Attachment E

Volume II: Report on TXRAM for Streams, Updated June 2017 (see Volume II binder)

Report on the Texas Rapid Assessment Method (TXRAM) for Streams

July 2017

Proposed Lake Palo Pinto Storage Restoration Project at Turkey Peak
(Turkey Peak Reservoir)

Prepared for:

Palo Pinto County Municipal Water District No. 1

Prepared by:

HDR Engineering, Inc.

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Appendices

1.0 INTRODUCTION

The U.S. Army Corps of Engineers (USACE), Fort Worth District, Regulatory Branch has published the Texas Rapid Assessment Method (TXRAM) in final draft form for immediate use in evaluating the ecological condition of streams in order to calculate adverse impacts and mitigation compensation under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. The Palo Pinto County Municipal Water District No. 1 (District or Applicant) submitted a Section 404 individual permit application SWF-2009-00264 for the proposed Palo Pinto Storage Restoration Project at Turkey Peak (Turkey Peak Reservoir or Project) on July 9, 2009, prior to the publication of TXRAM. However, the USACE has indicated that additional evaluation of compensatory mitigation is necessary for the Project, and TXRAM can be utilized to provide an evaluation of the ecological condition of streams in analysis of mitigation requirements.

The purpose of this report it to describe the circumstances and results of the TXRAM evaluation for the Project. TXRAM can be used to assess stream impacts, as well as assess the existing and proposed ecological condition of streams restored or enhanced for compensatory mitigation. This TXRAM report provides an evaluation of reference reaches for the proposed mitigation as well as information on the existing and proposed conditions for streams used for proposed mitigation upstream, on-site, and downstream of the Project. The data from the TXRAM evaluation can be used in the analysis of mitigation for the Project.

2.0 METHODS

TXRAM is a rapid, repeatable, field-based method that generates a single overall score of stream integrity and health. TXRAM contains procedures and guidelines for performing the evaluation, but also allows flexibility for the timing of the assessment in conjunction with other project activities as well as for representative sampling and inferring scores (USACE 2010). Due to the large size and similarity of aquatic resources in the Project and mitigation areas, this evaluation uses representative scoring for similar resources of the same type and condition. HDR based the TXRAM sampling plan on methodology approved by the USACE for other large projects as well as Project discussions with and comments from the USACE.

A delineation and proposed jurisdictional determination (JD) of waters of the U.S. within the Project area was performed previously by HDR (2009), and along with recent aerial photography and an additional field visit of the site in March 2017, provides sufficient information for completing the TXRAM evaluation. Furthermore, the Project area and stream characteristics are similar enough to evaluate conditions using a representative set of stream assessment reaches (SARs). HDR reviewed aerial photographs of the Project area to identify representative SARs using the TXRAM assessment extent guidelines. HDR's review of the Project area allowed for the selection of representative SARs for each type of resource and resource condition. Each representative SAR was evaluated with TXRAM, and remaining SARs were reviewed to confirm similarity. Each inferred SAR (i.e., remaining, non-representative resources) was assigned a representative score based on the similarity of conditions with a representative resource as confirmed with an office review (e.g., aerial photographs) and/or field reconnaissance.

A delineation of waters of the U.S. within the upstream mitigation area was performed concurrently with the TXRAM assessment for the District by HDR during April 22–24, 2014. HDR used available data and aerial photographs to identify preliminary stream assessment reaches (SARs) using the TXRAM assessment extent guidelines. In addition, HDR's review of the mitigation area allowed for the selection of representative SARs for each type of resource and resource condition. Each representative SAR was visited in the field for evaluation with TXRAM,

and remaining SARs were briefly reviewed to confirm similarity. During the office analysis and data review, including scoring metrics, the selection of representative resources was again confirmed using GIS and recent aerial photography. The metric scores for each representative SAR were entered into a spreadsheet to evaluate the core element and overall scores and determine categories based on the similarity of scores. The categories of representative SARs correspond to each type of resource and resource condition found in the mitigation area. Each inferred SAR (i.e., remaining, non-representative resources) was assigned to a category (with an associated representative score) based on the similarity of conditions with a representative resource as confirmed with an office review (e.g., aerial photographs) and/or field reconnaissance.

In order to provide an evaluation of the potential ecologically attainable condition for proposed mitigation, reference reaches were selected at the Palo Pinto Mountains State Park (park or reference area). The park property has been owned and managed by the state for approximately five years to replicate natural conditions, and is not open to the public. Thus the streams on the park provide an appropriate, approximate reference of the least degraded condition for streams in the watershed. Park management has included some reduction of livestock grazing and selective brush removal; however, while the existing condition of reference reaches is the best available, they do not represent what is the highest achievable. Therefore, the proposed condition of reference reaches after lift to demonstrate what is achievable with the rational for target scores is also included. HDR used available data and aerial photographs to identify reference SARs using the TXRAM assessment extent guidelines for the selection of reference SARs for each type of resource and resource condition. Each reference SAR was visited in the field for evaluation with TXRAM. During the office analysis and data review, scoring of metrics for reference SARs was performed using GIS and recent aerial photography. The metric scores for each reference SAR were entered into a spreadsheet to evaluate the core element and overall scores.

Furthermore, the reference conditions provided additional information for the previous evaluation of existing and proposed conditions of the upstream mitigation area that were conducted under extreme drought. Thus, existing and proposed condition scores for upstream mitigation were determined based on the reference stream data and previous information that provide information for the analysis of ecological lift.

Additionally, based on the reference SAR scores and conceptual restoration plans described in the revised mitigation plan, the SARs in the on-site and downstream mitigation areas were evaluated with TXRAM to provide proposed scores based on the anticipated improvements in metric scores. This evaluation provides an analysis of the ecological lift from the mitigation proposed for the Project.

For the mitigation area downstream of the Project area, recent aerial photography and previous site visits provide sufficient information for completing the TXRAM evaluation. The stream characteristics in the downstream area are similar enough to evaluate conditions using a representative set of SARs. HDR reviewed aerial photographs of the downstream mitigation area to identify representative SARs using the TXRAM assessment extent guidelines. Each representative SAR was evaluated with TXRAM, and remaining SARs were reviewed to confirm similarity. Each inferred SAR (i.e., remaining, non-representative resources) was assigned a representative score based on the similarity of conditions with a representative resource as confirmed with an office review (e.g., aerial photographs).
In July 2017 HDR conducted an evaluation of reference perennial streams in the ecoregion to provide an evaluation of the potential ecologically attainable condition for proposed mitigation.

These reference reaches included field data collection on Rock Creek at Lake Mineral Wells State Park and on the Paluxy River in and near Dinosaur Valley State Park.

In regard to scoring of riparian habitat types in the riparian buffer metric, it is important to note that the presence of particular species is not what determines the TXRAM score, it is the density and community composition/structure/state, as described in the TXRAM scoring evaluation for riparian buffer community types (Version 1.0). Per the TXRAM definitions (Version 1.0), invasive/undesirable vegetation is defined as "being an early or low-successional stage community regenerating from or responding to a disturbance/stress", whereas predominantly native and desirable vegetation is a "mature, mid-, or late-successional stage community expected for the ecoregion based on natural environmental conditions" and therefore a mixture classification includes both native/desirable and non-native/invasive/undesirable vegetation. Furthermore, while certain species may be listed in the TXRAM data sheets, scoring a particular buffer type is performed based on the structure and composition of the community, which was evaluated with available field data and classified / scored based on the TXRAM definitions, which may be difficult to reflect in limited space on data sheets. In instances where the buffer was classified as a "Mix" for the vegetation community, it was determined to be a mixture of native/desirable vegetation, as well as that reflecting a community responding to previous disturbance, such as younger community structure and early to mid-successional species such as hackberry, Ashe juniper, western soapberry, box elder, dewberry, and greenbriar.

3.0 RESULTS

3.1 Stream Impacts

The results of the TXRAM evaluation for impacted streams at the Project area are reported below. The TXRAM data sheets and final scoring sheets for the impacted SARs can be found in Appendix A, and maps are located in Appendix H.

The TXRAM scores for the impacted SARs in the Project area ranged from a high of 75 to a low of 24. Table 1 below depicts the score for each TXRAM core element as well as the overall TXRAM score for the representative impacted SARs in the Project area.

