-2 Section 3.1 (1)(a), (k); 2(a), (b); Section 3.4(1), 7(a); 8, 9(b), (c) and (d) are missing. Therefore, DEQ concludes that the three alternatives were not selected based on the information required. Gather the missing information and re-evaluate the selection of alternatives.</u>	Chapter 4 - Section 4.2.2 <u>Further discussion/clarification needed</u>
			<u>X</u>	a) Preferred location criteria <u>See comment under 3.5(1) above.</u>	Chapter 4 - Section 4.2.2 <u>Further discussion/clarification needed</u>

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Circular MFSA-2 Section 3.5		N/A		b) Incorporation of environmental information <u>for transmission lines</u> required by 3.2 -(1)(d) and Section 3.4	N/A
			X	c) Pipelines: <u>Incorporation of environmental information required by Section 3.2(1)(e) and Section 3.4</u> <u>See comment under 3.5(1) above</u>	Chapter 4 - Section 4.2.2 <u>Further discussion/clarification needed</u>
		X		d) Cost, reliability, and engineering concerns	Chapter 4 - Section 4.2.2
		X		e) Other factors important to applicant	Chapter 4 - Section 4.2.2
			X	2) Explanation of methods. <u>While information presented on pages 4-6 and 4-7 for the overview survey does include a very brief explanation of the methods used, it does not include an explanation of how preferred location criteria, cost, reliability and engineering considerations, and other factors were considered when selecting alternative locations. SIR-1.33: Provide a list of key locations in Montana that were visited during field reconnaissance. Identify what resource issues were reviewed during these site visits.</u>	Chapter 4 - Section 4.2.2 <u>Further discussion/clarification needed.</u> <u>Attachment P, Response to SIR-1.33</u>
Circular MFSA-2 Section 3.6	Baseline study general requirements	X		1) Baseline study	Chapter 4 - Sections 4.1, 4.2, 4.3, 4.4, 4.5
			X	2) Mapping of alternative facility locations must be within 40-feet. <u>SIR-1.34: Please provide the metadata, just missing Intended Scale and Resolution. An example can be provided.</u>	Attachment A - Waiver (hard copies) electronic data provided <u>Metadata was provided for each Feature Class in the database on the 3-disk DVD set. The database is a 'File Geodatabase' structure with Feature Datasets (similar to folders) containing Feature Classes (similar to shapefiles). The user must use ArcMap or ArcCatalog to view the metadata.</u>

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Circular MFSA-2 Section 3.6		X		3) Baseline data mapping	Attachment A
		X		4) Hard copy color contact prints	Waiver (hard copies) electronic aerial coverage provided
			X	5) Information to determine compliance with water quality permits. <u>Permit application are missing for crossing of state waters.</u>	Chapter 4 - Section 4.3, Chapter 5 - Section 5.2 <u>Permit application is in development.</u>
		X		6) Tabulation of the amount, type, and/or linear miles of areas mapped in Section 3.7 and 3.8. <u>Comment: VRM classes are tabulated by milepost for visual resources.</u>	Chapter 4 - Section 4.3 <u>Tabulation of VRM classes is provided in Section 4.3.10, Tables 4-56, 4-57, 4-59.</u>
		X	X	7) Identify and discuss mitigation to reduce or eliminate significant impacts along each alternative including: <u>Identify mitigation measures to reduce or eliminate significant impacts. SIR-1.35: Describe how the measure 'landscape feathering' (page 4-128) would be implemented for the proposed pipeline.</u>	Attachment C, Chapter 1 - Section 1.4, Chapter 4 - Section 4.4 <u>Attachment P, Response to SIR-1.35</u>
		X		a) Alternative construction methods and equipment	Attachment C
		X		b) Reclamation and maintenance methods	Attachment C, Chapter 1 - Section 1.5
			X	c) Localized location adjustments. <u>There was no discussion of localized location adjustments. However, there are numerous deviations from a straight alignment on the alternatives. For each deviation, describe the reasons for the deviation.</u>	Attachment C <u>Further discussion/clarification needed.</u>

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Circular MFSA-2 Section 3.6			X	d) Seasonal timing of construction. <u>The application states that it would take 4 months to construct the pipeline. What time of the year would the pipeline be constructed? Provide a more detailed schedule.</u>	Attachment C, Chapter 4 - Section 4.4 <u>Pipeline construction is currently planned for the summer and fall seasons of 2011 and 2012. There will be wildlife timing constraints that will impact construction and may result in some move-arounds and the need to revisit these areas and complete construction. To mitigate these constraints, there may be some construction activities such as clearing of vegetation and mowing, that may occur during the winter and early spring seasons. During construction, weather delays may impact construction and could perhaps push the completion of construction into the winter season. Some pump station construction work may also occur during the winter. Commission and line fill will occur in the late fall and winter of 2012</u>
		X		e) Alternative design and materials	Attachment C
		X		f) Alternative methods of crossing streams	Attachment C, Chapter 4 - Section 1.4.7
Circular MFSA-2 Section 3.7			X	1) Baseline data and assessment of impacts, general and site specific mitigation <u>See comments below. For socioeconomic, the discussion is not detailed enough. Only taxes are given. What about jobs and income, time of construction, social effects, effects on services. Table 4-88 does provide a ranking of routes for 'socioeconomic considerations'.</u>	Chapter 4, <u>Attachment A</u> <u>Further discussion/clarification needed.</u>
		X		2) Overlay of land use information	Attachment A - Mapbook 1, Landuse/Landcover
		X		a) Cities, towns, residential clusters, unincorporated areas	Attachment A - Figure 1, Landuse/Landcover
		X		b) Developed residential, industrial, and commercial areas	Attachment A - Mapbook 1, Landuse/Landcover
		X		c) Designated residential growth areas	Attachment A - Mapbook 1, Landuse/Landcover
		X		d) Roads and highways	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance

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Circular MFSA-2 Section 3.7		X		e) Railroads and ROWs	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		f) Transmission lines 50 kV and larger	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		g) Grassland rangeland	Attachment A - Mapbook 1, Landuse/Landcover
		X		h) Forested	Attachment A - Mapbook 1, Landuse/Landcover
		X		i) Communication infrastructure	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		j) Military installations	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		k) Agency conservation easements	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		l) Airports and airstrips	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		m) National trails	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		n) Cropland (dry, irrigated, mechanically irrigated)	Attachment A - Mapbook 1, Landuse/Landcover
		X		o) Prime or unique farmlands or orchards	Attachment A - Mapbook 2, Farmland Classifications, Steep Slopes and Low Revegetation Potential
		X		p) Permitted mines	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		q) Platted subdivisions <u>SIR-1.36: Clarify the discrepancy in Attachment F (page 104) between the statement from the office of the Prairie County Clerk and Recorder (11/3/08) stating there is no development in the area where the pipeline is going and the statement from the same office (11/15/08) stating that there are proposed developments within the project area.</u>	<u>No current or future development plans within the project area are on file at the Prairie County Clerk and Recorder's office. Documentation of the communication has been inserted into Attachment F.</u>
		X		r) Major public buildings	Attachment A - Mapbook 1, Landuse/Landcover

