Process for Extracting Information from ICIS on NPDES Permits with Nutrient Requirements (Monitoring and/or Limits):

1. **Extract permit, facility, and limits data from ICIS SAP Business Intelligence**
    a. Query Logic
        i. Fields to pull ***[see Appendix 1 for the full list of fields to pull from ICIS SAP Business Intelligence]***
        ii. Constraints/Caveats
            1. Current Version Only filter
            2. Parameter Code In List: ***[see Appendix 2 for the full list of parameter codes to pull from ICIS SAP Business Intelligence]***
            3. Permit Status Code In List: ADC (Admin Continued); EFF (Effective); EXP (Expired)
            4. Permit Type Code In List: NPD (NPDES Individual Permit); GPC (General Permit Covered Facility)
            5. Limit Value Type Code Is Not Null
               OR
               [Limit Value Type Code Is Null
               AND
               State Code In List: IA (Iowa)]
    b. Report Logic
        i. Reports to Populate
            1. Limit Records (Limit and Monitoring-only Records)
            2. Facilities
            3. Outfalls
            4. Limit Sets
            5. Params by State
            6. DMR Comments (preprinted comments on DMR form)
            7. Components
            8. Ref Tables
            9. Query Summary (general information about ICIS Business Intelligence query)
        ii. Constraints/Caveats
            1. Add user-defined variable "PTYP (PCS Legacy)", which pulls the third character of the "NPDES ID". Used for filtering out non-wastewater or non-NPDES facilities.
    c. Issues with downloading Business Intelligence documents in .xlsx format. ***[See Appendix 5 for resolving any issues with extracting Business Intelligence documents via SAP Web Intelligence.]***

2. **Filtering and preparing extracted data for analysis**
   a. Framework for screening data in Access ***[see Appendix 3 for the phases outlined below]***
      i. Import Limit Records tab from Excel to Access *[Phase I]*
      ii. Add the following columns to the imported permit universe table ***[see section 2.b.ii below]***:

Field Name	Data Type
ReasonForDeletion	Short Text
IndustryCat	Short Text
ParamCat1	Short Text
ParamCat2	Short Text
ParamCat3	Short Text
LimitOrMonitor	Short Text
UnitType	Short Text
LimitUnit_stdized	Short Text
NumericLimitValue_stdized	Number (Double)
FreqStatbaseCombo	Short Text
LimitExpression	Short Text
DataTranslated	Long Text

      iii. Translate any records that appear to have data migration issues
         1. 279 facilities (All in Michigan) from the Limits/Monitoring Pull (February 2015) were identified with "NPD" Permit Types but had NPDES IDs consistent with ones linked to a General Permit (MIG08, MIG57, MIG58, MIG96)
      iv. Filter out the following records:
         1. Have Permit Type "NPD" (NPDES Individual Permit)
            AND have "NPDES IDs" used for CAFOs, stormwater facilities, general permit covered facilities, and unpermitted facilities (Use "PTYP (PCS Legacy)" field for filtering)
         2. Have Permit Type "GPC" (General Permit Covered Facility)
            AND facility is covered under a State-Issued Non-NPDES General Permit (run SELECT query that matches the facility's "MGP NPDES ID" to the State Non-NPDES General Permit "NPDES ID")
         3. Have Permit Type "GPC" (General Permit Covered Facility)
            AND facility is covered under an NPDES General Permit
            AND have "NPDES IDs" used for CAFOs, stormwater facilities, or unpermitted facilities (Use "PTYP (PCS Legacy)" field for filtering)
         4. Permitted Feature Type not equal to "External Outfall" or "Sum"
         5. Monitoring Location Code not equal to:

Monitoring Location Code	Monitoring Location Description
1	Effluent Gross
2	Effluent Net
A	Disinfection, Process Complete
B	Prior to Disinfection
EG	Effluent Gross
SC	See Comments
Y	Effluent Gross (Supplementary)

6. Measuring units that are neither concentration-based nor mass-based (e.g., percent, ratio, yes/no, pass/fail, descriptive)

v. Copy and paste the filtered-out records into a new worksheet, then delete the filtered-out records from the Limit Records worksheet.

b. Framework for manipulating data in Access ***[see Appendix 3 for the phases outlined below]***

i. Update Table Limit Records with predefined formula for Column "FreqStatbaseCombo" *[Phase III]*

ii. Update Table Limit Records with predefined steps and formulas for the following columns: "IndustryCat"; "ParamCat1"; "ParamCat2"; "ParamCat3"; "LimitOrMonitor"; "UnitType"; "LimitUnit_stdized"; "NumericLimitValue_stdized"; "FreqStatbaseCombo"; "LimitExpression" *[Phase IV]*

Process for Developing the Total NPDES Individual and General Permitted Facility Universe:

3. Extract permit data from ICIS SAP Business Intelligence

a. Query Logic

i. Fields to pull ***[see Appendix 4 for the full list of fields to pull from ICIS SAP Business Intelligence]***

ii. Query filters

1. Current Version Only filter
2. Permit Status Code In List: ADC (Admin Continued); EFF (Effective); EXP (Expired)
3. Permit Type In List: NPD (NPDES Individual Permit); GPC (General Permit Covered Facility); SNN (State Non-NPDES Master General Permit)
   NOTE: Due to errors with pulling large data sets in SAP Business Intelligence, might have to run separate queries for the three permit types to be pulled.

