

# Technical Memorandum #2



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**To:** Clark County  
**From:** Deanna Hutchinson / Tim Kraft  
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**Subject:** Pollution Control Manual Comparison  
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To facilitate the update of the 2000 Clark County (CC) *Stormwater Pollution Control Manual* to meet the new NPDES permit, we compared the manual with Chapter 2, Volume IV of the 2005 Department of Ecology (DOE) *Stormwater Management Manual for Western Washington* and identified all differences. Several patterns emerged during analysis:

- The CC Manual Activity Sheets usually require that spill cleanup materials be stored onsite and that employees are properly trained in spill procedures, while the DOE Manual typically does not address this.
- The CC Manual discusses catch basin inserts as options for many of the BMPs, but this BMP is not discussed as a potential BMP in the corresponding sections of the DOE Manual.
- The CC Manual gives specific sweeping and/or cleaning intervals ranging from daily to monthly, while the DOE Manual gives the more general term “regular” sweeping and/or cleaning.
- While the CC Manual occasionally lists something not found in the DOE Manual, most of the CC Manual Activity Sheets are missing information contained in the DOE Manual.

Tables of the differences between the CC Manual and the DOE Manual (for all the CC Manual Activity Sheets that have corresponding sections in the DOE Manual) are found below. Differences that may be considered significant have been highlighted in yellow. Most of these differences are items that are discussed in the DOE manual and are missing from the CC Manual. However, some of the items are addressed in both manuals but conflict with each other. For example, in Activity Sheet A-13, the CC Manual allows mild detergents to be infiltrated into the ground. The DOE Manual is more restrictive and only allows washwater infiltration if no oils, soaps, or detergents are present. Another example can be found in Activity Sheet 30, where the CC Manual only requires tarps to be placed under boats during building, maintenance, and repair when the activity occurs over the water. In contrast, DOE requires tarps under the boat for these activities even when in dry dock.

Twenty of the CC Activity Sheets do not have corresponding BMPs in the DOE Manual. These include:

- Activity Sheet 1: Required BMPs for All Activities
- Activity Sheet 5: Storage of Pesticides and Fertilizers
- Activity Sheet 6: Storage and Treatment of Contaminated Soils
- Activity Sheet 7: Storage or Processing of Food Products
- Activity Sheet 11: Cleaning or Washing of Tools and Equipment
- Activity Sheet 12: Cleaning or Washing of Cooking Equipment
- Activity Sheet 14: Mobile Interior Washing Operations
- Activity Sheet 19: Concrete and Asphalt Production at Stationary Sites
- Activity Sheet 20: Concrete and Asphalt Application at Temporary Sites
- Activity Sheet 21: Manufacturing and Post-Processing of Metal Products
- Activity Sheet 25: Chemical Applications – Other Than for Landscaping
- Activity Sheet 27: Clearing and Grading of Small Construction Sites
- Activity Sheet 28: Demolition of Buildings
- Activity Sheet 29: Building Repair, Remodeling and Construction
- Activity Sheet 32: Sidewalk Maintenance
- Activity Sheet 33: Swimming Pool and Spa Cleaning and Maintenance
- Activity Sheet 35: Keeping Animals in Stables, Pens, Pastures, or Fields
- Activity Sheet 36: Logging
- Activity Sheet 37: Mining and Quarrying of Sand, Gravel, and Other Materials
- Activity Sheet 38: Well and Geotechnical Drilling

Sixteen of the DOE BMPs do not have corresponding Activity Sheets in the CC Manual. These include:

- BMPs for Commercial Printing Operations (p.2-13)
- BMPs for Deicing and Anti-Icing Operations – Airports and Streets (p.2-14)
- BMPs for Dust Control at Disturbed Land Areas and Unpaved Roadways and Parking Lots (p.2-16)
- BMPs for Dust Control at Manufacturing Areas (p.2-18)
- BMPs for Illicit Connections to Storm Drains
- BMPs for Log Sorting and Handling
- BMPs for Maintenance of Public and Private Utility Corridors and Facilities
- BMPs for Maintenance of Roadside Ditches
- BMPs for Maintenance of Stormwater Drainage and Treatment Systems
- BMPs for Manufacturing Activities – Outside
- BMPs for Mobile Fueling of Vehicles and Heavy Equipment
- BMPs for Railroad Yards
- BMPs for Roof/Building Drains at Manufacturing and Commercial Buildings

