STATUS REPORT

YPDT – CAMC HYDRAULIC DATABASE

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Prepared by EarthFX Inc. for submission to the CAMC – YPD Groundwater Management Team

1. PURPOSE

This document describes changes to the database structure and describes new data sets that have been added to the database. Readers will recognize this document from earlier release, updated to reflect the current condition and content of the database. This is intentional, and will continue with future database releases, creating a single chronological description of database development.

Recognizing that the database development activities have been ongoing for several years, it is clearly difficult to describe all improvements and updates in a readable documents. As a result, this document addresses primary updates and primary new data sets. Bt way of example, many of the new wells added to the database in 2004 came from YPDT users, entered through SiteFX, one well at a time. These wells are not described here, but can be queries using the date stamp field in the D_LOCATION table.

The document is presented in three sections.

- New Data – description of the new data sets added to the database
- Updates to the database structure to better accommodate data and facilitate access to the data.
- Standard Queries – included with all agency database to facilitate creating data sources in Viewlog.

2. MAJOR DATA MODEL STRUCTURE CHANGES

Two major changes have been made to the data model during the recent synchronization. First, the overall database as been divided into 4 linked Access databases, called YPD_A, YPD_B, YPD_C and YPD_D (the agency name may also be part of the name) by spreading the data over 4 databases, further room for growth is created, and the risk of corruption reduced. However, during the partitioning (process of creating the individual agency databases from the master), I the agency database is sufficiently small, the 4 databases may be collapsed back into a single database. The outcome is that some agencies (such as York) will have 4 separate databases and others a single database. The distribution of data across the 4 databases is shown below. YPD_A is the primary database and the 'point of entry', with the tables from B,C and D linked.

YPD_D	York water levels
YPD_C	Climate data
YPD_B	All remaining temporal data (mostly MOE water levels and stream flow data)
YPD_A	All remaining tables

The second major change is a re-organisation of tables holding the water level data. York water levels are distributed across 5 tables in the YPD_D database that reflect the source of the water levels – loggers, manual, historic etc. Water levels associated with the MOE well database are grouped in the D_INTERVAL_TEMPORAL_WL_MOE table in the YPD_B database, and include static and pump test readings (see the RD_TYPE_CODE field to distinguish static from stressed). Finally, all remaining water levels (from UGAIS, for example) are stored in the D_INTERVAL_TEMPORAL_WL table, also in YPD_B.

3. NEW DATA

3.1. Geological Survey of Canada Data

Date August 2004
Name Outcrops
Source Dave Sharpe's ORM database, August 2004 version from Charles Logan

Description Outcrops mapped by the GSC and the OGS where compiled into a database by the Terrain Science Group to complement their well log data for the ORM. Outcrop data basically looks like well log data, with an X, Y and Z positions and a geological sequence. The geological sequence can range from several centimeters to many meters in the case of large exposed faces. Geological descriptions have, for the most part, been mapped into the MAT1,2,3 and 4 descriptions used in the database.

Details Approximately 30,000 outcrops have been added to the database, covering an area from xx to yy. Locations are shown in the following figure. Outcrops are identified in the database using a LOC_TYPE_CODE of 11 in the D_LOCATION table. A standard YPDT query is provided in the database to display outcrops – this query is called YPDT – Outcrops ALL

Future Data The GSC located a number of non MOE wells for the database. Some will already exist in the YPD database (MTO geotechnical wells for bridge abutments); however, the remaining wells must be identified and transferred into YPD.

3.2. Environment Canada

Date February 2004
Name Climate Data
Source Sandy Radecki - Burlington

Description Climate data up to the end of 2003 has been added to the database. Included is the following data, provided on a daily average basis.

1. Precipitation
2. Rain
3. Snow on ground
4. Maximum, minimum and average temperature
5. Solar radiation where available

Details Approximately 560 climate stations are listed in the database, 517 operated by Environment Canada, and the remaining 43 operated by CA and other agencies. Locations are shown in the following figure. Climate stations are identified in the database using a LOC_TYPE_CODE of 9 in the D_LOCATION table. A standard YPDT query is provided in the database to display climate stations– this query is called YPDT – Climate Stations ALL

Future Data Stream flow data from Environment Canada extends to December 2000, and requires updating. Past requests have been referred to their web site, which currently does not accommodate the bulk

downloads required by the database. Improvements to the web site are expected, but unfortunately it has been difficult to access the required data.