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Circular MFSA-2 Section 3.7 (Cont.)		X		s) Pipelines 8 inches or greater	Attachment A - Mapbook 1, Landuse/Landcover
		X		t) Schools	Attachment A - Mapbook 1, Landuse/Landcover
		X		u) Ag. Experiment stations	Attachment A - Figure 2, Project Area Overview - Ownership and Avoidance
		X		v) Individual residences	Attachment A - Mapbook 1, Landuse/Landcover
		N/A		<u>w) Public concern over structure locations in fencelines and field boundaries.</u>	N/A
			X	3) Construction crew size, skill and wage levels <u>Include estimate wage levels</u>	Chapter 4 - Section 4.3.12 <u>Attachment P, page 2 response to SIR-1, Section 3.7(3)</u>
		X		4) Assessment of impacts on agricultural, residential, commercial, industrial, mining, and public land uses	Chapter 4 - Section 4.3.2
			X	5) Social impacts <u>Submit a discussion of how people and communities might be positively and negatively affected by the pipeline, including effects on income, attitudes, social cohesion, and ecological impacts.</u>	Chapter 4 - Section 4.3.12 <u>Text has been modified in Sections 4.3.12.6 and 4.3.12.7 to address this request.</u>

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Circular MFS-2 Section 3.7 (Cont.)			X	<p>6) Public attitudes and concerns</p> <p><u>Text on page 5-11 of the application states that "stakeholders raised a wide range of issues related to route locations and the route refinement process." Provide more information that characterizes the issues raised related to route locations and the route refinement process. Include written comments received after the November 2008 public notice. Also summarize and characterize the nature of comments received from county commissioners in the 6 counties along the proposed route. See the comment on Circular MFS-2, Section 3.1(1)(a).</u></p>	<p>Chapter 5 - Section 5.3</p> <p><u>Text was inserted into Section 5.3.1 to clarify</u></p>
			X	<p><u>a) Concern over social, socioeconomic, tax, land use changes the facility could cause individual resentment and public debate.</u></p> <p><u>If none of these concerns were raised, say so. If the concerns were raised, identify which meeting or correspondence raised the issue and what was said.</u></p>	<p><u>All county commissioners are in favor of having the pipeline pass through their county. They anticipate no social concerns and expect positive social and economic impacts and little or no negative environmental and land use impacts from the Keystone XL Project. County Commissioners in Daniels, Roosevelt and Sheridan counties were favorable to the A-1-A alternate route. Text has been inserted into Section 5.3.1 to this effect.</u></p>
		X		<p><u>b) Concern about natural environmental features</u></p> <p><u>See above comment</u></p>	<p><u>Concerns exist regarding impacts to the following: the Lewis and Clark Trail, visual resources around the Missouri River, waterbody crossings, sensitive (Cretaceous) and expansive soils, degradation of Rock Creek, and crossing the Bowdoin NWR.</u></p>

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Circular MFSA-2 Section 3.7 (Cont.)			X	c) <u>Issues that may divide communities, cause individual resentment and public debate</u>	<u>Text has been inserted into Section 5.3.1 to address this.</u>
			X	d) <u>Concern to landowners & residents in close proximity</u> <u>If no concerns were raised, say so.</u>	<u>Text has been inserted into Section 5.3.1 to address this.</u>
				7) Access roads	Chapter 1 - Section 1.4.5 Chapter 4 - Section 4.3.11, Attachment N
			X	a) A discussion of access across areas listed in Circular MFSA-2 Section 3.2 (1)(d) and Section 3.4(1) <u>If access roads do not cross any of these areas say so. If roads cross any of these areas, describe the impacts that would occur.</u>	Chapter 4 - Section 4.3.11, Attachment N <u>In process</u>
			X	b) An assessment of impacts to areas identified in (a) and in response to Circular MFSA-2 Sections (3.7) (2) through (6) and (3.7) (8) through (19) and cross-referenced <u>See comment above.</u>	Chapter 4 - Section 4.3.11, Attachment N <u>In process</u>
			X	8) Earth resource impacts. ...an estimate of the mileage of each alternative location and associated access roads crossing each category of mapped information requested below <u>The estimated mileage of access roads crossing each category of mapped information requested below is missing.</u>	Attachment C, Chapter 4 - Section 4.3 <u>In process</u>
			X	a) Overlay of wind and water erosion risk and a discussion of impacts considering soil characteristics, slope, predicted amount of disturbance and climatic conditions	Attachment A - Mapbook 5 and 4.3.7 Severe Soil Erosion Potential

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Circular MFSA-2 Section 3.7 (Cont.)			X	b) Overlay and discussion of mass movement potential <u>Overlays of mass movement potential are missing. This may only be a matter of fixing the legend of Mapbook 5.</u>	Chapter 4 - Section 4.3.6, Attachment A - Mapbook 5, Severe Soil Erosion Potential <u>Mapbook 5 has been updated to show mass movement potential.</u>
		X		c) Overlay and discussion of constraints to reclamation and revegetation	Chapter 4 - Section 4.3.7, Attachment A - Mapbook 2, Attachment C, Farmland Classification , Steep Slopes and Low Revegetation Potential
				9) Engineering of the facility in each alternative location:	<u>N/A</u>
		N/A		a) <u>Location differences relating to the feasibility of expanding the transmission capacity through multiple circuiting or design modifications, ROW width</u>	<u>N/A</u>
		N/A		b) <u>Location differences relating to the feasibility of expanding the transmission capacity through multiple circuiting or design modifications, ROW width</u>	<u>N/A</u>
			X	c) <u>Poor or seasonally restricted areas –</u> <u>This item is not addressed in the Cross Reference Index. Where is it located?</u>	<u>Attachment P, page 3, response to SIR-1, Section 3.7(9)(c)</u>
			X	d) <u>Compatibility or interference with transmission, transportation or communication facilities</u>	<u>In process</u>
		X		e) <u>Discussion and supporting documentation of problems or concerns associated with crossing highways or encroachment on highway ROWs through consultation with the Montana Department of Transportation (MDT).</u>	<u>Chapter 1 – Section 1.4.1.10 and Chapter 4 – Section 4.3.11.2</u>
		X		f) Floodplains	Attachment A - Mapbook 3 and 4.3.5 Hydrologic Features

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Circular MFSA-2 Section 3.7 (Cont.)				g) Aeronautical hazards for each alternative and mitigating measures determined through consultation with MDT and the Federal Aviation Administration (FAA)	Chapter 4 - Section 4.3.11
				10) Visual resource and viewer information:	<u>N/A</u>
			X	a) Scenic quality overlay <u>An overlay showing scenic quality of the impact zone for visual resources is not provided. Text in Section 4.3.10 indicates that 'BLM documentation is lacking' for VRM classes. Please clarify whether any existing landscape inventory maps were obtained from the BLM.</u>	Attachment A - Figure 4, Visual Resource Management Areas <u>VRM class maps were only available from BLM through the Malta Field Office and Miles City Field Office. These maps were used in the visual resources analysis. No landscape inventory maps were available, as documented in Attachment F.</u>
			X	b) Visual contrast overlay <u>An overlay categorizing visual contrast of the proposed pipeline with the landscape of the impact zone is not provided. SIR-1.37: Describe how re-vegetation potential was considered when evaluating impacts following construction, especially in those areas where reclamation would be difficult.</u>	Attachment A - Figure 4, Visual Resource Management Areas <u>In process</u>
			X	c) Tabulation of classes of scenic quality <u>DEQ - Incomplete</u>	Chapter 4 - Section 4.3.10 <u>Further discussion/clarification needed</u>
			X	d) Explanation of any difference with FS visual inventory maps <u>Explanation is provided where VRM classes provided in the application differ from the BLM.</u>	Chapter 4 - Section 4.3.10 <u>Forest Service land was not located along the project corridor; therefore, no Forest Service visual resource classes were used.</u>

