

Upper Big Blue NRD

Phase II & III/Hastings Wellhead Protection Groundwater Management Area Report For 2023 - 2024 Crop Year

Please follow the instructions below for each column of the report form.
Each line may be used to report information for one field, up to 12 fields may be reported on one form.

- Column #1 **Legal Description** - Enter legal description that best describes the field location. Example: SW4 6-T10N-R02W.
- Column #2 **Farm Name** - Optional description that you use to identify this field. Example: West 80 or Home Place.
- Column #3 **Was crop irrigated in 2023 YES/NO?** - Enter YES or NO. **DO NOT** combine irrigated and dryland fields or different crops or crop history into one line/row. Always list irrigated and dryland field acres as different fields (in different line on report). This includes pivot corners. Example, Dryland corners on the same center pivot with the same crop history may be combined into one field if the same crop was grown.
- Column #4 **Crop grown in 2023? Reminder: If you grew corn on 150 acres in 2023 and in 2024 you plan to grow 75 acres of corn and 75 acres of soybeans on those acres you must enter each field separately.**
- Column #5 **Actual yield (bu/acre)? List bushels/acre harvested in 2023 from the field**
- Column #6 **Acres in field?** List the number of crop acres in this field
- Column #7 **PRE PLANT N applied for 2023 crop lbs/acre? How much nitrogen fertilizer was applied before planting for the 2023 harvested last fall?**
- Column #8 **POST PLANT N applied for 2023 crop (lbs./ac.)? How much nitrogen fertilizer was applied after planting for the 2023 harvested last fall?**
- Column #9 **Inhibitor Used YES/NO?** - Enter YES or NO. List the name of the product used on the top of the form. If more than one product is used please list them all.
- Column #10 **Crop planned for 2024? What crop will you plant in this field in 2024**

If you plan to grow any crop other than corn, corn silage, popcorn or milo in a field in 2024 you DO NOT need to complete columns 11 thru 19.

- Column #11 **Expected yield for 2024 crop (bu./ac)?** The University of Nebraska recommends that expected year be calculated by taking the average for the last 5 years and adding 5 percent Example : YR 1 = 200, YR 2 = 210, YR 3 = 195, YR 4 = 225, YR 5 = 215 Average = 209 X 1.05 = 220 bu/acre expected yield.
- Column #12 **Deepest soil samples taken for 2024 crop? Enter depth in inches. Example: 24 or if you did not soil sample due to rotation enter 0 or none. These samples should have been taken in the fall of 2023 or the winter of 2024 before fertilizer application. IT IS REQUIRED TO INCLUDE A COPY OF THE SOIL SAMPLE**
- Column #13 **Percent organic matter?** This should be on your soil test results for the shallow (0-8") samples. If the actual organic matter is not known, use 2%.
- Column #14 **UNL total N Needed (lbs/acre)?** Refer to the TOTAL NITROGEN NEEDED tables provided for the crop to be planted.
- Column #15 **Soil Nitrate ppm ?** This is on your soil test results. If a shallow and deep sample were taken the two samples must be averaged. If a partial soil sample is taken (shallow only, 0" to 8" due to rotation) use 3 ppm for the deep area. The average ppm can be found on Table 5 - CARRYOVER NITRATE NITROGEN.
- Column #16 **Residual Soil N (lbs/acre)?** Multiply the ppm in column 15 by 8. (Example: 6X8 =48) If no soil tests were taken enter 24.
- Column #17 **N from previous crop (lbs/acre)?** For soybean credit use 45 lbs. For alfalfa or other legume refer to Table 6 - PREVIOUS LEGUME CROP CREDIT.
- Column #18 **N from Other Sources?** Nitrogen may be available from other sources such as irrigation water or livestock waste. If use had your irrigation water tested for nitrate refer to Table 7 -NITROGEN FROM IRRIGATION WATER. If you applied livestock waste refer to Table 8 - NITROGEN FOR OTHER SOURCES.
- Column #19 **UNL Recommended N Rate (lbs/acre)? To determine this subtract columns 16, 17 and 18 from column 14. Example: 210 - 24 - 45 - 0 = 141 lbs/acre. THIS IS THE AMOUNT OF NITROGEN YOUR 2023 CROP REQUIRES BASED ON THE UNIVERSITY OF NEBRASKA FORMULA**

TOTAL NITROGEN NEEDED TABLES

TABLE 1 - TOTAL NITROGEN NEEDED - CORN

Organic Matter											
Expected Yield bu./acre	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0
300	353	345	336	328	319	311	303	294	286	277	269
290	342	334	326	318	310	302	294	286	277	269	261
280	332	324	316	308	300	293	285	277	269	261	253
270	321	314	306	299	291	283	276	268	261	253	246
260	311	303	296	289	281	274	267	260	252	245	238
250	300	293	286	279	272	265	258	251	244	237	230
240	289	283	276	269	263	256	249	242	236	229	222
230	279	272	266	259	253	247	240	234	227	221	214
220	268	262	256	250	244	237	231	225	219	213	207
210	258	252	246	240	234	228	222	216	211	205	199
200	247	241	236	230	225	219	213	208	202	197	191
190	236	231	226	220	215	210	204	199	194	189	183
180	226	221	216	211	206	201	196	191	185	180	175
170	215	210	206	201	196	191	187	182	177	172	168
160	205	200	196	191	187	182	178	173	169	164	160
150	194	190	186	181	177	173	169	165	160	156	152
140	183	179	176	172	168	164	160	156	152	148	144
130	173	169	166	162	158	155	151	147	144	140	136
120	162	159	155	152	149	145	142	139	135	132	129

Formula: $35 + (1.2 \times \text{Expected Yield}) - (0.14 \times \text{Expected Yield} \times \text{Organic Matter})$