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- BMPs for Soil Erosion and Sediment Control at Industrial Sites
- BMPs for Spills of Oil and Hazardous Substances
- BMPs for Urban Streets

<b>Activity Sheet A-2: Storage of Liquid Materials in Stationary Tanks</b>					
<b>DOE Vol IV Page</b>	<b>CC Activity Sheet</b>	<b>CC Heading</b>	<b>CC Number</b>	<b>CC Bullet Point</b>	<b>Difference</b>
2-58	A-2	Min. Req.	1		DOE gives specifics of how to store liquids so that if the tank ruptures, the contents will not discharge. CC only discussed goal.
			1		CC discusses spill control device for materials that float on water. Not discussed in DOE.
			2	1	CC calls for drip pans or absorbent materials beneath potential spill and drip locations. DOE does not discuss absorbent materials.
			2	2	CC discusses where to store spill cleanup materials and employee spill response training. Not discussed in DOE.
			2	3	CC requires monthly sweeping and says to never hose down the area. DOE says to sweep and clean regularly.
			2	4	CC requires daily checking of tanks for leaks and spills. DOE only requires regular inspection of tank containment areas.
					DOE says all installations must comply with Uniform Fire Code. Not discussed in CC.
					DOE calls for tank overflow protection system. Not discussed in CC.
<b>Activity Sheet A-3: Storage of Any Liquid Material in Portable Containers</b>					
<b>DOE Vol IV Page</b>	<b>CC Activity Sheet</b>	<b>CC Heading</b>	<b>CC Number</b>	<b>CC Bullet Point</b>	<b>Difference</b>
2-55	A-3	Min. Req.	3		CC says to raise containers off the ground. Not discussed in DOE.
			5	1	CC discusses where to store spill cleanup materials and employee spill response training. Not discussed in DOE.
			5	2	CC requires monthly sweeping and says to never hose down the area. Not discussed in DOE.
			5	4	CC says to collect all spilled liquids and properly dispose of them. Not discussed in DOE.
					DOE says drums stored in area accessible by unauthorized persons must be secured. Not discussed in CC.
					DOE requires storage area to be covered, impervious, bermed or diked (sizing specified), and sloped to a dead-end sump. Not discussed in CC.
					DOE says to connect sump to sanitary sewer (if approved by local Sewer Authority) or provide treatment. Not discussed in CC.

<b>Activity Sheet A-4: Storage of Soil, Sand, Salt, and Other Erodible Materials</b>					
<b>DOE Vol IV Page</b>	<b>CC Activity Sheet</b>	<b>CC Heading</b>	<b>CC Number</b>	<b>CC Bullet Point</b>	<b>Difference</b>
2-60	A-4	Min. Req.	1		DOE calls for covers made from plastic sheeting. CC only says to cover stockpiles.
			1		For stockpiles too large to cover, DOE requires that contaminated stormwater not be discharged to catch basins with out treatment. Not discussed in CC.
			2	1	CC says to never hose down the area. Not discussed in DOE.
		Add. BMPs	1		CC discusses catch basin inserts for sediment removal. Not discussed in DOE.
					DOE requires area to be paved and include stormwater drainage system to prevent run on and runoff, reduce leachate, and provide treatment. Not discussed in CC.
					DOE lists appropriate treatment BMPs. Not discussed in CC.
					DOE calls for collection and recycling of leachate materials when feasible. Not discussed in CC.