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Circular MFS-2 Section 3.7 (Cont.)		<u>X</u>		e) Identification of key observation points <u>Comment: Residential viewpoints, recreation and transportation viewpoints, and special areas were considered in the impact analysis, although an overlay showing their location was not provided. No representative viewpoints were considered.</u>	Chapter 4 - Section 4.3.10 <u>In process</u>
		<u>X</u>		f) Viewer characteristics <u>Comment: Proximity to the pipeline and number of residences were considered in the impact analysis. SIR-1.38: Figure 4 showing BLM Visual Resource Management Areas does not consider locations of residences, although views from residences are considered sensitive in the impact analysis. Provide the number of residences along each alternative within Management Areas II, III and IV.</u>	Chapter 4 - Section 4.3.10 <u>In process</u>
			<u>X</u>	g) Photographs from observation points <u>DEQ - Incomplete</u>	Chapter 4 - Section 4.3.10 <u>In process</u>
			<u>X</u>	h) Viewsheds for key observation points within 3/4 mile and within view of ROW and other pipeline facilities <u>DEQ - Incomplete</u>	Chapter 4 - Section 4.3.10 <u>Further discussion/clarification needed.</u>

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Circular MFSA-2 Section 3.7 (Cont.)			X	11) Assessment of visual resource impacts <u>See comments above for incomplete items for 10) a-h. Text on page 4-129 para 1 for Route A and on page 4-130 para 3 for Route A1A indicates that in VRM Class II areas at Frenchman Creek and Rock Creek Canyon, 'terrain and surface conditions would, for the most part, be amenable to successful reclamation in a reasonable time frame.' The timeframe laid out for completion of successful reclamation is 1-5 years. Specify by milepost, where in these Class II areas successful reclamation is not expected within 1-5 years.</u>	Chapter 4 - Sections 4.3.10 <u>Successful reclamation is expected in all areas within 1-5 years.</u>
				12) Description of existing biological resources and an assessment of impacts to these resources for each alternative and access road	Chapter 4 - Sections 4.3.3, 4.3.4 Clarification Request
			X	a) A list of species and habitats of greatest susceptibility to project- related impacts and an explanation of rationale used to create the list <u>Species of plants and animals occupying each habitat type is not included. Explain the rationale for identifying 4 vegetation classes.</u>	Chapter 4 - Sections 4.3.3, 4.3.4 Attachment H <u>See Attachment E for list of special status plants and animals and associated habitats. The four vegetation types were determined from the landcover dataset. This dataset was digitized from 2006 satellite imagery from the National Agriculture Imagery Program (NAIP). The landcover/landuse layer was subsequently compared and cropland types further attributed compared with Montana Department of Revenues (MDR) agricultural land reappraisal layer.</u>
		X		b) An evaluation of impacts to each species or habitat listed in (a) including:	<u>N/A</u>
		X		(i) national wildlife refuges and ranges	Chapter 4 - Section 4.3.4.1 - 4.3.4.4 (by Route)
		X		(ii) state wildlife management areas and wildlife habitat protection areas	NA - No WMA's Crossed by the routes. Habitat protection areas discussed in ARM 3.7(a)(i)

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Circular MFSA-2 Section 3.7 (Cont.)		X		(iii) national recreation areas	Chapter 4 - Section 4.3.2 (none crossed)
		X		(vi) corridors of rivers in the National Wild and Scenic rivers system and rivers eligible for inclusion in the system.	Chapter 4 - Section 4.3.5, 4.3.2 (none crossed)
		X		(vii) managed roadless areas greater than 5,000 acres in size	Chapter 4 - Section 4.3.2 (none crossed)
		X		(ix) unique habitats and natural areas designated by the National Park Services, USDA Forest Service, BLM, or the State of Montana as national natural landmarks, natural areas, research natural areas, areas of critical environmental concerns, special interest areas, research botanical areas, or outstanding natural areas	Chapter 4 - Section 4.3.3
		X		(x) designated critical habitat for Threatened and Endangered species	Attachment A - Figure 3, Big Game, Fisheries and Avian Distribution and Habitats
		X		(xi) streams and rivers listed as having fisheries value class of I or II by FWP	Chapter 4 - Section 4.3.4, 4.3.5
		X		(xii) agricultural experiment stations	Chapter 4 - Section 4.3.2 none crossed
		X		(xiii) habitats occupied at least seasonally by resident state or federally listed threatened or endangered species.	Attachment A - Confidential Mapbook 1, Sensitive Cultural and Biological Data
		X		(xiv) specially managed buffer areas around wilderness	Chapter 4 - Section 4.3.3.1
		X		(xv) winter distribution of elk, deer, moose, pronghorn, mountain goat, and bighorn sheep, and areas where they concentrate during severe winters based on consultation...	Chapter 4 - Section 4.3.4
			X	(xvi) major elk summer security areas. <u>If none of these areas exist within the impact zone say so.</u>	Chapter 4 – Section 4.3.4 <u>No major elk summer security areas are located within the project area.</u>

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Circular MFSA-2 Section 3.7 (Cont.)		X		(xvii) mountain goat and <u>big horn</u> sheep seasonal habitat	<u>Chapter 4 – Section 4.3.4</u>
			X	(xviii) sage and sharp-tailed grouse leks and winter distribution <u>Winter distribution for sage grouse is not addressed.</u>	Chapter 4 - Section 4.3.4 <u>In process</u>
			X	(xix) high waterfowl population densities <u>DEQ - Incomplete</u>	Chapter 4 - Section 4.3.5 <u>In process</u>
			X	(xx) any undeveloped land or water areas that contain known natural features of unusual scientific educational or recreational significance <u>(Kevin Rim)</u> <u>Page 4-18. What are the existing biological resources in these areas and what are the impacts to biological resources that could occur if these areas are crossed.</u>	Chapter 4 - Section 4.3 <u>Section 4.3.4.1 discusses these areas related to wildlife impacts. None of the three alternative routes cross the Charles M. Russell NWR so no impacts will occur. Route A1A crosses a canal linked to Medicine Lake NWR that may provide stopover and breeding habitat for migratory birds. If Route A1A was utilized, this location would be crossed using HDD methods, thereby avoiding impacts to stopover and breeding habitat. Timing restrictions during the breeding and migratory periods could also be utilized to avoid noise and human disturbance. Impacts to the Bitter Creek ACEC and WSA located along Routes A and A1A in Valley County are discussed under each route analysis.</u>
			X	(xxi) mature riparian forests	Chapter 4 - Section 4.3
			X	(xxii) -nesting colonies <u>Do such colonies exist in the study zone?</u>	Chapter 4 - Section 4.3.4, Attachment I <u>One great blue heron rookery was identified over 1.0 mile to the west of the project at Frenchman Reservoir during the 2008 aerial raptor surveys. No impacts to that rookery are anticipated.</u>

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Circular MFSA-2 Section 3.7 (Cont.)			X	<p>(xxiii) habitats occupied at least seasonally and critical to species listed as “species of special concern or interest” by the FWP, or species listed or considered candidates for listing by the U.S. Fish and Wildlife service as threatened or endangered.</p> <p><u>In Mapbook 1, species locations of the Natural Heritage Species of Concern items are mapped rather than habitats for these species. SIR-1.39: Please differentiate the locations of individual species on confidential Mapbook 1.</u></p>	<p>Chapter 4 - Section 4.3.4.1 - 4.3.4.4 (by route)</p> <p><u>No Critical Habitat is crossed by any alternative. Habitats associated with Species of Concern are identified in Attachment H. There is a mapbook with a land use layer. Please refer to the feature class of the database to determine the locations of individual species in confidential Mapbook 1.</u></p>
			X	<p>(xxiv) locations of known nests of raptorial birds within 0.5 mile of alternative facility locations</p> <p><u>The survey was ¼ mile on each side of centerline not ½ mile on either side. See p. 4-24. Also it was done very late in the year.</u></p>	<p>Chapter 4 - Section 4.3.4, Attachment I</p> <p><u>The surveys located raptor nest locations regardless of activity status. Additional raptor surveys will be conducted during the nesting period prior to construction activities. Those surveys will incorporate this baseline data and be adjusted to fit the 0.5 mile buffer.</u></p>

