

## RIWSP - ENVIRONMENTAL MONITORING AND MITIGATION PLAN

### Introduction

This EMMP is based on USAID’s Rwanda IEE and addresses issues related to integrated water resource management directly related and derived through SO6 and SO7. The mitigation plan below shows how it will through relevant procedures, practices and following set out standard regulations fulfill the conditions identified in the IEE.

### EMP Part 1 of 2: Environmental Verification Form

USAID/Rwanda, EG Program, Award Name _Rwanda Integrated Water Security Program (RIWSP)	Date of Screening November 22 <sup>nd</sup> 2011
Name of Prime Implementing Organization Florida International University (FIU)	Funding Period for this award: 2011- 2016
Name of Sub-awardee Organization (if this EMP is for a sub): NA	Current FY Resource Levels: FY 11 – FY 16
Geographic location of USAID-funded activities (Province, District):_National level and Akagera and Akanyaru Sub-basins (Eastern and Southern Provinces)	This report prepared by: Name: David R. Mutekanga Date: November 22 <sup>nd</sup> 2011
	Date of Previous EMP for this organization: _N/A_____

	<b>Key Elements of Program/Activities Implemented</b>	<b>Yes</b>	<b>No</b>
1	<ul style="list-style-type: none"> <li>• Education, technical assistance or training;</li> <li>• analyses, studies, academic or research workshops and meetings</li> <li>• document and information transfers;</li> <li>• Support for intermediate credit institutions when the objective is to assist in the capitalization of the institution or part thereof and when such support does not involve reservation of the right to review and approve individual loans made by the institution</li> <li>• studies, projects or programs intended to develop the capability of recipient countries to engage in development planning, except to the extent designed to result in activities directly affecting the environment</li> </ul>	<b>X</b>	
2	Agriculture activities including small scale land husbandry, soil and water conservation activities including irrigation, terracing, water harvesting, conservation agriculture and agro- forestry	<b>X</b>	
3	Activities associated with agriculture research		<b>X</b>
4	Activities associated with seeds, seed supply and planting materials		<b>X</b>
5	Water supply and sanitation activities	<b>X</b>	

6	Activities involving GDA mechanisms		<b>X</b>
7	Development Credit Authority initiatives		<b>X</b>
8	Activities involving financial services, support to microfinance institutions (MFI), micro, small, and medium enterprises (MSE, SME), Business Development Services (BDS)	<b>X</b>	
9	Activities involving promotion of public-private partnerships		<b>X</b>
10	Activities involving support to small and medium enterprises	<b>X</b>	
11	Activities involving provision of grants to local CSOs, national CSOs, and government districts	<b>X</b>	
12	Eco-tourism activities		<b>X</b>
13	Other activities that are not covered by the above categories		<b>X</b>

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**EMP Part 2 of 2: Mitigation Plan**

<b>Category of Activity</b>	<b>Description of specific environmental threats</b>	<b>Description of Mitigation Measures</b>	<b>Responsible for monitoring</b>	<b>Monitoring Indicator</b>	<b>Monitoring Method</b>	<b>Frequency of Monitoring</b>
<b>Initial Activity: Preliminary Assessment/Scoping, and Watershed Selection</b>						
Desk review, analyses, workshops, etc.	No environmental impacts anticipated as a result of these activities	N/A	N/A	N/A	N/A	N/A
<b>Component# 1 Increased sustainable and resilient access to water-and WASH-related infrastructure and services for domestic and productive use</b>						
Activity 1.1- Multiple use water services (MUS)						
<i>Education, technical assistance, training, etc</i>	No environmental impacts anticipated as a result of these activities	Though there are no foreseen environmental impacts on these activities, education and training materials will include environmental management aspects	M&E Officers, Deputy COP, Team Leader UNESCO IHE	# training, educations, materials with environmental management topics	Review of materials and modules used in training	Annual
<i>Agriculture activities including small scale land husbandry, soil and water conservation activities including irrigation, terracing, water harvesting, conservation agriculture and agro-forestry</i>	Ecological and human Health-Surface water nitrification/eutrophication due to excrement flowing into streams, ponds, and other water sources which can affect the health of aquatic species and drinking water quality. Ecological and human health-introduction of non native species may cause unwanted competition, predation etc on native species. Non native or non regional species may compete with species that are naturalized (more likely to thrive) and critical to existing	Application of appropriate guidelines and use of best practices in agriculture, including: applying the soil and water conservation technologies to protect land from degradation; and reclaim land that has been degraded and, using interventions that reduce habitat loss by increasing agricultural productivity and sustainability on already-farmed lands (using improved seed; using multiple cropping; using fertilizers, manures and irrigation and replacing old or inadequate irrigation systems; and rotating	M&E Officers, Deputy COP	# training in appropriate guidelines for agriculture practice	Reports and routine field visits and discussions with technical persons on the ground	Annual

