Supplementary Annual Report for 2011 Final Standards Ground Water Monitoring Information (OAC Rules 3745-54-90 through 54-100) - Form and Instructions

PLEASE NOTE FOR 2011 SUBMITTAL

The Supplementary Annual Report for 2011 Ground Water Monitoring Information is used to report to the Director of Ohio EPA a site's ground water monitoring activities during the 2011 calendar year. The Annual Report must be submitted by **March 1, 2012**, in accordance with Ohio Administrative Code (OAC) Rule 3745-50-58 and 54-75. Information to be submitted includes the following information:

1. Results of ground water surface elevation measurements required under OAC Rule 3745-54-97(F). Ground water flow rate and direction in the uppermost aquifer under paragraph (E) of OAC Rules 3745-54-98 and 99. Include maps indicating rate and direction arrows for each zone in the uppermost aquifer.

2. A description of any response taken necessary to restore compliance with the number, location and depth monitoring well requirements of OAC Rule 3745-54-97(A&B) (i.e., installation of additional wells).

3. Results of analysis of quarterly, semiannual and annual sampling (and re-sampling) of indicator parameters, waste constituents, reaction products, Appendix to OAC Rule 3745-54-98 parameters or hazardous constituents as specified in the facility permit/plan under paragraph (A) of OAC Rules 3745-54-98 and 99, paragraph (G) of OAC Rule 3745-54-99, and OAC Rule 3745-54-100(A)(1) for each ground water monitoring well.

4. Statistical tests determining whether a significant increase has occurred over the background values under paragraph (F) of OAC Rule 3745-54-98 for any parameter or constituent specified in the permit/plan.

5. Statistical tests determining whether a significant increase has occurred over the concentration limits under paragraph (D) of OAC Rule 3745-54-99 for any hazardous constituent specified in the permit/plan.

6. A summary of the results of any ground water corrective action program required by OAC Rule 3745-54-100 and the results of analyses implemented to determine the effectiveness of the Corrective Action Program as outlined in OAC Rule 3745-54-100(G).

If you have not yet received results for all sampling events during the 2011 calendar year, please include the results that you do have in order to meet the March 1st submittal date. Send additional results as they are received. Year 2011 data may be appended to existing 2010 files. If a copy of the 2010 electronic files is needed, contact Ohio EPA, Division of Drinking and Ground Waters at (614) 644-3128.

OAC Rule 3745-54-75 states that the reporting form and instructions supplied by the Director shall be used for the annual report. **For the 2011 Report Ohio EPA will utilize an electronic format. All portions of the annual report, including the five complete, accurate, and accessible dbf files in either Excel (xls) or dbf database formats, must be submitted on CD.**

The five files MUST follow the structural specifications that begin on page 2. The Master Parameter List needed as a reference for the Parameter database file described on page 3 and Adobe Acrobat versions of the Annual Report instructions and forms are available for download at http://epa.ohio.gov/Default.aspx?tabid=4101 or by calling the Reporting, Analysis & Data Management Unit of the Division of Materials and Waste Management at (614) 644-2621. Technical questions should be directed to the Division of Drinking and Ground Waters/Ground Water Program through the owner's/operator's Ohio EPA Division of Materials and Waste Management contact.

Mail a copy of the complete report to:

Ohio EPA
Division of Materials and Waste Management
Lazarus Government Center
50 West Town Street, Suite 700
P.O. Box 1049
Columbus, Ohio 43216-1049

All information requested in the report shall be submitted in an electronic format on a CD. The submittal CD must be labeled with the information shown below to allow for proper tracking:

-- Facility name with 12 digit EPA ID number
-- Annual reporting year
-- A notation as to whether the data has been compressed.
– A list of the files included on the CD. These must include, at a minimum: FACILITY.dbf, WELLS.dbf, PARAMS.dbf, SAMPLING.dbf, and GWDATA.dbf.

*** In addition, Ohio EPA requests that a complete paper copy of the report and CD be sent to the appropriate **District Unit Supervisor, Division of Materials and Waste Management.** Please note this mailing on the copy mailed to Columbus so that duplication can be avoided.

Central District Office - Ohio EPA
Lazarus Government Center
50 West Town Street, Suite 700
P.O. Box 1049
Columbus, Ohio 43216-1049

Northeast District Office - Ohio EPA
2110 East Aurora Road
Twinsburg, Ohio 44087

Northwest District Office - Ohio EPA
347 North Dunbridge Road
Bowling Green, Ohio 43402

Southeast District Office - Ohio EPA
2195 Front Street
Logan, Ohio 43138

Southwest District Office - Ohio EPA
401 East 5th Street
Dayton, Ohio 45402

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If an owner/operator submits **all** the information required in this report (five database files, all narrative and graphic requirements) on a quarterly or semi-annual basis, then the March 1st annual submittal shall consist of a reference to those documents and a CD containing the five database files appended to include data from the whole calendar year (including any past year's background data needed for statistical comparisons).