b. Report Logic

i. Reports to Populate

1. Basic Universe Info
2. Permit SIC Codes
3. Permit NAICS Codes
4. Facility SIC Codes
5. Facility NAICS Codes
6. Components
7. Ref Table
8. Query Summary (general information about ICIS Business Intelligence query)

ii. Constraints/Caveats

1. Add user-defined variable "PTYP (PCS Legacy)", which pulls the third character of the "NPDES ID". Used for filtering out non-wastewater or non-NPDES facilities.

c. Issues with downloading Business Intelligence documents in .xlsx format. ***[See Appendix 5 for resolving any issues with extracting Business Intelligence documents via SAP Web Intelligence.]***

4. **Filtering and preparing extracted data for analysis**
    a. Framework for manipulating data in Access
        i. Combine the Permit Type "NPD" and "GPC" data into one spreadsheet.
        ii. Import downloaded ICIS data from Excel to Access
        iii. Add the following columns to the imported permit universe table:

Field Name	Data Type
ReasonForDeletion	Short Text
DataTranslated	Long Text

        iv. Translate any records that appear to have data migration issues
            1. 376 facilities (All in Michigan) from the Limits/Monitoring Pull (February 2015) were identified with "NPD" Permit Types but had NPDES IDs consistent with ones linked to a General Permit (MIG08, MIG57, MIG58, MIG96)
        v. Run a delete query to remove any MS4 permits with "MS4", "stormwater", or "storm water" in their ICIS Permit Name or Facility Name (this is done to remove any MS4 permits that do not have "S" as the third character of the NPDES ID)
        vi. Run a delete query to remove all general permitted facilities whose Master General Permit NPDES ID is for a State Non-NPDES General Permit.
        vii. Run a delete query to remove all other permits with non-numeric 3rd characters, except for general permitted facilities with third character "F" or "G", regardless of major/minor status with a letter as the third character in the NPDES ID (intended to remove CAFO, stormwater, and non-NPDES permits such as pretreatment, groundwater, etc., that have been entered into ICIS incorrectly)
        viii. Run a delete query to remove permits with no date information in any field

Process for Analyzing Nutrient Requirement Data:

5. **Analyze Potential Discharging Universe for Industrial Facilities**
    a. Based on two lists of SIC codes: the first was developed by WPD in 2010 and the other was developed by OECA for the DMR Pollutant Loading Tool.
    b. The two lists were merged together into one and are considered to be the potential universe of industrial facilities for this task.
    c. Current list contains 411 SIC codes ***[See Appendix 6 for the complete list of potential discharging universe for industrial facilities]***
    d. General Query Logic for Defining the Potential Universe
        i. "INNER JOIN" data table (i.e., Limit/Monitoring Records data, Permit Universe data) to reference table (i.e., Potential Universe SICs)
    e. Example SQL code for defining the Potential Universe in a table (using the Limit/Monitoring Records data table `[LimitRecords]` and the reference potential universe SIC table `[Ref_SIC Code_Potential Industrials]`):

```
UPDATE LimitRecords INNER JOIN [Ref_SIC Code_Potential Industrials] ON
       LimitRecords.[Primary Permit SIC Code] = [Ref_SIC Code_Potential
       Industrials].[SIC Code] SET LimitRecords.IndustryCat = "P"
WHERE (((LimitRecords.IndustryCat) Is Null));
```

6. **Analyzing extracted data for <u>Individual Permit</u> Universe – the following reports were developed from the raw data above (II = Individual Potential Industrial facilities; IM = Individual Municipal [Domestic WWTF] facilities):**
    a. **Report II-1:** Universe of Individual Industrial Permits with Nutrient Requirements (potential discharging universe only)
        i. Rows: State | EPA Region
        ii. Columns:
            1. Total Potential Nutrient Discharging Universe | Number of Permits with Limits | Number of Permits with Monitoring Requirements| Number of Permits with Any Requirement
            2. # Majors | # Non-Majors | # Total | % Majors | % Non-Majors | % Total
    b. **Report IM-1:** Universe of Individual WWTF Permits with Nutrient Requirements
        i. Rows: State | EPA Region
        ii. Columns:
            1. Total WWTF Universe | Number of Permits with Limits | Number of Permits with Monitoring Requirements | Number of Permits with Any Requirement
            2. # Majors | # Non-Majors | # Total | % Majors | % Non-Majors | % Total
    c. **Report II-2:** Number of Individual Industrial Permits with Numeric Limits by Parameter Category (potential discharging universe only)
        i. Rows: State | EPA Region
        ii. Columns:
            1. Total Universe of potential Nutrient discharging Permits | Parameter Category Level 1 | Total Permits with Nutrient Limits
                a. Parameter Category (Nitrogen only | Phosphorus only | Dual Control)
            2. Majors | Non-Majors
            3. # of Permits | % of Total Universe
    d. **Report IM-2:** Number of Individual WWTF Permits with Numeric Limits by Parameter Category
        i. Rows: State | EPA Region
        ii. Columns:
            1. Total Universe of Permits | Parameter Category Level 1 | Total Permits with Nutrient Limits
        iii. Parameter Category (Nitrogen only | Phosphorus only | Dual Control)
            1. Majors | Non-Majors
            2. # of Permits | % of Total Universe
    e. **Report II-3:** Number of Individual Industrial Permits with Monitoring Requirements by Parameter Category (potential discharging universe only)
        i. Rows: State | EPA Region
        ii. Columns:
            1. Total Universe of Potential Nutrient Discharging Permits | Parameter Category Level 1 | Total Permits with Required/Optional Monitoring-only
        iii. Parameter Category (Nitrogen only | Phosphorus only | Dual Control)
            1. Majors | Non-Majors
            2. # of Permits | % of Total Universe