	<p>community food sources. Ecological-destruction of habitat critical to the survival of threatened and endangered species, or habitats that support those species survival.</p> <p>Human health exposure to parasites in animal excrement and to viruses</p>	<p>crops). For further details on the agricultural best practices, see, <a href="http://www.encapafrika.org/EGSSAA/Word_English/agriculture.doc">http://www.encapafrika.org/EGSSAA/Word_English/agriculture.doc</a></p>				
<i>Water supply and sanitation activities</i>	<p>Depletion of fresh water resources (surface and groundwater)</p> <p>Chemical degradation of the quality of potable water sources (surface and groundwater)</p> <p>Creation of stagnant (standing) water</p> <p>Degradation of terrestrial, aquatic, and coastal habitats</p> <p>Human health risks from a water source that becomes biologically or chemically contaminated.</p>	<p>Water supply and sanitation activities will be conducted in a manner consistent with the good design and implementation practices described in EGSSAA Chapter 16: Water Supply and Sanitation or other recommended guidelines.</p> <p>RIWSP will develop and implements a Water Quality Assurance Plan that addresses how the partners will ensure the provision of safe drinking water to communities served under the subject activity. This Plan should be approved by the MEO and should assure that drinking water sources meet local and WHO water quality standards.</p> <p>RIWSP will test water quality before water sources they are open to the public. As part of the capacity building, RIWSP will also set in place capacities and responsibilities to provide</p>	M&E Officers, Team Leader World Vision	<p>Water quality assurance plan available</p> <p># water quality tests conducted</p> <p># training on water quality tests</p>	<p>Reports and routine field visits and discussions with technical persons on the ground</p>	Annual

		<p>reasonable assurance that ongoing water quality monitoring occur. The standards for initial and ongoing testing -- types of contaminants for which testing should be conducted, testing methods, testing frequency, and issues such as public access to results should follow any applicable USAID guidance, as well as local laws, regulations and policies. Furthermore, a response protocol should be established in the event that water quality testing detects contamination. Among the water quality tests which must be performed are tests for the presence of arsenic in accordance to the requirement that any USAID-supported activity engaged in the provision of potable water must adhere to Guidance Cable State 98 108651, which requires arsenic testing. The USAID managing team must assure that the standards and testing procedures described in the following document are met: "Guidelines for Determining the Arsenic Content of Ground Water in USAID-Sponsored Well Programs in Sub-Saharan Africa."</p>				
Activity 1.2- Sanitation Marketing and Product/Supply Chain Development						
<i>Education, technical assistance or</i>	No environmental impacts anticipated as a result of	Though there are no foreseen environmental impacts on these	M&E Officers, Deputy COP	# training, educations,	Review of materials and	Annual

