

Kansas Water Environment Association

Plant Awards Inspection Form and Instructions to Plant Award Inspectors

Instructions to Inspectors

1. Notify facility operator of date and time of inspection at least 3 working days prior to the inspection.
2. Take 35 mm slides during facility inspection. Describe each picture taken on the attached log. Submit the film and log to the Awards Committee with the inspection form. The Committee will develop the film and may prepare a presentation to be shown at the Award Banquet.
3. Use the attached Document Checklist to assure that all claims of achievements, programs, records, etc. are verified. Each claim must be documented in written form whether it is a form, record sheet, newspaper clipping or whatever is appropriate for the inspected item. This does not mean that all documents must be presented to the Plant Award Committee. Checks made on the Document Checklist by the inspector are sufficient.
4. The Inspection Form guides you by providing rating descriptions and possible points in the following categories:
 - a. Staff 15 points possible
 - b. Safety 15 points possible
 - c. Laboratory 5 points possible
 - d. Process evaluation 15 points possible
 - e. Compliance
 - (1) Effluent 10 points possible
 - (2) Biosolids disposal 5 points possible
 - f. Equipment status 10 points possible
 - g. Records 10 points possible
 - h. Public relations 10 points possible
 - i. Vintage bonus 2 points possible
 - j. Other 5 points possible
5. In each category, read the descriptions for each rating, choose the appropriate rating and check the box or enter the number of points. **Be sure that each claim is documented. If the facility claims, for example, that a written policy has been developed, ask to see the written policy and determine if it has been implemented before recording the points.** To determine the total score, add all points and enter the total on the first page of the Inspection Form.
6. Additional instructions for rating the **Process evaluation and control category**.
 - a. Determine what processes are present in the facility to be inspected.
 - b. On the form, cross out the processes that are not present.
 - c. Place a check mark in the space in front of each evaluation procedure that is performed and for which there is a record of the results. If the results are not written and documented for future reference, do not give credit for that procedure.
 - d. Calculate the score for process evaluation and control using the following formula:

$$\frac{(\text{number of evaluation \& control procedures documented})(15)}{\text{total number possible for the facility}} = \text{Total points for process eval. \& control}$$

KWEA Plant Awards Inspection Form

Facility Name: _____ Person in charge: _____ Phone #: _____
Inspector: _____ Date of Inspection: _____ Total points scored: _____

Staff (15 points possible) Total scored: _____

Staff Adequacy (5 points possible)

- Facility is adequately staffed for normal and relief operation. Such staffing allows good preventive maintenance and process control. (5)
- Adequate preventive maintenance and process control is provided and some on-duty training and relief staff is available. (3)
- Plant is run on a fire-alarm basis where only the biggest emergency gets the attention. (0)

Staff certification (5 points possible)

- Responsible person in charge has current certification at the proper level (3)
- All operating staff certified at the level required for the facility (or OIT) (2)
- All operating staff are certified at some level (or OIT) (1)

Staff training (5 points possible)

- All operators have had at least one State-recognized structured training session during the past 2 years (5)
- More than half the operators have had at least one State-recognized structured training session during the past 2 years. (2)

Safety (15 points possible) Total scored: _____

General safety program (5 points possible, 1 for each item)

- Fire extinguishers are available in necessary locations and currently certified.
- First aid kits are properly located and properly stocked with necessary supplies.
- Safety posters and warning signs are properly displayed.
- Protective equipment and shields are all in place. All hand rails are in place including toe-boards and mid-rails.
- Coast Guard-approved flotation devices are available and properly located.

Training & Equipment (10 points possible, 1 for each item)

- Specific training and equipment is adequately provided in the following areas:
 - A written policy has been developed and implemented
 - Lockout/Tagout
 - Confined Space/Fall protection
 - Right-to-know
 - Emergency evacuation
 - CPR/First aid
 - Chemical handling (if needed)
 - Emergency eyewash/shower (if needed)
 - Spill prevention/cleanup
 - Training sessions for all employees are provided at least once per month

Laboratory (5 points possible, 1 point for each item)

Total scored: _____

- Written procedures are available
- QC program is established and used
- Records of results and calculations are orderly and available
- The facility is adequate and orderly
- The person in charge is a certified Wastewater Lab Technician in the voluntary ABC program

Process evaluation and control (15 points possible)

Total scored: _____

Below are lists of methods of evaluating and controlling common treatment processes. Compare evaluation and control activities performed at the facility with the lists below to arrive at a score.