f. **Report IM-3:** Number of Individual WWTF Permits with Monitoring Requirements by Parameter Category
    i. Rows: State | EPA Region
    ii. Columns:
        1. Total Universe of Permits | Parameter Category Level 1 | Total Permits with Required/Optional Monitoring-only
    iii. Parameter Category (Nitrogen only | Phosphorus only | Dual Control)
        1. Majors | Non-Majors
        2. # of Permits | % of Total Universe
g. **Report II-4:** Number of Individual Industrial Permits with Any Permit Requirement by Parameter Category (potential discharging universe only)
    i. Rows: State | EPA Region
    ii. Columns:
        1. Total Universe of Potential Nutrient Discharging Permits | Parameter Category Level 1 | Total Permits with Any Permit Requirement
    iii. Parameter Category (Nitrogen only | Phosphorus only | Dual Control)
        1. Majors | Non-Majors
        2. # of Permits | % of Total Universe
h. **Report IM-4:** Number of Individual WWTF Permits with Any Permit Requirement by Parameter Category
    i. Rows: State | EPA Region
    ii. Columns:
        1. Total Universe of Permits | Parameter Category Level 1 | Total Permits with Any Permit Requirement
    iii. Parameter Category (Nitrogen only | Phosphorus only | Dual Control)
        1. Majors | Non-Majors
        2. # of Permits | % of Total Universe
i. **Report II-5:** Number of Individual Industrial Permits with numeric limits by Major Parameter Type (potential discharging universe only)
    i. Rows: State|Region
    ii. Columns:
        1. Parameter Category Level 3 ("ParamCat3")
        2. Majors | Non-Majors
j. **Report IM-5:** Number of Individual WWTF Permits with numeric limits by Major Parameter Type
    i. Rows: State|Region
    ii. Columns:
        1. Parameter Category Level 3 ("ParamCat3")
        2. Majors | Non-Majors
k. **Report II-6:** Number of Individual Industrial Permits with monitoring requirements by Major Parameter Type (potential discharging universe only)
    i. Rows: State|Region
    ii. Columns:
        1. Parameter Category Level 3 ("ParamCat3")
        2. Majors | Non-Majors

l. **Report IM-6:** Number of Individual WWTF Permits with monitoring requirements by Major Parameter Type
    i. Rows: State|Region
    ii. Columns:
        1. Parameter Category Level 3 ("ParamCat3")
        2. Majors | Non-Majors
m. **Report II-7:** Number of Nutrient Limits by Limit Expression (individual industrial permits—potential discharging universe only)
    i. Rows: State|Region
    ii. Columns:
        1. Limit Expression (e.g., daily, monthly)
        2. Limit Type (i.e., concentration, mass)
n. **Report IM-7:** Number of Nutrient Limits by Limit Expression (individual WWTF permits)
    i. Rows: State|Region
    ii. Columns:
        1. Limit Expression (e.g., daily, monthly)
        2. Limit Type (i.e., concentration, mass)
o. **Report II-8:** Range of Numeric Nutrient Limits (Nationwide, individual industrial permits—potential discharging universe only)
    i. Minimum Range of Concentration-based Permit Limits for N and P
        1. Rows:
            a. Limit Unit
            b. Parameter Category Level 3 ("ParamCat3")
        2. Columns: Limit Expression
    ii. Maximum Range of Concentration-based Permit Limits for N and P
        1. Rows:
            a. Limit Unit
            b. Parameter Category Level 3 ("ParamCat3")
        2. Columns: Limit Expression
    iii. Mode(s) of Concentration-based Permit Limits for N and P
        1. Rows:
            a. Limit Unit
            b. Parameter Category Level 3 ("ParamCat3")
        2. Columns: Limit Expression (exclude "OTHER" limits)
    iv. Maximum and Minimum Concentration-based Permit Limits for TN and TP by Limit Expression
        1. Rows:
            a. Limit Expression
            b. Parameter Category Level 3 ("N, total" and "P, total" only)
        2. Columns: Maximum Limit (mg/L) | Minimum Limit (mg/L)
    v. Maximum and Minimum Concentration-based Permit Limits for TN by Limit Expression
        1. Rows: Maximum Limit (mg/L) | Minimum Limit (mg/L)
        2. Columns: Limit Expression
    vi. Maximum and Minimum Concentration-based Permit Limits for TP by Limit Expression

        1. Rows: Maximum Limit (mg/L) | Minimum Limit (mg/L)
        2. Columns: Limit Expression
    vii. Frequency of Concentration-based Permit Limits for TN and TP

p. **Report IM-8:** Range of Numeric Nutrient Limits (Nationwide, individual WWTF permits)
    i. Minimum Range of Concentration-based Permit Limits for N and P
        1. Rows:
            a. Limit Unit
            b. Parameter Category Level 3 ("ParamCat3")
        2. Columns: Limit Expression
    ii. Maximum Range of Concentration-based Permit Limits for N and P
        1. Rows:
            a. Limit Unit
            b. Parameter Category Level 3 ("ParamCat3")
        2. Columns: Limit Expression
    iii. Mode(s) of Concentration-based Permit Limits for N and P
        1. Rows:
            a. Limit Unit
            b. Parameter Category Level 3 ("ParamCat3")
        2. Columns: Limit Expression (exclude "OTHER" limits)
    iv. Maximum and Minimum Concentration-based Permit Limits for TN and TP by Limit Expression
        1. Rows:
            a. Limit Expression
            b. Parameter Category Level 3 ("N, total" and "P, total" only)
        2. Columns: Maximum Limit (mg/L) | Minimum Limit (mg/L)
    v. Maximum and Minimum Concentration-based Permit Limits for TN by Limit Expression
        1. Rows: Maximum Limit (mg/L) | Minimum Limit (mg/L)
        2. Columns: Limit Expression
    vi. Maximum and Minimum Concentration-based Permit Limits for TP by Limit Expression
        1. Rows: Maximum Limit (mg/L) | Minimum Limit (mg/L)
        2. Columns: Limit Expression
    vii. Frequency of Concentration-based Permit Limits for TN and TP

