



APPLICATION TO CHANGE A WATER RIGHT
TECHNICAL ANALYSIS ADDENDUM
ADDITIONAL EVALUATION OF IMPACTS FOR RETURN FLOW ANALYSIS SHEET (606-TAA, GW)
ARM 36.12.1303

Answer every question and applicable follow-up questions. Use the checkboxes to denote yes ("Y") or no ("N"). Questions that require items to be submitted to the Department have a submitted ("S") checkbox, which is checked when the required item is attached to the Technical Analysis Addendum Additional Sheet. Label all submitted items with the question number for which they were submitted. Narrative responses that are larger than the space provided can be answered in an attachment. If an attachment is used, mark the see attachment ("A") checkbox on this form and label the attachment with the question number. If no attachment is needed, leave the see attachment ("A") checkbox blank. Constrain narrative responses to the specific question as is asked on the form; do not respond to multiple questions in one narrative. Label units in narrative responses.

Table with 2 columns: Question and Response. Row 1: 77. What is the name of the surface water source receiving return flows for which you are answering questions 78 to 80? Row 2: 78. Is gage data available? Row 3: a. If yes, answer the following questions for the number of stream gages that are available. Row 4: i. One stream gage is available. Row 5: 1. What is the gage name? Row 6: 2. Who operates and maintains the gage? Row 7: 3. Is the stream gage upstream or downstream of the points of diversion? Row 8: 4. Is there a limiting or controlling factor that would make the Drainage Area Method not practical? This includes dams that control the flow and streams with large gaining and/or losing reaches. Row 9: 5. Is the period of record greater than or equal to 10 years? Row 10: 6. How frequently is stage data recorded? Row 11: 7. If data gaps were to occur, are they identified and left unfilled or estimated using interpolation, ice correction, or indirect discharge measurements methods?



8. Was the rating curve established and maintained throughout the duration of the period of record using measurements taken near the reference gage and stage recorder according to USGS protocols?	<input type="checkbox"/> Y <input type="checkbox"/> N
9. Were there requirements for maintaining a permanent gage datum and meeting specified accuracy limits?	<input type="checkbox"/> Y <input type="checkbox"/> N
10. Does the gage data meet the Department's standard to be sufficient to calculate the median of the mean monthly flow rate and volume during the months with a net loss of return flows? See the "Department Standard Practice for Determining Physical Surface Water Availability" in the Permit Manual for more information.	<input type="checkbox"/> Y <input type="checkbox"/> N
a. If yes, skip to question 80.	
b. If no, answer question 78.b.	
ii. More than one stream gage is available	
1. List the gage names. _____	
2. Who operates and maintains the gages? _____	
3. Is one stream gage upstream and one downstream of points of diversion?	<input type="checkbox"/> Y <input type="checkbox"/> N
4. Do the stream gages have similar periods of record?	<input type="checkbox"/> Y <input type="checkbox"/> N
5. Are the periods of record each greater than or equal to 10 years?	<input type="checkbox"/> Y <input type="checkbox"/> N
6. How frequently is stage data recorded at each gage? _____	
7. For each gage, if data gaps were to occur, are they identified and left unfilled or estimated using interpolation, ice correction, or indirect discharge measurements methods?	<input type="checkbox"/> Y <input type="checkbox"/> N
8. Were the rating curves established and maintained throughout the duration of the period of record using measurements taken near the reference gages and stage recorders according to USGS protocols?	<input type="checkbox"/> Y <input type="checkbox"/> N
9. For each gage, were there requirements for maintaining a permanent gage datum and meeting specified accuracy limits?	<input type="checkbox"/> Y <input type="checkbox"/> N
10. Does the gage data meet the Department's standard to be sufficient to calculate the median of the mean monthly flow rate and volume during the months with a net loss of return flows? See the "Department Standard Practice for Determining Physical Surface Water Availability" in the Permit Manual for more information	<input type="checkbox"/> Y <input type="checkbox"/> N
a. If yes, skip to question 80.	
b. If no, answer question 78.b.	
b. If no gage data is available or if available gage data does not meet the Department's standard to be sufficient to calculate the median of the mean monthly flow rate and volume during the proposed months of diversion, is the source otherwise measured?	<input type="checkbox"/> Y <input type="checkbox"/> N
i. If yes,	
1. Submit measurements to the Department.	<input type="checkbox"/> S