<i>training, analyses, studies, workshops and meetings, etc.</i>	these activities	activities, education and training materials will include environmental management aspects		materials with environmental management topics	modules used in training	
<i>Activities involving financial services, support to microfinance institutions (MFI), micro, small, and medium enterprises (MSE, SME), Business Development Services (BDS)</i>	Without environmental due diligence in loan-making and technical assistance, increased finance for and technical assistance to MSMEs may increase the numbers of enterprises (and the scale of individual enterprises) that have potentially significant adverse impacts.	RIWSP will use the USAID's Environmental Review Forms before approving any financial assistance to MSMEs, and VSL.  VSL and MSMEs will be given training in the use of environment guidelines. The guidelines will illustrate how environmentally sound practices can be used to improve the effectiveness and efficiency.	Team Leader CARE, M & E Officers.	# Environmental Reviews forms approved by MEO  # training, educations, materials with environmental management topics	Reports and routine field visits and discussions with technical persons on the ground	Annual
<i>Sanitation activities</i>	Depletion of fresh water resources (surface and groundwater) Chemical degradation of the quality of potable water sources (surface and groundwater) Creation of stagnant (standing) water Degradation of terrestrial, aquatic, and coastal habitats Human health risks from a water source that becomes biologically or chemically contaminated	Sanitation activities will be conducted in a manner consistent with the good design and implementation practices described in EGSSAA Chapter 16: Water Supply and Sanitation or other recommended guidelines	M&E Officers, Deputy COP	Water quality assurance plan available	Reports and routine field visits and discussions with technical persons on the ground	Annual
<b>Activity 1.3- Scaling Up Community Hygiene Behavior Change</b>						
<i>Education, technical assistance or training; analyses, studies, workshops</i>	No environmental impacts anticipated as a result of these activities	Though there are no foreseen environmental impacts on these activities, education and training materials will include	M&E Officers, Team Leader World Vision	# training, educations, materials with environmental	Review of materials and modules used in training	Annual

<i>and meetings; document and information transfers; studies, projects or programs intended to develop the capability of recipient countries to engage in development planning, except to the extent designed to result in activities directly affecting the environment</i>		environmental management aspects		management topics		
Activity 1.4- WASH Integration into Facility Based Care						
<i>Education, technical assistance or training; analyses, studies, workshops and meetings; document and information transfers; studies, projects or programs intended to develop the capability of recipient countries to engage in development planning, except to the extent designed to result in activities directly affecting the environment</i>	No environmental impacts anticipated as a result of these activities	Though there are no foreseen environmental impacts on these activities, education and training materials will include environmental management aspects	M&E Officers, Team Leader World Vision	# training, educations, materials with environmental management topics	Review of materials and modules used in training	Annual
<i>Water supply and sanitation activities</i>	Depletion of fresh water resources (surface and	Water supply and sanitation activities will be conducted in a	M&E Officers,	Water quality assurance plan	Reports and routine field	Annual

	<p>groundwater)  Chemical degradation of the quality of potable water sources (surface and groundwater)  Creation of stagnant (standing) water  Degradation of terrestrial, aquatic, and coastal habitats  Human health risks from a water source that becomes biologically or chemically contaminated.</p>	<p>manner consistent with the good design and implementation practices described in EGSSAA Chapter 16: Water Supply and Sanitation or other recommended guidelines.</p> <p>RIWSP will develop and implements a Water Quality Assurance Plan that addresses how the partners will ensure the provision of safe drinking water to communities served under the subject activity. This Plan should be approved by the MEO and should assure that drinking water sources meet local and WHO water quality standards.</p> <p>RIWSP will test water quality before water sources they are open to the public. As part of the capacity building, RIWSP will also set in place capacities and responsibilities to provide reasonable assurance that ongoing water quality monitoring occur. The standards for initial and ongoing testing -- types of contaminants for which testing should be conducted, testing methods, testing frequency, and issues such as public access to results should follow any applicable USAID guidance, as well as local laws, regulations and policies. Furthermore, a</p>	<p>Deputy COP,  Team Leader  Winrock</p>	<p>available</p> <p># water quality tests conducted</p> <p># training on water quality tests</p>	<p>visits and discussions with technical persons on the ground</p>	
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		<p>response protocol should be established in the event that water quality testing detects contamination. Among the water quality tests which must be performed are tests for the presence of arsenic in accordance to the requirement that any USAID-supported activity engaged in the provision of potable water must adhere to Guidance Cable State 98 108651, which requires arsenic testing. The USAID managing team must assure that the standards and testing procedures described in the following document are met: “Guidelines for Determining the Arsenic Content of Ground Water in USAID-Sponsored Well Programs in Sub-Saharan Africa.</p>				
<p>Component 2- Strengthened Governance of Water-Related Resources at the National, Watershed, and Community Scale to Increase Sustainability and Resiliency of the Resource for All Users.</p>						
<p>Activity 2.1- Support to Adoption and Implementation of “Adaptive” IWRM National Strategy/Plan</p>						
<p><i>Education, technical assistance or training; analyses, studies, workshops and meetings; document and information transfers; studies, projects or programs intended to develop the capability of</i></p>	<p>No environmental impacts anticipated as a result of these activities</p>	<p>Though there are no foreseen environmental impacts on these activities, education and training materials will include environmental management aspects</p>	<p>M&amp;E Officers, Deputy COP</p>	<p># training, educations, materials with environmental management topics</p>	<p>Review of materials and modules used in training</p>	<p>Annual</p>