Table 1. TXRAM Scores for Representative Impacted SARs in the Project Area

SAR ID	Type	Channel Condition	Riparian Buffer Condition	In-Stream Condition	Hydrologic Condition	Additional Points (Limited Habitat)	TXRAM Score
S-1-3	Perennial	16.7	10.0	22.5	21.9	0	71
S-1-6	Perennial	16.7	12.5	22.5	21.9	0	74
S-1-9	Perennial	16.7	7.3	22.5	21.9	0	68
S-1-12	Perennial	16.7	9.5	22.5	21.9	0	71
S-1-14	Perennial	16.7	11.5	22.5	21.9	0	73
S-1-16	Perennial	16.7	12.0	22.5	21.9	0	73
S-1-19	Perennial	16.7	9.0	22.5	21.9	0	70
S-1-20	Perennial	18.3	12.5	22.5	21.9	0	75
S-2-1	Intermittent	13.3	7.0	12.5	12.5	0	45
S-2-2	Intermittent	16.7	4.5	10.0	12.5	0	44

SAR ID	Type	Channel Condition	Riparian Buffer Condition	In-Stream Condition	Hydrologic Condition	Additional Points (Limited Habitat)	TXRAM Score
S-2-3	Intermittent	20.0	7.0	12.5	12.5	0	52
S-3-1	Ephemeral	15.0	9.5	10.0	6.3	0	41
S-4-1	Ephemeral	15.0	9.5	7.5	0.0	0	32
S-5-1	Ephemeral	11.7	10.0	7.5	0.0	0	29
S-6-1	Ephemeral	18.3	9.5	10.0	6.3	0	44
S-7-1	Ephemeral	11.7	10.0	2.5	0.0	0	24
S-8-1	Ephemeral	15.0	9.5	12.5	6.3	0	43
S-9-1	Ephemeral	16.7	9.8	10.0	6.3	0	43
S-9-2	Ephemeral	18.3	9.3	10.0	6.3	0	44
S-9-3	Ephemeral	20.0	10.0	12.5	6.3	0	49
S-10-1	Ephemeral	15.0	8.8	12.5	6.3	0	43
S-10-2	Ephemeral	18.3	9.0	15.0	6.3	0	49
S-10-3	Ephemeral	11.7	6.3	10.0	6.3	0	34
S-10-4	Ephemeral	18.3	9.5	12.5	6.3	0	47
S-11-1	Ephemeral	16.7	8.5	10.0	0.0	0	35
S-12-1	Ephemeral	15.0	9.0	10.0	6.3	0	40
S-13-1	Intermittent	11.7	4.5	15.0	12.5	0	44
S-14-1	Ephemeral	13.3	5.5	7.5	0.0	0	26
S-15-1	Ephemeral	20.0	6.0	12.5	0.0	0	39
S-16-1	Intermittent	16.7	15.0	5.0	9.4	0	46

Based on the stream type and existing conditions, each inferred SAR was assigned a representative score based on the similarity of its conditions to the representative SAR with that score. Table 2 below shows the inferred SARs, representative SARs, and the representative score.

Table 2. TXRAM Scores for Inferred Impacted SARs in the Project Area

Stream Type	Inferred SAR(s)	Representative SAR(s)	TXRAM Score
Perennial	S-1-1, S-1-2, S-1-4, S-1-7, S-1-8, S-1-17, S-18	S-1-3	71
Perennial	S-1-5	S-1-6	74
Perennial	S-1-10, S-1-11	S-1-12	71
Perennial	S-1-13, S-1-15	S-1-14	73
Intermittent	S-2-4, S-2-5	S-2-3	52
Ephemeral	S-9-4	S-9-3	49
Ephemeral	S-10-5	S-10-4	47

3.2 Stream Reference

The results of the TXRAM evaluation for reference streams in the reference area are reported below. This includes the existing conditions of the reference SARs, as well as the proposed conditions that represent the conditions that are achievable based on the rationale in the

descriptions below. The TXRAM data sheets and final scoring sheets for the reference SARs existing conditions can be found in Appendix B, and maps are located in Appendix H.

The TXRAM scores for the reference SARs existing conditions ranged from a high of 72 for Palo Pinto Creek (intermittent stream) to a low of 36 for an ephemeral stream. Table 3 below depicts the score for each TXRAM core element as well as the overall TXRAM score for the existing conditions of reference SARs.

Table 3. TXRAM Scores for Existing Conditions of Reference SARs in Palo Pinto Mountains State Park

SAR ID	Type	Channel Condition	Riparian Buffer Condition	In-Stream Condition	Hydrologic Condition	Additional Points (Limited Habitat)	TXRAM Score
RS-1-1	Intermittent	21.7	9.5	22.5	15.6	0	69
RS-1-2	Intermittent	20.0	9.3	25.0	15.6	0	70
RS-1-3	Intermittent	20.0	9.8	25.0	15.6	0	70
RS-1-4	Intermittent	20.0	9.8	25.0	15.6	0	70
RS-1-5	Intermittent	21.7	10.0	25.0	15.6	0	72
RS-2-1	Intermittent	21.7	10.0	17.5	12.5	0	62
RS-3-1	Ephemeral	21.7	5.0	12.5	0.0	0	39
RS-4-1	Ephemeral	20.0	5.0	12.5	0.0	0	38
RS-5-1	Ephemeral	21.7	5.0	12.5	0.0	0	39
RS-6-1	Intermittent	21.7	7.5	15.0	12.5	0	57
RS-7-1	Ephemeral	20.0	10.0	10.0	0.0	0	40
RS-8-1	Ephemeral	23.3	5.0	7.5	0.0	0	36
RS-9-1	Ephemeral	23.3	5.0	7.5	0.0	0	36

Although the reference SARs represent some of the higher conditions for streams in the watershed, due to past and present land uses, they do not represent the highest achievable for the ecoregion and watershed. The park property / reference area has been owned and managed by the state for approximately five years, but it has not undergone extensive vegetation management, and some un-authorized livestock access has been observed. Furthermore, past grazing and clearing has degraded the native plant community, which is still in a state of recovery through natural succession, and has not been assisted by substantial vegetation planting and management. It is anticipated that reference SAR scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve the native community, as well as native tree and herbaceous species plantings to increase diversity, which is based on the state and transition models from the NRCS Ecological Site Descriptions for the area (see more details in the Vegetation Management Plan by HDR, 2017). Additionally, it should be noted that TXRAM Version 1.0 includes Example SAR 2 in Appendix D, which is a SAR on an intermittent reach of Rock Creek in the same ecoregion as the reference SARs, and scores a 24.8 for the riparian buffer core element, with only a minor deduction for an abandoned utility line right-of-way. Therefore, it is reasonable to expect the proposed riparian buffer scores shown herein.

Along with past grazing degradation to the channel, Palo Pinto Creek reference reaches have experienced recent, extreme flow events which have led to additional bank erosion. Following periods of normal flows and bankfull events, the banks are anticipated to stabilize naturally

through channel forming processes and vegetation, based on natural geomorphology. It is anticipated that reference SAR scores will improve for bank condition and sediment deposition after flooding affects normalize and cattle removal allows revegetation. Some feral hog damage was observed along reference SARs as a result of recent rain and lack of management. It is anticipated that feral hog damage would be reduced with park development and active management.

Based on the rationale and descriptions above, the proposed conditions of reference SARs that are anticipated are shown in Table 4 below.

Table 4. TXRAM Scores for Proposed/Anticipated Conditions of Reference SARs in Palo Pinto Mountains State Park

SAR ID	Type	Channel Condition	Riparian Buffer Condition	In-Stream Condition	Hydrologic Condition	Additional Points (Limited Habitat)	TXRAM Score
RS-1-1	Intermittent	23.3	22.5	22.5	15.6	0	84
RS-1-2	Intermittent	21.7	25.0	25.0	15.6	0	87
RS-1-3	Intermittent	21.7	20.8	25.0	15.6	0	83
RS-1-4	Intermittent	21.7	24.8	25.0	15.6	0	87
RS-1-5	Intermittent	23.3	25.0	25.0	15.6	0	89
RS-2-1	Intermittent	21.7	25.0	17.5	12.5	0	77
RS-3-1	Ephemeral	21.7	20.0	12.5	0.0	0	54
RS-4-1	Ephemeral	21.7	20.0	12.5	0.0	0	54
RS-5-1	Ephemeral	23.3	20.0	12.5	0.0	0	56
RS-6-1	Intermittent	23.3	25.0	15.0	12.5	0	76
RS-7-1	Ephemeral	21.7	25.0	10.0	0.0	0	57
RS-8-1	Ephemeral	23.3	20.0	7.5	0.0	0	51
RS-9-1	Ephemeral	23.3	20.0	7.5	0.0	0	51

The TXRAM evaluation of reference reaches for perennial streams included four SARs. With additional points for limited habitats, the scores ranged from 96 to 98. Table 5 below depicts the score for each TXRAM core element as well as the overall TXRAM score for the existing conditions of perennial reference SARs. The TXRAM data sheets and final scoring sheets for the perennial reference SARs existing conditions can be found in Appendix B, and maps are located in Appendix H.

Table 5. TXRAM Scores for Existing Conditions of Perennial Reference SARs

SAR ID	Type	Channel Condition	Riparian Buffer Condition	In-Stream Condition	Hydrologic Condition	Additional Points (Limited Habitat)	TXRAM Score
RCR-1-1	Perennial	23.3	25.0	20.0	25.0	5	98
PRR-1-1	Perennial	23.3	24.8	22.5	25.0	2	98
PRR-1-2	Perennial	23.3	22.5	20.0	25.0	5	96
PRR-1-3	Perennial	23.3	24.0	25.0	25.0	0	97

3.3 Stream Mitigation

The TXRAM evaluation for existing and proposed conditions of streams in mitigation areas (upstream, on-site, and downstream) are reported below.

3.3.1 Upstream

The results of the TXRAM evaluation for both existing and proposed conditions of streams at the upstream mitigation area are reported below. The TXRAM data sheets and final scoring sheets for the existing conditions of representative SARs in the upstream mitigation area can be found in Appendix C. The TXRAM final scoring sheets for evaluating proposed mitigation activities for the SARs in the upstream mitigation area, as well as the reference streams proposed as mitigation, can be found in Appendix D. Maps of existing and proposed conditions are located in Appendix H.