<p>2. Who collected the measurements?</p> <p>_____</p>	<input type="checkbox"/> A
<p>3. With what method was the data collected?</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<input type="checkbox"/> A
<p>4. What is the period of record?</p> <p>_____</p>	
<p>5. What is the frequency of measurement?</p> <p>_____</p>	
<p>6. Are there gaps in the data?</p>	<input type="checkbox"/> Y <input type="checkbox"/> N
<p>a. If yes, what is the nature of the gaps and how are gaps handled to ensure data quality?</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<input type="checkbox"/> A
<p>7. Is there a process for maintaining the data and meeting specified accuracy limits?</p>	<input type="checkbox"/> Y <input type="checkbox"/> N
<p>a. If yes, explain.</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<input type="checkbox"/> A
<p>8. Does available measurement data meet the Department's standard to be sufficient to calculate the median of the mean monthly flow rate and volume during the months with a net loss of return flows?</p>	<input type="checkbox"/> Y <input type="checkbox"/> N
<p>a. If yes, skip to question 80.</p>	
<p>b. If no, answer question 79.</p>	
<p>79. Does the available measurement data, gage and/or otherwise measured, include a minimum of high, moderate, and low flows to be used for validation of a Department-accepted estimation technique? If the Department finds that your measurements are not sufficient to validate an estimation technique or that no estimation technique is appropriate for the source characteristics, further measurements may be required. Refer to the "Department Standard Practice for Determining Physical Surface Water Availability" in the Permit Manual for more information.</p>	<input type="checkbox"/> Y <input type="checkbox"/> N



a. If yes,	
i. Describe how your measurements are representative of high, moderate, and low flows. <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	<input type="checkbox"/> A
ii. Summarize the estimation technique. <hr/> <hr/> <hr/> <hr/> <hr/>	<input type="checkbox"/> A
b. If no, and one or more Department-accepted estimation techniques are appropriate for the source characteristics.	
i. Did you request to depart from the requirements of "Department Standard Practice for Determining Physical Surface Water Availability" found in the Permit Manual? Please note that the Department's Scientific Credibility Review of your Technical Analyses cannot commence until the Department receives measurements that meet these requirements or, in combination with an approved request to depart, are sufficient to complete any necessary technical analyses or scientific credibility reviews and to evaluate the applicable criteria.	<input type="checkbox"/> Y <input type="checkbox"/> N
1. If yes, submit a copy of the request to depart and, if available, the Department's decision.	<input type="checkbox"/> S
c. If no, and you have evidence that no Department-accepted estimation technique is appropriate for the source characteristics.	
i. Describe why no Department-accepted estimation technique is appropriate for the source characteristics. <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	<input type="checkbox"/> A
ii. Does available measurement data meet the Department's standard of monthly measurements throughout the period with a net loss of return flows?	<input type="checkbox"/> Y <input type="checkbox"/> N



<p>1. If no, did you request to depart from the requirements of "Department Standard Practice for Determining Physical Surface Water Availability" found in the Permit Manual? Please note that the Department's Scientific Credibility Review of your Technical Analyses cannot commence until the Department receives measurements that meet these requirements or, in combination with an approved request to depart, are sufficient to complete any necessary technical analyses or scientific credibility reviews and to evaluate the applicable criteria.</p>	<input type="checkbox"/> Y <input type="checkbox"/> N
<p>a. If yes, submit a copy of the request to depart, and if available, the Department's decision.</p>	<input type="checkbox"/> S
<p>80. How did you define the Area of Potential Adverse Effect evaluating return flow impacts?</p> <hr/> <hr/> <hr/> <hr/> <hr/>	<input type="checkbox"/> A