Even though some of the data required in the five databases will remain consistent from year to year, because of the relatively small amount of storage space this information takes up on the submitted CD, and the fact that each database is linked with data in the other databases, all of the information on the five databases must be submitted annually. This will allow for easy accessibility to any required information without having to locate a specific CD which contains the sought after information.

SECTION 1 - FACILITY.DBF

The Facility Database File should be submitted by all facilities required by OAC Rule 3745-54-90 to conduct ground water monitoring. The "Size" field represents the general size of the column. "Required" refers to whether that field must be filled in, not whether it must be present in the database file. All fields must be represented and accurate.

Column Headers	Type	Size	Required?	Description
NAME	Character	30	Y	Facility Name
FCID	Character	12	Y	RCRA EPA ID for the facility (OHD....)
ADDR1	Character	25	Y	Street address where the facility is located, not the corporate headquarters or mailing address.
ADDR2	Character	25	N	P.O. Box, if one exists for the facility.
CITY	Character	20	Y	City where facility is located, not corporate headquarters.
STATE	Character	2	Y	OH
ZIP	Character	9	Y	Zip Code (no hyphens)
PHONE	Character	14	Y	Phone Number including Area Code
CONTACT	Character	20	Y	Name of the contact person for the facility
SECTION	Character	4	N	USGS Section from Topo Map (Example: Section 21)
TWNSHIP	Character	4	N	USGS Township from Topo Map (Example: Township 9E)
RANGE	Character	4	N	USGS Range from Topo Map (Example: Range 4W)
LATITUDE	Character	10	Y	Facility Latitude (three decimal places with a space for the decimal placement). Example: 35E 14' 27.000" should be listed as 351427 000 in the file.
LONGITUDE	Character	10	Y	Facility Longitude (three decimal places with a space for the decimal placement). Example: 86E 6' 54.123" should be listed as 860654 123 in the file.
GEOG_ METHOD	Character	2	Y	Lat/Long Method - see below
NUM_WELLS	Numeric	3	Y	Total number of wells entered into database for facility
COUNTY_NAM	Character	16	Y	Name for the County where the facility is located
FIPS_CO	Character	3	N	FIPS County Code - leave blank if you don't know the code.
FIPS_ST	Character	2	N	FIPS State Code - for Ohio it is 39.

GEOGRAPHIC LATITUDE/LONGITUDE METHOD:

D=Digitized from a map or photo
G=Calculated from a USGS 7.5'map
C=Calculated from county center
F=Field Checked with tape measure
P=Digitized from a USGS 7.5'map
R=Calculated from Section/Township
A=Obtained from satellite data
T=Calculated from Universal Transverse Mercator (UTM)
M=Obtained from a manual
S=Surveyed
O=Other

SECTION 2 - WELL.DBF

For the 2011 Annual Report, all owner/operators shall submit a complete WELL.DBF for all wells that are part of the regulated system. Each well in a cluster of nested wells shall be listed separately. Each record (row) in the file describes one well at the facility. For duplicates, field, lab or equipment blanks, complete a row in the spreadsheet labeling the Well ID such as "LabBlank" or "MW-1" with "D" for duplicate in the Data Qualifier field**. "**Size" represents the general size of the column. "Required" refers to whether that field must be filled in, not whether it must be present in the database file. All fields must be represented and accurate. Unit symbols such as (') feet or (") inches are assumed and should not be included within the field.