3.3. UGAIS Wells

Date June 2004
Name Geotechnical borehole data for urban areas
Source GSC - MNR

Description UGAIS (Urban Geology Automated Information System) is a compilation of largely urban boreholes for major municipalities across Canada prepared by the GSC in the mid seventies. Wells from Hamilton to Oshawa were added to the YPD database. These wells are largely geotechnical investigation test holes, offering descriptive and accurate soil descriptions and blow counts. Soil descriptions have be mapped into the standard look up fields of the D_GEOLOGY_LAYER table in the database. The geological descriptions provided are based on the soils recovered in split spoon samples, and the depths provided were the depths of the split spoon sample.

Details Approximately 33,200 geotechnical boreholes, with depths ranging from 0.1 m (soil sample) to in excess of 100 m were converted from ASCII format and appended to the database These boreholes are identified in the database using a LOC_TYPE_CODE of 1 and DATA_SOURCE = 'ugais' in the D_LOCATION table. A standard YPDT query is provided in the database called YPDT – Wells UGAIS. The wells have been assigned as position certainly code of 3 (10 to 30 m), although as geotechnical borings, it is expected the accuracy may be greater, but this cannot be confirmed. Only about 7,040 of the 33,200 include water level information.

Future Data In several cases, the geological description for the wells included water level information. Many of these water levels remain in the geological description field, although often hidden by carriage return characters. Further work is necessary to parse the water level data into the water level table. It is noted that the original ASCII files included Liquid Limit and Plastic Limit values; this data could not be confidently converted owing to missing depth readings.

3.4. MNR Surface Water Station Coordinates

Date June 2004
Name Updated UTM coordinates for MNR and EC stations
Source MNR

Description The original Environment Canada coordinates were initially provided in digital lat long format with limited accuracy, resulting in stations not plotting on their assigned water course. This has been updated using MNR GPS data.

3.5. MOE South Simcoe Groundwater Study data files

Date June 2004
Name Dixon Hydrogeology database for MOE GW study
Source Dixon Hydrogeology

Description DHL released their updated project database for use in the YPD database. Of value were several hundred new wells installed as monitoring wells by DHL during previous projects, and updated UTM coordinates for about 6000 MOE wells across Simcoe County

4. OUTSTANDING DATA

4.1. Rick Gerbers U of T files

Rick provided two database and several spreadsheets of water level and water level data. Elements of the spreadsheet data, including spring flows have not been entered.

4.2. Lake Simcoe Region CA – Climate and Stage data

LSRCA provided databases containing climate and stage / flow data for their independent stations. The files are large in light of the 15 minute interval reading frequency. The data remains outside the YPD database following discussion regarding the 'distillation' of 15 minute data into hourly or daily data.

5. DATABASE CORRECTIONS

D_LOCATION	BR_DEPTH (depth bedrock encountered) and BR_CONTACT (was bedrock encountered) have been updated based on a simple query that looks for the first occurrence of rock material in each well. This is not an exhaustive method as it may mis-interpret boulders as bedrock, but provides an easy to use first cut at bedrock contacts.
D_INTERVAL_PROPERTY	The specific capacity was re-calculated from the original static levels and pump test data.

6. NEW TABLES ADDED

6.1. D_LOCATION_QA

This table currently provides 8 fields for tracking uncertainly (QA codes) for various properties of the Location. The D_LOCATION_QA table provides confidence ratings for select segments of information for each well. This table should be part of all queries where there is a need to filter wells based on their estimated accuracy, be it for position, geology or water levels. Currently, ratings for the easting, northing and elevation of each well are provided, including the source of the information and the method used to derive the value. (e.g., Beatty 2002 GPS Survey as the source, and GPS as the method). This structure will allow for a more expandable and comprehensive means of tracking the position and accuracy of wells.

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Field Name	Data Type	Description
LOC_ID	Number	
QA_COORD_CONFIDENCE_CODE	Number	qa code for the location position accuracy
QA_COORD_SOURCE	Text	source of the coordinate infomation
QA_COORD_METHOD	Text	method of corrdinate determination
QA_ELEV_CONFIDENCE_CODE	Number	qa code for the location elevation
QA_DATA_SOURCE_CODE	Number	indicates source of the location data, eg, driller, consultant etc - see FK table
QA_DRILLER_ACCURACY_CODE	Number	provides indication of the number of geologic units each driller records - assumption that more units is more accurate
QA_OVERALL_CODE	Number	qa code - calculated - reflecting the overall qa of the location
QA_PUMPING_CODE	Number	qa code for the location
QA_USER_RG_GOLDEN_SPIKE	Number	

Coord Fields — Three fields are provided fro tracking the X-Y positional accuracy of Locations. SOURCE is a text field and lists the organization that collected the data, METHOD is text and lists the method used to determine the position (E.g., GPS, map etc) and ERROR is a numeric field with values that link to a revised reference table (R_LOC_COORD_QA_CODE) . This table is similar to the original MOE QA code table.