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Circular MFSA-2 Section 3.7 (Cont.)			X	<p>c) A general assessment of impacts from hunting and fishing pressure if increased access to secure habitats would likely occur in the general vicinity of each alternative line location because new access roads would be constructed outside the impact zone described in (a).</p> <p><u>On page 4-3839 ¶ 2, the last sentence fails to address whether increases in access to secure habitat would occur and whether hunting or fishing pressure would increase.</u></p>	<p>Chapter 4 - Section 4.3.2.2</p> <p><u>Consultation with the BLM on December 12 2008 (included in Attachment F) confirmed that new construction of or improvement to existing tracks/roads associated with the pipeline would result in increased use and pressures regarding hunting and fishing. Currently, public lands are experiencing an increase in hunting. The construction of the pipeline itself would not affect current hunting and fishing status. Hunting and fishing pressures on private lands would be site-specific and depend on whether the landowners allowed these activities on their property. A permanent access road on private lands that allowed hunting would increase hunting and/or fishing pressures in that area.</u></p>
			X	<p>d) A description of the method used to evaluate impacts to wildlife, fisheries, and vegetation</p> <p><u>This stand-alone section should identify the sources of information used, how categories of impacts were identified, and the metric used to quantify impacts.</u></p>	<p>Chapter 4 - Sections 4.3.3, 4.3.4</p> <p><u>The last paragraph on page 4.43 is a stand alone section that describes the methods used. It is listed under special status species but was the methodology for all wildlife along the project route.</u></p>
		X		<p>e) For impacts described in (b) and (c), a description of mitigating measures that could be implemented to reduce significant impacts and the cost of such measures.</p> <p><u>Note: The discussion of mitigating measures may need updating if additional impacts in (b) or (c) are identified.</u></p>	<p>Chapter 4 - Sections 4.3.3, 4.3.4, Attachment H, Attachment I</p> <p><u>Mitigation measures that agencies will require for the Project have not been defined; Keystone will conform to the Best Management Practices listed in the CMRP.</u></p>

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Circular MFSA-2 Section 3.7 (Cont.)			X	f) Documentation that agencies with management responsibility for any affected biological resources have been consulted concerning impacts and mitigation and a description and evaluation of the mitigation measures suggested by these agencies. <u>DEQ – Incomplete</u>	Attachment F <u>Mitigation measures that agencies will require for the Project have not been defined; Keystone will conform to the Best Management Practices listed in the CMRP.</u>
		X		13) Cultural, historical, and paleontological data	Chapter 4 - Section 4.3.8, 4.3.9, Tables for each Route
		<u>N/A</u>		a) Results of an on-the-ground survey and documentation	Waiver
		X		b) Consultation with State Historic Preservation Office (SHPO) relative to eligibility for listing on the national register	Chapter 4 - Section 4.3.9
		X		14) Assessment of impacts to cultural, historical, and paleontologic resources.	Chapter 4 - Section 4.3.8, 4.3.9 Environmental Consequences/Construction Phase (Paleo)
		X		a) For each of the following potentially affected cultural resource properties or sites and for any properties or sites identified by (13)(b) which may be eligible for listing on the national register, a discussion of whether the facility would affect the qualities for which these sites or properties were listed or could be listed:	Chapter 4 - Section 4.3.9
		X		(i) National historic landmarks, and national register historic districts and sites;	Chapter 4 - Section 4.3.2.2
		X		(ii) National register historic districts and sites nominated to or designated by SHPO	Chapter 4 - Section <u>4.3.9.2</u> , 4.3.9.3
		X		b) A discussion of whether the proposed facility would affect the qualities of:	<u>N/A</u>

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Circular MFSA-2 Section 3.7 (Cont.)		X		(i) Areas with geologic units or formations that show a high probability of including significant paleontological resources; and	Chapter 4 - Section 4.3.6 (tables)
			X	(ii) Sites that have, or may have, religious or heritage significance and value to Native Americans as identified by Section 3.4(1)(t). <u>DEQ – Incomplete</u>	Chapter 4 - Section 4.3.9 <u>Traditional Cultural Property information will be developed through the Department of State (as the lead federal agency) through government-to-government consultation with the tribes.</u>
		X		c) Identification of special construction methods and topographic screening that could eliminate or reduce impacts, and a discussion of the likelihood of success of each measure in reducing impact.	Attachment C
		X		d) Documentation that consultation has occurred with SHPO, affected state and federal agencies, and tribes regarding any affected cultural sites, impacts, and mitigation.	Chapter 4 - Section 4.3.9
				15) Baseline data for recreation areas and sites	
		X		a) Maps depicting recreation areas and sites.	Chapter 4 - Section 4.3.2
		X	X	b) Description of each site or area, how area is used, and use level estimates <u>DEQ - Incomplete</u>	Chapter 4 - Section 4.3.2 <u>In process</u>
		X		c) List of possible recreation areas & sites	Chapter 4 - Section 4.3.2
		X		16) Assessment of impacts on recreation areas and sites	Chapter 4 - Section 4.3.2
		X		a) Change in access	Chapter 4 - Section 4.3.2
				b) Aesthetic impacts on sites	Chapter 4 - Section 4.3.2
		X		c) Location of facility relative to site	Chapter 4 - Section 4.3.2

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Circular MFSA-2 Section 3.7 (Cont.)			X	d) Description of how activities and experiences could change <u>DEQ - Incomplete</u>	Chapter 4 - Section 4.3.2 <u>In process</u>
			X	e) Description of regional supply of recreational opportunities for affected sites <u>Submit documentation of consultation with MFWP on the regional supply of recreation opportunities/fishing opportunities, and the potential for areas or streams to be affected. Contacts are Woody Baxter, Region 6 Parks Manager, Glasgow, phone 406-228-3700, and John Little, Region 7 Parks Manager, Miles City, phone 406-234-0900.</u>	Chapter 4 - Section 4.3.2 <u>In process</u>
			X	f) Documentation of consultation <u>See the comment above. SIR-1.40: Submit documentation of consultation with Woody Baxter on potential effects to the School Trust FAS below Fort Peck Dam.</u>	Chapter 5 - Section 5.1 <u>Attachment F, page 64h</u>
			X	17) Overlay showing names of perennial streams crossed, and WQ classification.	Attachment A - Mapbook 3 Hydrologic Features
			X	18) Assessment of impacts to surface and ground water resources	Chapter 4 - Section 4.3.5
			X	Impacts to water users <u>What are the impacts of hydrostatic test water withdrawals on water users?</u>	Chapter 4 - Section 4.3.5 <u>Text has been adjusted on page 4-68 to indicate hydrostatic test water withdrawals will not impact water users.</u>
			X	Impacts to hydrology and stream banks	Chapter 4 - Section 4.3.5
			X	Impacts to municipal watersheds	Chapter 4 - Section 4.3.5

