

MEMORANDUM**RECEIVED**

DATE: May 23, 2008

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TO: Tim Luke; Jeff Peppersack, Gary Spackman

**DEPARTMENT OF
WATER RESOURCES**FROM: Cindy Yenter, Water District 130 Watermaster *cy*

RE: Insufficiencies in measurement and reporting for commercial totalizing flow meter data within North Snake Ground Water District

Measurement and reporting for commercial pods within North Snake GWD (NSG) continues to be below standards. Since commercial diversions began petitioning to join NSG in 2002, WD130 has struggled to maintain consistent and accurate data for these diversions. Virtually all commercial diversions are added to NSG as full reporting members. However, NSG has not yet demonstrated an ability to adequately measure and report for this group of water users, and WD130 has spent considerable time both in the field and in the office trying to verify and complete the data. At the end of each year, WD130 spends approximately 10 staff-field days collecting totalizer data from commercial flow meters, and about the same amount of staff-office time conducting record-by-record QA on WMIS data. These audits, while costly, have been the only way to ensure that comprehensive commercial data are collected. WD130 also conducts at least a portion of the calibration tests on new meter installs each year, thus reducing the total number of field examinations which must be conducted by NSG.

The Hydrographer for NSG is Brian Higgs, Water Well Consulting (WWC). WWC acquired the NSG contract, including all commercial diversions, in about 2004. Commercial flow meter calibration tests are conducted by Mr Higgs in the fall, and data entry is usually done over the winter months. I spent a day at the WWC office in December 2006 conducting WMIS training specific to flow meter data entry. Data entry by WWC is still less than satisfactory, and even after 4 years many sloppy habits have persisted. For example, during a meeting in the fall of 2007 I told Brian that most of the 2006 meter calibration records which WWC had entered the past year were missing standard meter units, and this caused the meter calibration factor to not compute (it stays at 1). Consequently the 2006 diversion data entered for those records were not adjusted. I provided Brian with a list of those records which needed to be fixed, and asked that the corrections be completed by the end of the year so that the 2006 diversion data were accurate. During our QA of 2006 data, which occurred during December 2007 and January 2008, I found none of the identified calibration records corrected, and Michelle Richman or I had to modify all of them and then recalculate the 2006 diversion volume. Other common data entry errors by WWC include not sequencing end-of-year readings with the following start-of-year readings, erroneous or missing volume multipliers, and calibration data entered in the wrong record.

Michelle Richman completed an analysis of WMIS data which indicates that WD130 staff corrected or otherwise modified 33% of the 180 NSG records for 2006 which contained commercial flow meter data (measurement option 8). This analysis was made using WMIS data captured before and after the WD130 QA exercise in late 2007 (copy attached). The corrections were the result of data entry errors, missing or erroneous multipliers, reporting errors and non-reported data. Most errors were resolved using the audit data collected by WD130 staff at the end of 2006. About 20 records (11% of total) contained no data at all due to non-reporting by the water user. WD130 supplied end of year readings with audit data, but this is another ongoing issue which NSG has taken little action to correct. NSG does charge late fees for missing or late reports, but does not seem to require that the report be completed, only signed and submitted.

This level of error is not acceptable, and I believe that strong action is warranted, up to and including the termination of NSG's authority to measure and report for commercial diversions. Since WD130 does not charge for measurement and reporting for commercial members of NSG, the time spent by WD130 staff to do or check NSG's work, and the associated costs, end up coming from the WD130 administrative budget. This is a drain on other administrative and regulatory activity, an unfair expense to other water users, and causes shortfalls in overall water district services.

The data collection problem I have identified also extends to other data sets such as hour meter and flow meter data for irrigation diversions. This is fairly well documented by the level of non-reporting just within the NSG irrigation conversion projects, where a full 30% of conversion wells using hour meter or flow meter (9 of 30 wells) have no annual reports, or insufficient annual reports, filed for 2007. Since we conduct no routine audits of irrigation diversions, there is simply no annual withdrawal data for some wells. Data entry errors are a separate issue involving WWC, but they are ultimately the responsibility of NSG.