q. **Report II-9:** Number of Limits (Mass and Concentration) (potential nutrient discharging industrial NPDES permits)
    i. Rows: State|Region
    ii. Columns:
        1. Majors | Non-Majors
        2. Limit Type (Concentration | Mass | Total)

r. **Report IM-9:** Number of Limits (Mass and Concentration) (WWTF NPDES permits)
    i. Rows: State|Region
    ii. Columns:
        1. Majors | Non-Majors
        2. Limit Type (Concentration | Mass | Total)

7. **Analyzing extracted data for <u>General Permit</u> Universe – the following reports were developed from the raw data above (GI = General Potential Industrial facilities; GM = General Municipal [Domestic WWTF] facilities):**
    a. **Report GI-1:** Universe of General Industrial Permits with Nutrient Requirements (potential discharging universe only)
        i. Rows: State | EPA Region
        ii. Columns:
            1. Total Potential Nutrient Discharging Universe | Number of Permits with Limits | Number of Permits with Monitoring Only | Number of Permits with Any Requirement
            2. # Majors | # Non-Majors | # Total | % Majors | % Non-Majors | % Total
    b. **Report GM-1:** Universe of General Domestic WWTF Permits with Nutrient Requirements
        i. Rows: State | EPA Region
        ii. Columns:
            1. Total WWTF Universe | Number of Permits with Limits | Number of Permits with Monitoring Only | Number of Permits with Any Requirement
            2. # Majors | # Non-Majors | # Total | % Majors | % Non-Majors | % Total
    c. **Report GI-2:** Number of General Industrial Permits with Numeric Limits by Parameter Category (potential discharging universe only)
        i. Rows: State | EPA Region
        ii. Columns:
            1. Total Universe of potential Nutrient discharging Permits | Parameter Category Level 1 | Total Permits with Nutrient Limits
                a. Parameter Category (Nitrogen only | Phosphorus only | Dual Control)
            2. Majors | Non-Majors
            3. # of Permits | % of Total Universe
    d. **Report GM-2:** Number of General WWTF Permits with Numeric Limits by Parameter Category
        i. Rows: State | EPA Region
        ii. Columns:
            1. Total Universe of Permits | Parameter Category Level 1 | Total Permits with Nutrient Limits
                b. Parameter Category (Nitrogen only | Phosphorus only | Dual Control)
            2. Majors | Non-Majors
            3. # of Permits | % of Total Universe
    e. **Report GI-3:** Number of General Industrial Permits with Monitoring Requirements by Parameter Category
        i. Rows: State | EPA Region
        ii. Columns:
            1. Total Universe of Potential Nutrient Discharging Permits | Parameter Category Level 1 | Total Permits with Required/Optional Monitoring-only
                c. Parameter Category (Nitrogen only | Phosphorus only | Dual Control)
            2. Majors | Non-Majors
            3. # of Permits | % of Total Universe

f. **Report GM-3:** Number of General WWTF Permits with Monitoring Requirements by Parameter Category
    i. Rows: State | EPA Region
    ii. Columns:
        1. Total Universe of Permits | Parameter Category Level 1 | Total Permits with Required/Optional Monitoring-only
            d. Parameter Category (Nitrogen only | Phosphorus only | Dual Control)
        2. Majors | Non-Majors
        3. # of Permits | % of Total Universe
g. **Report GI-4:** Number of General Industrial Permits with Any Permit Requirement by Parameter Category (potential discharging universe only)
    i. Rows: State | EPA Region
    ii. Columns:
        1. Total Universe of Potential Nutrient Discharging Permits | Parameter Category Level 1 | Total Permits with Any Permit Requirement
            e. Parameter Category (Nitrogen only | Phosphorus only | Dual Control)
        2. Majors | Non-Majors
        3. # of Permits | % of Total Universe
h. **Report GM-4:** Number of General WWTF Permits with Any Permit Requirement by Parameter Category
    i. Rows: State | EPA Region
    ii. Columns:
        1. Total Universe of Permits | Parameter Category Level 1 | Total Permits with Any Permit Requirement
            f. Parameter Category (Nitrogen only | Phosphorus only | Dual Control)
        2. Majors | Non-Majors
        3. # of Permits | % of Total Universe

Change Log

Version	Date	Notes
1	2/19/2016	Initial version of document for WA 5-03, Task 2
2	3/10/2016	Updates from Danielle
3	4/15/2016	Updates from Greg S. to Potential Discharging Universe process

Appendix 1 – List of fields to pull from ICIS SAP Business Intelligence for permits with nutrient monitoring/limits