<b>Activity Sheet A-8: Storage of Solid Waste and Food Waste</b>					
<b>DOE Vol IV Page</b>	<b>CC Activity Sheet</b>	<b>CC Heading</b>	<b>CC Number</b>	<b>CC Bullet Point</b>	<b>Difference</b>
2-55	A-8	Min. Req.	1		CC discusses waste piles that are not in containers. Not discussed in DOE.
			2		CC says to use drip pans or absorbent materials whenever grease containers are emptied. DOE says to place drip pans beneath all potential drip and spill location during filling and unloading of containers.
			2		CC says grease cannot be left on ground, but must be disposed of as garbage. Not discussed in DOE.
			3	1	CC says to check storage containers weekly. DOE says to check storage areas (containers and piping systems) regularly.
			3	2	CC says to sweep storage area monthly and never hose down the area. Not discussed in DOE.
			3	3	CC says to dispose of rinse and washwater into sanitary sewer. DOE says to drain dumpsters and/or dumpster pads to sanitary sewer.
					DOE says drums stored in area accessible by unauthorized persons must be secured. Not discussed in CC.
					DOE requires dumpsters to be covered to prevent stormwater entry. Not discussed in CC.
					DOE requires storage area to be covered, impervious, bermed or diked (sizing specified), and sloped to a dead-end sump. Not discussed in CC.
					DOE says to connect sump to sanitary sewer (if approved by local Sewer Authority) or provide treatment. Not discussed in CC.
<b>Activity Sheet A-9: Storage of Scrap and Recycling Materials</b>					
<b>DOE Vol IV Page</b>	<b>CC Activity Sheet</b>	<b>CC Heading</b>	<b>CC Number</b>	<b>CC Bullet Point</b>	<b>Difference</b>
2-50	A-9				CC gives instructions. DOE refers to separate manuals.
<b>Activity Sheet A-10: Treatment, Storage, or Disposal of Dangerous Wastes</b>					
<b>DOE Vol IV Page</b>	<b>CC Activity Sheet</b>	<b>CC Heading</b>	<b>CC Number</b>	<b>CC Bullet Point</b>	<b>Difference</b>
2-55	A-10				CC says to call DOE. DOE refers to Appendix IV-D R-3 and gives some specifics on p. 2-55 to 2-56.

<b>Activity Sheet A-13: Vehicle Washing and Steam Cleaning</b>					
<b>DOE Vol IV Page</b>	<b>CC Activity Sheet</b>	<b>CC Heading</b>	<b>CC Number</b>	<b>CC Bullet Point</b>	<b>Difference</b>
2-64	A-13	Min. Req.	1		Disagreement: CC says that mild detergents can be infiltrated into ground. DOE says infiltration only allowed if no oils, soaps, or detergents are in washwater.
			2		CC says designated wash areas must be well marked with signs. DOE says gas stations, multi-family residences, and businesses where non-employees wash vehicles must be marked.
					DOE allows inside washing to drain to sanitary sewer. Not discussed in CC.
					DOE says an NPDES permit may be required for treated wastewater discharge. Not discussed in CC.
					DOE discusses sizing and design of sumps, valves, and valve signage. Not discussed in CC.
					DOE calls for phosphate-free biodegradable detergents. Not discussed in CC.
					DOE wants washwater recycling considered. Not discussed in CC.
<b>Activity Sheet A-15: Pressure Washing of Buildings, Rooftops, and Other Large Objects</b>					
<b>DOE Vol IV Page</b>	<b>CC Activity Sheet</b>	<b>CC Heading</b>	<b>CC Number</b>	<b>CC Bullet Point</b>	<b>Difference</b>
2-64	A-15	Min. Req.	2		Disagreement: CC says that if only water is used, wash runoff can be infiltrated into ground. DOE says infiltration only allowed if no oils, soaps, or detergents are in washwater and soil has sufficient natural attenuation capacity for dust and sediment.
			3		CC discusses pressure washing on grassed areas. Not discussed in DOE.
			4		CC discusses hiring a mobile washer that recycles water. Not discussed in DOE.
		Add. BMPs	1		CC discusses catch basin inserts for sediment removal. DOE only discusses temporary plug systems used to collect water for treatment.
					DOE says an NPDES permit may be required for treated wastewater discharge. Not discussed in CC.
					DOE discusses sizing and design of sumps, valves, and valve signage. Not discussed in CC.
					DOE calls for phosphate-free biodegradable detergents. Not discussed in CC.
					DOE wants washwater recycling considered. Not discussed in CC.

