STATUS REPORT
2006 Best Available Control Measures for Columbia Plateau Agriculture

March, 2007

Summary

This report fulfills Ecology's commitment to review and report annually on the use of Best Available Control Measures (BACM) in the Columbia Plateau. Ecology committed to provide such a report to the Environmental Protection Agency (EPA) in the revised Natural Events Action Plan (NEAP).

The level of Conservation Reserve Program (CRP) and Best Management Practice (BMP) use remains at 78 percent in the priority counties of the Columbia Plateau. Seventy eight percent of the total farmable acres in these counties are now part of a United States Department of Agriculture (USDA) conservation program, use one of the minimum till practices, or contain 15-30% residue. Washington State finds this level of CRP and BMP implementation easily fulfills BACM criteria.

Background

EPA issued the policy on "Areas Affected by PM-10 Natural Events", or the Natural Events Policy (NEP), on May 30, 1996. Under the NEP, ambient PM_{10} concentrations raised by unusually high winds may be treated as uncontrollable natural events when the dust originates from nonanthropogenic sources, or when the dust originates from contributing anthropogenic sources controlled with BACM. After natural events cause the PM_{10} concentration to violate the PM_{10} National Ambient Air Quality Standard, the NEP allows a state to develop a natural events action plan (NEAP) to deal with future exceedances.

A number of exceedances of the 24-hour standard for PM_{10} were recorded in eastern Washington in the late 1980*s* and early 1990*s*. Examination of the exceedances showed a close correlation to high wind events and upwind agricultural fields were identified as the chief source of the wind-blown dust. The Washington State Department of Ecology (Ecology) developed the *Natural Events Action Plan for High Wind Events in the Columbia Plateau* in March 1998, and submitted it to Region 10 EPA, in accordance with the NEP.

The 1998 NEAP included Ecology's commitment to re-evaluate the NEAP at the end of 2001. The 2001 evaluation is embodied in the revised NEAP submitted to EPA in July, 2003. Several changes were incorporated into the revised NEAP including Ecology's commitment to review and report to EPA annual BACM implementation.

BACM Definition and Tracking Mechanism

The revised NEAP defines BACM for agricultural fields as USDA Conservation Title Programs supplemented by incentive based implementation of wind erosion conservation practices or BMPs. In short, the BACM definition recognizes the critical role of agricultural agencies in

defining and instituting BACM on the Columbia Plateau. The primary agencies include those directly reporting to the USDA such as the Natural Resources Conservation Service (NRCS), the Farm Service Agency (FSA), and the Agricultural Research Service (ARS). Additional agricultural agencies include the Washington State Conservation Commission, local Conservation Districts and various agriculture related departments of the Washington State University. The NEAP acknowledges the combined expertise of these agencies and relies on the various programs of these agencies in implementing the conservation practices that constitute BACM.

For defining BACM, the NEAP uses the USDA's CRP program and the wind erosion BMPs encouraged by the NRCS and/or the Columbia Plateau Wind Erosion /Air Quality Project (referred to as the CP3). Use of these practices is tracked by the Conservation Technology Information Center's (CTIC), Core 4 program. The CTIC's Core 4 program tracks conservation tillage (No-Till, Ridge-Till, Mulch-Till) and conventional tillage (0-15% and 15-30% residue) practices and CRP enrollment on a county by county basis.

A full discussion on Ecology's BACM definition and tracking mechanism is found in the revised NEAP.

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The 2003 NEAP determined BACM is implemented in the Columbia Plateau based on 68 percent use of conservation practices. Attachment 1 shows the implementation of conservation practices for the seven priority counties, as defined in the NEAP. These counties have the lowest rainfall and thus are the most susceptible to windblown dust.

Data evaluated is for the year 2004, the most current year for which data is available. The evaluation includes data on CRP, minimum tillage, and residue remaining on the field for the lowest rainfall counties of the Columbia Plateau - counties Ecology finds to be high priority in terms of addressing wind blown dust. Ecology identified Adams, Douglas, Franklin, Grant and Lincoln as priority counties in the 1998 NEAP. Benton and Walla Walla counties were added to the list more recently. The Core 4 data shows 78 percent of the priority counties' total farmable acres are in a USDA conservation program, use one of the minimum till practices, or contain 15-30% residue.

Similarly, attachment 2 shows the implementation of conservation practices for all counties of the Columbia Plateau NEAP. The data shows 79 percent use of conservation practices throughout the Columbia Plateau.