Note that the original TXRAM scores for the existing conditions of the representative SARs in the upstream mitigation area were from an evaluation during extreme drought conditions. Based on the TXRAM evaluation of reference reaches upstream, during more normal conditions, it was determined that the original evaluation may have underestimated in-stream habitat metric scores. Thus, with this information, the original TXRAM scores for intermittent stream existing condition were updated as reflected in Table 6 below. The existing condition riparian buffer scores were not raised because the scores presented in the tables are accurate and reflective of the existing conditions of the riparian buffer as scored in the field with TXRAM.

The TXRAM scores for the existing conditions of the representative SARs in the upstream mitigation area ranged from a high of 64 to a low of 28. Table 6 below depicts the score for each TXRAM core element as well as the overall TXRAM score for the existing conditions of the representative SARs in the upstream mitigation area.

Table 6. TXRAM Scores for Existing Conditions of Representative SARs in the Upstream Mitigation Area

SAR ID	Type	Channel Condition	Riparian Buffer Condition	In-Stream Condition	Hydrologic Condition	Additional Points (Limited Habitat)	TXRAM Score
MS-1-1	Intermittent	18.3	7.5	22.5	15.6	0	64
MS-1-2	Intermittent	15.0	4.5	22.5	15.6	0	58
MS-1-3	Intermittent	18.3	9.3	22.5	12.5	0	63
MS-1-4	Intermittent	18.3	8.5	22.5	12.5	0	62
MS-1-5	Intermittent	20.0	5.0	22.5	15.6	0	63
MS-2-1	Ephemeral	18.3	9.5	15.0	6.3	0	49
MS-2-2	Ephemeral	11.7	5.0	10.0	6.3	0	33
MS-2-3	Ephemeral	15.0	5.0	7.5	0.0	0	28
MS-4-1	Ephemeral	15.0	5.0	7.5	0.0	0	28
MS-5-2	Ephemeral	20.0	5.0	7.5	0.0	0	33
MS-6-1	Ephemeral	16.7	7.5	7.5	0.0	0	32
MS-6-2	Ephemeral	21.7	5.0	12.5	0.0	0	39
MS-6-3	Ephemeral	23.3	5.0	5.0	0.0	0	33

SAR ID	Type	Channel Condition	Riparian Buffer Condition	In-Stream Condition	Hydrologic Condition	Additional Points (Limited Habitat)	TXRAM Score
MS-7-1	Ephemeral	18.3	7.0	7.5	0.0	0	33
MS-9-1	Intermittent	21.7	10.0	17.5	12.5	0	62

Based on the stream type and existing conditions, each inferred SAR is assigned a representative score based on the similarity of its conditions to the representative SAR with that score. Table 7 below shows the inferred SARs, representative SARs, and the representative score.

Table 7. TXRAM Scores for Existing Conditions of Inferred SARs in the Upstream Mitigation Area

Stream Type	Inferred SAR(s)	Representative SAR(s)	TXRAM Score
Ephemeral	MS-3-1, MS-3-2, MS-4-2, MS-8-1	MS-5-2, MS-6-3, MS-7-1	33
Ephemeral	MS-5-1	MS-6-2	39

Also note that the original TXRAM scores for the proposed condition of streams in the upstream mitigation area were evaluated with the data collected during extreme drought and under degraded conditions. Based on the TXRAM evaluation of reference reaches upstream, during more normal conditions, it was determined that the original evaluation may have underestimated some of the proposed TXRAM metric scores, such as in-stream habitat and riparian buffer. Thus, with this new information, the original TXRAM scores for proposed conditions at the upstream mitigation area were updated as reflected in Table 8 below.

The TXRAM scores for the proposed condition of streams restored and enhanced in the upstream mitigation area are based on the anticipated improvement to metric scores from the activities described in the mitigation plan. Table 8 below depicts the score for each TXRAM core element as well as the overall TXRAM score for the proposed condition of SARs in the mitigation area.

Table 8. TXRAM Scores for Proposed Conditions of SARs in the Upstream Mitigation Area

SAR ID	Type	Channel Condition	Riparian Buffer Condition	In-Stream Condition	Hydrologic Condition	Additional Points (Limited Habitat)	TXRAM Score
PS-1-1	Intermittent	23.3	24.0	25.0	15.6	0	88
PS-1-2	Intermittent	21.7	22.5	25.0	15.6	0	85
PS-1-3	Intermittent	23.3	22.8	25.0	12.5	0	84
PS-1-4	Intermittent	23.3	21.5	25.0	12.5	0	82
PS-1-5	Intermittent	23.3	25.0	25.0	15.6	0	89
PS-1-6*	Intermittent	23.3	23.8	25.0	15.6	0	88
PS-2-1	Intermittent	23.3	22.5	17.5	12.5	0	76
PS-2-2	Intermittent	23.3	22.5	15.0	12.5	0	73
PS-2-3	Intermittent	23.3	20.0	15.0	12.5	0	71
PS-2-4*	Intermittent	23.3	20.0	15.0	12.5	0	71
PS-3-1**	Ephemeral	23.3	20.0	7.5	0.0	0	51
PS-3-2**	Ephemeral	23.3	20.0	7.5	0.0	0	51

SAR ID	Type	Channel Condition	Riparian Buffer Condition	In-Stream Condition	Hydrologic Condition	Additional Points (Limited Habitat)	TXRAM Score
PS-4-1	Ephemeral	23.3	20.0	7.5	3.1	0	54
PS-4-2**	Ephemeral	23.3	20.0	7.5	0.0	0	51
PS-5-1**	Ephemeral	23.3	20.0	12.5	0.0	0	56
PS-5-2	Ephemeral	23.3	20.0	7.5	0.0	0	51
PS-6-1	Ephemeral	20.0	20.0	7.5	0.0	0	48
PS-6-2	Ephemeral	23.3	20.0	12.5	0.0	0	56
PS-6-3	Ephemeral	25.0	20.0	5.0	0.0	0	50
PS-7-1	Ephemeral	21.7	25.0	7.5	0.0	0	54
PS-8-1**	Ephemeral	23.3	20.0	7.5	0.0	0	51
PS-9-1	Intermittent	21.7	24.8	17.5	12.5	0	77
PS-10-1*	Ephemeral	23.3	20.0	10.0	3.1	0	56

* Proposed condition for SAR currently impounded or not present following stream restoration activities
** Inferred score based on similarity to representative stream

Proposed improvements to channel condition include removal of impoundments and re-grading of dams to re-establish stream channels on Palo Pinto Creek (SAR PS-1-6) and two unnamed tributaries (SARs PS-2-4 and PS-10-1) which will restore the functions of a stream channel. Additionally, SARs downstream of these re-established stream channels will be rehabilitated through the restoration of natural flows and channel forming processes, thus improving floodplain connectivity scores through the increased frequency of channel interaction with the floodplain or bankfull benches, similar to reference reaches. Furthermore, along with restoration of natural flows, the removal of cattle from the upstream mitigation area, with the subsequent re-growth of vegetation, is anticipated to reduce bank erosion resulting from uncontrolled use, and thus improve the bank condition metric scores of the mitigation SARs, similar to what is anticipated for reference reaches. Furthermore, along with restoration of natural flows and sediment transport, the removal of cattle and riparian enhancement activities will reduce sedimentation in the streams and thus increase the sediment deposition metric scores of the mitigation SARs, similar to what is anticipated for reference reaches.

Proposed improvements to the riparian buffer include removal of cattle using fencing and vegetation management to reduce brush and improve the native community, as well as native tree and herbaceous species plantings to increase diversity, which is based on the state and transition models from the NRCS Ecological Site Descriptions for the area (see more details in the Vegetation Management Plan by HDR, 2017). The proposed riparian mitigation measures are expected to enhance the riparian buffer and result in an overall increase in the riparian buffer scores of the mitigation SARs, similar to what is anticipated for reference reaches.

The in-stream condition is expected to increase in SARs as a result of the removal of the impoundments discussed above to restore flows downstream as well as cattle removal and riparian enhancements. SARs will show improvement in substrate composition due to reduction in fines contributed from upslope and restoration of natural sediment transport processes. SARs will show improvement of in-stream habitat based on the removal of stressors and restoration of natural stream processes that increase available habitat types, similar to reference reaches.

The hydrologic condition in SARs will be improved by restoring flows in and downstream of areas that are currently impounded through the removal of dams as discussed above. For SARs PS-2-1, PS-2-2, and PS-2-3, the removal of upslope dams on PS-2-4 and PS-10-1 will restore natural flows that allow the recharge of alluvial water tables, thus providing extended periods of groundwater contribution to flow and pooling in the channel. Additionally, SARs PS-4-1 and PS-10-1, with the removal of the upstream dam, will have an increase in natural flows and pooling. The flow regime and channel flow status metrics will increase accordingly, similar to reference reaches and based on watershed size.

Additional details on mitigation work plans are found in the mitigation plan.

3.3.2 On-Site

The TXRAM score for the existing condition of one stream in the on-site mitigation area was evaluated based on previous delineation data (SAR S-17-1), and is shown in Table 9 below. Additionally, streams currently impounded or degraded by impoundments such that they no longer have an ordinary high water mark have an existing condition of 0.

Table 9. TXRAM Scores for Existing Conditions of SARs in the On-Site Mitigation Area

SAR ID	Type	Channel Condition	Riparian Buffer Condition	In-Stream Condition	Hydrologic Condition	Additional Points (Limited Habitat)	TXRAM Score
S-17-1	Ephemeral	20.0	8.5	7.5	0.0	0	36

The TXRAM scores for the proposed condition of streams restored or enhanced in the on-site mitigation area are based on the anticipated improvement to metric scores from the activities described in the mitigation plan, as well as the anticipated conditions of reference reaches. Table 10 below depicts the score for each TXRAM core element as well as the overall TXRAM score for the proposed condition of SARs in the on-site mitigation area.