Column Headers	Type	Size	Required?	Description
FCID	Character	12	Y	RCRA EPA ID for the facility (OHD...)
WELL_ID	Character	8	Y	Unique well identification number (for example MW-3)
DATUM	Character	8	Y	Reference point for elevation data: Mean Sea Level (MSL) or North American Vertical Datum 1988 (NAVD)
DEPTH	Character	10	Y	Most recent total well depth in feet from measuring point used for gwl
TOP_CAS_EL	Character	10	Y	Top of interior casing elevation referenced to DATUM in feet (846)
TOP_SCR_EL	Character	10	Y	Top of screen elevation referenced to DATUM in feet (813)
BOT_SCR_EL	Character	10	Y	Bottom of screen elevation referenced to DATUM in feet (800)
GRAD_POSTN	Character	1	Y	Well Gradient (U= Up; D= Down; S=Side; O= Other; B=Unknown)
CAS_MATERL	Character	10	Y	Inner well casing material: PVC, SS (Stainless Steel), Teflon, ABS, PTFE, Fiber (Epoxy Fiberglass), GalvStl (Galvanized Steel), Other
PIPE_DIA	Character	4	Y	Interior diameter of well casing in inches (4)
COMMENT	Character	110	N	Comment (such as "Abandoned", etc.)
SURFACE_EL	Character	10	Y	Ground Surface elevation referenced to DATUM in feet
LATITUDE	Character	10	Y	Well Latitude (three decimal places with a space for the decimal placement) 35E 14' 27.000" would be listed as 351427 000 in the file.
LONGITUDE	Character	10	Y	Well Longitude (three decimal places with a space for the decimal placement). 86E 6' 54.123" would be listed as 860654 123.
X_VAR	Character	10	N	Enter X and Y coordinates if required for modeling. No spaces or characters are permitted
Y_VAR	Character	10	N	
GEOG_METHOD	Character	1	Y	Latitude/Longitude Method Code (see bottom of previous page)
ELEV_METHOD	Character	1	N	Elevation Method Code (A = Differential mode GPSd; B = absolute mode GPSd; C = surveyed from benchmark; D = Digitally interpolated from map; E= manually interpolated from a map)
WELL_USE	Character	2	Y	Well Use Code: 1A = Public Water Supply; 1B = Private Water Supply; 1C = Extraction & Treatment; 1D = Irrigation Supply; 1E = Industrial Supply; 1F = Dewatering; 06 = Seismic Monitoring; 07 = Test Hole (uncased); 09 = Tracer (monitoring); **8A = RCRA monitoring**; 8B = Piezometer; 8C = Other Ground Water Observation
WELL_LOG_T	Character	1	Y	Well Log Type Code: D= Core-record of strata through which borehole passes; F= Drillers-brief record of gross characteristics of strata; M= Geologist-Graphic record of strata from microscopic exam
DATE_INSTL	Date	8	Y	Date Installed (mm/dd/yy)
DPTH_INSTL	Character	10	Y	Well Depth at Installation in feet
GWL_INSTL	Character	10	Y	GW Level at installation referenced to DATUM in feet
DATA_QA_W	Character	1	N	Well QA Code…This Field is NOT IN USE AT THIS TIME.

SECTION 3 - SAMPLING.DBF

Each record (row) in the file describes one sampling date for a given facility during the past calendar year. **If the owner/operator is using past results from a sampling event(s) as background for statistical well comparisons, each of those sampling events must be included as well.** (If the sampling event required three or fewer consecutive days, the owner/operator may report the event as a single date as long as that fact is noted under "Comments".) **"**Size" represents the general size of the column. "Required" refers to whether that field must be filled in, not whether it must be present in the database file. All fields must be represented and accurate.

Column Headers	Type	Size	Required?	Description
FCID	Character	12	Y	RCRA EPA ID for the facility (OHD...)
SAMP_DATE	Date	8	Y	Sampling Date (mm/dd/yy)
SAMP_SCHEM	Character	4	Y	Q=Qtrly; S=Semi-Annually; M = Monthly; O=Other; A=Annual
COMMENT	Character	60	N	Comments (such as resamples)

SECTION 4 - PARAMETER.DBF

Each record (row) in the file describes one parameter being monitored at a given facility. Each parameter sampled during the year should be listed. **The Parameter Code from the Master Parameter List must be used.** The list is available for download from http://epa.ohio.gov/Default.aspx?tabid=4101. **"**Size" represents the general size of the column. "Required" refers to whether that field must be filled in, not whether it must be present in the database file. All fields must be represented and accurate.

Column Headers	Type	Size	Required	Description
FCID	Character	12	Y	RCRA EPA ID for the facility (OHD...)
NAME	Character	8	Y	**Parameter Code from Master Parameter List (No Commas)**
REP_CODE	Character	1	N	If Replicates were collected enter a separate line for each with "a", "b", "c", or "d" in this field.
UNITS	Character	8	Y	Units for display of this parameter (Use default units on Master List)
DET_LMT	Numeric	14,3	Y	Parameter Method Detection Limit (the 14 = total length of field, 3= number of positions to the right of the decimal point that are available). If more than one method detection limit was used during the year, include the highest one.
ACL	Numeric	14,3	N	Alternate Concentration Limit (Allowed by permit/plan only, in default units)
MCL	Numeric	14,3	N	Maximum Concentration Limit (in default units)
CODE	Numeric	3	N	No longer necessary
METH_CODE	Character	5	Y	EPA Analytical Method Code from SW846.