I am prepared to send a letter directly to the NSG board informing them that annual data collection and data entry of non-irrigation flow meter records for NSG pods is not acceptable, and requiring them to resolve the problem. If data for 2008 are unacceptable, WD130 will resume all measurement and reporting for commercial diversions beginning in 2009.

I need some solid support from administration on this topic. If NSG cannot or will not resolve this problem they simply should not be allowed privileges to measure and report, starting with commercial diversions. IDWR's position has always been to "give them another chance". That approach is not working, even after I have spent time working with both NSG and WWC on the various issues. If IDWR administration is not willing to back me on this and take appropriate followup action, then they should not expect that WD130 can continue to provide quality data for NSG commercial diversions, or any diversions for that matter.

Summary:**Count of Changes:**

180 records of 270 have no change
90 records of 270 changed (33%)

33% of the reported volumes in WMIS were corrected by IDWR. Some volumes were under-reported and some were over-reported.

Actual Change in AcFt:

-8450.7 AF

Corrections by IDWR resulted in a decrease of 8451 AF for the total volume reported. In other words, the volume was over-reported by 8451 AF.

Percent Change in AcFt:

-28.10 %

Corrections by IDWR resulted in a 28.1% drop in the volume reported in WMIS.

Under-reported FM Usage:

63 records, errors totaling 2597 AF, with the largest error at 268 AF

Of the 63 under-reported records, the largest single error resulted in an under-reporting of 268 AF.

Over-reported FM Usage:

27 records, errors totaling 11048 AF, with the largest error resulting in an over-reporting of 5325 AF.

Of the 27 over-reported records, the largest single error resulted in an over-reporting of 5325 AF. The two largest errors resulted in a total over-reporting of 8796 AF.

Data prepared by: Michelle Richman, IDWR

Date: Feb 25, 2008

All data provided by Water District 130. Annual reported user data are subject to ongoing review and verification.

Reporting District ID	WMIS Number	Report Year	Measurement OptionID	PreQA AdjustedA creFeet	Post QA AdjustedA creFeet	Diff in AF	
15	401205	2006	8	29.47	297.73	268.26	under-reported
15	400095	2006	8	5.84	227.29	221.45	under-reported
15	401189	2006	8	0	197.81	197.81	under-reported
15	401493	2006	8		148.63	148.63	under-reported
15	401934	2006	8	44.67	160	115.33	under-reported
15	401832	2006	8	14.64	124.72	110.08	under-reported
15	401529	2006	8	0	94.21	94.21	under-reported
15	401204	2006	8	10.4	103.8	93.40	under-reported
15	400119	2006	8		87.34	87.34	under-reported
15	400449	2006	8		87.04	87.04	under-reported
15	401542	2006	8	0	69.53	69.53	under-reported
15	401890	2006	8		68.16	68.16	under-reported
15	400547	2006	8		63.73	63.73	under-reported
15	400605	2006	8	6.82	68.16	61.34	under-reported
15	400093	2006	8	13.98	72.62	58.64	under-reported
15	401198	2006	8	0.01	53.35	53.34	under-reported
15	401854	2006	8	25.8	74.08	48.28	under-reported
15	400040	2006	8	590.91	636.73	45.82	under-reported
15	401145	2006	8		42.56	42.56	under-reported
15	400840	2006	8		39	39.00	under-reported
15	401539	2006	8		36.54	36.54	under-reported
15	400049	2006	8	187.61	222.34	34.73	under-reported
15	401897	2006	8	26	60.69	34.69	under-reported
15	400048	2006	8	142.77	174.97	32.20	under-reported
15	400063	2006	8	65.37	97.27	31.90	under-reported
15	401902	2006	8	35	66.03	31.03	under-reported
15	400038	2006	8	650.89	681.11	30.22	under-reported
15	400436	2006	8	11.9	41.12	29.22	under-reported
15	401160	2006	8	50.85	79.09	28.24	under-reported
15	400841	2006	8	3.05	30.56	27.51	under-reported
15	401163	2006	8		26.86	26.86	under-reported
15	400195	2006	8	6.61	31.76	25.15	under-reported
15	400219	2006	8		23.55	23.55	under-reported
15	401138	2006	8	252.23	274.93	22.70	under-reported
15	400078	2006	8	10.4	32.8	22.40	under-reported
15	401833	2006	8	113.59	133.35	19.76	under-reported
15	401519	2006	8	27.26	45.87	18.61	under-reported
15	400091	2006	8	0.02	16.08	16.06	under-reported
15	400066	2006	8	316.99	333	16.01	under-reported
15	400105	2006	8		15.4	15.40	under-reported
15	401191	2006	8	72.71	87.73	15.02	under-reported
15	400071	2006	8	15.62	30.23	14.61	under-reported
15	400096	2006	8		9.91	9.91	under-reported
15	100573	2006	8	59.48	68.4	8.92	under-reported
15	100601	2006	8	0.01	5.94	5.93	under-reported
15	400083	2006	8	0.06	5.88	5.82	under-reported
15	401834	2006	8	0.3	5.2	4.90	under-reported
15	401151	2006	8	241.54	246.38	4.84	under-reported