Table 10. TXRAM Scores for Proposed Conditions of SARs in the On-Site Mitigation Area

SAR ID	Type	Channel Condition	Riparian Buffer Condition	In-Stream Condition	Hydrologic Condition	Additional Points (Limited Habitat)	TXRAM Score
S-17-1	Ephemeral	23.3	20.0	10.0	0.0	0	53
OPSR-2-1*	Ephemeral	23.3	20.0	10.0	0.0	0	53
OPSR-5-1*	Ephemeral	23.3	20.0	10.0	0.0	0	53
OPSR-17-1*	Ephemeral	23.3	20.0	10.0	0.0	0	53
OPSR-18-1*	Ephemeral	23.3	20.0	10.0	0.0	0	53

* Proposed condition for SAR currently impounded following stream restoration activities

The proposed on-site enhancement of stream will include excluding livestock and vegetation management that results in reduced erosion and sedimentation as well as improve the riparian buffer condition, similar to what is anticipated for reference reaches. The proposed on-site restoration of streams will remove impoundments and result in restored functions of the channel, riparian buffer, in-stream and hydrologic condition. The proposed scores for OPRS-2-1, OPSR-5-1, OPSR-17-1, and OPSR-18-1 are based on the stream designs included in the mitigation plan

as well as the anticipated conditions similar to reference reaches. The TXRAM final scoring sheets for evaluating proposed mitigation activities for the SARs in the on-site mitigation areas can be found in Appendix E and maps are located in Appendix H.

3.3.3 Downstream

The TXRAM scores for the existing condition of streams in the downstream mitigation area, that is, downstream of the proposed Project, are similar to those included in the Project area, but were evaluated as described in section 2.0 using representative and inferred SARs. The TXRAM data sheets and final scoring sheets for the existing conditions of SARs in the downstream mitigation area can be found in Appendix F and maps are located in Appendix H. Table 11 below depicts the score for each TXRAM core element as well as the overall TXRAM score for the existing condition of representative SARs in the downstream mitigation area.

Table 11. TXRAM Scores for Existing Conditions of Representative SARs in the Downstream Mitigation Area

SAR ID	Type	Channel Condition	Riparian Buffer Condition	In-Stream Condition	Hydrologic Condition	Additional Points (Limited Habitat)	TXRAM Score
DS-1-1	Perennial	16.7	10.0	22.5	21.9	0	71
DS-1-5	Perennial	16.7	10.5	22.5	21.9	0	72
DS-1-10	Perennial	16.7	8.5	22.5	21.9	0	70
DS-1-13	Perennial	16.7	8.8	22.5	21.9	0	70
DS-1-14	Perennial	16.7	10.5	22.5	21.9	0	72
DS-1-17	Perennial	16.7	13.0	22.5	21.9	0	74
DS-1-20	Perennial	16.7	10.0	22.5	21.9	0	71
DS-1-24	Perennial	16.7	7.5	22.5	21.9	0	69

Based on the stream type and existing conditions, each inferred SAR was assigned a representative score based on the similarity of its conditions to the representative SAR with that score. Table 12 below shows the inferred SARs, representative SARs, and the representative score.

Table 12. TXRAM Scores for Existing Conditions of Inferred SARs in the Downstream Mitigation Area

Stream Type	Inferred SAR(s)	Representative SAR(s)	TXRAM Score
Perennial	DS-1-2, DS-1-3, DS-1-7	DS-1-1	71
Perennial	DS-1-4, DS-1-6	DS-1-5	72
Perennial	DS-1-8, DS-1-9	DS-1-10	70
Perennial	DS-1-11, DS-1-12	DS-1-13	70
Perennial	DS-1-15, DS-1-16, DS-1-18	DS-1-14	72
Perennial	DS-1-19, DS-1-21, DS-1-22, DS-1-25	DS-1-20	71
Perennial	DS-1-23	DS-1-24	69

The TXRAM scores for the proposed condition of streams enhanced in the downstream mitigation area are based on the anticipated improvement to metric scores from the activities described in the mitigation plan. Table 13 below depicts the score for each TXRAM core element as well as

the overall TXRAM score for the proposed condition of the SARs in the downstream mitigation area.

Table 13. TXRAM Scores for Proposed Conditions of SARs in the Downstream Mitigation Area

SAR ID	Type	Channel Condition	Riparian Buffer Condition	In-Stream Condition	Hydrologic Condition	Additional Points (Limited Habitat)	TXRAM Score
DS-1-1	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-2*	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-3*	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-4*	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-5	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-6*	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-7*	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-8*	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-9*	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-10	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-11*	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-12*	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-13	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-14	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-15*	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-16*	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-17	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-18*	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-19*	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-20	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-21*	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-22*	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-23*	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-24	Perennial	23.3	25.0	22.5	21.9	0	93
DS-1-25*	Perennial	23.3	25.0	22.5	21.9	0	93

* Inferred score based on similarity to representative SAR

The proposed downstream enhancement of streams will include restricting livestock access and clearing as well as planting native trees, shrubs, grasses, and forbs. The removal of cattle from the downstream mitigation area, with the subsequent planting and re-growth of vegetation, is anticipated to reduce bank erosion resulting from uncontrolled cattle use, and thus improve the bank condition metric scores of the downstream mitigation SARs. Furthermore, the removal of cattle and riparian enhancement activities will reduce sedimentation in the streams and thus increase the sediment deposition metric scores of the downstream mitigation SARs. Additionally, the proposed operations plan for the Project will provide more floodplain connectivity than existing through the proposed high flow events that will provide regular flow access to bankfull benches, and thus increase the floodplain connectivity metric scores of the downstream mitigation SARs.

The proposed 85 cfs pulse flows will allow access to floodplain benches based on visual observations of channel cross sections under various flows and following the TXRAM (Version 1.0) definitions and methodology. The proposed mitigation activities in the riparian buffer include removal of cattle using fencing as well as native tree and herbaceous species plantings to increase diversity of the plant community. The proposed riparian mitigation measures are expected to enhance the riparian buffer and result in an overall increase in the riparian buffer scores of the downstream mitigation SARs. The TXRAM final scoring sheets for evaluating proposed mitigation activities for the SARs in the downstream mitigation area can be found in Appendix G and maps are located in Appendix H.

Note that the TXRAM evaluation of scores for proposed conditions of perennial stream in the downstream mitigation area only utilizes the lift from enhancement to the channel condition and riparian buffer condition. Proposed conditions related to increased hydrology and the lift to instream and hydrologic condition by flow releases, water quality improvements, and increased instream habitat are evaluated in a separate analysis in Attachment K of the Mitigation Plan.

This TXRAM evaluation of existing and proposed conditions in the downstream mitigation area includes the reaches/areas immediately downstream of the Project that are proposed as mitigation. If different or additional downstream areas are included later, supplemental TXRAM evaluation of those reaches would be provided in a future, proposed amendment. Based on preliminary review using aerial photography and available data, it appears that other downstream areas are similar to those included herein and generally consistent with the range of existing conditions found within the Project area and currently proposed downstream mitigation area.

4.0 CONCLUSIONS

The results of the TXRAM evaluation for both the Project area and mitigation areas provide an indication of the ecological condition of streams in these areas. The scores for each of the impacted SARs, combined with the linear feet of impact, as well as the existing and proposed scores and linear feet for representative and inferred SARs in the mitigation areas, can be used to evaluate the replacement of aquatic resources by compensatory mitigation. See the Mitigation Plan for the discussion and calculation of mitigation requirements.

In summary, the results of the TXRAM provide an evaluation of the ecological condition of waters of the U.S. (i.e., streams) at the proposed Project area, as well as the ecological condition of existing and proposed streams in the mitigation areas. The results of the conditional assessment can be used to evaluate the proposed mitigation.

5.0 REFERENCES

HDR Engineering, Inc. (HDR). 2009. Report on the Delineation and Proposed Jurisdictional Determination, Lake Palo Pinto Storage Restoration Project at Turkey Peak, Palo Pinto County, Texas.

HDR Engineering, Inc. (HDR). 2017. Copeland Tract Vegetation Management Plan.

U.S. Army Corps of Engineers. 2010. The Texas Rapid Assessment Method (TXRAM). Wetlands and Streams Modules, Version 1.0. Final Draft.

Appendix A: Stream Data Sheets and Final Scoring Sheets – Impacted SARs

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-1 SAR No.: S-1-3 Size (LF): 1,134 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	35	Avg. Banks:	8
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	2.2	Sum of bank scores / 10 x 25	10.0
	Riparian buffer (right bank)	1.8		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	5		
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9
	Channel flow status	4		
			Sum of core element scores = overall TXRAM stream score	71
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	71

Representative Site Photograph:

Facing downstream at the SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-1 SAR No.: S-1-3 Size (LF): 1,134 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

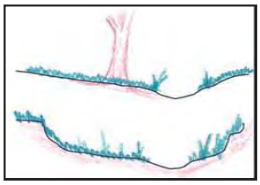
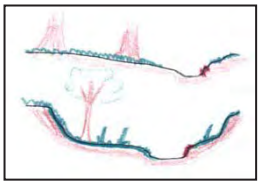
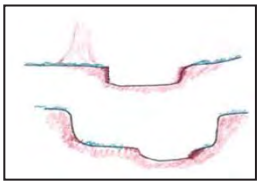
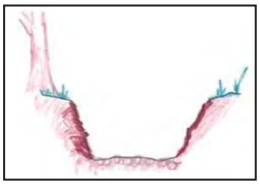
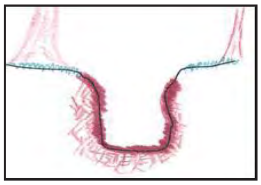
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	35	Avg. Banks:	8
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 117.5

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, dogwood, dewberry, greenbriar	80	Mix	Moderate	3	60	1.8
2. Savannah with pecan and bermudagrass	60	Mix	High	1	40	0.4
3.						
4.						
5.						