The results are consistent with the 2003 NEAP determination and show that we continue to meet BACM requirements.

Additional Efforts to Enhance Wind Erosion Conservation Measures

Previous reports have shown that Ecology continues to work with the various agricultural agencies to enhance the use of conservation practices in the Columbia Plateau. Ecology initiated these efforts in 2003 via the Benton Conservation District (BCD) and a special funds grant from the EPA.

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The momentum from this early effort with State and local agricultural agencies and farmers continues, as described below. Thus, through 2006 implementation of wind erosion conservation measures were enhanced beyond that which is tracked and reported by the Core 4.

Enhancing Wind Erosion Conservation Measures in Priority Counties of the Columbia Plateau:

1. As of the winter 2006 planting season, roughly 160 acres of wind erosion buffer strips have been planted in the Horse Heaven Hills, Benton County.

   This effort is a result of an education and outreach program that focused on wind erosion conservation buffers as a longer-term solution to wind erosion. The BCD, USDA-Natural Resources Conservation Service, Ecology, and the Benton Clean Air Authority conducted the outreach in 2004 and numerous growers responded favorably to implementing conservation buffers on a trail basis.

   As a result, Ecology, the BCD and EPA developed a special funds grant to facilitate installation of long-term (10 years to permanent) wind erosion buffers in the Horse Heaven Hills. The wind erosion field border grant began in 2005 and though no formal decision has been made, the BCD has identified a few promising funding options to extend the program beyond the period designated in the grant.

   The BCD promotes wind erosion buffer strips as an EQIP eligible wind erosion best management practice through the NRCS local workgroup.

2. In 2006, 5 farmers managed weed control on 888 acres through chemical-fallow with the introduction of an automatic spot spray system – the WeedSeeker®. The BCD estimates that this effort reduced soil erosion by 2.6 tons/acre for a total of 2039 tons/soil saved from erosion.

   In partnership with Ecology's Air Quality Program, the BCD, Washington State University (WSU) and others, the Washington State Conservation Commission (CC) secured a grant under Ecology's water program to enhance wind erosion practices in Benton County. The grant provided funds for the BCD to purchase a Weedseeker® that is now being rented by farmers. The WeedSeeker® uses advanced technology to 'sense' the chlorophyll color in a weed and spray accordingly. This reduces the frequency of field operations, increases surface residue, roughness and stability - and ultimately protects the soil against the lofting forces of high winds and keeps the soil on the ground rather than in the air.

3. As of spring 2007, 35 Columbia Plateau dryland wheat farmers have cost-shared the purchase of 35 low-disturbance primary tillage implements through Washington's USDA/NRCS Conservation Innovation Grant (CIG).

   In 2006, in partnership with Ecology's Air Quality Program and Washington State University (WSU) the Washington Association of Wheat Growers (WAWG) secured a $900,000 grant to cost-share 50 low-disturbance primary tillage implements with Columbia Plateau dryland wheat farmers.

The CIG grant requires growers to commit to an innovative management system which combines a distinct primary tillage regiment with a more recent undercutter sweep technology. When coupled with the proposed primary tillage regiment, the undercutter combines to create a management system that significantly minimizes mixing or stirring of the soil for excellent control of wind erosion.

The primary goal of the grant is to promote widespread use of the undercutter method of summer-fallow farming throughout the Columbia Plateau in order to significantly reduce wind erosion and suspended dust emissions. According to William F. Schillinger, Ph.D. WSU Crop and Soil Sciences, this project has the potential to revolutionize dryland wheat farming in the low-precipitation (< 12-inch annual) wheat production region of the Columbia Plateau.

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2005 BACM Status Report:
Columbia Pleateau Priority Counties