Region Code
State Code
NPDES ID
Facility Type Code
Facility Type Desc
Permit Name
Facility Name
Location Address
Supplemental Address
City
State Code
Zip
County Name
Section Township Range
Latitude in Decimal Degrees
Longitude in Decimal Degrees
Horizontal Accuracy Measure
Source Map Scale Number
Reference Point Desc
Geometric Type Desc
Horizontal Collect Method Desc
Horizontal Reference Datum Desc
HUC Code
Tribal Land Code
Tribal Land Name
USBC Tribal Land Code
Permit Type Code
Permit Type Desc
Facility Type Indicator
Curr. Major Minor Status
Total App. Design Flow (MGD)
Total Actual Average Flow (MGD)
Permit Status Code
Permit Status Desc
Issue Date
Effective Date
Expiration Date
State Water Body
State Water Body Name
Perm Feature Type Desc
Perm Feature Desc
Perm Feature Latitude/Longitude. Latitude in Decimal Degrees
Perm Feature Latitude/Longitude. Longitude in Decimal Degrees
Perm Feature Latitude/Longitude. Horizontal Accuracy Measure (Meter)
Perm Feature Latitude/Longitude. Source Map Scale Number
Perm Feature Latitude/Longitude. Reference Point Desc
Perm Feature Latitude/Longitude. Geometric Type Desc
Perm Feature Latitude/Longitude. Horizontal Collect Method Desc
Perm Feature Latitude/Longitude. Horizontal Reference Datum Desc
Perm Feature Water Body. RAD Reach ID
Perm Feature Water Body. RAD HUC Code based on Reach ID
Perm Feature Water Body. RAD Water Body Name
Perm Feature Water Body. State Water Body Code
Perm Feature Water Body. State Water Body Name
Perm Feature ID
Perm Feature Flow. App Actual Average Flow (MGD)
Perm Feature Flow. Application Design Flow
Limit Set Designator
Limit Set Name
Limit Set Type Desc
Limit Set DMR Comments
Change of Limit Status Desc
Parameter Code
Parameter Desc
Monitoring Location Code
Monitoring Location Desc
Limit Season ID
All Months Limit Applies - Short
Basis Of Limit Code
Basis Of Limit Desc
Eligible for Burden Reduction?
Any Effluent Trade in Place?
Limit Type Code
Limit Type Desc
Limit Start Date
Limit End Date
Limit Frequency of Analysis Desc
Limit Sample Type Desc
Limit Unit Short Desc
Limit Unit Desc
Limit Value Type Code
Limit Value Type Desc
Limit Value
Limit Value Consolidation
Limit Value Requirement Short
Statistical Base Short Desc
Statistical Base Long Desc
Limit Value Qualifier Code
Primary Permit SIC Code
Primary Permit SIC Desc
Permit SIC Code
Permit SIC Desc
Permit SIC Primary Indicator
Primary Permit NAICS Code
Primary Permit NAICS Desc
Permit NAICS Code
Permit NAICS Desc
Permit NAICS Primary Indicator
Primary Facility SIC Code
Primary Facility SIC Desc
Facility SIC Code
Facility SIC Desc
Facility SIC Primary Indicator
Primary Facility NAICS Code
Primary Facility NAICS Desc
Facility NAICS Code
Facility NAICS Desc
Facility NAICS Primary Indicator
Component Type Code
Component Type Desc
Curr. Compl. Track. Status
Curr. Compl. Track. Status Start Dt
Curr. Compl. Track. Status End Dt
Dmr Non Receipt Flag
Rnc Tracking Flag
MGP NPDES ID
MGP Gen. Perm. Industrial Cat. Desc.
FRS Facility UIN
FRS HUC Code
ICIS Facility Interest ID

Appendix 2 – Parameter Codes Used for Pulling NPDES Permits with Nutrient Requirements (Limits and/or Monitoring-only)

Parameter Code	Parameter Description	Pollutant Code	Chemical Abstract Service No.	Notes
New Parameters in 2016 Pull				
00601	Nitrogen, total	2817	7727-37-9	Other mass per area parameter codes were pulled in 2015—both for Kjeldahl Nitrogen (81639 and 82539)
0600A	Nitrogen, total [as N] [adjusted]	2817	7727-37-9	Used in Chesapeake Bay states such as MD and NY
0600C	Nitrogen, total [as N] [credit]	2817	7727-37-9	
0600D	Nitrogen, total [as N] [delivered]	2817	7727-37-9	
0665C	Phosphorus, total [as P] [credit]	5889	7723-14-0	
51794	Nitrite + Nitrate total [as N]	10354		KS is still using this code for some permits
71855	Nitrogen, nitrite total [as NO2]	2806	14797-65-0	Used in several states. A similar code for nitrates was pulled in 2015 (71850).
Existing Parameters in 2016 Pull				
00600	Nitrogen, total [as N]	2817	7727-37-9	
00602	Nitrogen, Dissolved	99999		
00605	Nitrogen, organic total [as N]	2817	7727-37-9	
00607	Nitrogen, organic, dissolved [as N]	2817	7727-37-9	
00613	Nitrite nitrogen, dissolved [as N]	2806	14797-65-0	
00615	Nitrogen, nitrite total [as N]	2806	14797-65-0	
00618	Nitrogen, nitrate dissolved	5713	14797-55-8	
00620	Nitrogen, nitrate total [as N]	5713	14797-55-8	
00621	Nitrate nitrogen, dry weight	5713	14797-55-8	
00623	Nitrogen, Kjeldahl, dissolved [as N]	2817	7727-37-9	
00625	Nitrogen, Kjeldahl, total [as N]	2817	7727-37-9	
00630	Nitrite + Nitrate total [as N]	10354		
00631	Nitrite plus nitrate dissolved 1 det.	10354		
00640	Nitrogen, inorganic total	2817	7727-37-9	
00650	Phosphate, total [as PO4]	5878	14265-44-2	
00653	Phosphate total soluble	5878	14265-44-2	
00655	Phosphate, poly [as PO4]	5878	14265-44-2	
00660	Phosphate, ortho [as PO4]	5878	14265-44-2	
00662	Phosphorous, total recoverable	5889	7723-14-0	
00664	Dock discharge of phosphorus	5889	7723-14-0	
00665	Phosphorus, total [as P]	5889	7723-14-0	
00666	Phosphorus, dissolved	5889	7723-14-0	
00667	Phosphorus, dissolved reactive [drp as P]	5889	7723-14-0	
00670	Phosphorous, total organic [as P]	5889	7723-14-0	
00671	Phosphate, ortho, dissolved [as P]	5878	14265-44-2	
01299	Nitrogen-nitrate in water, [pct]	5713	14797-55-8	
04157	Phosphorus [reactive as P]	5889	7723-14-0	
04175	Phosphate, ortho [as P]	5878	14265-44-2	