SECTION 5 - GWData.DBF

This file contains the analytical ground water results including any Drinking Water Parameters, Ground Water Quality Parameters, Indicator Parameters, annual Appendix to OAC Rule 3745-54-98 parameters, resamples, blanks, duplicates and site specific parameters from all RCRA wells or other required sampling points as required for each sampling event. OAC Rule 3745-50-58(J)(1) requires that all samples and measurements taken for the purpose of monitoring must be representative of the monitored activity. In addition to all parameters sampled, the facility is required to submit the water level measurements for each well for each sampling event. Each record (row) in the file contains one ground water observation from a given facility and well on a specified date for a given parameter. Complete and accurate results for all groundwater monitoring performed during 2011 **and** any **background data from past years used for statistical purposes** including sampling dates and detection limits must be submitted.

Field/Column	Type	Size	Required?	Description
FCID	Character	12	Y	RCRA EPA ID for the facility (OHD...)
WELL_ID	Character	8	Y	Unique well identifier (i.e., MW-1)
PARAMETER	Character	8	Y	Parameter Code from Master List (Do NOT use Commas)
SAMP_DATE	Date	8	Y	Sample collection date (mm/dd/yy)
CHR_DATA	Character	14	Y	Detection Limit (PQL w/characters, ND<) in default units from Master List.
REAL_DATA	Numeric	14,3	Y	Numeric results (14 = total size, 3 = positions allowed to the right of the decimal point). Use default units from Master List.
UNITS	Character	8	Y	Units of observation in default units from Master List.
DUP_CODE	Character	1	N	Enter "D" if sample is a duplicate
REP_CODE	Character	1	N	If Replicates were collected enter a separate line for each with “a”, “b”, “c”, or “ d” in this field.
METH_CODE	Character	5	Y	Approved Analytical Method from SW846
DATA_QUAL	Character	2	N	Measurement Qualifier - See list below

Data Qualifiers found below may be used to indicate any limits to interpretation of the data. Any two codes may be combined.

A = Average value
C = Determined present by GC/EC
D = Value is from a diluted sample
F = Field measurement
J = Estimated value (MDL< X < PQL)
K = Actual value< Reported value
L = Actual value> Reported value
N = Tentatively identified
O = Analysis lost
P = Present but not quantified
R = Rejected - do not use
S = Sample not stored properly
U = Tested but not detected (< MDL)
V = Calculated value
X = Too numerous to count
Y = Sample not filtered
Z = Not suitable for analysis

SECTION 6 - OTHER REQUIRED INFORMATION

Additional information to accompany the electronic database submittals should include, but not be limited to, the information shown below. The additional information shall be submitted in an electronic format equivalent to the suggested software program indicated if the facility so desires. **Narrative may be written in any word processing program but saved in MicrosoftWord:**

1. Signed Certification Statement per OAC Rule 3745-54-75(J) and 3745-50-58(K) of the facility’s/consultant’s legal responsibility for accuracy of data, submitted on paper, to read as follows:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

2. Ground Water Flow Data:
   - Results of ground water surface elevation measurements required under OAC Rule 3745-54-97(F).
   - A brief description of the ground water flow system. Annual ground water flow direction and rate in the uppermost aquifer as required under OAC Rule 3745-54- 98(E), 99(E) and 54-100(D).
   - A description of any response necessary to restore compliance with number, location and depth monitoring well requirements of OAC Rule 3745-54-97(A&B) (i.e., installation of additional wells)

3. Sampling Data:
   - Date, exact place and time of sampling or measurement; individual(s) who performed the sampling or measurement per OAC Rule 3745-50-58(J)(3)
   - Copies of Chains of Custody & Sample Receipt forms including preservation methods
   - Results of any field analyses
   - A description of problems encountered during sampling or statistical analysis of the data, any deviation from SAP procedures including documentation of parameter omissions during any sampling event.
   - Background data from past years used for statistical purposes including sampling dates and detection limits.

4. Lab Data: (submit either electronically or by hard copy lab sheets)
   - Date(s) analyses were performed and individual(s) who performed the analyses
   - Analytical techniques or methods used
   - Results of such analyses including: duplicate, trip, field and equipment blank data, any dilution, spike, spike duplicate, spike and surrogate recovery % with Control Limits, RPD, lab/method blank
   - **Method detection limit, PQL**, and units of measurement.
   - **Documentation that the MDL was below the MCL**, statistical and/or concentration limit for each parameter
   - Results of any data validations performed with discussion if any data validation issues (qualifiers) were such that the information provided may not be used for compliance requirements.