<i>recipient countries to engage in development planning, except to the extent designed to result in activities directly affecting the environment</i>						
Activity 2.2- Strengthening National Hydrologic Data and information Management Systems for IWRM						
<i>Education, technical assistance or training; analyses, studies, workshops and meetings; document and information transfers; studies, projects or programs intended to develop the capability of recipient countries to engage in development planning, except to the extent designed to result in activities directly affecting the environment</i>	No environmental impacts anticipated as a result of these activities	Though there are no foreseen environmental impacts on these activities, education and training materials will include environmental management aspects	M&E Officers, Deputy COP, Team Leader UNESCO – IHE	# training, educations, materials with environmental management topics	Review of materials and modules used in training	Annual
<i>Selection and Installation of Hydromet Equipment</i>	This activity could have impacts related to the siting of the equipments	Good practices and existing regulations related to construction and installation of equipment in the field will be followed including the requirements for specific areas like near water / river banks, forests, grasslands, protected areas etc	M&E Officers, Team Leader ICI WaRM, Team Leader UNESCO - IHE	# Environmental review Forms approved by USAID	Reports and routine field visits and discussions with technical persons on the ground	Annual

		Before installing the equipment an environmental review will be submitted to USAID for approval				
<b>Activity 2.3- Decentralized Governance and Management of Water Resources, WASH Services, and Agricultural Water Use</b>						
<i>Education, technical assistance or training; analyses, studies, workshops and meetings; document and information transfers; studies, projects or programs intended to develop the capability of recipient countries to engage in development planning, except to the extent designed to result in activities directly affecting the environment</i>	No environmental impacts anticipated as a result of these activities	Though there are no foreseen environmental impacts on these activities, education and training materials will include environmental management aspects	M&E Officers, Deputy COP	# training, educations, materials with environmental management topics	Review of materials and modules used in training	Annual
<i>Agriculture activities including small scale land husbandry, soil and water conservation activities including irrigation, terracing, water harvesting, conservation agriculture and agro- forestry</i>	Ecological and human Health-Surface water nitrification/eutrophication due to excrement flowing into streams, ponds, and other water sources which can affect the health of aquatic species and drinking water quality. Ecological and human health-introduction of non native species may cause unwanted competition, predation etc on native species. Non native or non regional species may	Application of appropriate guidelines and use of best practices in agriculture, including: applying the soil and water conservation technologies to protect land from degradation; and reclaim land that has been degraded and, using interventions that reduce habitat loss by increasing agricultural productivity and sustainability on already-farmed lands (using improved seed; using multiple cropping; using fertilizers,	M&E Officers/ Team Leader Winrock	# training in appropriate guidelines for agriculture practice	Reports and routine field visits and discussions with technical persons on the ground	Annual

	<p>compete with species that are naturalized (more likely to thrive) and critical to existing community food sources. Ecological-destruction of habitat critical to the survival of threatened and endangered species, or habitats that support those species survival.</p> <p>Human health exposure to parasites in animal excrement and to viruses</p>	<p>manures and irrigation and replacing old or inadequate irrigation systems; and rotating crops). For further details on the agricultural best practices, see, <a href="http://www.encapafrika.org/EGSSAA/Word_English/agriculture.doc">http://www.encapafrika.org/EGSSAA/Word_English/agriculture.doc</a></p>				
<i>Water supply and sanitation activities</i>	<p>Depletion of fresh water resources (surface and groundwater)</p> <p>Chemical degradation of the quality of potable water sources (surface and groundwater)</p> <p>Creation of stagnant (standing) water</p> <p>Degradation of terrestrial, aquatic, and coastal habitats</p> <p>Human health risks from a water source that becomes biologically or chemically contaminated.</p>	<p>Water supply and sanitation activities will be conducted in a manner consistent with the good design and implementation practices described in EGSSAA Chapter 16: Water Supply and Sanitation or other recommended guidelines.</p> <p>RIWSP will develop and implements a Water Quality Assurance Plan that addresses how the partners will ensure the provision of safe drinking water to communities served under the subject activity. This Plan should be approved by the MEO and should assure that drinking water sources meet local and WHO water quality standards.</p> <p>RIWSP will test water quality before water sources they are open to the public. As part of</p>	<p>M&amp;E Officers, Deputy COP, Team Leader World Vision</p>	<p>Water quality assurance plan available</p> <p># water quality tests conducted</p> <p># training on water quality tests</p>	<p>Reports and routine field visits and discussions with technical persons on the ground</p>	<p>Annual</p>