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Parameter Code	Parameter Description	Pollutant Code	Chemical Abstract Service No.	Notes
0625D	Nitrogen, Kjeldahl, total [as N] [per discharge]	2817	7727-37-9	
0665S	Phosphorus, total [as P] [per season]	5889	7723-14-0	
49579	Nitrogen, total Kjeldahl	2817	7727-37-9	
50785	Phosphorus, ortho	5889	7723-14-0	
51084	Nitrogen, total available [water]	2817	7727-37-9	
51086	Nitrogen, nitrate [NO3], [water]	5713	14797-55-8	
51087	Nitrogen, Kjeldahl, total [TKN] [water]	2817	7727-37-9	
51092	Phosphate, total [P2O5], water	11195	17101-36-9	
51100	Nitrogen, total, as NO3, [water]	5713	14797-55-8	
51425	Nitrogen, Total As N	99999		
51426	Phosphorus, Total As P	99999		
51445	Nitrogen, Total	2817	7727-37-9	
51447	Nitrogen, Nitrite Total	2806	14797-65-0	
51448	Nitrogen, Nitrate Total	5713	14797-55-8	
51449	Nitrogen, Kjeldahl Total	2817	7727-37-9	
51450	Nitrite Plus Nitrate Total	10354		
51451	Phosphorus, Total	5889	7723-14-0	
51489	Nitrogen, Total as NO3 + NH3	12586		
51622	Limiting Nutrient [Nitrogen or Phosphorus]	99999		
51662	Nitrogen, Kjeldahl, Total [TKN], insoluble	2817	7727-37-9	
51663	Phosphorus, insoluble	5889	7723-14-0	
51675	Annual Nitrate Nitrogen Discharged	5713	14797-55-8	
51699	Phosphorus, Total [Avg Seasonal Load Cap]	5889	7723-14-0	
51764	Phosphorus Adsorption	5889	7723-14-0	
70505	Phosphate, total, color method [as P]	5889	7723-14-0	
70506	Phosphate, dissolved color method [as P]	5878	14265-44-2	
70507	Phosphorous, in total orthophosphate	5889	7723-14-0	
71850	Nitrogen, nitrate total [as NO3]	5713	14797-55-8	
71888	Phosphorus, total soluble [as PO4]	5878	14265-44-2	
81639	Nitrogen Kjeldahl, total [TKN]	2817	7727-37-9	
82386	Nitrogen, oxidized	2817	7727-37-9	
82539	Nitrogen, Kjeldahl	2817	7727-37-9	

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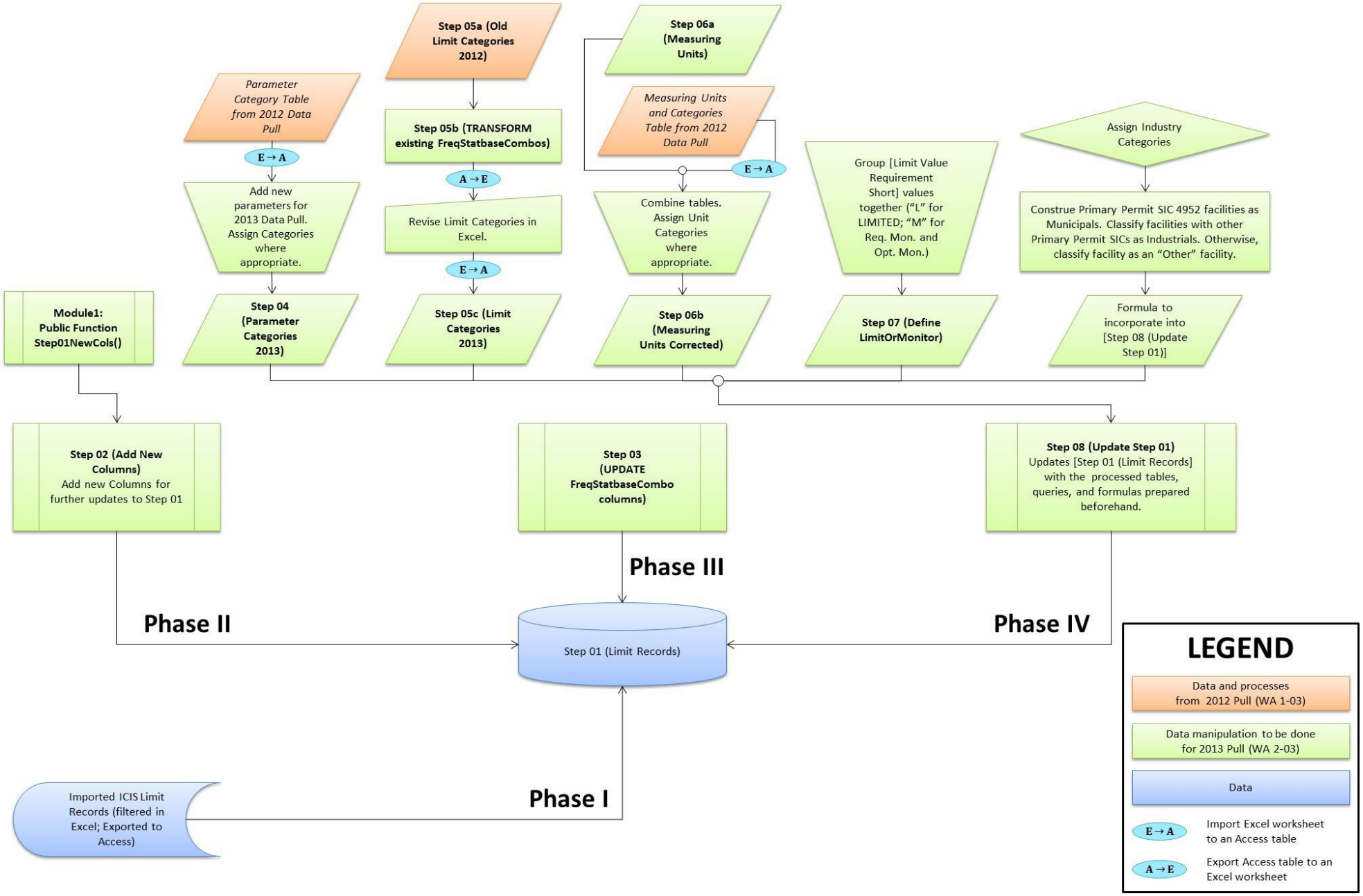
Appendix 3 – Flow chart for manipulating data in Access *[outlined in section 2.b]*