Commercial 2006 audit comparison FINAL.xls

Reporting District ID	WMIS Number	Report Year	Measurement OptionID	PreQA AdjustedA creFeet	Post QA AdjustedA creFeet	Diff in AF	
15	400082	2006	8		4.82	4.82	under-reported
15	400108	2006	8	0.02	4.78	4.76	under-reported
15	400187	2006	8		3.62	3.62	under-reported
15	400838	2006	8		3.46	3.46	under-reported
15	100597	2006	8	20.39	23.67	3.28	under-reported
15	401898	2006	8	30.21	32.85	2.64	under-reported
15	401931	2006	8	17.65	19.54	1.89	under-reported
15	400109	2006	8	35.69	37.12	1.43	under-reported
15	401202	2006	8	48.32	49.7	1.38	under-reported
15	400102	2006	8	1.99	2.95	0.96	under-reported
15	400846	2006	8	9.37	10.12	0.75	under-reported
15	401155	2006	8	0.07	0.72	0.65	under-reported
15	400100	2006	8	0	0.53	0.53	under-reported
15	401837	2006	8	8.9	8.97	0.07	under-reported
15	401696	2006	8	6.2	6.26	0.06	under-reported
15	401935	2006	8	2.46	2.26	-0.20	over-reported
15	400123	2006	8	55.3	55	-0.30	over-reported
15	401503	2006	8	17.22	16.53	-0.69	over-reported
15	400101	2006	8	2.87	1.93	-0.94	over-reported
15	400135	2006	8	179.58	177.38	-2.20	over-reported
15	400115	2006	8	228.29	226.01	-2.28	over-reported
15	401502	2006	8	233.88	231.2	-2.68	over-reported
15	400062	2006	8	297.7	294.72	-2.98	over-reported
15	401823	2006	8	45.32	41.7	-3.62	over-reported
15	401153	2006	8	33.4	29.73	-3.67	over-reported
15	100616	2006	8	86.83	82.91	-3.92	over-reported
15	400117	2006	8	222.61	218.52	-4.09	over-reported
15	400116	2006	8	271.31	264.29	-7.02	over-reported
15	400166	2006	8	49.25	24.17	-25.08	over-reported
15	400079	2006	8	72.6	34.97	-37.63	over-reported
15	401843	2006	8	63.82	19.95	-43.87	over-reported
15	401520	2006	8	124	79.39	-44.61	over-reported
15	401161	2006	8	106.6	24	-82.60	over-reported
15	400159	2006	8	181.04	73.97	-107.07	over-reported
15	400174	2006	8	121.6	12.52	-109.08	over-reported
15	400493	2006	8	201.81	58.93	-142.88	over-reported
15	400045	2006	8	173.67	29.41	-144.26	over-reported
15	401844	2006	8	232.5	21.32	-211.18	over-reported
15	401936	2006	8	630.04	0	-630.04	over-reported
15	400858	2006	8	639.69	1.24	-638.45	over-reported
15	401206	2006	8	3575.87	104.08	-3471.79	over-reported
15	400198	2006	8	5330	5.47	-5324.53	over-reported
TOTALS				30085.27	21634.59	-8450.68	