<b>Activity Sheet A-16: Truck or Rail Loading and Unloading of Liquid Materials</b>					
<b>DOE Vol IV Page</b>	<b>CC Activity Sheet</b>	<b>CC Heading</b>	<b>CC Number</b>	<b>CC Bullet Point</b>	<b>Difference</b>
2-29	A-16	Min. Req.	1		CC gives specific instructions about storing and cleaning drip pans. Not discussed in DOE.
					DOE calls for frequent sweeping of areas. Not discussed in CC.
					DOE calls for regular checking of equipment for leaks. Not discussed in CC.
					DOE requires spills of reportable quantities to be reported to DOE. Not discussed in CC.
					DOE requires an Emergency Spill Cleanup Plan and gives specifics. Not discussed in CC.
					DOE states petroleum product loading and unloading must comply with Coast Guard requirements. Not discussed in CC.
					DOE gives specifics of structural source control BMPs. Not discussed in CC.
					DOE gives specifics of loading and unloading dock requirements. Not discussed in CC.
					DOE gives specifics of tanker truck transfer areas. Not discussed in CC.
<b>Activity Sheet A-17: Fueling Operations</b>					
<b>DOE Vol IV Page</b>	<b>CC Activity Sheet</b>	<b>CC Heading</b>	<b>CC Number</b>	<b>CC Bullet Point</b>	<b>Difference</b>
2-19	A-17	Min. Req.	3	1	CC calls for signs preventing changing engine oil or other fluids. Not discussed in DOE.
			4		CC says to cease fueling if emergency spill materials and training can't be provided. Not discussed in DOE.
			5		Disagreement: CC calls for drip pans or absorbent materials for mobile fueling. DOE calls for mobile fueling over impervious contained areas.
		Add. BMPs	1		CC discusses absorbent materials around storm drains. Not discussed in DOE.
			2		CC discusses catch basin inserts. Not discussed in DOE.
					DOE gives specifics for vehicles ≥10 feet tall. Not discussed in CC.

<b>Activity Sheet A-18: Engine Repair and Maintenance</b>					
<b>DOE Vol IV Page</b>	<b>CC Activity Sheet</b>	<b>CC Heading</b>	<b>CC Number</b>	<b>CC Bullet Point</b>	<b>Difference</b>
2-34	A-18	Min. Req.	1		Disagreement: DOE says to conduct all maintenance and repair under cover. CC gives instructions for temporary work outside.
			3	1	Similarities to DOE p.2-34 fourth bullet under Applicable Operational BMPs, but DOE does not mention educating employees.
				2	Storage of spill cleanup materials not discussed in DOE.
				3	Weekly sweeping not discussed in DOE.
				3	Disagreement: CC says to "never" hose down area. DOE says to "avoid" hosing down areas.
		Add. BMPs	1		CC discusses absorbent materials around storm drains. Not discussed in DOE.
			2		CC discusses catch basin inserts. Not discussed in DOE.
					DOE requires vehicles, parts, and equipment temporarily stored outside to be checked for leaks. Not discussed in CC.
					DOE requires drip pans. Not discussed in CC.
					DOE requires removal or batteries and liquids in designated areas. Not discussed in CC.
					DOE prevents discharge of washwater, liquid waste, or other pollutants in to storm drains or surface water. Sanitary sewer connection required if allowed, or specified treatment. Not discussed in CC.
					DOE discussed treatment for snowmelt. Not discussed in CC.
					DOE gives specifics about applicable structural source control BMPs. Not discussed in CC.
					DOE gives specifics about additional operational BMPs not listed in CC.

<b>Activity Sheet A-22: Painting, Finishing and Coating of Vehicles, Products and Equipment</b>					
<b>DOE Vol IV Page</b>	<b>CC Activity Sheet</b>	<b>CC Heading</b>	<b>CC Number</b>	<b>CC Bullet Point</b>	<b>Difference</b>
2-46	A-22	Min. Req.	1		CC more restrictive: CC does not allow unenclosed spraying or sand/grit blasting. DOE allows it if not windy.
			1		DOE calls for OSHA and WISHA requirements to be met. Not discussed in CC.
			2	1	CC discusses storing spill cleanup materials and employee spill response training. Not discussed in DOE.
			2	4	CC calls for end of day sweeping. Not discussed in DOE.
					DOE does not allow spraying, blasting, or sanding activities over open water or where wind may blow paint into water. Not discussed in CC.
					DOE requires any hose water to be properly treated and disposed of. Not discussed in CC.
					DOE requires runoff control devices if catch basins are at risk. Not discussed in CC.
					DOE requires paint mixing and tool cleaning outside of where spills can contaminate stormwater. Not discussed in CC.
					DOE prevents uncontrolled releases to air, ground, or water. Not discussed in CC.
					DOE requires cleaning solvents to be recycled or properly disposed of. Not discussed in CC.
					DOE requires toxic materials to be covered under tarps during precipitation or when not in use. Not discussed in CC.
					DOE gives specifics about additional operational BMPs not listed in CC.