Appendix 4 – List of fields to pull permit universe data from ICIS SAP Business Intelligence

Region Code
State Code
NPDES ID
Permit Name
Facility Name
Permit Type Code
Permit Type Desc
Facility Type Indicator
Facility Type Code
Facility Type Desc
Curr. Major Minor Status
Issuing Agency Type Desc
MGP NPDES ID
MGP Gen. Perm. Industrial Cat. Desc.
Issue Date
Effective Date
Expiration Date
App. Received Date
Complete App Received Date
Primary Permit SIC Code
Primary Permit SIC Desc
Permit SIC Code
Permit SIC Desc
Permit SIC Primary Indicator
Primary Permit NAICS Code
Primary Permit NAICS Desc
Permit NAICS Code
Permit NAICS Desc
Permit NAICS Primary Indicator
Primary Facility SIC Code
Primary Facility SIC Desc
Facility SIC Code
Facility SIC Desc
Facility SIC Primary Indicator
Primary Facility NAICS Code
Primary Facility NAICS Desc
Facility NAICS Code
Facility NAICS Desc
Facility NAICS Primary Indicator
Component Type Code
Component Type Desc
FRS Facility UIN
ICIS Facility Interest ID

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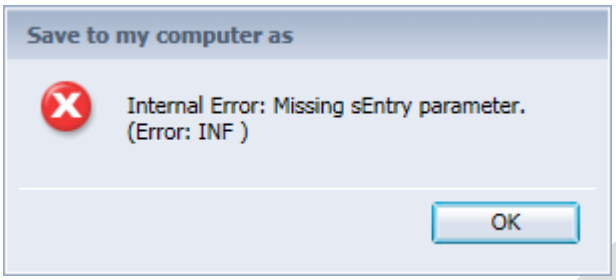
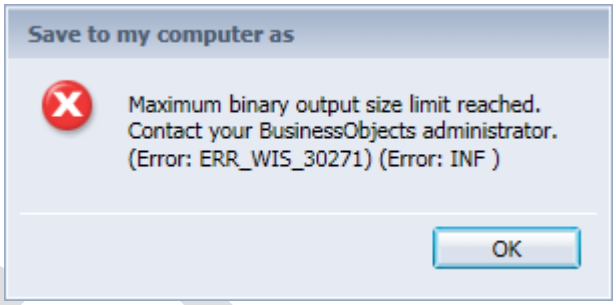
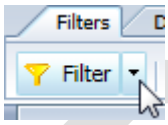
Appendix 5 – Troubleshooting Errors with Downloading Business Intelligence Documents

1. The most recent version of SAP Web Intelligence installed on ICIS has had issues with exporting Business Intelligence documents into Excel format (.xls or .xlsx). Depending on the size and complexity of the documents constructed, the following errors may appear when exporting the entire Business Intelligence document or just one of the reports contained in the document:





2. If either of these errors occurs when exporting the entire document into .xlsx format, try exporting one of the reports contained in the Business Intelligence document into .xlsx format ("Export Current Report As"). Repeat this step for all the reports contained in the document and compile the reports into a single Excel workbook.
3. If the above item is not successful, do the following:
   a. Navigate to the "Analysis" tab in Web Intelligence, and in the "Filters" sub-tab, click 

and then click

.
   b. When adding filters, use a field that can filter the pulled data down into an appreciable size. Fields such as "Permit Status Code" or "Region Code" are recommended for filtering reports covered under this task.
   c. After applying the appropriate filters, try exporting the current report into .xlsx format. Repeat **Step 3** until all the filter choices have been exhausted.
   (If Web intelligence still produces errors with exporting the data, trying limiting the selections to the field being filtered to one selection at a time [e.g., if filtering by EPA region, try filtering by one region at a time instead of by multiple regions]. Otherwise, note the issue, use a second field for filtering the report, and export the current report as directed in **Step 3** until the above errors no longer appear.)