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Circular MFS-2 Section 3.7 (Cont.)				Supplies of potable water, and streams listed by the department pursuant to 75-5-702, MCA that are not attaining designated beneficial uses of water.	Chapter 4 - Section 4.3.5
		<u>X</u>		19) Noise, radio, and television impacts	
		<u>N/A</u>		a) A description of present noise conditions at residences within 1000 feet of each alternative for 230 kV	Chapter 4 – Section 4.3.13 <u>N/A</u>
		<u>N/A</u>		b) For 230 kV	<u>N/A</u>
			<u>X</u>	c) Induced currents <u>DEQ - Incomplete</u>	Chapter 4 - Section 4.3.13 <u>Further discussion/clarification needed</u>
		<u>N/A</u>		d) Noise impacts	Chapter 4 - Section 4.3.13
			<u>X</u>	e) An assessment of the potential impacts of the electrical and magnetic fields generated by the facility <u>DEQ - Incomplete</u>	Chapter 4 - Section 4.3.13 <u>Further discussion/clarification needed</u>
			<u>X</u>	f) Radio and television impacts <u>Associated power lines are not addressed.</u>	Chapter 4 - Section 4.3.13 <u>Further discussion/clarification needed</u>
Circular MFS-2 Section 3.8	Baseline data and impact assessment requirements			1) Assessment of cumulative short and long term changes and adverse impacts for each alternative location	Chapter 4 - Sections 4.3.15
				a) Must contain data relating to the engineering of facilities in each alternative location	<u>N/A</u>

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Circular MFSA-2 Section 3.8 (Cont.)			X	(i) engineering differences between alternative locations, <u>if any, relative to their ability to accommodate future pipeline or other linear facilities</u> <u>The section that is referred to does not describe engineering differences among the alternative actions.</u>	Chapter 4 - Sections 4.3.15 <u>During evaluation of each alternative the possibility of looping the pipeline at some point in the future was taken into account. No substantial engineering differences between alternatives were noted that would preclude the ability to loop the pipeline. The offset of the pipeline from the edge of the ROW within the permanent easement was made to allow for the possibility of placing a second line in that easement.</u>
		X		(ii) discussion and drawings of ability to accommodate future pipelines	Chapter 1 - Section 1.3.7
		X		(iii) overlay and tabulation of alternative facility locations showing the following <u>Provide a tabulation of the miles of each alternative facility location that would cross each category in 3.8(1) (A and C).</u>	<u>See discussion for 3.8(1)(a)(iii) (A and C)</u>
		X		A) rock trenching requiring drilling and blasting	Chapter 1 - Section 1.4.1.10 <u>Locations where drilling and blasting will be required will not be identified until the project centerline is fully finalized.</u>
		X		B) rock trenching requiring heavy ripping equipment <u>An overlay is provided but there is not tabulation.</u>	Chapter 1 - Section 1.4.1.10 <u>Soils with shallow bedrock could require heavy ripping equipment without requiring drilling and blasting. Locations where drilling and blasting are required will be identified at a later date. Table 4-48 indicates miles of soil with shallow bedrock, and Attachment K identifies soil type by route and milepost.</u>

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Circular MFSA-2 Section 3.8 (Cont.)			X	C) cliffs and talus that would constrain construction <u>No overlay or tabulation is provided. If there are no cliffs or talus areas that would constrain construction, say so.</u>	Chapter 1 - Section 1.4.1.10 <u>No cliffs or talus areas that would constrain construction are located in the ROW for any route.</u>
		X		iv) seismic and geologic data of alternative facility location	Chapter 4 - Section 4.3.6 Geologic Hazards/Seismic Hazards
		X		v) description of seismic risk associated with each alternative location	Clarification Request Chapter 4 - Section 4.3.6 Geologic Hazards/Seismic Hazards
		X		b) must contain visual resource information for areas listed in 3.7 (10)(h) located within 3/4 mile and within view of the ROW for each alternative location	Chapter 4 - Section 4.3.10
				c) must contain biological resource information required in 3.7(12) and the following information for each alternative location:	N/A
		X		(i) map at scale 1:4800 and min. resolution of 2 acres showing existing vegetation and land cover for the following impact zones <u>DEQ - Incomplete</u>	Waiver (hard copies) electronic data provided <u>Further discussion/clarification needed</u>
		X		A) areas within 0.5 mile radius of pump or compressor stations <u>DEQ - Incomplete</u>	Attachment A - Mapbook 1 (scale 1:100K) Landuse/Landcover <u>Further discussion/clarification needed</u>
		X		B) crossing of streams with fishery value class of I or II or waterways with annual discharge of 1,000 cfs or more <u>Detailed information must be provided for crossings of the Yellowstone and Missouri rivers and perhaps others, depending on average annual flow.</u>	Attachment A - Figure 3, & 4.3.4, Big Game, Fisheries and Avian Distribution and Habitats <u>Further discussion/clarification needed</u>

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Circular MFSA-2 Section 3.8 (Cont.)		X		ii) overlay to basemap required by section 3.6(2) showing migration routes and seasonal habitat for elk, deer, moose, bighorn sheep, mountain goat, and pronghorn that is intersected by alternative locations including timing and use of migration routes	Attachment A - Figure 3, (no migration routes available from MFWP) Big Game, Fisheries and Avian Distribution and Habitats
			X	iii) description of aquatic habitat, fish populations, special use areas (spawning areas, etc...), and angler use for the following stream reaches: <u>The detailed description of aquatic habitat, fish populations, and spawning sites is missing for (A), (C), and (D).</u>	<u>Further discussion/clarification needed</u>
			X	A) Perennial waterway extending 2 miles downstream from any trenched crossing <u>DEQ - Incomplete</u>	Chapter 4 - Section 4.3.4 <u>Further discussion/clarification needed</u>
			X	B) Any additional water where aquatic habitat could be affected by siltation, sedimentation, or increased turbidity due to construction adjacent to a perennial stream	Chapter 4 - Section 4.3.4
			X	C) Waters that could be affected by a spill or leak <u>DEQ - Incomplete</u>	Chapter 4 - Section 4.3.4 <u>In process</u>
			X	D) Reach of any stream where hydrostatic testing water will be withdrawn extending 1/4 mile upstream and 5 miles downstream from point of withdraw <u>DEQ - Incomplete</u>	Chapter 4 - Section 4.3.4 <u>In process</u>
			<u>N/A</u>	E) Reach extending 1/4 mile upstream and 5 miles downstream from any point on perennial stream where hydrostatic discharge water would reach stream.	Chapter 4 - Section 4.3.4

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Circular MFSA-2 Section 3.8 (Cont.)			X	iv) Assessment of the consequences of a spill or leak downstream of each crossing of a perennial waterway. Describe the resource that would be affected, magnitude of impact to fishery, description of spill detection, containment and cleanup <u>The detailed assessment for each crossing of a waterway is missing, as is the description of proposed spill containment and cleanup techniques.</u>	Chapter 1 - Section 1.5.5, 1.5.6, 1.5.7, Attachment D (Risk Assessment) <u>Further discussion/clarification needed</u>
			X	v) Wetlands or waterfowl habitat downstream from a river crossing that would be adversely affected by a spill or leak. <u>DEQ - Incomplete</u>	Chapter 1 - Section 1.5.5, 1.5.6, 1.5.7, Attachment D (Risk Assessment) <u>In process</u>
		X		d) Must contain a list of noxious weeds that occur at alternative locations, threat of spread and description of control measures	Attachment G, Attachment C
		X		e) Must contain information on recreation areas and sites required by section 3.7(15), except that the impact zone differs and is specified in (b)	Chapter 4 - Section 4.3.2
		X		f) Must contain information on stream locations required by section 3.7(17)	Attachment J
			X	g) Must contain water resource information required by section 3.7(18) and an assessment of stream crossing impacts for each perennial stream crossing per alternative crossing location. <u>Estimates of floodplain disturbance are missing for each perennial stream crossed. The anticipated stream flow during construction was not found, and the amount of streambed excavation was not listed for each stream crossed.</u>	Attachment J <u>Further discussion/clarification needed</u>