5. Tables:
   - Statistical information required on TABLE 1 may be submitted by electronic format on CD
   - Any information required under the Detection, Compliance or Corrective Action monitoring sections of this report that would be conducive to spreadsheet submittal may be entered on the CD.

6. Maps: In order to meet the requirements of OAC Rule 3745-54-97(J) for reporting results of ground water surface elevations under OAC Rule 3745-54-97(F), Ohio EPA requires that owner/operators submit a map(s) for each sampling event indicating:
   - Position of the hazardous waste management unit in relation to the monitoring wells
   - Potentiometric maps of all monitored zones for each sampling event, including arrow(s) marking flow direction(s) as evidence that the monitor well samples are representative of the quality of ground water passing the point of compliance as required by OAC Rule 3745-54-97(A)(2), 98 and 99(B) and (E), and 54-100(D); and
   - Iso-concentration maps for contaminants if the facility is in either compliance or corrective action.

7. Calculations: If ground water contamination has been determined, provide supporting calculations pertaining to the calculated or measured rates of migration of hazardous waste/constituents during the reporting period.

SECTION 7 - STATISTICAL EVALUATIONS

NOTE - Statistical methods used to determine significant changes in ground water quality may be selected from the procedures outlined in the 2009 Unified Guidance for Statistical Analysis of Ground Water Monitoring Data at RCRA Facilities. Alternative methods achieving comparable statistical power may also be used. **Please enter the required information on Table 1 as part of the Supplementary Annual Report or on a spreadsheet/database**. Statistically significant differences shall be bolded, underlined or readily identified in some other manner in each applicable table. Only owner/operators that have completed collection of the numbers and kinds of samples necessary to establish the background appropriate for the form of statistical test employed need to report this section.

1. Provide evidence that the statistical methods were as specified in the permit/plan comparing data at the compliance point to background ground water quality per OAC Rule 3745-54-97(H)&(I)(3 & 4)&98(F)(1).

2. Provide evidence that the statistical methods were conducted separately for each constituent in each well per OAC Rule 3745-54-97(H).

3. Provide evidence that the statistical methods were appropriate for the distribution of the constituents per OAC Rule 3745-54-97(I)(1).

4. Provide evidence that the statistical methods were done at a Type 1 error level of .01 for each testing period for individual well comparisons; and .05 for multiple comparisons (with the exception of tolerance, confidence, prediction intervals and control charts) per OAC Rule 3745-54-97(I)(2).

5. Provide evidence that the statistical methods used accounted for any data below the limit of detection as specified in the permit/plan per OAC Rule 3745-54-97(I)(5).

6. Provide evidence that the statistical methods used included procedures to control or correct for seasonal, spatial and temporal variability, as necessary per OAC Rule 3745-54-97(I)(6).

7. Provide evidence that the frequency of conducting the statistical tests to determine where there is statistically significant evidence of contamination met the permit conditions per OAC Rule 3745-54-98(D&F).

8. Provide evidence that the statistical tests were completed within the time frame specified in the permit/plan per OAC Rule 3745-54-98(F)(2) or 99(D)(2).

9. Provide evidence that tests were run to determine whether there was a statistically significant increase over the background for any chemical parameter or hazardous constituent specified in the permit/plan as required by OAC Rule 3745-54-98(G).

10. Provide evidence that the statistical tests for compliance and corrective action monitoring were run as specified in the permit/plan comparing data collected at the compliance point to a concentration limit developed in accordance with OAC Rules 3745-54-94&99(D)(1).

11. Provide evidence that tests were run to determination statistically significant evidence of increased contamination for any chemical parameter or hazardous constituent specified in the permit/plan as part of the compliance monitoring system per OAC Rule 3745-54-99(D)(2).

12. Provide evidence that the frequency of conducting the statistical tests met the permit conditions per OAC Rule 3745-54-99(F).

13. If statistics were used to determining that presence of parameters listed in the Appendix to OAC Rule 3745-54-98 is below background, provide evidence that the tests were performed according to OAC Rule 3745-54-98(F) comparing data at the compliance point to background ground water quality in a timely manner according to the permit as required by OAC Rule 3745-54-99(G).

14. Provide example calculations of the statistical methods used.

Ohio EPA requests interpretations of ground water quality data not analyzed statistically also be submitted as part of Section 7 (comments pertaining to applicability of the data to determining whether ground water quality has been affected by facility operations). **This information may be submitted in narrative form (WordPerfect) on the CD.**

SECTION 8 - DETECTION GROUND WATER MONITORING

NOTE - Owners or operators of facilities required to establish a detection ground water monitoring program in accordance with OAC Rule 3745-54-98 shall submit documentation of the following information per the requirement that annual reports must cover all activities during the year. Documentation of any response reporting requirements must be included in narrative/spreadsheet format on CD as part of the annual report or as specified in the permit/plan.