TABLE 2 - TOTAL NITROGEN NEEDED - CORN FOR SILAGE

Organic Matter											
Expected Yield tons/acre	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0
40	301	294	287	281	274	267	260	253	247	240	233
38	288	281	275	268	262	255	249	242	236	230	223
36	274	268	262	256	250	244	238	232	225	219	213
34	261	255	250	244	238	232	226	221	215	209	203
32	248	242	237	231	226	221	215	210	204	199	193
30	235	229	224	219	214	209	204	199	194	189	184
28	221	216	212	207	202	197	193	188	183	178	174
26	208	203	199	195	190	186	181	177	173	168	164
24	195	191	186	182	178	174	170	166	162	158	154
22	181	178	174	170	166	163	159	155	151	148	144
20	168	165	161	158	154	151	148	144	141	137	134

Formula: $35 + (7.5 \times \text{Expected Yield}) - (0.85 \times \text{Expected Yield} \times \text{Organic Matter})$

TABLE 3 - TOTAL NITROGEN NEEDED - POPCORN

Organic Matter											
Expected Yield lbs./acre	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0
7500	134	131	128	125	123	120	117	114	112	109	106
7000	127	124	122	119	117	114	111	109	106	104	101
6500	120	117	115	113	110	108	106	103	101	98	96
6000	113	111	109	106	104	102	100	98	95	93	91
5500	106	104	102	100	98	96	94	92	90	88	86
5000	99	97	95	94	92	90	88	86	84	83	81
4500	92	90	89	87	86	84	82	81	79	77	76

Formula: $(35 + (1.2 \times \text{Expected Yield}/65) - (0.14 \times \text{Expected Yield}/65 \times \text{Organic Matter})) \times 0.85$

TABLE 4 - TOTAL NITROGEN NEEDED - MILO

Organic Matter											
Expected Yield bu./acre	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0
150	215	211	207	203	199	195	191	187	183	179	175
140	204	200	196	192	188	184	180	176	172	168	164
130	193	189	185	181	177	173	169	165	161	157	153
120	182	178	174	170	166	162	158	154	150	146	142
110	171	167	163	159	155	151	147	143	139	135	131
100	160	156	152	148	144	140	136	132	128	124	120
90	149	145	141	137	133	129	125	121	117	113	109

Formula: $50 + (1.1 \times \text{Expected Yield} - ((\text{Organic Matter} - 1) \times 20))$

Other Useful Information

**TABLE 5 - CARRYOVER NITRATE-NITROGEN (ppm)
Shallow Soil Sample ppm (0-8")**

ppm	2	4	6	8	10	12	14	16	18	20	22	24	26	28	
Deep Sample ppm (8" TO 24")	2	2	3	3	4	5	5	6	7	7	8	9	9	10	11
	3	3	3	4	5	5	6	7	7	8	9	9	10	11	12
	4	3	4	5	5	6	7	7	8	9	9	10	11	11	12
	5	4	5	5	6	7	7	8	9	9	10	11	11	12	13
	6	5	5	6	7	7	8	9	9	10	11	11	12	13	13
	7	5	6	7	7	8	9	9	10	11	11	12	13	13	14
	8	6	7	7	8	9	9	10	11	11	12	13	13	14	15
	9	7	7	8	9	9	10	11	11	12	13	13	14	15	15
	10	7	8	9	9	10	11	11	12	13	13	14	15	15	16
	11	8	9	9	10	11	11	12	13	13	14	15	15	16	17
	12	9	9	10	11	11	12	13	13	14	15	15	16	17	17
	13	9	10	11	11	12	13	13	14	15	15	16	17	17	18
	14	10	11	11	12	13	13	14	15	15	16	17	17	18	19
	15	11	11	12	13	13	14	15	15	16	17	17	18	19	19
	16	11	12	13	13	14	15	15	16	17	17	18	19	19	20
	17	12	13	13	14	15	15	16	17	17	18	19	19	20	21
	18	13	13	14	15	15	16	17	17	18	19	19	20	21	21
	19	13	14	15	15	16	17	17	18	19	19	20	21	21	22
	20	14	15	15	16	17	17	18	19	19	20	21	21	22	23
	21	15	15	16	17	17	18	19	19	20	21	21	22	23	23
	22	15	16	17	17	18	19	19	20	21	21	22	23	23	24
	23	16	17	17	18	19	19	20	21	21	22	23	23	24	25
	24	17	17	18	19	19	20	21	21	22	23	23	24	25	25
	25	17	18	19	19	20	21	21	22	23	23	24	25	25	26

TABLE 6 - PREVIOUS LEGUME CROP CREDIT

Legume Crop	Pounds of credit
Alfalfa 70-100% stand	150
Alfalfa 30-69% stand	120
Alfalfa 0 - 29% stand	90
Clover (Sweet or Red)	80% of alfalfa credit
Soybeans	45

TABLE 7 - NITROGEN IN IRRIGATION WATER

Nitrate in water	10	15	20	25
Water Applied (inches/acre)	LBS OF NITROGEN ADDED PER ACRE			
5	14	20	27	34
7.5	20	30	41	51
10	27	41	54	68
12.5	34	51	68	84
15	41	61	81	101
20	54	81	108	135

TABLE 8 - NITROGEN FROM OTHER SOURCES

Beef feedlot manure	4-5 lbs/ton
Dairy cattle manure	3 lbs/ton
Sheep Manure	5 lbs/ton
Poultry manure	15 lbs/ton
Swine manure	10 lbs/ton
Plant compost	3-5 lbs/ton
Sewage sludge	2-3 lbs/ton
Swine slurry	2-10 lbs/1,000 gal
Beef slurry	2-10 lbs/1,000 gal
Dairy slurry	2-6 lbs/1000 gal