		BACM	BACM (component 2) -				BACM total	
Adams		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	216,362	216,362					216,362	100.00%
Fallow acres	232,154		9,288	0	44,352	155,232	208,872	89.97%
Planted acres	368,264		23,985	0	62,419	197,193	283,597	77.01%
Total farmable acres	816,780	**26%**	33,273	0	106,771	352,425	708,831	**86.78%**
Benton		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	98,885	98,885					98,885	100.00%
Fallow acres	131,488		3,550	0	0	67,979	71,529	54.40%
Total planted acres	232,100		2,488	0	2,212	124,202	128,902	55.54%
Total farmable acres	462,473	**21%**	6,038	0	2,212	192,181	299,316	**64.72%**
Douglas		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	189,094	189,094					189,094	100.00%
Fallow acres	245,000		0	0	15,000	100,000	115,000	46.94%
Total planted acres	183,601		5,200	0	74,700	64,830	144,730	78.83%
Total farmable acres	617,695	**31%**	5,200	0	89,700	164,830	448,824	**72.66%**
Franklin		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	116,048	116,048					116,048	100.00%
Fallow acres	60,000		0	0	0	56,000	56,000	93.33%
Total planted acres	240,330		0	0	8,000	96,300	104,300	43.40%
Total farmable acres	416,378	**28%**	0	0	8,000	152,300	276,348	**66.37%**
Grant		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	62,061	62,061					62,061	100.00%
Fallow acres	102,000		1,020	0	24,480	60,180	85,680	84.00%
Total planted acres	342,700		5,310	0	60,540	101,090	166,940	48.71%
Total farmable acres	506,761	**12%**	6,330	0	85,020	161,270	314,681	**62.10%**
Lincoln		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	112,904	112,904					112,904	100.00%
Fallow acres	273,792		27,379	0	95,827	136,896	260,102	95.00%
Total planted acres	450,061		43,715	0	160,912	213,540	418,167	92.91%
Total farmable acres	836,757	**13%**	71,094	0	256,739	350,436	791,173	**94.55%**
Walla Walla		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	160,263	160,263					160,263	100.00%
Fallow acres	112,624		50,500	0	13,500	18,624	82,624	73.36%
Total planted acres	262,831		43,804	0	86,275	78,981	209,060	79.54%
Total farmable acres	535,718	**30%**	94,304	0	99,775	97,605	451,947	**84.36%**
SUMMARY		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
Total farmable acres	4,192,562	955,617	216,239	0	648,217	1,471,047	3,291,120	
		23%	**5%**	**0%**	**15%**	**35%**		**78%**

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		BACM	BACM (component 2) -				BACM total	
Adams		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	216,362	216,362					216,362	100.00%
Fallow acres	232,154		9,288	0	44,352	155,232	208,872	89.97%
Planted acres	368,264		23,985	0	62,419	197,193	283,597	77.01%
Total farmable acres	816,780	**26%**	33,273	0	106,771	352,425	708,831	**86.78%**
Asotin		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	29,720	29,720					29,720	100.00%
Fallow acres	18,561		5,000	0	3,000	10,561	18,561	100.00%
Planted acres	28,763		9,133	0	5,160	14,470	28,763	100.00%
Total farmable acres	77,044	**39%**	14,133	0	8,160	25,031	77,044	**100.00%**
Benton		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	98,885	98,885					98,885	100.00%
Fallow acres	131,488		3,550	0	0	67,979	71,529	54.40%
Total planted acres	232,100		2,488	0	2,212	124,202	128,902	55.54%
Total farmable acres	462,473	**21%**	6,038	0	2,212	192,181	299,316	**64.72%**
Chelan		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	1,373	1,373					1,373	100.00%
Fallow acres	300		0	0	0	300	300	100.00%
Total planted acres	390		0	0	0	390	390	100.00%
Total farmable acres	2,063	**67%**	0	0	0	690	2,063	**100.00%**
Columbia		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	47,329	47,329					47,329	100.00%
Fallow acres	24,764		9,906	0	4,952	0	14,858	60.00%
Total planted acres	115,313		77,021	0	0	16,492	93,513	81.09%
Total farmable acres	187,406	**25%**	86,927	0	4,952	16,492	155,700	**83.08%**
Douglas		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	189,094	189,094					189,094	100.00%
Fallow acres	245,000		0	0	15,000	100,000	115,000	46.94%
Total planted acres	183,601		5,200	0	74,700	64,830	144,730	78.83%
Total farmable acres	617,695	**31%**	5,200	0	89,700	164,830	448,824	**72.66%**
Ferry		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	1,091	1,091					1,091	100.00%
Fallow acres	500		0	0	0	200	200	40.00%
Total planted acres	3,800		0	0	0	1,150	1,150	30.26%
Total farmable acres	5,391	**20%**	0	0	0	1,350	2,441	**45.28%**
Franklin		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	116,048	116,048					116,048	100.00%
Fallow acres	60,000		0	0	0	56,000	56,000	93.33%
Total planted acres	240,330		0	0	8,000	96,300	104,300	43.40%
Total farmable acres	416,378	**28%**	0	0	8,000	152,300	276,348	**66.37%**
Garfield		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	52,914	52,914					52,914	100.00%
Fallow acres	48,869		17,871	0	23,668	7,330	48,869	100.00%
Total planted acres	96,806		30,530	0	37,033	29,243	96,806	100.00%
Total farmable acres	198,589	**27%**	48,401	0	60,701	36,573	198,589	**100.00%**
Grant		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	62,061	62,061					62,061	100.00%
Fallow acres	102,000		1,020	0	24,480	60,180	85,680	84.00%
Total planted acres	342,700		5,310	0	60,540	101,090	166,940	48.71%
Total farmable acres	506,761	**12%**	6,330	0	85,020	161,270	314,681	**62.10%**