1. If there was statistically significant evidence of hazardous constituent contamination at a well at the compliance point, provide evidence that the owner/operator notified the Director in writing within 7 days, as required by OAC Rule 3745-54-98(G)(1).

2. Include dates, results, including resamples, and discussion of any Appendix to OAC Rule 3745-54-98 or site-specific subset of constituent sampling required under OAC Rule 3745-54-98(G)(2)&(3).

3. If hazardous constituents were confirmed at a well at the compliance point, note whether an application for a permit modification to establish compliance monitoring was submitted to the Director, within 90 days, as required by OAC Rule 3745-54-98(G)(4).

4. If applicable, note that the owner/operator submitted to the Director, within 180 days of the initial trigger, all data necessary to justify an alternate concentration limit under OAC Rule 3745-54-94(B) per OAC Rule 3745-54-98(G)(5)(a).

5. If applicable, note that the owner/operator submitted to the Director within 180 days of the initial trigger an engineering feasibility plan for a corrective action program under OAC Rule 3745-54-100 unless all hazardous constituent results were either below an established MCL or ACls were sought for each per OAC Rule 3745-54-98(G)(5)(b).

6. If applicable, note that the owner/operator notified the Director within 7 days of determining statistically significant evidence of contamination at the compliance point of the intention to make an “Other Source Demonstration” per OAC Rule 3745-54-98(G)(6)(a).

7. If applicable, note that within 90 days of the original trigger, the owner/operator submitted an “Other Source Demonstration” to the Director in lieu of a permit modification application per OAC Rule 3745-54-98(G)(6)(b).

8. If applicable note that Ohio EPA agreed that the “Other Source Demonstration” successfully showed that a source other than a regulated unit caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation per OAC Rule 3745-54-98(G)(6).

9. If applicable, should the Other Source Demonstration not have been successful, note that within those same 90 days of the original trigger, the owner/operator submitted to the Director an application for a permit modification to make appropriate changes to the detection monitoring program per OAC Rule 3745-54-98(G)(6)(c).

10. At any time, if the owner/operator has determined that the present detection monitoring program no longer satisfied the requirements of the regulations, note that he/she submitted an application within 90 days for a permit modification to make any appropriate changes to the program per OAC Rule 3745-54-98(H).

SECTION 9- COMPLIANCE GROUND WATER MONITORING

NOTE - Owners or operators of facilities required to establish a compliance ground water monitoring program in accordance with OAC Rule 3745-54-99 **shall submit the following information in narrative/spreadsheet format on CD** as part of the annual report or as specified in the permit/plan to substantiate that the regulated units are in compliance with the ground water protection standard under OAC Rule 3745-54-92:

1. If ground water contamination has been determined supply supporting calculations pertaining to the calculated or measured rates of migration of hazardous waste/constituents during the reporting period.

2. Submit the results of annual enhanced Appendix to OAC Rule 3745-54-98 sampling (including resamples) required under OAC Rule 3745-54-99(G).

3. If, following the annual enhanced sampling for Appendix to OAC Rule 3745-54-98, any additional hazardous constituents were found to be present in the uppermost aquifer in addition to the constituents listed in the permit/plan, note whether the constituent and its concentration were reported to Ohio EPA within seven days of a confirmatory resampling event or within seven days of the original sampling event per OAC Rule 3745-54-99(G).

4. If, during the annual enhanced sampling for Appendix to OAC Rule 3745-54-98, a new constituent was detected and subsequently confirmed, note whether the Director was notified in writing that the constituent would be added to the permit monitoring list within 7 days of that confirmation per OAC Rule 3745-54-99(G).

5. If the owner/operator determined that the concentration limits had been exceeded at any monitoring well at the point of compliance, note that the Director was notified in writing within 7 days of that determination per OAC Rule 3745-54-99(H)(1).

6. If concentration limits had been exceeded, note that the owner/operator submitted to the Director an application for a permit modification to establish a corrective action program within 180 days of that determination, or within ninety days if an engineering feasibility study had previously been submitted per OAC Rule 3745-99(H)(2).

7. If the concentration limits were exceeded at the compliance point and the owner/operator chose to submit an Other Source Demonstration, note that this notification was supplied to the Director EPA within seven days of determination per OAC Rule 3745-54-99(I)(1).

8. Note, if applicable, whether within 90 days of the exceeding the concentration limits, the owner/operator submitted an “Other Source Demonstration” to the Director per OAC Rule 3745-54-99(I)(2).