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Circular MFSA-2 Section 3.8 (Cont.)		X		h) Must contain information on potential noise required by section 3.7(19)(a) and (e). Only required for pumping and compressor stations near residences (see Circular for more specific information)	Chapter 4 - Section 4.3.2, Table 4.4-2
		X		i) Overlay to map and electronic equivalent required by section 3.6(2) indicating discharge points. The department may require: <u>Specified discharge points for hydrostatic discharges were not listed nor were landowners, water supply wells, and the information describing existing ground water quality and uses within 1 mile of the discharge.</u>	N/A <u>Further discussion/clarification needed</u>
		X		(i) Discharge rates and chemical constituents <u>Specifics are lacking for each discharge site, volumes are lacking, likely chemical composition of the discharge is lacking.</u>	Chapter 4 - Section 4.3.5 <u>Further discussion/clarification needed</u>
		X		(ii) discussion of potential and measures to be taken for emergencies and accidental spills of hydrostatic discharge and products <u>Spills of hydrostatic test waters were not described.</u>	Attachment D <u>Further discussion/clarification needed</u>
		X		(iii) measures to be taken to provide alternative water supplies or treatment should domestic, municipal, agricultural, commercial, or industrial supplies become adversely affected <u>DEQ - Incomplete</u>	Chapter 4 - Section 4.3.5 <u>Further discussion/clarification needed</u>

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Circular MFSA-2 Section 3.8 (Cont.)			X	(iv) written evaluation of alternative disposal practices for maximization of environmental protection <u>DEQ - Incomplete</u>	Chapter 4 - Section 4.3.5 <u>Further discussion/clarification needed</u>
Circular MFSA-2 Section 3.9	Comparison of alternative locations	X		1a) Summary of the most important impacts of the facility <u>SIR-1.41: Clarify the disbursement period for property tax payments to counties shown in Table 4-87 (page 4-178). Impact zones for associated facilities are not addressed.</u>	Chapter 4 - Section 4.4 <u>Disbursement - In process</u> <u>Impact zones - further discussion/clarification needed</u>
X			b) Avoiding most important impacts	Chapter 4 - Section 4.4	
X			c) Ranking of alternatives from best to worst	Chapter 4 - Section 4.4	
X			(i) levelized costs including environmental costs and mitigation costs	Chapter 4 - Section 4.4	
X			(ii) reliability	Chapter 4 - Section 4.4	
X			(iii) land use considerations	Chapter 4 - Section 4.4	
X			(iv) socioeconomic	Chapter 4 - Section 4.4	
X			(v) earth resources	Chapter 4 - Section 4.4	
X			(vi) engineering considerations	Chapter 4 - Section 4.4	
X			(vii) visual resources	Chapter 4 - Section 4.4	
X			(viii) biological resources	Chapter 4 - Section 4.4	
X			(ix) historic, archaeological, and paleontologic resources	Chapter 4 - Section 4.4	
X			(x) recreation	Chapter 4 - Section 4.4	
X	(xi) water resources	Chapter 4 - Section 4.4			

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Circular MFSA-2 Section 3.9 (Cont.)		X		(xii) noise, radio, and television interference and electric effects <u>SIR-1.42: How many residences are located within 500 feet of the associated powerlines? Would noise, radio, and television interference, and electrical effects be an issue?</u>	Chapter 4 - Section 4.4 <u>Number of structures within 500 feet of associated transmission lines along alternate routes in Montana: Route A (16); Route A1A (32); Route B (20). Distance where effects will be noted is in development.</u>
		X		<u>(xiii) any other categories important to the applicant</u>	
		X		D) A comparative ranking of alternative facility locations from best to worst with an indication of the magnitude of the differences between facility locations	Chapter 4 - Section 4.4
Circular MFSA- 2 Section 3.10	Selection of preferred location			1) Selection of applicant's preferred alternative	Chapter 4 - Section 4.5
		X		a) The applicant's selective criteria and how they were applied <u>SIR-1.43: Text on page 4-181, section 4.5.1.6 says one of the avoidance areas was state land. For what reason did you avoid state land?</u>	Chapter 4 - Section 4.5 <u>State lands were crossed, however, some state lands were avoided for engineering or environmental reasons.</u>
		X		b) An explanation of how the preferred location criteria listed in 3.1(1) or 3.1(2) were applied	Chapter 4 - Section 4.5
		X		c) Discussion of relative importance of categories in 3.9(3)	Chapter 4 - Section 4.5
		X		d) An explanation of how areas listed in 3.2(1)(d)(i) - (iii) were considered in selecting the preferred location	Chapter 4 - Section 4.5
		X		e) An explanation of how areas listed in Section 3.2(1)(d)(iv) through (f) and Section 3.4(1) through (3) were considered in selecting the preferred location	Chapter 4 - Section 4.5

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Subchapter 15					
<u>17.20.1509</u>	<u>Design Characteristics</u>	<u>X</u>		<u>1) Engineering description</u>	<u>Chapter 1 - Section 1.3</u>
		<u>X</u>		<u>2) Reports showing adequacy of design</u>	<u>Chapter 1 - Section 1.3.1</u>
		<u>X</u>		<u>3) Design elements to reduce impacts</u>	<u>Chapter 1 - Section 1.3.2</u>
			<u>X</u>	<u>8) Applies to Pipelines - engineering description of the facility, including conduit size and thickness, tensile strength, test and operating pressure, methods of joining sections of conduit, trenching depth, amount of ground cover over the pipeline, the location, size and overall plan for new or modified pumping and compressor stations, cathodic protection systems, other safety measures. Facility design provided for normal and maximum transmitting or pumping capacity and pressure of compressor stations and pump stations.</u>	<u>Chapter 1 Section 1.3.2 and Section 1.3.3</u> <u>Further discussion/clarification needed</u>
		<u>X</u>		<u>9) Applies to Pipelines - description of quality control and testing procedures</u>	<u>Chapter 1 - Section 1.3.4</u>
			<u>X</u>	<u>10) Applies to Pipelines - description of source of power for pump & compressor stations and indicate the proposed and alternative location of power supply lines for these stations.</u> <u>Impacts are generically described (Attachment O) for all resources and detailed analyses are missing.</u>	<u>Waiver (scale) - Attachment A, Transmission Line Figures 1, 2, and 3</u> <u>Further discussion/clarification needed</u>
			<u>X</u>	<u>11) Communication facilities</u> <u>Describe the microwave antennas and provide a diagram showing the size of the antennas.</u>	<u>Chapter 1 - Section 1.3.6</u> <u>In process</u>
		<u>X</u>		<u>12) Paralleling or showing utility or transportation ROWs and why paralleling was not chosen</u>	<u>Chapter 1 - Section 1.3.7</u>