		<p>the capacity building, RIWSP will also set in place capacities and responsibilities to provide reasonable assurance that ongoing water quality monitoring occur. The standards for initial and ongoing testing -- types of contaminants for which testing should be conducted, testing methods, testing frequency, and issues such as public access to results should follow any applicable USAID guidance, as well as local laws, regulations and policies. Furthermore, a response protocol should be established in the event that water quality testing detects contamination. Among the water quality tests which must be performed are tests for the presence of arsenic in accordance to the requirement that any USAID-supported activity engaged in the provision of potable water must adhere to Guidance Cable State 98 108651, which requires arsenic testing. The USAID managing team must assure that the standards and testing procedures described in the following document are met: "Guidelines for Determining the Arsenic Content of Ground Water in USAID-Sponsored Well Programs in Sub-Saharan Africa.</p>				
<i>Activities involving</i>	Given that details about the	Before approving any grant,	M&E Officers,	#	Reports and	Annual

<i>provision of grants to local CSOs, national CSOs, and government districts</i>	proposed activities are not yet fully developed, e.g. sitting, the grantee or sub-grantee will be required to subject the proposed activities to an environmental screening process intended to identify potential environmental problems, appropriate mitigation measures, and to trigger supplemental environmental review if appropriate.	RIWSP will screen proposed activities according to the Africa Bureau Screening and Environmental Review Process, which is described in the Bureau's Environmental Procedures Training Manual, "Annex G: Umbrella IEEs and Subgrant Environmental Screening.," as well as in the Africa Bureau Environmental Guidelines, Part III. Both can be found at <a href="http://www.encapafrika.org/Resources.htm">http://www.encapafrika.org/Resources.htm</a>	Grants Manager	Environmental review Forms approved by USAID	routine field visits and discussions with technical persons on the ground	
Activity 2.4- Community Climate Change Adaptation and Disaster Risk Reduction						
<i>Education, technical assistance or training; analyses, studies, workshops and meetings; document and information transfers; studies, projects or programs intended to develop the capability of recipient countries to engage in development planning, except to the extent designed to result in activities directly affecting the environment</i>	No environmental impacts anticipated as a result of these activities	Though there are no foreseen environmental impacts on these activities, education and training materials will include environmental management aspects	M&E Officers, Climate Change Coordinator	# training, educations, materials with environmental management topics	Review of materials and modules used in training	Annual
<i>Agriculture activities including small scale land</i>	Ecological and human Health-Surface water nitrification/eutrophication	Application of appropriate guidelines and use of best practices in agriculture,	M&E Officers, Deputy COP	# training in appropriate guidelines for	Reports and routine field visits and	Annual

<p><i>husbandry, soil and water conservation activities including irrigation, terracing, water harvesting, conservation agriculture and agro- forestry</i></p>	<p>due to excrement flowing into streams, ponds, and other water sources which can affect the health of aquatic species and drinking water quality. Ecological and human health-introduction of non native species may cause unwanted competition, predation etc on native species. Non native or non regional species may compete with species that are naturalized (more likely to thrive) and critical to existing community food sources. Ecological-destruction of habitat critical to the survival of threatened and endangered species, or habitats that support those species survival. Human health exposure to parasites in animal excrement and to viruses</p>	<p>including: applying the soil and water conservation technologies to protect land from degradation; and reclaim land that has been degraded and, using interventions that reduce habitat loss by increasing agricultural productivity and sustainability on already-farmed lands (using improved seed; using multiple cropping; using fertilizers, manures and irrigation and replacing old or inadequate irrigation systems; and rotating crops). For further details on the agricultural best practices, see, <a href="http://www.encapafrika.org/EGSSAA/Word_English/agriculture.doc">http://www.encapafrika.org/EGSSAA/Word_English/agriculture.doc</a></p>		<p>agriculture practice</p>	<p>discussions with technical persons on the ground</p>	
<p>Component 3- Improved Technical Practices and Approaches to Optimize the Use and Resiliency of Available Water Resources for Multiple Purposes.</p>						
<p><i>Education, technical assistance or training; analyses, studies, workshops and meetings; document and information transfers; studies, projects or programs intended to develop the capability of recipient countries</i></p>	<p>No environmental impacts anticipated as a result of these activities</p>	<p>Though there are no foreseen environmental impacts on these activities, education and training materials will include environmental management aspects</p>	<p>M&amp;E Officers, Team Leader Winrock</p>	<p># training, educations, materials with environmental management topics</p>	<p>Review of materials and modules used in training</p>	<p>Annual</p>