Barscreen

- ____ Amount (volume or weight) of screenings collected daily
- ____ Calculate amount collected per million gallons treated
- ____ Cleaned frequently enough

Grit chamber

- ____ Calculate detention time at average and max. lows
- ____ Air flow rate (if aerated)
- ____ Velocity (if long channel)
- ____ Amount of grit collected per day
- ____ Amount of grit collected per million gallons treated
- ____ Grit: TS & VS, %
- ____ Air flow control is based on valid information (if aerated grit chamber)

Primary clarifiers

- ____ Surface appearance
- ____ BOD, TSS of influent and effluent (% removal)
- ____ Amount of sludge blanket
- ____ Calculation of hydraulic loading
- ____ Weirs level (short circuiting)
- ____ Sludge pumping is properly controlled

Activated sludge

- ____ Observations of mixed liquor color and foam
- ____ Mixed liquor and return sludge settleability
- ____ Solids concentration in aeration basin(s) and return/waste sludge (MLSS, MLVSS, Centrifuge Spin)
- ____ Microscopic exam of mixed liquor
- ____ Aeration basin dissolved oxygen concentration
- ____ Secondary clarifier sludge blanket depth
- ____ Secondary clarifier effluent quality
- ____ Aeration rate control is based on valid information
- ____ Wasting rate control is based on valid information
- ____ Return rate control is based on valid information

RBCs

- ____ Influent and effluent BOD
- ____ Calculation of organic and hydraulic loadings
- ____ Appearance of growth on media
- ____ Secondary clarifier appearance
- ____ Rotating speed and aeration rates control are based on valid information

Trickling filters

- ____ Influent and effluent BOD
- ____ Calculation of organic and hydraulic loadings
- ____ Appearance of growth on media
- ____ Distributor movement and distribution pattern
- ____ Secondary clarifier appearance
- ____ Recirculation rate control is based on valid info.

Process evaluation and control (continued)

Lagoons

- ___ Color of algae (lt. green, dark green, blue-green, etc.)
- ___ Wave action
- ___ Dissolved oxygen and temperature
- ___ pH
- ___ Clarity
- ___ Influent and effluent BOD, TSS, pH
- ___ Depth of sludge (profile of entire bottom)
- ___ Flow distribution pattern control is based on valid info.
- ___ Calculation of hydraulic and organic loading

Disinfection by Chlorination/Dechlorination

- ___ Measurement of chlorine dosage, demand and residual
- ___ Pre- and Post-testing for fecal coliform
- ___ A chlorine/sulfur dioxide-specific safety program

Disinfection by Ultraviolet (UV) Irradiation

- ___ Pre- and Post-testing for fecal coliform
- ___ Measurement of UV transmittance of incoming wastewater
- ___ Individual lamp logs are kept and analyzed
- ___ Regular program for cleaning lamps

Anaerobic digesters

- ___ Raw (feed) sludge: TS & VS: % & lbs/day
- ___ Supernatant: TS & VS, % & lbs/day
- ___ Primary digester: Vol., Total Alk., pH, Temp.
- ___ Digester gas: CO₂, % and volume, cubic feet per day
- ___ Digested sludge: TS & VS, % & lbs
- ___ Calculation of organic and hydraulic loading
- ___ Feeding control is based on valid information

Aerobic digesters

- ___ Raw (feed) sludge: TS & VS: % & lbs/day
- ___ Supernatant: TS & VS: % & lbs/day
- ___ Mixed liquor dissolved oxygen
- ___ Temperature
- ___ Settleability
- ___ Calculation of organic and hydraulic loading

Compliance (15 points possible) Total scored: _____

Effluent (10 possible points)

- During the past 12 month calendar year there has been absolute compliance with the discharge permit limitations and no bypass of raw or partially-treated wastewater has occurred. (10)
- During the past 12 month calendar year dry weather flows have been treated to absolute compliance, but there have been 1 or 2 hydraulic surcharges which required bypassing of less than fully-treated wastewater. (7)
- During the past 12 month calendar year there have been 2 or less months where permit discharge limits were nominally exceeded. A nominal exceedance is no more than 1.5 times the permit limit. No more than 2 bypass events have occurred during the same period. (3)

Biosolids disposal (5 possible points)