ELEV Field — Identifies the confidence of the ground elevation assigned to the location. Codes link to the R_BH_GND_ELEV_QA_CODE table. The large majority of locations display am elevation QA code of 2 (0.1 to 0.3 m possible error), assumed to be reasonable for the MNR 10m DEM. It is important to note that about 170 wells are assigned a code of 1, corresponding to an error of less than 0.1 m, but also signaling that the well was professionally surveyed, and that the elevation should not be updated from the DEM. Although this may be tempting in an effort to harmonize elevations, it leads to significant errors in monitoring wells at landfills and other sites of extreme elevation differential not visible on current DEM surfaces.

Data Source Code Field — Links to the R_DATA_SOURCE_CODE table and reflects the source of the information in the database. Values range for 1 (from the driller) to 7 (from a consultant). The field will primarily be used to gauge the accuracy of the geological descriptions for each well.

Driller Accuracy Code — This has been recently calculated by EFX as an experimental means of estimating the level of the diligence of each driller. The value is calculated by calculating the ratio of total meters drilled to total number of geologic units logged, for each driller in each township. A baseline ratio is then calculated for each township, and driller with more logged units then the baseline get a higher ranking, and visa versa. Could very well be pie in the sky.

Pumping Code — To contain a code providing an indication of the quality of the hydraulic data provided. Currently unpopulated as we are unsure of the best means of assessing the data quality.

Overall Code — Will contain a calculated value reflecting the overall confidence for a well, based on the above codes. Currently unpopulated. The MOE stated to make progress with QA codes by assigning quantitative codes based on the position of the well – wells in lakes or swamps are assigned poor positional codes etc. We will check with Tim to see if any further progress has been made.

6.2. D_LOCATION_PURPOSE

This table is an enhanced version of the Moe Water Use table. For each well, it provides a primary water use (such as agricultural or water supply) and a secondary water use (such as Golf Course or School). The table uses codes to identify each category of water use, and the codes are listed in the Reference tables R_LOC_PURPOSE_1_CODE (primary) and R_LOC_PURPOSE_2_CODE (secondary water use).

In previous versions of the database, water use information (municipal well, for example) was stored with the LOC_TYPE_CODE in the D_LOCATION table. LOC_TYPE_CODE has now been simplified to list only wells, climate stations, surface water stations etc.

Although a powerful table for assessing various water uses, recognize that many of the classifications are based on the well owner's name, and therefore hinges on the accuracy of the name. For example, wells with a owners name containing the word 'golf' were assigned to golf courses in the primary and secondary purposes - a primary water use of 2 (commercial) and a secondary code of 15 (golf course). It is important to keep the data current as new wells are added to the database, and to encourage corrections to the existing classifications.

As a further example, to locate all municipal pumping wells, the query would draw from the D_LOCATION table and the D_LOCATION_PURPOSE table, using criteria of 10 (water supply) for the primary water use, and a criteria of 22 (municipal) for the secondary water use. Note that each water use has an end date, allowing chronological tracking of changing well uses with time.

LOC_ID	Number	REQUIRED FK to D_location table
PRIMARY_WATERUSE_CODE	Number	OPTIONAL primary use of the location
SECONDARY_WATERUSE_CC	Number	OPTIONAL SECONDARY use of the location
WATERUSE_DATE_END	Date/Time	date of end of wateruse period

Example – Golden Spike Codes

The following table lists the Golden Spike codes and how the same result is achieved using the recent data model updates. The primary and secondary water use fields (from the D_WATERUSE table) are the central criteria in the query, supplementary fields including OWNER_ID, LOC_STATUS and LOC_DATA_SOURCE_CODE are used to further refine the query.