Score: 2.2

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, dogwood, dewberry, greenbirar	80	Mix	Moderate	3	40	1.2
2. Savannah with pecan and maintained grasses	60	Mix	High	1	60	0.6
3.						
4.						
5.						

Score: 1.8

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 30	Fines (silt, clay, muck): 10	Artificial:
Cobble: 25	Sand: 25	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Overhanging Vegetation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Rootmats	✓	✓	✓	✓	✓	✓	✓	✓					
Rootwads	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Woody/Leafy Debris	✓	✓			✓	✓	✓	✓	✓		✓	✓	
Boulders/Cobbles	✓		✓	✓	✓	✓	✓	✓					
Aquatic Macrophytes													
Riffle/Pool Sequence	✓		✓		✓	✓			✓				
Artificial Habitat Enhancement													
Other													
Total No. Present	7	5	6	5	7	7	6	6	5	3	4	3	

Average: 5.3 **Score:** 5

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☒ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 3

Channel Flow Status

- ☒ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 4

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-1 SAR No.: S-1-6 Size (LF): 1,143 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	35	Avg. Banks:	8
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	2.2	Sum of bank scores / 10 x 25	12.5
	Riparian buffer (right bank)	2.8		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	5		
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9
	Channel flow status	4		
			Sum of core element scores = overall TXRAM stream score	74
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	74

Representative Site Photograph:

Facing downstream near the upstream end of the SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-1 SAR No.: S-1-6 Size (LF): 1,143 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

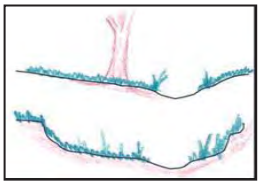
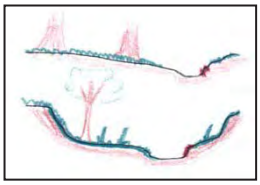
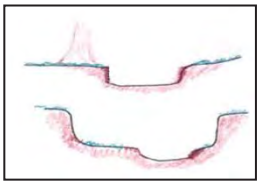
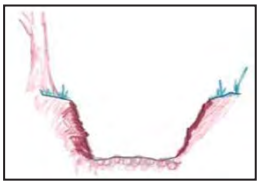
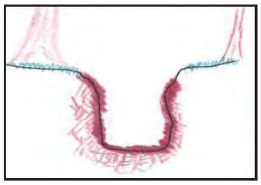
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	35	Avg. Banks:	8
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 117.5

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, Ashe juniper	80	Mix	Moderate	3	60	1.8
2. Savannah with pecan and bermudagrass	50	Mix	High	1	40	0.4
3.						
4.						
5.						

Score: 2.2

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, Ashe juniper	90	Mix	Moderate	3	90	2.7
2. Bank and floodplain bench with bermudagrass, rattlepod,cocklebur	20	Undesirable	Moderate	1	10	0.1
3.						
4.						
5.						

Score: 2.8

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 30	Fines (silt, clay, muck): 10	Artificial:
Cobble: 25	Sand: 25	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Overhanging Vegetation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Rootmats	✓	✓	✓	✓	✓	✓	✓	✓					
Rootwads	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Woody/Leafy Debris	✓	✓			✓	✓	✓	✓	✓		✓	✓	
Boulders/Cobbles	✓		✓	✓	✓	✓	✓	✓					
Aquatic Macrophytes													
Riffle/Pool Sequence	✓		✓		✓	✓			✓				
Artificial Habitat Enhancement													
Other													
Total No. Present	7	5	6	5	7	7	6	6	5	3	4	3	

Average: 5.3 **Score:** 5

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☒ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 3

Channel Flow Status

- ☒ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 4

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-1 SAR No.: S-1-9 Size (LF): 1,225 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	35	Avg. Banks:	8
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.4	Sum of bank scores / 10 x 25	7.3
	Riparian buffer (right bank)	1.5		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	5		
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9
	Channel flow status	4		
			Sum of core element scores = overall TXRAM stream score	68
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				68

Representative Site Photograph:

Facing downstream near the middle of the SAR, looking at eroded bank.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-1 SAR No.: S-1-9 Size (LF): 1,225 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

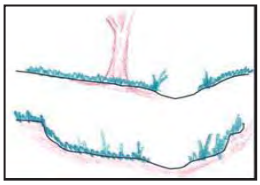
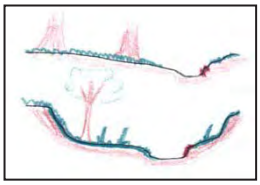
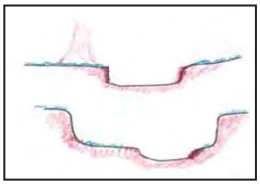
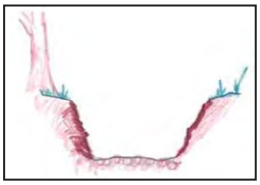
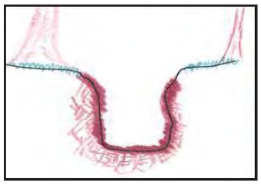
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	35	Avg. Banks:	8
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 117.5

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, Ashe juniper	80	Mix	Moderate	3	20	0.6
2. Savannah with pecan and bermudagrass	50	Mix	High	1	80	0.8
3.						
4.						
5.						

Score: 1.4

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, Ashe juniper	80	Mix	Moderate	3	40	1.2
2. Savannah with pecan and bermudagrass	50	Mix	High	1	30	0.3
3. Disturbed / eroded / barren soil	0	Undesirable	Intensive	0	30	0
4.						
5.						

Score: 1.5

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 30	Fines (silt, clay, muck): 10	Artificial:
Cobble: 25	Sand: 25	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Overhanging Vegetation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Rootmats	✓	✓	✓	✓	✓	✓	✓	✓					
Rootwads	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Woody/Leafy Debris	✓	✓			✓	✓	✓	✓	✓		✓	✓	
Boulders/Cobbles	✓		✓	✓	✓	✓	✓	✓					
Aquatic Macrophytes													
Riffle/Pool Sequence	✓		✓		✓	✓			✓				
Artificial Habitat Enhancement													
Other													
Total No. Present	7	5	6	5	7	7	6	6	5	3	4	3	

Average: 5.3 **Score:** 5

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☒ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 3

Channel Flow Status

- ☒ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 4

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-1 SAR No.: S-1-12 Size (LF): 1,281 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	35	Avg. Banks:	8
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.6	Sum of bank scores / 10 x 25	9.5
	Riparian buffer (right bank)	2.2		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	5		
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9
	Channel flow status	4		
			Sum of core element scores = overall TXRAM stream score	71
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	71

Representative Site Photograph:

Facing downstream at the SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-1 SAR No.: S-1-12 Size (LF): 1,281 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

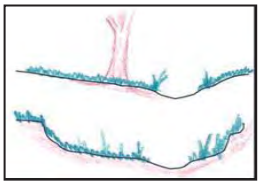
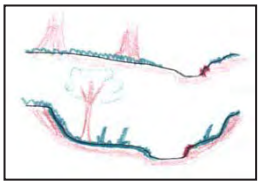
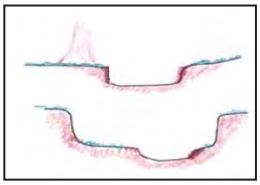
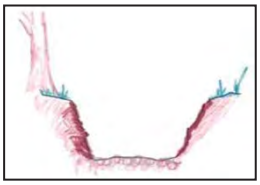
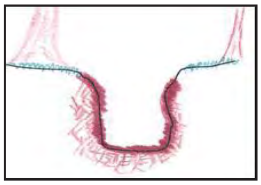
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	35	Avg. Banks:	8
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 117.5

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, Ashe juniper	80	Mix	Moderate	3	30	0.9
2. Savannah with pecan, bermudagrass, other grasses/forbs	50	Mix	High	1	70	0.7
3.						
4.						
5.						

Score: 1.6

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, Ashe juniper	80	Mix	Moderate	3	60	1.8
2. Savannah with pecan, bermudagrass, other grasses/forbs	50	Mix	High	1	40	0.4
3.						
4.						
5.						