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17.20.1510		<u>N/A</u>		1) Preliminary schedule	N/A
		<u>N/A</u>		2) Construction disturbance	N/A
		<u>N/A</u>		3) Road description	N/A
		<u>N/A</u>		4) Min and max ROW	N/A
		<u>N/A</u>		5) Construction camps	N/A
		<u>N/A</u>		6) Reclamation methods	N/A
		<u>N/A</u>		7) Fire control	N/A
17.20.1511		<u>X</u>		<u>1) Preliminary construction schedule</u>	<u>Chapter 1 - Section 1.4.1</u>
		<u>X</u>		<u>2) Explanation of work area width</u>	<u>Chapter 1 - Section 1.4.2</u>
		<u>X</u>		<u>3) Construction disturbance</u>	<u>Chapter 1 - Section 1.4.3</u>
		<u>X</u>		<u>4) Topsoil salvage</u>	<u>Chapter 1 - Section 1.4.4</u>
		<u>X</u>		<u>a) Width of ROW for topsoil salvage.</u> It is unclear where topsoil would be salvaged from the entire ROW. See p. 1-26, 1.4.4, last sentence, "and where there is another need to separate topsoil from subsoil." Please identify where these areas would be located and the reasons for additional topsoil stripping.	<u>Chapter 1 - Section 1.4.4</u> Detailed information for topsoil removal will be determined prior to construction during preconstruction surveys and in consultation with landowners.
		<u>X</u>		<u>b) Topsoil salvage depth</u>	<u>Chapter 1 - Section 1.4.4, p. 18 of Attachment C</u>
		<u>X</u>		<u>c) Locations of alternatives for topsoil salvage</u> See the comment under 4(a) above.	<u>Chapter 1 - Section 1.4.4</u> Detailed information for topsoil salvage will be determined prior to construction during preconstruction surveys and in consultation with landowners.
		<u>X</u>		<u>(d) Methods to be used for removal of coarse rock from surface soils following construction</u>	<u>Chapter 1 - Section 1.4.4</u>
		<u>X</u>		<u>5) Roads</u>	<u>Chapter 1 - Section 1.4.5</u>
		<u>X</u>		<u>6) Construction ROW (min and max widths)</u>	<u>Chapter 1 - Section 1.4.6</u>

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17.20.1511 (Cont.)		X		<u>7) Alternative methods of stream crossings</u>	<u>Chapter 1 - Section 1.4.7</u>
		X		<u>a) Specification of equipment types</u>	<u>Chapter 1 - Section 1.4.7</u>
			X	<u>b) Estimates of trench width</u> <u>Provide the width that the burial depth would be carried laterally to account for lateral stream channel migration.</u>	<u>Chapter 1 - Section 1.4.7</u> <u>To be completed prior to construction based on pre-construction surveys and calculations. The standard design is to install the pipeline five feet below the channel depth for a distance of 15 feet beyond normal high water banks. Each channel will be evaluated prior to construction and will take into account the hydrologic and hydraulic parameters associated with each. The crossings will be designed accordingly.</u>
			X	<u>c) Estimates of scour depth</u> <u>DEQ – Incomplete.</u>	<u>Chapter 1 - Section 1.4.7</u> <u>See the response to 17.20.1511(7)(b) above.</u>
		X		<u>d) Amount of ground disturbance adjacent to stream crossings</u>	<u>Chapter 1 - Section 1.4.7</u>
		X		<u>8) Proposed and alternative methods for overhead stream crossings</u>	<u>Chapter 1 - Section 1.4.8</u>
		X		<u>9) Construction camps</u>	<u>Chapter 1 - Section 1.4.9</u>
		X		<u>10) Reclamation methods</u>	<u>Chapter 1 - Section 1.4.10</u>
		X		<u>11) Fire control</u>	<u>Chapter 1 - Section 1.4.11</u>
	17.20.1512		X		<u>1) Operation and maintenance procedures under normal and emergency conditions.</u>
		X		<u>Complaints from nearby residents for radio and television interference.</u>	<u>Chapter 4 – 4.3.13.4</u>
		X		<u>2) Ability to withstand mass movement, earthquakes, floods, high winds, accidents.</u>	<u>Chapter 1 - Section 1.5.2</u>
		X		<u>3) Land use controls, encroachment of buildings.</u>	<u>Chapter 1 - Section 1.5.3</u>

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17.20.1512 (Cont.)		X		4) <u>ROW vegetation, tree, & weed control methods; herbicide & trimming of vegetation control.</u>	<u>Chapter 1 - Section 1.5.4</u>		
				X		5) <u>Pipelines size and frequency of leaks</u>	<u>Chapter 1 - Section 1.5.5</u>
				X		6) <u>Description of leak detection system.</u>	<u>Chapter 1 - Section 1.5.6</u>
			X	7) <u>Detailed spill contingency plan, describing:</u> <u>DEQ Incomplete</u>	<u>Chapter 1 - Section 1.5.7, Attachment B</u> <u>An illustrative SPCC will be provided. A project-specific plan will be finalized prior to construction.</u>		
			X	a) <u>Immediate notification procedures</u> <u>DEQ Incomplete</u>	<u>Chapter 1 - Section 1.5.7, Attachment B</u> <u>An illustrative SPCC will be provided. A project-specific plan will be finalized prior to construction.</u>		
			X	b) <u>Type and location of emergency response personnel and equipment</u> <u>DEQ Incomplete</u>	<u>Chapter 1 - Section 1.5.7, Attachment B</u> <u>An illustrative SPCC will be provided. A project-specific plan will be finalized prior to construction.</u>		
			X	c) <u>c) Any mutual aid agreements to supply personnel and equipment and respond in the event of a spill</u> <u>DEQ Incomplete</u>	<u>Chapter 1 - Section 1.5.7, Attachment B</u> <u>An illustrative SPCC will be provided. A project-specific plan will be finalized prior to construction.</u>		
			X	d) <u>Response procedures</u> <u>DEQ Incomplete</u>	<u>Chapter 1 - Section 1.5.7, Attachment B</u> <u>An illustrative SPCC will be provided. A project-specific plan will be finalized prior to construction.</u>		
			X	e) <u>Equipment testing procedures</u> <u>DEQ Incomplete.</u>	<u>Chapter 1 - Section 1.5.7, Attachment B</u> <u>An illustrative SPCC will be provided. A project-specific plan will be finalized prior to construction.</u>		

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17.20.1512 (Cont.)			X	f) <u>Frequency of field training exercises</u> <u>DEQ – Incomplete.</u>	<u>Chapter 1 - Section 1.5.7, Attachment B</u> <u>An illustrative SPCC will be provided. A project-specific plan will be finalized prior to construction.</u>
			X	g) <u>Plan update procedures</u> <u>DEQ Incomplete.</u>	<u>Chapter 1 - Section 1.5.7, Attachment B</u> <u>An illustrative SPCC will be provided. A project-specific plan will be finalized prior to construction.</u>
Supplemental Information Request (SIR) 1 – January 20, 2009					
<u>SIR-1</u>	<u>1</u>			<u>Page 1-4, ¶ 4. Will there be remotely controlled or manually controlled valves on the upstream side of the river crossings as was done for Express Pipeline?</u>	<u>An intermediate mainline valve that can be remotely operated will be located on the upstream side of all major river crossings.</u>
<u>SIR-1</u>	<u>2</u>			<u>Page 1-10, ¶ 7. At specific locations – where?</u>	<u>Pressure transmitters will be installed at all intermediate valve sites, at all pump stations, and at the delivery metering facilities.</u>
<u>SIR-1</u>	<u>3</u>			<u>Page 1-12, Table 1-2. Above ground. (-113° F). Should this be a positive number?</u>	<u>For aboveground metering, the Charpy Impact Test temperature should read -45°C (-49°F).</u>
<u>SIR-1</u>	<u>4</u>			<u>Page 1-12, ¶ 2. Are all these at low elevations or are they just close to pump stations?</u>	<u>These are at low elevations and close to the discharge of the pump stations.</u>
<u>SIR-1</u>	<u>5</u>			<u>Page 1-14, Cathodic Protection. Please provide a diagram of rectifiers and anodes ground beds.</u>	<u>See Attachment P</u>
<u>SIR-1</u>	<u>6</u>			<u>Page 1-16, ¶ 1. Please provide a diagram showing microwave antennas, typical design and size.</u>	<u>In process</u>
<u>SIR-1</u>	<u>7</u>			<u>Page 1-19, ¶ 6. How much trench would be open at one time on a construction spread?</u>	<u>The crews on the construction spread are synchronized with the main line welding for efficiency. The amount of open trench is minimized to the extent possible and would typically be a maximum of 3 miles, corresponding to 3 days of mainline weld production.</u>
<u>SIR-1</u>	<u>8</u>			<u>Page 1-20, ¶ 1. Where would this padding come from in rocky areas?</u>	<u>To the extent possible, suitable padding material will be obtained by sorting the spoil material for the fines present in it. Where there is insufficient padding</u>