9. Indicate, if applicable, whether within those same 90 days of the exceedance, the owner/operator submitted to the Director an application for a permit modification to make any appropriate changes to the compliance monitoring program per OAC Rule 3745-54-99(I)(3).

10. If an Other Source Demonstration was submitted, indicate that monitoring was continued in accordance with the compliance monitoring program established under OAC Rule 3745-54-99 per OAC Rule 3745-54-99(I)(4).

11. If the present compliance monitoring program no longer satisfied the requirements of the regulations, note whether an application for a permit modification to make any appropriate changes to the program was submitted within 90 days per OAC Rule 3745-54-99(J).

12. Note if any hazardous constituents have exceeded their concentration limits in the ground water between the compliance point and the downgradient facility property boundary per OAC Rule 3745-54-91(A)(3). In order to make this evaluation, a demonstration that the concentration, rate, and extent of contamination have been determined must be submitted.

13. If any hazardous constituents have exceeded their concentration limits between the compliance point and the downgradient property boundary, note whether an application for a Corrective Action Program under OAC Rule 3745-54 according to OAC rule 3745-54-91(A)(3) was submitted?

SECTION 10 - CORRECTIVE ACTION GROUND WATER MONITORING

NOTE - To summarize efforts to determine the effectiveness of a corrective action program during the compliance period ensuring that the ground water protection standard is not exceeded, the owner/operator must establish and implement a ground water monitoring program that may be based on the requirements for a compliance monitoring program under OAC Rule 3745-54-99. The owner/operator shall submit evaluations on the effectiveness of the corrective action program semi-annually **in electronic format. Narrative submittals shall be in WordPerfect format or in any of the spreadsheet or database formats listed in the introduction.** Information should include:

1. Include an explanation of methods used to prevent the hazardous constituents from exceeding their respective concentration limits at the compliance point by removing the hazardous waste constituents or treating them in place per OAC Rule 3745-54-100(C).

2. Provide analytical results of the ground water monitoring program (including resamples) implemented to determine the effectiveness of the corrective action program as outlined in OAC Rule 3745-54-100(D).

3. Provide a summary of any corrective action to remove or treat in place any hazardous constituents that exceeded concentration limits between the compliance point and the downgradient property boundary per OAC Rule 3745-54-100(E)(1). In order to make this evaluation, the concentration, rate, and extent of contamination must be determined.

4. Provide a summary of any corrective action used to remove or treat in place any hazardous constituents that exceeded concentration limits beyond the facility boundary per OAC Rule 3745-54-100(E)(2). In order to make this evaluation, the concentration, rate, and extent of contamination must be determined.

5. Provide a schedule of corrective action activities that took place during the past year and the proposed scheduled activities for the coming year per OAC Rule 3745-54-100(E)(3).

6. If performing Corrective Action Monitoring beyond the Compliance Period, note whether a successful demonstration that the ground water protection standard has not been exceeded for a period of three consecutive years has been submitted per OAC Rule 3745-54-100(F).

7. Note the submittal dates of the annual reports on the effectiveness of the corrective action program that were submitted per OAC Rule 3845-54-100(G). This report may be included in the annual report required by OAC Rule 3745-54-75.

8. If during the past year the corrective action monitoring program no longer satisfied the requirements of the regulations, note whether a submittal of an application for a permit modification was made within 90 days making any appropriate changes to the program per OAC Rule 3745-54-100(H).

TABLE 1 - STATISTICAL BACKGROUND FORM

Parameter Name _____Statistical Method _____ Sample Date _____

CRITERIA	ENTER WELL NAMES HERE							
Sampling Frequency								
Experimentwise error no less than 0.01 for individual well comparisons?								
Type 1 error no less than 0.05 for Multiple well comparisons?								
Basis of Comparison - Background, Concentration Limit, MCL or ACL?								
# Background Wells in Database								
# Samples in Background Data Base								
Seasonality/Temporal Corrections (method)								
Spatial Corrections (method)?								
% of Total Non-Detects								
Method of Treating Non-Detects								
Normal/LogNormal Distribution?								
Known contamination?								
Number of Retests Allowed								
Prediction Interval								
Confidence Level								
Upper Prediction Limit								
# of Future Observations*								
Confidence Interval								
Lower Confidence Limit								
MCL/ACL/Fixed Standard								
Confidence Level								
On Mean?								
On Upper %?								
Control Chart Type?								
Control Limits								
Number of Retests Allowed								
STATISTICAL SIGNIFICANCE?								

*Number of Future Observations = # of independent measurements per well between the sampling event and the next time the data must be statistically analyzed.