- For the past 3 years all required samples have been collected, all required tests run, all reports filed, no problems meeting requirements for proper disposal. (5)
- In 2 of the past 3 years all required samples have been collected, all required tests run, all reports filed, no problems meeting requirements for proper disposal. (3)
- In the past 3 years most sampling, testing and reporting requirements have been met. Have had some problems meeting requirements for proper disposal. (1)

Equipment Status (10 points possible, 2 points for each)

Total scored: _____

- All equipment and processes are fully operational. (10)
- Some items of equipment have been taken out of service and repair is being actively pursued. (8)
- Overall treatment adequacy has not been significantly reduced by taking equipment out of service. (4)

Records (10 points possible, 1 for each item)

Total scored: _____

- Preventive maintenance task schedule is developed & used.
- Records include lab or test results on both operational control and performance monitoring.
- Records include information about equipment maintenance performed as well as equipment failures and repairs.
- Reports are on prepared forms.
- Permanent ink or indelible pencil is used to keep records.
- Reports are filed at the plant and available for 3 years minimum (required by KDHE).
- Weekly or monthly report summaries are filed with a headquarters away from the facility.
- An annual report is prepared and submitted to headquarters
- Records accurately reflect the spare parts inventory.
- A listing of industrial contributors and their contacts is available.

Public relations (10 points possible)

Total scored: _____

General (5 points, 1 for each item)

- At least one news release was prepared and released by the municipality (owner's staff) during the past year.
- A favorable news story was generated by the media during the past year.
- At least one educational tour of the facility was presented during the past year.
- At least one civic or business organization toured the facility during the past year.
- At least one tour of the facility was attended by members of the facility governing board during the past year.

Facility Appearance (5 points, 1 for each item)

- Area is attractively landscaped with trees, shrubs and other plantings.
- Plant area is properly fenced & signage is properly placed.
- Grass is properly mowed and maintained.
- Plant is generally tidy and neat.
- ID signs are suitable and attractive.

Vintage bonus (2 points possible) Total scored _____

Average age of facility and equipment is:

- Less than 10 years (0)
- 10-20 years (1)
- More than 20 years (2)

Other (5 points possible) Total scored _____

(Items not directly addressed in other categories)

(5 points may be subtracted or added to the total)

(Consider the following and anything else that may help the committee determine if the plant is outstanding in its class: Items that can add points to the score include: Innovative ideas, cost or energy savings, alarms, exemplary activities, publications, presentations given to outside organizations. Items that can subtract points from the score would include any problems not addressed above. Be sure to list and describe each item along with reasons why it should add or subtract from the plant's score on the back of this page.)

KWEA Plant Awards Inspection

Document Checklist

Use this checklist to confirm that all claims of achievements, programs, records are documented. In this way you, as an inspector, can verify all claims of awards, achievements, etc. before giving points for an inspection item. As you verify each item, place a check mark or X in the appropriate box.

Staff

- Staff roster
- Titles and job descriptions for each staff member
Documentation of certification and other achievements
Documentation of State-recognized, structured training during past 2 years

Safety

- Dated and signed inspection cards on fire extinguishers
- Documentation of training & equipment (ten items)

Laboratory

- Written procedures
- Documentation of Quality Control program
- Record books, bench sheets, calculation sheets, etc.
- Documentation of Lab and Lab Technician certification

Process evaluation documentation

- Record sheets with test results, etc.
- Calculation results for loadings
- Daily logs (evidence of control adjustments)
- Trend charts of process parameters

Compliance

Effluent

- NPDES Permit
- Last 12 month's Discharge Monitoring Reports
- Bypass reports

Biosolids disposal

- Results of lab tests for the past 3 years
- Reports to KDHE for the past 3 years
- Written sludge disposal plan

Equipment status

- If equipment is inoperable, determine status of repair schedule
- Equipment repair and replacement fund document with amount contributed annually and present balance
 - Written long range plan (at least 5 years) for equipment repair/replacement

Records

- Preventive maintenance task schedule
Lab/test results for process & performance monitoring
- Examples of prepared forms
- Past 3 years' records on file
- Copies of reports sent to headquarters
- Spare parts inventory records
- List of industrial contributors and contacts

Public relations

- Copies of news releases, favorable news stories
- Records of tours

Vintage bonus

- Calculation of average age of equipment

Other

- Whatever is appropriate documentation of points added or subtracted.