Code	Golden Spike Description	Pri. Wateruse	Sec. Wateruse	Data Source	Notes
1	municipal pumping wells	10	22	optional	Can filter further using the Owner (to limit to one Region) or the LOC_STATUS to filter only active wells.
2	municipal observation/monitoring wells	3	51 or 47	optional	Can filter further using the Owner (TTC for example) or the LOC_STATUS to filter only active wells.
3	consultant report	optional	optional	7	Can filter further using the Owner (York region or TTC for example) or the primary and secondary water use codes to select a type of well.
4	municipal exploration borehole/well	3	51 or 47	optional	Use the Owner ID to filter to the required municipality (York = 54, Peel = 44, Durham = 45)

5	R Gerber/IWA/GSC/OGS/MOE OWRC	3	51	7	
6	municipal pumping well - inactive/abandoned	10	22	Optional	Add LOC_STATUS to criteria and set to 2 (inactive) or 3 (abandoned)
7	golf course well	2	15	Optional	
8	MOE/CA monitoring well				This one is trickier – technically it is a monitoring well, and we are seeking to filter on the owner (a CA or the MOE) The Owner information will need updating for this to work.
9	TTC borehole			Optional	Filter Owner ID to TTC
10	York Region sewer borehole - geotechnical	3	47	Optional	Use the LOC_STUDY to filter out the sewer wells.
11	York Region sewer borehole - CRA monitoring/borehole location	3	51	Optional	Use the LOC_STUDY to filter out the sewer wells.
12	Industrial Well	5		Optional	

6.3. D_LOCATION_ALIAS

This table tracks alternate names for each well. The field LOC_NAME_ALT2 from the D_LOCATION table has been moved here. When searching for well by name, SiteFX will search for the entered text in LOC_NAME, LOCA_NAME_ALT1 and LOC_NAME_ORIGINAL, and all alias names. Field names and descriptions are shown below.

LOC_ID	Number	location ID number
LOC_NAME	Text	common location name - here for reference and cross checking
LOC_NAME_ALIAS	Text	alias name

6.4. D_PUMPTEST AND D_PUMPTEST_STEP

These tables capture pump test data and replace the original MOE Pump test table. Two tables are necessary to accommodate multiple step tests within a single pump test. Table D_PUMPTEST is linked to the D_LOCATION table and lists the date and time of the pump test and recommended pump rates and depths deduced from the test properties of the overall pump test). Table D_PUMPTEST_STEP lists the details of each step of the overall pump test, including the pump rate, was pumping completed by pump, bailer or air, and were readings taken during recovery or during pumping. Table D_PUMPTEST_STEP is linked to table D_PUMPTEST using the PUMPTEST_ID field. All water levels measured during the pump test are stored in the D_INTERVAL_TEMPORAL_WL_MOE table. Field names and descriptions for the D_PUMPTEST table are shown below.

PUMP_TEST_ID	AutoNumber	Pump Test ID.
INT_ID	Number	Interval ID.
PUMPTEST_DATE	Date/Time	date of construction (calculate from COMPDATE)
PUMPTEST_NAME	Text	Owner when the well is constructed
REC_PUMP_DEPTH	Number	Recommended depth of pump setting in m by the well driller
REC_PUMP_RATE	Number	Recommended rate of pumping in gpm by the well driller
WATER_QUALITY	Text	Code indicating whether the water is clear or cloudy (1 = clear, 2 = cloudy)
FLOWING_RATE	Number	Rate (igpm) of flowing well

Field names and descriptions for the D_PUMPTEST_STEP table are shown below.

PUMP_TEST_ID	Number	Pump Test ID.
PUMP_METHOD_CODE	Number	Code for method of pumping used (bailor or pump)
PUMPTEST_METHOD_CODE	Number	code for wl taken during pumping or recovery
TEST_METHOD_CODE	Text	Code for method of testing
PUMP_RATE	Number	pumping rate in gpm
PUMP_RATE_UNITS	Text	Pumping rate units.
PUMP_START	Date/Time	date of construction (calculate from COMPDATE)
PUMP_END	Date/Time	date of construction (calculate from COMPDATE)

6.5. D_OWNER

Table D_OWNER links to the D_LOCATION table and lists the owner of the well. This is a powerful searching tool for locating wells owned by a municipality, or other large well owners. For York, Peel and Durham, all wells drilled under a lower tier municipal name (e.g., Village of Blackstock) or PUC have been assigned to the upper tier municipality. In addition, considerable effort was committed to resolving transcription errors in the well name, allowing a well called "R.O.P." to be assigned to Peel. Similarly, for all new wells entered, it is important to correctly assign the owner. Note that this assignment has been undertaken for large and 'YPD relevant' well owners only. The many address fields are used for MOE PTTW Owner information, although could be updated for wells.