SECTION 11 - EXAMPLES OF THE REQUIRED DATA FILES

FACILITY.DBF

NAME	FCID	ADDR1	ADDR2	CITY	STATE	ZIP	PHONE	CONTACT	SECT
TEST	OHD123456789	123 First St	PO BOX 100	KENT	OH	40000	4401123214	FRED SMITH	21

TWP	RANGE	LATITUDE	LONGITUDE	GEOG_ METHOD	NUM_WELLS	COUNTY NAME	FIPS_CO	FIPS_ST
'9E	**'4W**	410842 435	812203 321	S	5	PORTAGE	133	39

WELL.DBF

FCID	WELL_ID	DATUM	DEPTH	TOP_CAS_ EL	TOP_SCR_ EL	BOT_SCR_ EL	GRAD_POSTN	CAS_MATERL
OHD123456789	MW-6	MSL	65	865	808	798	D	SS
OHD123456789	MW-9	MSL	57	853	803	793	U	SS
OHD123456789	DupMW6							
OHD123456789	FBlank							

PIPE_DIA	COMMENT	SURFACE_EL	LATITUDE	LONGITUDE	X_VAR	Y_VAR	GEOG_METHOD
2	bent	866.01	405327 449	805151 094			S
2	good	849.75	405332 945	805145 985			S
	Duplicate						
	Field Blank						

ELEV_METHOD	WELL_ USE	WELL_LOG_T	DATE_INSTL	DPTH_INSTL	GWL_INSTL	DATA_QA_W
	8A	F	02/29/91	65.1	821.06	
	8A	F	02/29/91	68.2	818.89	
	8C					
	8C					

PARAMS.DBF

FCID	NAME	REP_CODE	UNITS	DET_LMT	ACL	MCL	CODE	METH_CODE
OHD123456789	Cond F	b	umhos/cm					9050
OHD123456789	GWL		feet					
OHD123456789	pH F	c	SU					
OHD123456789	Temp F		F					
OHD123456789	TOC	a	mg/l					9060
OHD123456789	TOC	b	mg/l					9060
OHD123456789	TOX		ppb	3.000				9022
OHD123456789	111Tri		ppb	3.000		200.0		8240

SAMPLING.DBF

FCID	SAMP_DATE	SAMP_SCHEM	COMMENT
OHD123456789	6/1/06	S	First semi-annual sampling event for 2006.
OHD123456789	12/28/06	S	Second semi-annual sampling event for 2006.
OHD123456789	6/1/07	S	First semi-annual sampling event of 2007
OHD123456789	12/8/07	S	Second semi-Annual sampling event for 2007
OHD123456789	7/26/07	O	Re-sampling due to statistical trip.
OHD123456789	6/14/08	S	First semi-annual sampling event of 2008
OHD123456789	12/21/08	S	Second Semi-Annual sampling event for 2008
OHD123456789	3/12/09	S	First semi-annual sampling event of 2011
OHD123456789	4/17/09	O	Resampling of MW-6 & MW-7 due to 3/12/09 Cr false +
OHD123456789	9/24/09	S	Second Semi-Annual sampling event for 2009.

GWDATA.DBF

FCID	WELL_ID	PARAM	SAMP_ DATE	CHR_DATA	REAL_ DATA	UNITS	DUP_ CODE	REP_ CODE	METH_ CODE	DATA_ QUAL
OHD123456789	MW-10	Cond F	4/17/09	1520.000	1520.000	umhos/cm				
OHD123456789	MW-6	Cond F	4/17/09	1550.000	1550.000	umhos/cm				
OHD123456789	MW-10	GWL	4/17/09	819.470	819.470	feet				
OHD123456789	MW-6	GWL	4/17/09	820.090	820.090	feet				
OHD123456789	MW-10	pH F	4/17/09	6.400	6.400	SU				
OHD123456789	MW-6	pH F	4/17/09	6.400	6.400	SU				
OHD123456789	MW-8	Temp F	4/17/09	57.000	57.000	F				
OHD123456789	MW-9	Temp F	4/17/09	58.000	58.000	F				
OHD123456789	MW-10	TOC	4/17/09	2200.000	2200.000	mg/l				
OHD123456789	MW-6	TOC	4/17/09	2200.000	2200.000	mg/l				
OHD123456789	MW-10	TOC	4/17/09	ND<5.000	0.000	ppb	D			
OHD123456789	MW-9	TOX	4/17/09	ND<5.000	0.000	ppb				
OHD123456789	MW-8	111Tri	9/24/09	ND<5.000	3.451	ppb			8260	J