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					<u>material it will be imported from existing permitted borrow locations close to the construction easement.</u>
<u>SIR-1</u>	<u>9</u>			<u>Page 1-20, ¶ 9. Explain why topsoil salvage is not proposed on range and pasture land.</u>	<u>Topsoil salvage is described in Section 1.4.4. Topsoil will be salvaged on all range and agricultural land</u>
<u>SIR-1</u>	<u>10</u>			<u>Page 1-29, 1.4.10 ¶ 1. What topsoil salvage would be done on non-side slope conditions.</u>	<u>See response to SIR-1.9 (above)</u>
<u>SIR-1</u>	<u>11</u>			<u>Page 4-3, ¶ 3. Explain further how it will create value for Keystone's customers.</u>	<u>The Preferred Option is the Route Option B providing the lowest cost of transportation and the fastest transit time of shipper crude oil batches to the delivery points on the US Gulf Coast. It therefore creates the highest value option for customers.</u>
<u>SIR-1</u>	<u>12</u>			<u>Page 4-3, ¶ 4. Did you evaluate transmission / power lines impacts and costs in conjunction with this analysis? If so, describe the analysis.</u>	<u>The analysis of power line routings are included in Attachment O. The costs for the power lines and associated infrastructure were determined based on the length of the pipeline route multiplied by the estimated cost per mile of the power line.</u>
<u>SIR-1</u>	<u>13</u>			<u>Page 4-3, ¶ 6, 3rd bullet. So what is the disadvantage of this option?</u>	<u>The disadvantage of the large pump in parallel option is that the piping configuration is more complicated initially and expansion of the pumping capacity from the initial requirement is more complicated. The net result of this is a higher cost facility. The parallel configuration is good in situations where there are greater elevation differences, since it can maintain flow if there are problems with one or more train of pumps. Keystone XL does not have large elevation differences to deal with; therefore does not need this type of configuration or the greater costs and complexity.</u>

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<u>SIR-1</u>	<u>14</u>			<u>Page 4-4, ¶ 2. What are the relative environmental and cost merits and demerits of the proposed and alternative pipe grades?</u>	<u>From an environmental and safety point of view, the alternate pipe grades are the same. Design parameters, including pipe grade, are dictated by federal regulations. The use of either grade pipe will meet or exceed federal standards, thereby providing protection of human and environmental resources. A lower tonnage of API 5LX-80 pipe would be required relative to the API 5LX-70 pipe, however typically is more expensive per ton. Also, construction costs are higher for the higher grade pipe. Until bids are received for the pipe required, the relative cost merit of one grade versus the other is not known.</u>
<u>SIR-1</u>	<u>15</u>			<u>Page 4-19, ¶ 8. In big sagebrush habitat, why do shrubs need to be cleared?</u>	<u>Clearing of shrubs greater than 15 feet in height will occur only within 15 feet of the pipeline centerline to facilitate aerial patrols during operations.</u>
<u>SIR-1</u>	<u>16</u>			<u>Page 4-27, Table 4-12. Are these white-tailed or blacktailed prairie dogs?</u>	<u>Blacktailed prairie dogs. The project area is outside of white-tailed prairie dog range.</u>
<u>SIR-1</u>	<u>17</u>			<u>Page 4-41, ¶ 1. How long are the HDDs of the Milk, Missouri, and Yellowstone rivers expected to take?</u>	<u>Estimated time required and length of proposed HDDs in Montana follow. These estimates do not include the potential for rock boring.</u> <u>Milk River 36 days 3,400 horizontal feet</u> <u>Missouri River 24 days 1,982 horizontal feet</u> <u>Yellowstone River 30 days 3,100 horizontal feet</u>
<u>SIR-1</u>	<u>18</u>			<u>Page 4-42, ¶ 3. Please explain these techniques (address equipment and installation procedures) further.</u>	<u>Details of the BMPs referenced are found in the CMRP in sections 4.5, 6.4, and 7.7.</u>
<u>SIR-1</u>	<u>19</u>			<u>Page 4-47, ¶ 2. Identify or give examples of the types of mitigating and remedial measures that would meet state standards to protect aquatic species in the event of a release.</u>	<u>Attachment P, Response to SIR-1.19</u>
<u>SIR-1</u>	<u>20</u>			<u>Page 4-49. Provide copies of correspondence from DFWP and BLM identifying mitigating measures suggested by these agencies.</u>	<u>Correspondence to date has been provided in Attachment F. Correspondence will be updated throughout the permitting process.</u>
<u>SIR-1</u>	<u>21</u>			<u>Page 4-50, ¶ 3. Check with each county</u>	<u>In process</u>

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				<u>Conservation District crossed by the alternatives to determine which streams are considered perennial within the district and report your findings to DEQ.</u>	
<u>SIR-1</u>	<u>22</u>			<u>Page 4-52, ¶ 2. Review the Classifications, Beneficial Uses, and Standards for Ground Waters in ARM 17.30.1006 and update the information on page 4-52, ¶ 2.</u>	<u>Text has been modified on page 4-52.</u>
<u>SIR-1</u>	<u>23</u>			<u>Page 4-53, ¶ 4. Identify where state designated exceptional value waters are located along the alternatives in Montana or indicate that no such waters are located along the alternatives.</u>	<u>MTFWP classifies waters as outstanding waters. Routes A and A1 do not cross any outstanding value waters; Route B crosses the following outstanding waters: Milk River, Missouri River, and Yellowstone River.</u>
<u>SIR-1</u>	<u>24</u>			<u>Page 4-99, Table 4-48. How can 381.2 miles be crossed in Valley County, Montana.</u>	<u>Table 4-48 has been corrected.</u>
<u>SIR-1</u>	<u>25</u>			<u>Page 4-174, Footnote 1. Although there is a footnote regarding stream crossings, there is no information in the table regarding the relative numbers of streams crossed.</u>	<u>The table starts on the preceding page, 4-173, where the footnote is used in the table and the number of perennial streams per alternative is provided.</u>
<u>SIR-1</u>	<u>26</u>			<u>Page 4-182, 4.5.2, second to the last sentence. Provide a citation for this statement.</u>	<u>This statement is the professional opinion of TransCanada and its contractors. There is no citation available.</u>
<u>Other</u>				<u>Add text to Table 5-1 for Montana DEQ stating this additional agency action: Consider issuance of a certificate of compliance under MFS-2 for construction and operation of the proposed facility.</u>	<u>Text was added to Table 5-1.</u>