

The Monitor

Spirit Creek Watershed Monitoring Committee Newsletter

March 2001 Issue



Monitoring of the Spirit Creek Watershed Progressing

By Don Walters, Committee Chair

We have started our monitoring program. The results from samples collected last fall are a valuable step towards establishing a baseline of water quality in the Spirit Creek watershed. More work has to be done. More data will provide a better baseline, which takes into account seasonal variations.

We hope to have the data and, therefore, the baseline by the end of spring. The baseline will tell us, over the course of the next number of years, what impact Big Sky is having on water quality.

We want to thank those residents for their co-operation in allowing us to come on their farms to collect samples. It is your co-operation that allows us to carry out the committee's mandate to monitor water quality in the watershed.

Water quality is a big concern and we want to hear from you. Please feel free to phone or email the committee.



As chair of the committee, I am, personally, willing to come and talk to groups in the watershed on the committee's activities.

Spirit Creek Watershed Monitoring Committee

Working with agriculture and the rural community to ensure our environment is protected.

Monitoring Program Includes Taking Soil Samples

By Jim Davis

Starting this fall, 2001, soil samples, from fields around each of three Big Sky hog barns in the Spirit Creek watershed will be takendown to four feet to establish a benchmark of soil nutrients before manure is applied.

Analyses will also be done to establish nutrient content of the manure before it is injected into the fields.

Big Sky will apply manure according to soil test recommendations. For comparison, each site will have a strip fertilized with conventional fertilizers.

During the growing season, tissue samples of the crops will be taken to determine crop nutrient uptake.

These field sites will be monitored over the next number of years. Future soil samples, from the two-to-four foot depths, will tell us if there is migration of nutrients into the soil.

The results from our monitoring programs will be published in this newsletter, which is mailed to all residents in the watershed.



If the results do show nutrient migration from the applied manure into water sources, the committee is mandated to make recommendations on remedial action.

COMMITTEE MEMBERS

Don Walters, Chairperson
Good Spirit Cottage Owners

Jim Davis
Canora Beach

Randy Goulden
Tourism Yorkton

Adam Kosar
Mayor of Buchanan

Don Olson
Mayor of Sturgis

Florian Possberg
Big Sky Farms

Eugene Prychak
Livestock And Grain
Producer

Jack Prychak
Reeve, R.M. of Invermay

Ray Riesz
Friends of Good Spirit Lake

Published by the

Spirit Creek Watershed Monitoring Committee
(306)783-4828
Yorkton SK
rwalters@sk.sympatico.ca

Update on Water Quality Monitoring of Spirit Creek Watershed

by Ray Reisz



SPIRIT CREEK WATERSHED COMMITTEE Baseline Summary for Wells and Dugouts within 3 Mile Radius of Each Big Sky Barn Location Sampled Fall of 2000

Last fall, the committee collected water samples from a total 11 wells and 37 dugouts from farms within a three mile radius of the three Big Sky hog barns. The samples were analyzed and the committee received the results. By themselves, the results do not mean anything. Collectively, they establish a water quality baseline in the Spirit Creek Watershed before Big Sky starts injecting liquid hog manure in surrounding fields in the spring of 2002.

As we were unable to complete sampling of all the sites before freeze-up, we will, come spring, collect samples from those wells and dugouts missed. We will be re-sampling those wells and dugouts from last fall as well as taking samples from the spring run off. The results from the spring samples will be added to last fall's results (see table) to give us a more comprehensive baseline.

Phase II starts this fall when we go back and collect samples from the same wells and dugouts and compare the results with our baseline.

Some of the samples collected last fall showed results of high readings of nitrates and coliforms in some of the wells and dugouts used for drinking. The committee informed residents of these results and most had their wells and dugouts re-tested and treated for nitrates and coliform.

An unexpected benefit of our monitoring program is that it has created an

PARAMETERS	WELLS		DUGOUTS	
	RANGE	AVERAGE	RANGE	AVERAGE
Conductivity (uS/cm)	507 to 1450	1010	284 to 1580	801
Nitrate (mg/L)	0 to 428	59	0 to 4	0.68
Sulphate (mg/L)	44 to 636	216	15 to 1668	308
pH (pH units)	7.3 to 7.7	7.5	7.5 to 9.4	8.2
Total Alkalinity (mg/L)	226 to 470	367	48 to 350	144
Bicarbonate (mg/L)	276 to 588	439	59 to 427	173
Sodium (mg/L)	3 to 36	14	1 to 72	16
Magnesium (mg/L)	34 to 146	79	15 to 166	62
Calcium (mg/L)	61 to 196	121	20 to 152	74
Total Hardness (mg/L)	292 to 1091	628	124 to 933	448
Chloride (mg/L)	0 to 16	3.4	0 to 254	9.5
Potassium (mg/L)	3 to 36	14	6 to 6.2	22
Turbidity (N.T.U.)	0.05 to 30.3	3.6	0.25 to 18.4	3.6
Biochemical Oxygen Demand (mg/L)	0.1 to 0.5	0.2	0.2 to 7.5	2.1
Dissolved Organic Carbon (mg/L)	3 to 8	5.5	7 to 37	17.5
Ammonia-Nitrogen (mg/L)	0.04 to 1.0	0.18	0.02 to 0.58	0.11
Total Kjeldahl Nitrogen (mg/L)	0.2 to 0.08	0.5	0.6 to 4.4	1.55
Total Phosphorous (mg/L)	0.06 to 0.13	0.078	0 to 0.57	0.14
Ortho Phosphorous (mg/L)	0.02 to 0.08	0.036	0 to 0.36	0.05
Chlorophyll "a" (mg/m3)	N/A	N/A	0 to 112	23
Total Coliforms (orgs/100ml)	0 to 260	25.7	0 to 1800	89
Fecal Coliforms (orgs/100ml)	0 to 25	2.27	0 to 40	1.35
Fecal Strep (orgs/100ml)	0 to 62	7.1	0 to 130	5.4
Plate Count orgs/100 ml)	0 to 1180	177.5	0 to 3000	877
Lead (mg/L)	0 to 0.015	0.0017	N/A	N/A
Manganese (mg/L)	0 to 5.7	0.54	0 to 1.58	0.11
Iron (mg/L)	0 to 3.4	0.62	0 to 0.4	0.07
Barium (mg/L)	0.02 to 0.21	0.09	N/A	N/A
Zinc (mg/L)	0	0	N/A	N/A
Boron (mg/L)	0 to <0.2	0.09	N/A	N/A
Copper (mg/L)	0 to 0.1.1	0.01	0 to 0.4	0.02
Aluminum (mg/L)	0 to 0.003	0.0005	0	0
Selenium (mg/L)	0 to 0.02	0.005	0 to 0.27	0.04
Arsenic (mg/L)	0 to <0.001		N/A	N/A
Total Dissolved Solids (mg/L)	448 to 1601	946.6	186 to 1281	670

awareness with residents in the watershed that we have to test our wells and dugouts to make sure our drinking water is safe.

NOTE: The results are part of the Spirit Creek Watershed Baseline water quality initiative before the Big Sky Hog barns are in operation and/or before manure is spread on surrounding farmland from the Big Sky Hog Barns.