OWN_ID	AutoNumber	Owner ID
OWN_NAME	Text	Name of the client
OWN_TYPE_CODE	Number	
OWN_ADD_STREET	Text	The street and street number part of this client's address.
OWN_ADD_CITY	Text	The client's "current" Township/County/Region/District/City/Town or Village
OWN_ADD_PROVINCE	Text	The province of the client's address
OWN_ADD_POSTALCODE	Text	The postal code of the client's address
OWN_ADD_COUNTRY	Text	Country Code must be on the Country Table
OWN_ADD_LOT	Text	OPTIONAL ot
OWN_ADD_CON	Text	OPTIONAL concession
OWN_ADD_LOT_X	Text	OPTIONAL township
OWN_ADD_COUNTY	Text	OPTIONAL county
OWN_PHONENUMBER	Text	This client's phone number (include area code)
OWN_ADD_EMERG	Number	OPTIONAL emergency ID
OWN_END_DATE	Date/Time	OPTIONAL start of time period of owners occupancy
Owner_Start_Date	Date/Time	OPTIONAL start of time period of owners occupancy
OWN_START_DATE	Date/Time	OPTIONAL end of time period of owners occupancy
Owner_End_Date	Date/Time	OPTIONAL end of time period of owners occupancy

7. FIELD CHANGES

7.1. Fields Added

LOC_STATUS_CODE — added to the D_LOCATION table and replaces the LOC_ACTIVE Boolean field. Used to track the current status of each location – options include Active, In-active, Abandoned and Unknown.

ORIGINAL NAME — added to the D_LOCATION table to record the name of the location as it was provided to us. Most applicable to the MOE wells were the MOE Well ID number is recorded.

7.2. Field Changes

LOC_DATA_SOURCE_CODE	move from D_LOCATION to D_LOCATION_QA
LOC_POSITION_ERROR	move from D_LOCATION to D_LOCATION_QA
LOC_POSITION_METHOD	move from D_LOCATION to D_LOCATION_QA
LOC_POSITION_SOURCE	move from D_LOCATION to D_LOCATION_QA

LOC_TYPE_CODE — In the D_LOCATION table has been reverted back to it's original purpose of simply tracking the Location type – e.g., a well, surface water station etc. Details of each are stored in the D_WATERUSE table (likely to be renamed D_LOCATION_USE)

LOC_DATA_SOURCE_CODE — In the D_LOCATION_QA table has been updated based on Rick's Golden Spike information and based on notes in the database describing the source of corrections and revisions. The goal is to move wells for code 1 (driller) to code 7 (consultant)

PRIMARY_WATERUSE_CODE — (and SECONDARY_WATERUSE_CODE) in the D_WATERUSE table have been updated based on Ricks Golden Spikes and the well owner information to more accurately reflect the current use of the well. There are approximately 10 primary categories, including Water Supply, Agriculture, and 40 secondary categories, offering greater definition on the primary. For Water Supply, secondary options include Schools, Municipal, Church etc). This table also offers a date field to allow chronological tracking of multiple wells uses over time.

8. STANDARD QUERIES

Agency databases released after September 2004 include a series of queries designed to address common requests and to satisfy basic Viewlog mapping functions. The queries are prefixed by 'YPDT' for ease of identification. The list is will expand based on feed back. Queries are listed below, grouped according to their main feature.

Many of these queries are based on a grouping of the well owner name, for example, by searching for all names containing the word 'authority" or 'conservation', wells belonging to Conservation Authorities were identified. This approach was used for all frequent well owners (such as Brewers Retail) and all public well owners (such as Ministry of Transportation).

This grouping was feasible owing to considerable editing of the well owners names; a lengthy process of sorting wells by name and ID and manually scanning each record for transcription errors. Approximately one third of the well names were corrected.

List of General Locations

YPDT Locations – ALL	*returns name and UTM position of all locations in the database*

List of Outcrops

YPDT Outcrops-ALL	*returns name and UTM position of all outcrops in the database*

List of Permit To Take Water Positions

YPDT PTTW - ALL Permit To Take Water holders	*returns name, UTM position and maximum production of all PTTW in the database*

List of Surface Water with select attributes

YPDT Surface Water - CAMC / YPDT	*returns name and position of surface water stations established under YPD projects (mostly CRA)*
YPDT Surface Water Stations-ALL	*returns name and position of all surface water stations*
YPDT Surface Water Stations-Continuous	*returns name and position of surface water stations with 50 or more flow readings (part of MOE / EC monitoring network)*
YPDT Surface Water Stations-Spot	*returns name and position of surface water stations with 50 or less flow readings (spot flow stations)*