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Appendix 6 – List of SIC Codes (Potential Nutrient-Discharging Industrial Facilities)

ID	SIC Code
1	0112
2	0174
3	0175
4	0182
5	0212
6	0251
7	0253
8	0254
9	0259
10	0272
11	0279
12	0711
13	0742
14	0752
15	0971
16	1031
17	1094
18	1311
19	1400
20	1422
21	1479
22	1481
23	1499
24	1522
25	1542
26	1611
27	1623
28	1629
29	1711
30	1794
31	1795
32	1799
33	2000
34	2011
35	2015
36	2021
37	2022
38	2023
39	2024
40	2026
41	2032
42	2035
43	2037
44	2038
45	2044
46	2046

ID	SIC Code
47	2047
48	2048
49	2051
50	2052
51	2062
52	2066
53	2075
54	2077
55	2082
56	2084
57	2085
58	2087
59	2091
60	2092
61	2096
62	2099
63	2211
64	2258
65	2262
66	2269
67	2273
68	2282
69	2295
70	2299
71	2392
72	2419
73	2426
74	2431
75	2434
76	2435
77	2451
78	2491
79	2514
80	2599
81	2611
82	2621
83	2631
84	2653
85	2672
86	2676
87	2679
88	2711
89	2812
90	2813
91	2816
92	2818

ID	SIC Code
93	2819
94	2821
95	2822
96	2823
97	2824
98	2833
99	2834
100	2836
101	2841
102	2842
103	2844
104	2861
105	2865
106	2869
107	2873
108	2874
109	2875
110	2879
111	2891
112	2892
113	2895
114	2899
115	2911
116	2952
117	2999
118	3011
119	3052
120	3081
121	3089
122	3111
123	3211
124	3221
125	3241
126	3255
127	3262
128	3271
129	3274
130	3275
131	3295
132	3297
133	3312
134	3313
135	3315
136	3316
137	3317
138	3325

ID	SIC Code
139	3334
140	3339
141	3341
142	3353
143	3354
144	3363
145	3365
146	3399
147	3411
148	3443
149	3444
150	3449
151	3451
152	3469
153	3471
154	3479
155	3489
156	3491
157	3494
158	3511
159	3519
160	3523
161	3531
162	3533
163	3534
164	3544
165	3545
166	3548
167	3552
168	3555
169	3559
170	3561
171	3562
172	3563
173	3565
174	3569
175	3585
176	3589
177	3612
178	3613
179	3622
180	3633
181	3639
182	3671
183	3674
184	3675

ID	SIC Code
185	3694
186	3699
187	3711
188	3713
189	3715
190	3721
191	3724
192	3729
193	3731
194	3743
195	3751
196	3764
197	3795
198	3841
199	3842
200	3851
201	3965
202	3996
203	3999
204	4013
205	4111
206	4213
207	4215
208	4226
209	4231
210	4311
211	4412
212	4581
213	4612
214	4724
215	4812
216	4900
217	4911
218	4923
219	4925
220	4931
221	4939
222	4941
223	4961
224	5012
225	5013
226	5052
227	5082
228	5092
229	5142
230	5146

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ID	SIC Code
231	5159
232	5182
233	5191
234	5211
235	5331
236	5411
237	5461
238	5499
239	5541
240	5712
241	5812
242	5941
243	5942
244	5947
245	5989
246	5999
247	6022
248	6141
249	6512
250	6513
251	6514
252	6515
253	6519
254	6531
255	6552
256	7011
257	7021
258	7032
259	7033
260	7041
261	7215
262	7218
263	7219
264	7261
265	7299
266	7353
267	7359

ID	SIC Code
268	7374
269	7389
270	7513
271	7514
272	7532
273	7542
274	7694
275	7699
276	7911
277	7933
278	7941
279	7948
280	7991
281	7992
282	7997
283	7999
284	8011
285	8051
286	8052
287	8059
288	8062
289	8063
290	8069
291	8071
292	8082
293	8092
294	8099
295	8211
296	8221
297	8222
298	8249
299	8322
300	8331
301	8361
302	8412
303	8422
304	8641

ID	SIC Code
305	8699
306	8731
307	8733
308	8734
309	8741
310	8744
311	8748
312	8811
313	8999
314	9111
315	9199
316	9221
317	9222
318	9223
319	9511
320	9512
321	9531
322	9611
323	9621
324	9661
325	9711
326	0133
327	0181
328	0241
329	0273
330	0921
331	1011
332	1021
333	1041
334	1061
335	1099
336	1221
337	1222
338	1321
339	1429
340	1442
341	1446

ID	SIC Code
342	1459
343	1475
344	1541
345	2013
346	2033
347	2034
348	2061
349	2063
350	2086
351	2141
352	2221
353	2231
354	2252
355	2257
356	2261
357	2281
358	2421
359	2436
360	2493
361	2499
362	2511
363	2512
364	2754
365	2851
366	2951
367	3061
368	3069
369	3083
370	3229
371	3231
372	3321
373	3465
374	3483
375	3499
376	3541
377	3564
378	3568

ID	SIC Code
379	3621
380	3679
381	3714
382	3732
383	3822
384	3861
385	3949
386	4011
387	4225
388	4491
389	4493
390	4512
391	4613
392	4619
393	4922
394	4924
395	4953
396	4959
397	5093
398	5144
399	5169
400	5171
401	5172
402	5192
403	5399
404	5551
405	5813
406	6732
407	7371
408	7549
409	7996
410	8661
411	9999

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