<i>to engage in development planning, except to the extent designed to result in activities directly affecting the environment</i>						
<i>Agriculture activities including small scale land husbandry, soil and water conservation activities including irrigation, terracing, water harvesting, conservation agriculture and agro- forestry</i>	<p>Ecological and human Health-Surface water nitrification/eutrophication due to excrement flowing into streams, ponds, and other water sources which can affect the health of aquatic species and drinking water quality.</p> <p>Ecological and human health-introduction of non native species may cause unwanted competition, predation etc on native species. Non native or non regional species may compete with species that are naturalized (more likely to thrive) and critical to existing community food sources.</p> <p>Ecological-destruction of habitat critical to the survival of threatened and endangered species, or habitats that support those species survival.</p> <p>Human health exposure to parasites in animal excrement and to viruses</p>	<p>Application of appropriate guidelines and use of best practices in agriculture, including: applying the soil and water conservation technologies to protect land from degradation; and reclaim land that has been degraded and, using interventions that reduce habitat loss by increasing agricultural productivity and sustainability on already-farmed lands (using improved seed; using multiple cropping; using fertilizers, manures and irrigation and replacing old or inadequate irrigation systems; and rotating crops). For further details on the agricultural best practices, see, <a href="http://www.encapafrika.org/EGSSAA/Word_English/agriculture.doc">http://www.encapafrika.org/EGSSAA/Word_English/agriculture.doc</a></p>	M&E Officers, Deputy COP	# training in appropriate guidelines for agriculture practice	Reports and routine field visits and discussions with technical persons on the ground	Annual
<i>Activities involving provision of grants to local CSOs, national CSOs, and government districts</i>	<p>Given that details about the proposed activities are not yet fully developed, e.g. sitting, the grantee or sub-grantee will be required to</p>	<p>Before approving any grant, RIWSP will screen proposed activities according to the Africa Bureau Screening and Environmental Review Process,</p>	M&E Officers, Grants Manager	# Environmental review Forms approved by USAID	Reports and routine field visits and discussions with technical	Annual

	subject the proposed activities to an environmental screening process intended to identify potential environmental problems, appropriate mitigation measures, and to trigger supplemental environmental review if appropriate.	which is described in the Bureau's Environmental Procedures Training Manual, "Annex G: Umbrella IEEs and Sub grant Environmental Screening," as well as in the Africa Bureau Environmental Guidelines, Part III. Both can be found at <a href="http://www.encapafrika.org/Resources.htm">http://www.encapafrika.org/Resources.htm</a>			persons on the ground	
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**Certification**

**I certify the completeness and the accuracy of the mitigation and monitoring plan described above for which I am responsible and its compliance with the IEE:**



\_\_\_\_\_  
Signature

22<sup>nd</sup> November, 2011  
Date

David R. Mutekanga (PhD)  
Print Name

Florida International University \_\_\_\_\_

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**BELOW THIS LINE FOR USAID USE ONLY**

**USAID/Rwanda, EG Program, Clearance of EMP:**

Agreement Officer Technical Representative: Aimee Hpendony Date: 11/28/2011

Mission Environmental Officer: Aimee Hpendony Date: 11/28/2011

As appropriate: REA, BEO [depending on nature of activity, which potentially may require an EA]

**Note:** if clearance is denied, comments must be provided to applicant