Score: 2.2

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 30	Fines (silt, clay, muck): 10	Artificial:
Cobble: 25	Sand: 25	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Overhanging Vegetation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Rootmats	✓	✓	✓	✓	✓	✓	✓	✓					
Rootwads	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Woody/Leafy Debris	✓	✓			✓	✓	✓	✓	✓		✓	✓	
Boulders/Cobbles	✓		✓	✓	✓	✓	✓	✓					
Aquatic Macrophytes													
Riffle/Pool Sequence	✓		✓		✓	✓			✓				
Artificial Habitat Enhancement													
Other													
Total No. Present	7	5	6	5	7	7	6	6	5	3	4	3	

Average: 5.3 **Score:** 5

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☒ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 3

Channel Flow Status

- ☒ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 4

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-1 SAR No.: S-1-14 Size (LF): 1,244 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	35	Avg. Banks:	8
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.8	Sum of bank scores / 10 x 25	11.5
	Riparian buffer (right bank)	2.8		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	5		
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9
	Channel flow status	4		
			Sum of core element scores = overall TXRAM stream score	73
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	73

Representative Site Photograph:

Facing upstream near the upstream end of the SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-1 SAR No.: S-1-14 Size (LF): 1,244 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

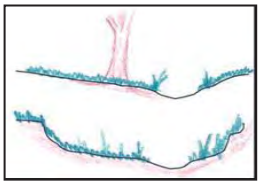
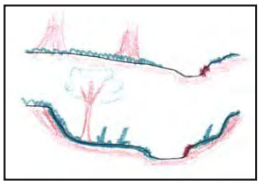
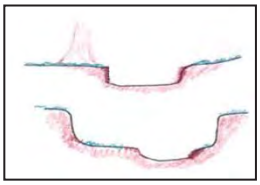
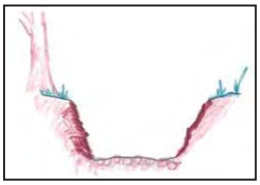
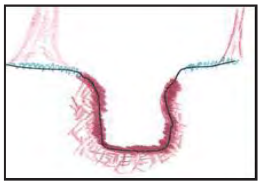
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	35	Avg. Banks:	8
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 117.5

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, Ashe juniper	80	Mix	Moderate	3	40	1.2
2. Savannah with pecan, bermudagrass, other grasses/forbs	50	Mix	High	1	50	0.5
3. Trail with bermudagrass and other grasses/forbs	10	Undesirable	High	1	10	0.1
4.						
5.						

Score: 1.8

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, Ashe juniper	80	Mix	Moderate	3	90	2.7
2. Trail with bermudagrass and other grasses/forbs	10	Undesirable	High	1	10	0.1
3.						
4.						
5.						

Score: 2.8

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 30	Fines (silt, clay, muck): 10	Artificial:
Cobble: 25	Sand: 25	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Overhanging Vegetation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Rootmats	✓	✓	✓	✓	✓	✓	✓	✓					
Rootwads	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Woody/Leafy Debris	✓	✓			✓	✓	✓	✓	✓		✓	✓	
Boulders/Cobbles	✓		✓	✓	✓	✓	✓	✓					
Aquatic Macrophytes													
Riffle/Pool Sequence	✓		✓		✓	✓			✓				
Artificial Habitat Enhancement													
Other													
Total No. Present	7	5	6	5	7	7	6	6	5	3	4	3	

Average: 5.3 **Score:** 5

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☒ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 3

Channel Flow Status

- ☒ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 4

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-1 SAR No.: S-1-16 Size (LF): 1,116 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated. Segment parallel FM 4.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	35	Avg. Banks:	8
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	18.3
	Bank condition	3		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	1.8	Sum of bank scores / 10 x 25	12.0
	Riparian buffer (right bank)	3.0		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	5		
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9
	Channel flow status	4		
			Sum of core element scores = overall TXRAM stream score	75
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				75

Representative Site Photograph:

Facing downstream at the SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-1 SAR No.: S-1-16 Size (LF): 1,116 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

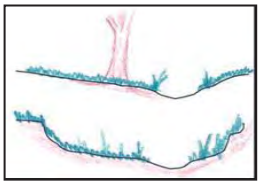
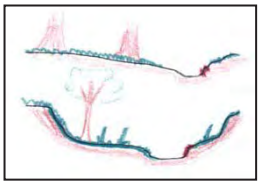
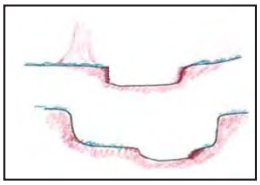
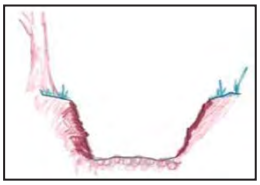
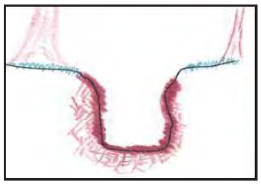
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	35	Avg. Banks:	8
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated. Segment parallel FM 4.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 117.5

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, bumelia, Ashe juniper	70	Mix	Moderate	3	60	1.8
2. Road, barren, and separated	0	-	Intensive	0	40	0
3.						
4.						
5.						

Score: 1.8

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, bumelia, Ashe juniper	80	Mix	Moderate	3	100	3
2.						
3.						
4.						
5.						

Score: 3.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 30	Fines (silt, clay, muck): 10	Artificial:
Cobble: 25	Sand: 25	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Overhanging Vegetation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Rootmats	✓	✓	✓	✓	✓	✓	✓	✓					
Rootwads	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Woody/Leafy Debris	✓	✓			✓	✓	✓	✓	✓		✓	✓	
Boulders/Cobbles	✓		✓	✓	✓	✓	✓	✓					
Aquatic Macrophytes													
Riffle/Pool Sequence	✓		✓		✓	✓			✓				
Artificial Habitat Enhancement													
Other													
Total No. Present	7	5	6	5	7	7	6	6	5	3	4	3	

Average: 5.3 **Score:** 5

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☒ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 3

Channel Flow Status

- ☒ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 4

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-1 SAR No.: S-1-19 Size (LF): 1,271 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	35	Avg. Banks:	8
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.4	Sum of bank scores / 10 x 25	9.0
	Riparian buffer (right bank)	2.2		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	5		
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9
	Channel flow status	4		
			Sum of core element scores = overall TXRAM stream score	70
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	70

Representative Site Photograph:

Facing upstream near the middle of the SAR, looking at eroded bank.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-1 SAR No.: S-1-19 Size (LF): 1,271 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

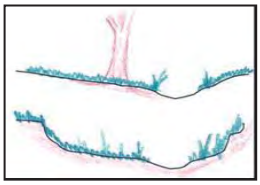
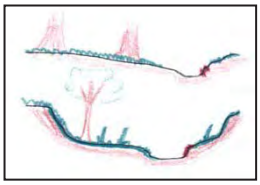
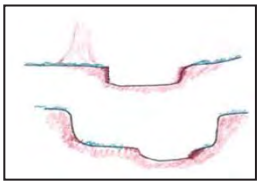
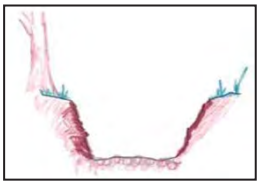
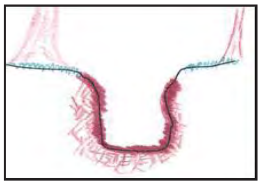
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	35	Avg. Banks:	8
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 117.5

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, Ashe juniper	70	Mix	Moderate	3	30	0.9
2. Pasture with bermudagrass and other grasses/forbs	50	Undesirable	High	1	50	0.5
3. Disturbed / eroded / barren soil	0	Undesirable	Intensive	0	20	0
4.						
5.						

Score: 1.4

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, Ashe juniper	70	Mix	Moderate	3	60	1.8
2. Floodplain bench with willow, baccharis, mesquite	40	Undesirable	High	1	30	0.3
3. Trail and electric line right-of-way	10	Undesirable	High	1	10	0.1
4.						
5.						

Score: 2.2

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 30	Fines (silt, clay, muck): 10	Artificial:
Cobble: 25	Sand: 25	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Overhanging Vegetation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Rootmats	✓	✓	✓	✓	✓	✓	✓	✓					
Rootwads	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Woody/Leafy Debris	✓	✓			✓	✓	✓	✓	✓		✓	✓	
Boulders/Cobbles	✓		✓	✓	✓	✓	✓	✓					
Aquatic Macrophytes													
Riffle/Pool Sequence	✓		✓		✓	✓			✓				
Artificial Habitat Enhancement													
Other													
Total No. Present	7	5	6	5	7	7	6	6	5	3	4	3	

Average: 5.3 **Score:** 5

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☒ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 3

Channel Flow Status

- ☒ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 4

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-1 SAR No.: S-1-20 Size (LF): 737 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated. Segment between outlet pipe and spillway channel.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	35	Avg. Banks:	8
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	18.3
	Bank condition	4		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	2.6	Sum of bank scores / 10 x 25	12.5
	Riparian buffer (right bank)	2.4		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	5		
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9
	Channel flow status	4		
			Sum of core element scores = overall TXRAM stream score	75
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				75

Representative Site Photograph:

Facing upstream near the middle of the SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-1 SAR No.: S-1-20 Size (LF): 737 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

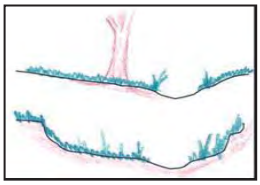
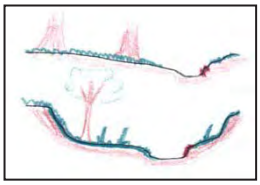
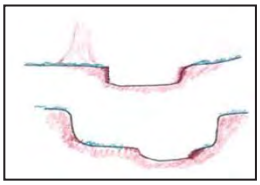
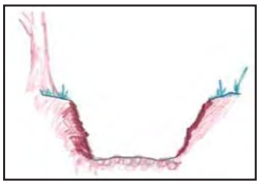
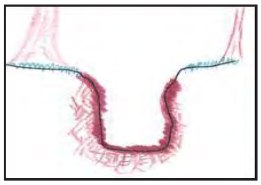
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	35	Avg. Banks:	8
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated. Segment between outlet pipe and spillway channel.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 10 % Average: 10.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 117.5

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, Ashe juniper	70	Mix	Moderate	3	80	2.4
2. Pasture with bermudagrass and other grasses/forbs	50	Undesirable	High	1	15	0.2
3. Disturbed / eroded / barren soil	0	Undesirable	Intensive	0	5	0
4.						
5.						