<b>Activity Sheet A-23: Wood Treatment and Preserving</b>					
<b>DOE Vol IV Page</b>	<b>CC Activity Sheet</b>	<b>CC Heading</b>	<b>CC Number</b>	<b>CC Bullet Point</b>	<b>Difference</b>
2-67	A-23	Min. Req.	1		CC calls for ground cloths or drip pans. Not discussed in DOE.
			2		CC requires portable preservative containers to be stored in a covered location. Not discussed in DOE.
			3		Disagreement: CC requires dipped lumber to be held over dip tanks until dripping ceases. DOE specifies 30 minutes.
			4		Disagreement: CC calls for restricting stormwater from entering storage area. DOE calls for treated wood products in storage to be elevated to prevent stormwater contact.
			5		CC calls for treatment work areas and equipment to be contained safe from stormwater entering the area and pollutants from leaving the area. DOE only calls for dedicated treatment equipment to prevent tracking treatment equipment to other areas on the site or scrubbing down non-dedicated lift trucks on the drip pad.
					DOE calls for non-process treatment to be eliminated on the drip pad. Not discussed in CC.
					DOE requires immediate removal of contaminated soil. Not discussed in CC.
					DOE gives instructions if wood is observed to be contributing chemicals to the environment. Not discussed in CC.
					DOE recommends using preservatives that do not adversely affect surface and groundwater. Not discussed in CC.
					DOE gives specifics about treatment area design. Not discussed in CC.
					DOE requires segregation of clean stormwater from process water (Process water must be treated). Not discussed in CC.
					DOE requires holes or cracks in asphalt areas subject to chemical contamination to be sealed. Not discussed in CC.

<b>Activity Sheet A-24: Commercial Composting</b>					
<b>DOE Vol IV Page</b>	<b>CC Activity Sheet</b>	<b>CC Heading</b>	<b>CC Number</b>	<b>CC Bullet Point</b>	<b>Difference</b>
2-11	A-24	Min. Req.	4		DOE calls for sumps or catch basins capable of collecting all leachate. Not discussed in CC.
		Add. BMPs	1		CC discusses catch basin inserts. Not discussed in DOE.
					DOE says to contact federal, state, and local agencies (including health department) with environmental or zoning authority for applicable permit and regulatory information. Not discussed in CC.
					DOE offers instructions about whether a General Permit is required. Not discussed in CC.
					DOE requires a plan of operations. Not discussed in CC.
					DOE requires finished compost to be stored to prevent stormwater contamination. Not discussed in CC.
					DOE requires treatment or storage ponds to be lined and AKART to be applied. Not discussed in CC.
					DOE gives specifics about additional BMPs not listed in CC.

<b>Activity Sheet A-26: Landscaping Activities</b>					
<b>DOE Vol IV Page</b>	<b>CC Activity Sheet</b>	<b>CC Heading</b>	<b>CC Number</b>	<b>CC Bullet Point</b>	<b>Difference</b>
2-23	A-26	Min. Req.	1		CC does not allow chemicals to be applied directly to surface waters without a permit. Not discussed in DOE.
			2		Disagreement: CC says not to apply pesticides when it is raining. DOE also says not to apply when it is raining and immediately before expected rain.
			4		CC says to avoid planting noxious plant species or species of county concern. Not discussed in DOE.
			5	2	CC calls for employee training on pesticide and their application techniques. Not discussed in DOE.
		Add. BMPs	1		DOE gives specifics about integrated pest management not included in CC.
			4		CC gives more details about soil mixing than DOE.
					DOE calls for the installation of soil/landscape systems to improve infiltration. Not discussed in CC.
					DOE calls for mulch-mowing whenever practicable. Not discussed in CC.
					DOE requires a pesticide-use plan. Not discussed in CC.
					DOE requires the least toxic applicable pesticide to be used, and used when the pest is most vulnerable. Not discussed in CC.
					DOE requires application in accordance with label directions. Not discussed in CC.
					DOE requires pesticide mixing and equipment cleaning where accidental spills cannot enter surface or ground waters or contaminate soils. Not discussed in CC.
					DOE requires pesticides to be stored covered in areas that do not discharge to storm drains, no hosing the surfaces, and spill cleanup material stored near the storage area. Not discussed in CC.
					DOE requires pesticide spills to be cleaned up and contaminated waste materials kept in designated covered and contained areas. Not discussed in CC.
					DOE requires application equipment to be capable of immediate shutoff. Not discussed in CC.
					DOE requires all sensitive areas to be flagged prior to spraying.
					DOE or local government may require public posting of area prior to spraying. Not discussed in CC.
					DOE gives specifics about additional operational BMPs for the use of pesticides not listed in CC.
					DOE gives specifics about operational BMPs for vegetation management not listed in CC.