List of Waste Water Treatment Plants

YPDT Waste Water Treatment Plants-ALL	*returns name and position of waste water treatment plants*

List of Wells with select attributes

YPDT Wells – ALL	*returns name and position of wells a positional confidence error of 300 m or less*
YPDT Wells – BEDROCK	*returns name and position of bedrock wells a positional confidence error of 300 m or less*
YPDT Wells - CAMC / YPDT	*returns name and position of wells commissioned by YPDT with a positional confidence error of 300 m or less*
YPDT Wells – CAMPGROUNDS	*returns name and position of wells suspected of serving campgrounds with a positional confidence error of 300 m or less – includes over 300 wells including CA wells, MNR wells, provincial parks, private campgrounds and clubs, such as Girl Guides.*
YPDT Wells - CONSERVATION AUTHORITY	*returns name and position of wells belonging to Conservation Authorities with a positional confidence error of 300 m or less*
YPDT Wells – Consultant	*returns name and position of wells drilled by a consultant, where the consultants name is listed as the well owners name with a positional confidence error of 300 m or less*
YPDT Wells - DEEP (>30m)	*returns name and position of wells with a depth greater then 30 m with a positional confidence error of 300 m or less*
YPDT Wells - Drought Susceptible - pump depth	*returns name and position of wells susceptible to drought as defined by the drillers recommended pump depth being less then 3 m below water table (Sept 2004 model) with a positional confidence error of 300 m or less*
YPDT Wells - Drought Susceptible - well depth	*returns name and position of wells susceptible to drought as defined by the below water table (Sept 2004 model) being less then 3 m from the base of the*

	well, with a positional confidence error of 300 m or less
YPDT Wells – Federal	*returns name and position of wells drilled by federal agencies – mostly Indian and Northern Affaires - with a positional confidence error of 300 m or less*
YPDT Wells – FLOWING	*returns name and position of wells flagged by the driller as flowing with a positional confidence error of 300 m or less*
YPDT Wells – Geotechnical	*returns name and position of wells considered to be geotechnical borings – from UGAIS database or the City of Toronto BH database - with a positional confidence error of 300 m or less*
YPDT Wells - GOLF COURSE	*returns name and position of wells belonging to a golf course with a positional confidence error of 300 m or less*
YPDT Wells - GRAVEL PITS	*returns name and position of wells belonging to a quarry or gravel pit operators with a positional confidence error of 300 m or less*
YPDT Wells - HIGH FLOW (Q>100 gpm)	*returns name and position of wells tested by the driller at greater than 100 gpm with a positional confidence error of 300 m or less*
YPDT Wells – MOE	*returns name and position of wells originating from the MOE database with a positional confidence error of 300 m or less*
YPDT Wells – Monitoring	*returns name and position of wells considered to be monitoring wells based on origin (e.g., IWA) or owners name (e.g., Landfill) with a positional confidence error of 300 m or less*
YPDT Wells - MUNICIPAL EXPLORATION	*returns name and position of wells considered to be municipal exploration wells (less than 6 water level readings) with a positional confidence error of 300 m or less*
YPDT Wells - MUNICIPAL MONITORING	*returns name and position of wells considered to be municipal monitoring wells (greater than 6 water level readings) with a positional confidence error of 300 m or less*

YPDT Wells - MUNICIPAL SUPPLY ACTIVE	*returns name and position of wells considered to be active municipal production with a positional confidence error of 300 m or less*
YPDT Wells - MUNICIPAL SUPPLY IN-ACTIVE	*returns name and position of wells considered to be in-active municipal production with a positional confidence error of 300 m or less*
YPDT Wells - Non-MOE	*returns name and position of wells that did not originate from the MOE database with a positional confidence error of 300 m or less*
YPDT Wells – Provincial	*returns name and position of wells drilled for a provincial agency with a positional confidence error of 300 m or less*
YPDT Wells – PWMN	*returns name and position of wells assigned to the PWMN with a positional confidence error of 300 m or less*
YPDT Wells – SCHOOLS	*returns name and position of wells drilled for a school or school board with a positional confidence error of 300 m or less*
YPDT Wells - SHALLOW (<20m)	*returns name and position of wells with a depth less than 20m with a positional confidence error of 300 m or less*
YPDT Wells – UGAIS	*returns name and position of wells taken from the UGAIS database with a positional confidence error of 300 m or less*