Score: 2.6

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, Ashe juniper	70	Mix	Moderate	3	70	2.1
2. Floodplain bench with willow, baccharis, mesquite	40	Undesirable	High	1	30	0.3
3.						
4.						
5.						

Score: 2.4

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 30	Fines (silt, clay, muck): 10	Artificial:
Cobble: 25	Sand: 25	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Overhanging Vegetation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Rootmats	✓	✓	✓	✓	✓	✓	✓	✓					
Rootwads	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Woody/Leafy Debris	✓	✓			✓	✓	✓	✓	✓		✓	✓	
Boulders/Cobbles	✓		✓	✓	✓	✓	✓	✓					
Aquatic Macrophytes													
Riffle/Pool Sequence	✓		✓		✓	✓			✓				
Artificial Habitat Enhancement													
Other													
Total No. Present	7	5	6	5	7	7	6	6	5	3	4	3	

Average: 5.3 **Score:** 5

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☒ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 3

Channel Flow Status

- ☒ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 4

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-2 SAR No.: S-2-1 Size (LF): 883 Date: 2017 Evaluator(s): RW

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture Watershed Size: 710 acres

Aerial Photo Date and Source: 2012 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on 2017 site visit, review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	25	Avg. Banks:	4
Avg. Waters Edge:	8	Avg. Water:	1
Avg. OHWM:	15	Avg. OHWM:	2

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	2	Sum of metric scores / 15 x 25	13.3
	Bank condition	3		
	Sediment deposition	3		
Riparian buffer condition	Riparian buffer (left bank)	1.4	Sum of bank scores / 10 x 25	7.0
	Riparian buffer (right bank)	1.4		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	12.5
	In-stream habitat	1		
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	12.5
	Channel flow status	2		
			Sum of core element scores = overall TXRAM stream score	45
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	45

Representative Site Photograph:

SAR S-2-1 facing downstream.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-2 SAR No.: S-2-1 Size (LF): 883 Date: 2017 Evaluator(s): RW

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture Watershed Size: 710 acres

Aerial Photo Date and Source: 2012 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

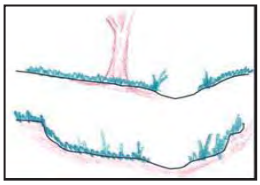
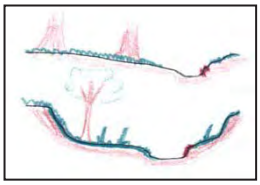
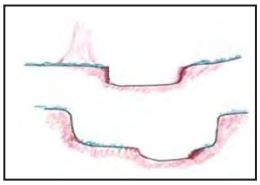
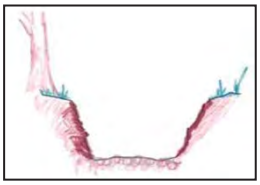
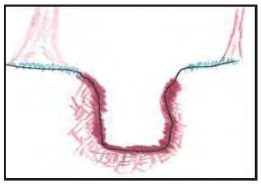
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	25	Avg. Banks:	4
Avg. Waters Edge:	8	Avg. Water:	1
Avg. OHWM:	15	Avg. OHWM:	2

Notes: Based on 2017 site visit, review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	3	(2)	1

Score: 2

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☒ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 3

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 62.5

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, live oak, Texas ash, Ashe juniper	70	Mix	High	2	50	1.0
2. Brush with Ashe juniper and mesquite	50	Undesirable	High	1	40	0.4
3. Trail and separated	0	-	Intense	0	10	0
4.						
5.						

Score: 1.4

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, live oak, Texas ash, Ashe juniper	70	Mix	High	2	50	1.0
2. Brush with Ashe juniper and mesquite / Trail	50	Undesirable	High	1	40	0.4
3. Trail and separated	0	-	Intense	0	10	0
4.						
5.						

Score: 1.4

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 20	Fines (silt, clay, muck): 40	Artificial:
Cobble: 30	Sand:	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓												
Overhanging Vegetation		✓											
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles			✓										
Aquatic Macrophytes				✓									
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	1	1	1	1									

Average: 1.0 **Score:** 1

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☒ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 2

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☒ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 2

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-2 SAR No.: S-2-2 Size (LF): 926 Date: 2017 Evaluator(s): RW

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture Watershed Size: 710 acres

Aerial Photo Date and Source: 2012 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on 2017 site visit, review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	25	Avg. Banks:	4
Avg. Waters Edge:	8	Avg. Water:	1
Avg. OHWM:	15	Avg. OHWM:	2

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7
	Bank condition	4		
	Sediment deposition	3		
Riparian buffer condition	Riparian buffer (left bank)	0.7	Sum of bank scores / 10 x 25	4.5
	Riparian buffer (right bank)	1.1		
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	10.0
	In-stream habitat	1		
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	12.5
	Channel flow status	2		
			Sum of core element scores = overall TXRAM stream score	44
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				44

Representative Site Photograph:

SAR S-2-2 facing downstream.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-2 SAR No.: S-2-2 Size (LF): 926 Date: 2017 Evaluator(s): RW

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture Watershed Size: 710 acres

Aerial Photo Date and Source: 2012 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

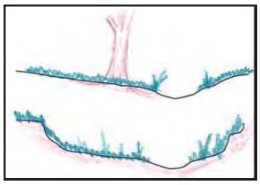
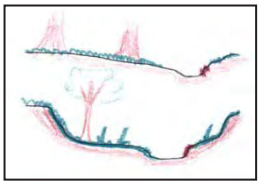
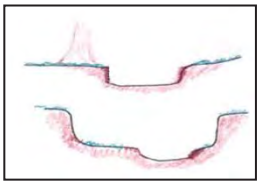
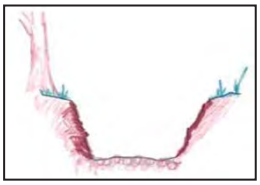
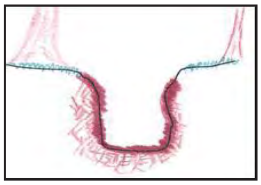
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	25	Avg. Banks:	4
Avg. Waters Edge:	8	Avg. Water:	1
Avg. OHWM:	15	Avg. OHWM:	2

Notes: Based on 2017 site visit, review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 10 % Average: 10.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☒ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 3

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 62.5

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, live oak, Texas ash, Ashe juniper	70	Mix	High	2	20	0.4
2. Brush with Ashe juniper and mesquite	50	Undesirable	High	1	30	0.3
3. Trail and separated	0	-	Intense	0	50	0
4.						
5.						

Score: 0.7

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, live oak, Texas ash, Ashe juniper	70	Mix	High	2	30	0.6
2. Brush with Ashe juniper and mesquite / Trail	50	Undesirable	High	1	50	0.5
3. Trail and separated	0	-	Intense	0	20	0
4.						
5.						

Score: 1.1

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 20	Fines (silt, clay, muck): 50	Artificial:
Cobble: 20	Sand:	Bedrock:	Other:

Score: 3

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓												
Overhanging Vegetation		✓											
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles			✓										
Aquatic Macrophytes				✓									
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	1	1	1	1									

Average: 1.0 **Score:** 1

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☒ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 2

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☒ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 2

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-2 SAR No.: S-2-3 Size (LF): 1270 Date: 2017 Evaluator(s): RW

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture Watershed Size: 710 acres

Aerial Photo Date and Source: 2012 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on 2017 site visit, review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	25	Avg. Banks:	4
Avg. Waters Edge:	8	Avg. Water:	1
Avg. OHWM:	15	Avg. OHWM:	2

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	20.0
	Bank condition	5		
	Sediment deposition	3		
Riparian buffer condition	Riparian buffer (left bank)	1.6	Sum of bank scores / 10 x 25	7.0
	Riparian buffer (right bank)	1.2		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	12.5
	In-stream habitat	1		
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	12.5
	Channel flow status	2		
			Sum of core element scores = overall TXRAM stream score	52
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	52

Representative Site Photograph:

SAR S-2-3 facing downstream.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-2 SAR No.: S-2-3 Size (LF): 1270 Date: 2017 Evaluator(s): RW

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture Watershed Size: 710 acres

Aerial Photo Date and Source: 2012 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

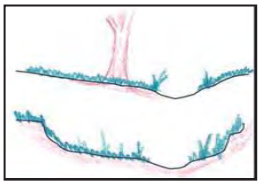
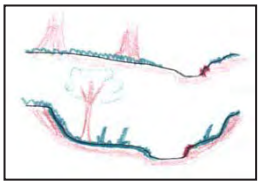
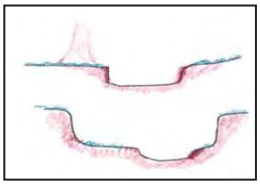
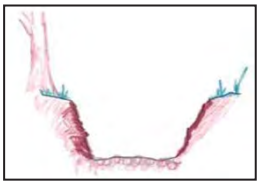
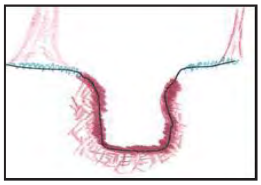
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	25	Avg. Banks:	4
Avg. Waters Edge:	8	Avg. Water:	1
Avg. OHWM:	15	Avg. OHWM:	2

Notes: Based on 2017 site visit, review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	(4)	3	2	1

Score: 4

Bank Condition

Left Bank Active Erosion: 5 % Right Bank Active Erosion: 5 % Average: 5.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 5

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☒ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 3

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 62.5

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, live oak, Texas ash, Ashe juniper	70	Mix	High	2	60	1.2
2. Brush with Ashe juniper and mesquite	50	Undesirable	High	1	40	0.4
3.						
4.						
5.						