<b>Activity Sheet A-30: Boat Building, Maintenance and Repair</b>					
<b>DOE Vol IV Page</b>	<b>CC Activity Sheet</b>	<b>CC Heading</b>	<b>CC Number</b>	<b>CC Bullet Point</b>	<b>Difference</b>
2-7	A-30	Min. Req.	1		CC says to move maintenance and repair activities on-shore if possible. Not discussed in DOE.
			3		CC only lists use of ground cloths for painting and finishing. DOE also lists drip pans, tarpaulins, or other protective devices.
			4		CC more stringent: calls for collection of bilge and ballast water with an oily sheen for proper disposal, while DOE calls for maintenance of automatic bilge pumps to prevent waste material from being pumped automatically into surface water.
			7	1	CC requires storage of spill cleanup materials and employee training. DOE requires notification.
			7	2	CC does not allow hosing down at all. DOE allows it if hosing is unavoidable and water is collected. CC also specifies weekly sweeping. DOE calls for regular sweeping.
		Add. BMPs	2		<b>Disagreement: Tarps under the boat required by CC when over water. Required by DOE even over dry dock.</b>
			3		CC more stringent: calls for all used oil and oil filters to be recycled. DOE only recommends recycling of these (and additional) materials.
			4		CC does not allow soaps or detergents to be used on boat topsides if washwater can enter storm drains, streams, wetlands, or lakes. Not discussed in DOE.
					<b>DOE calls for proper disposal of greasy rags, oil filters, air filters, batteries, spent coolant, and degreasers. Not discussed in CC.</b>
					<b>DOE calls for oil filters to be drained. Not discussed in CC.</b>
					<b>DOE discussed sanitary sewage conveyance. Not discussed in CC.</b>
					<b>DOE prohibits spray painting, blasting, or sanding during windy conditions that render containment ineffective. Not discussed in CC.</b>
					<b>DOE does not allow paint to be burnt or to use spray guns on topsides or above decks. Not discussed in CC.</b>
					<b>DOE requires deck drainage to be settled and/or treated in a collection system sump. Not discussed in CC.</b>
					<b>DOE requires cracked batteries to be covered in a secondary container. Not discussed in CC.</b>
					<b>DOE calls for additional BMPs from other sections to be used as applicable. Not discussed in CC.</b>

<b>Activity Sheet A-31: Vehicle and Equipment Parking and Storage</b>					
<b>DOE Vol IV Page</b>	<b>CC Activity Sheet</b>	<b>CC Heading</b>	<b>CC Number</b>	<b>CC Bullet Point</b>	<b>Difference</b>
2-48	A-31	Min. Req.	1		CC requires monthly sweeping. DOE requires regular sweeping.
		Add. BMPs	1		CC calls for employee incentives for carpooling or public transit. Not discussed in DOE.
			2		CC calls for customer discounts for public transit users. Not discussed in DOE.
			3		CC discusses catch basin inserts. Not discussed in DOE.
					DOE discusses oil/water separator systems. Not discussed in CC.
					DOE discusses definition of "high use" sites. Not discussed in CC.
<b>Activity Sheet A-34: Keeping Animals in Controlled Areas</b>					
<b>DOE Vol IV Page</b>	<b>CC Activity Sheet</b>	<b>CC Heading</b>	<b>CC Number</b>	<b>CC Bullet Point</b>	<b>Difference</b>
2-10	A-34				No differences