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Kittitas		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	3,270	3,270					3,270	100.00%
Fallow acres	3,100		0	0	0	2,480	2,480	80.00%
Planted acres	18,300		0	0	0	5,738	5,738	31.36%
Total farmable acres	24,670	**13%**	0	0	0	8,218	11,488	**46.57%**
Klickitat		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	60,168	60,168					60,168	100.00%
Fallow acres	22,028		0	0	0	16,080	16,080	73.00%
Planted acres	69,452		16,591	0	0	39,986	56,577	81.46%
Total farmable acres	151,648	**40%**	16,591	0	0	56,066	132,825	**87.59%**
Lincoln		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	112,904	112,904					112,904	100.00%
Fallow acres	273,792		27,379	0	95,827	136,896	260,102	95.00%
Total planted acres	450,061		43,715	0	160,912	213,540	418,167	92.91%
Total farmable acres	836,757	**13%**	71,094	0	256,739	350,436	791,173	**94.55%**
Okanogan		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	4,108	4,108					4,108	100.00%
Fallow acres	6,854		0	0	0	4,928	4,928	71.90%
Total planted acres	26,320		0	0	0	19,044	19,044	72.36%
Total farmable acres	37,282	**11%**	0	0	0	23,972	28,080	**75.32%**
Pend Oreille		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	0	**0%**					0	NA
Fallow acres	0		0	0	0	0	0	NA
Total planted acres	2,000		0	0	0	1,000	1,000	50.00%
Total farmable acres	2,000	**0%**	0	0	0	1,000	1,000	**50.00%**
Spokane		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	32,096	32,096					32,096	100.00%
Fallow acres	21,000		5,000	0	10,000	5,000	20,000	95.24%
Total planted acres	251,895		20,500	0	99,189	94,752	214,441	85.13%
Total farmable acres	304,991	**11%**	25,500	0	109,189	99,752	266,537	**87.39%**
Stevens		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	3,138	3,138					3,138	100.00%
Fallow acres	5,214		0	0	0	4,000	4,000	76.72%
Total planted acres	24,521		1,230	0	1,600	11,007	13,837	56.43%
Total farmable acres	32,873	**10%**	1,230	0	1,600	15,007	20,975	**63.81%**
Walla Walla		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	160,263	160,263					160,263	100.00%
Fallow acres	112,624		50,500	0	13,500	18,624	82,624	73.36%
Total planted acres	262,831		43,804	0	86,275	78,981	209,060	79.54%
Total farmable acres	535,718	**30%**	94,304	0	99,775	97,605	451,947	**84.36%**
Whitman		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	149,790	149,790					149,790	100.00%
Fallow acres	170,500		30,000	0	20,000	61,000	111,000	65.10%
Total planted acres	717,202		106,391	0	115,678	306,204	528,273	73.66%
Total farmable acres	1,037,492	**14%**	136,391	0	135,678	367,204	789,063	**76.05%**
Yakima		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
HEL withdrawn from production	55,455	55,455					53727	96.88%
Fallow acres	8,175		0	0	0	2,853	2,853	34.90%
Total planted acres	66,700		0	0	4,224	16,903	21,127	31.67%
Total farmable acres	130,330	**43%**	0	0	4,224	19,756	77,707	**59.62%**
SUMMARY		**CRP**	**No-Till**	**Ridge-Till**	**Mulch-Till**	**15-30% Residue.**	**acres**	**% acres**
Total farmable acres	6,384,341	1,396,069	545,412	0	972,721	2,142,158	5,054,632	
		22%	**9%**	**0%**	**15%**	**34%**		**79%**