Score: 1.6

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, live oak, Texas ash, Ashe juniper	70	Mix	High	2	40	0.8
2. Brush with Ashe juniper and mesquite	30	Undesirable	High	1	40	0.4
3. Trail and separated	0	-	Intense	0	20	0
4.						
5.						

Score: 1.2

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 20	Gravel: 20	Fines (silt, clay, muck): 30	Artificial:
Cobble: 30	Sand:	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓												
Overhanging Vegetation		✓											
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles			✓										
Aquatic Macrophytes				✓									
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	1	1	1	1									

Average: 1.0 **Score:** 1

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☒ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 2

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☒ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 2

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-3 SAR No.: S-3-1 Size (LF): 1,230 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 140 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Minor pooling.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	15	Avg. Banks:	5
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	5	Avg. OHWM:	1

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	2	Sum of metric scores / 15 x 25	15.0
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.9	Sum of bank scores / 10 x 25	9.5
	Riparian buffer (right bank)	1.9		
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	10.0
	In-stream habitat	1		
Hydrologic condition	Flow regime	1	Sum of metric scores / 8 x 25	6.3
	Channel flow status	1		
			Sum of core element scores = overall TXRAM stream score	41
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				41

Representative Site Photograph:

Facing downstream near the downstream end of the existing SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-3 SAR No.: S-3-1 Size (LF): 1,230 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 140 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

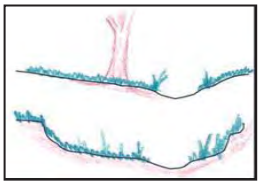
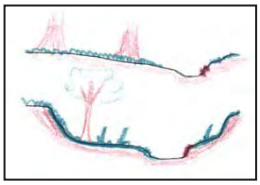
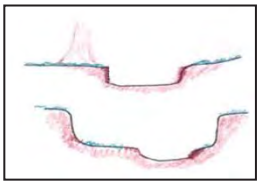
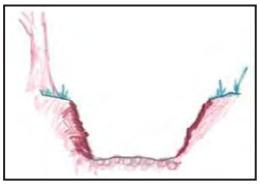
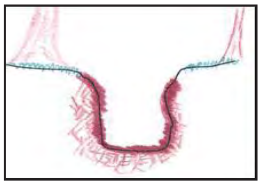
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	15	Avg. Banks:	5
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	5	Avg. OHWM:	1

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Minor pooling.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	3	(2)	1

Score: 2

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 32.5

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, Texas ash, Ashe juniper	70	Mix	High	2	90	1.8
2. Trail / Electric distribution line	0	Undesirable	High	1	10	0.1
3.						
4.						
5.						

Score: 1.9

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, Texas ash, Ashe juniper	70	Mix	High	2	90	1.8
2. Trail / Electric distribution line	0	Undesirable	High	1	10	0.1
3.						
4.						
5.						

Score: 1.9

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder:	Gravel: 30	Fines (silt, clay, muck): 50	Artificial:
Cobble: 20	Sand:	Bedrock:	Other:

Score: 3

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓												
Overhanging Vegetation		✓											
Rootmats													
Rootwads													
Woody/Leafy Debris			✓										
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	1	1	1										

Average: 1.0 **Score:** 1

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☒ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 1

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☒ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 1

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-4 SAR No.: S-4-1 Size (LF): 1,177 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 55 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Flows through culvert under FM 4 with heavy down-cutting below.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	10	Avg. Banks:	4
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	1

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	2	Sum of metric scores / 15 x 25	15.0
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.9	Sum of bank scores / 10 x 25	9.5
	Riparian buffer (right bank)	1.9		
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	7.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0
	Channel flow status	0		
			Sum of core element scores = overall TXRAM stream score	32
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	32

Representative Site Photograph:

Facing downstream near the downstream end of the SAR. Note the incision and bank erosion.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-4 SAR No.: S-4-1 Size (LF): 1,177 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 55 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

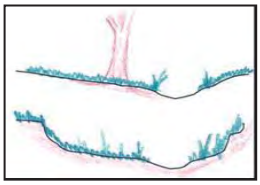
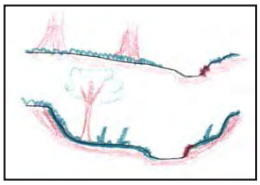
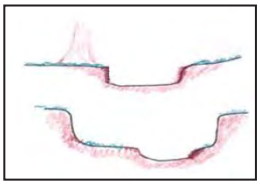
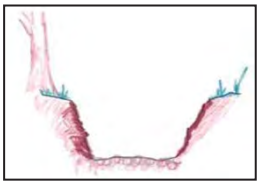
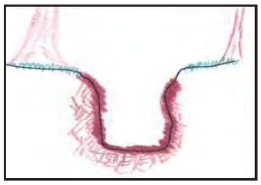
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	10	Avg. Banks:	4
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	1

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Flows through culvert under FM 4 with heavy down-cutting below.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	3	(2)	1

Score: 2

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 30.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, Texas ash, Ashe juniper	70	Mix	High	2	95	1.9
2. Road	0	-	Intensive	0	5	0
3.						
4.						
5.						

Score: 1.9

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, Texas ash, Ashe juniper	70	Mix	High	2	95	1.9
2. Road	0	-	Intensive	0	5	0
3.						
4.						
5.						

Score: 1.9

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder:	Gravel: 30	Fines (silt, clay, muck): 60	Artificial:
Cobble: 10	Sand:	Bedrock:	Other:

Score: 3

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	0												

Average: 0.0 **Score:** 0

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☒ Dry channel and no observable pools or interstitial flow (0)

Score: 0

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-5 SAR No.: S-5-1 Size (LF): 239 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Pond Watershed Size: 10 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Downslope of culvert under FM 4 with heavy erosion.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	15	Avg. Banks:	10
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	1

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	1	Sum of metric scores / 15 x 25	11.7
	Bank condition	1		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	2.0	Sum of bank scores / 10 x 25	10.0
	Riparian buffer (right bank)	2.0		
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	7.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0
	Channel flow status	0		
			Sum of core element scores = overall TXRAM stream score	29
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	29

Representative Site Photograph:

Facing downstream near the middle of the SAR. Note the steep banks and erosion.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-5 SAR No.: S-5-1 Size (LF): 239 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Pond Watershed Size: 10 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

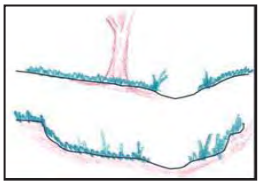
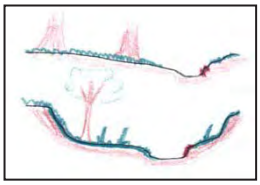
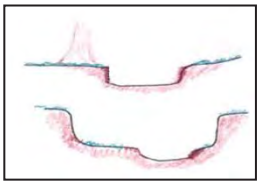
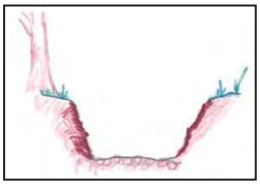
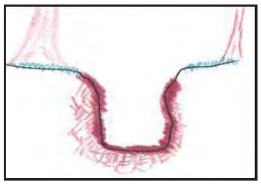
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	15	Avg. Banks:	10
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	1

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Downslope of culvert under FM 4 with heavy erosion.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	3	2	(1)

Score: 1

Bank Condition

Left Bank Active Erosion: 40 % Right Bank Active Erosion: 40 % Average: 40.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 1

Sediment Deposition

☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 30.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, Texas ash, hackberry, Ashe juniper	70	Mix	High	2	100	2
2.						
3.						
4.						
5.						

Score: 2.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, Texas ash, hackberry, Asje juniper	70	Mix	High	2	100	2
2.						
3.						
4.						
5.						

Score: 2.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder:	Gravel: 30	Fines (silt, clay, muck): 60	Artificial:
Cobble: 10	Sand:	Bedrock:	Other:

Score: 3

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	0												

Average: 0.0 **Score:** 0

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☒ Dry channel and no observable pools or interstitial flow (0)

Score: 0

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-6 SAR No.: S-6-1 Size (LF): 1,394 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture Watershed Size: 80 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Minor pooling from recent rain.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	6	Avg. Banks:	3
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	2	Avg. OHWM:	1

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	18.3
	Bank condition	4		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.9	Sum of bank scores / 10 x 25	9.5
	Riparian buffer (right bank)	1.9		
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	10.0
	In-stream habitat	1		
Hydrologic condition	Flow regime	1	Sum of metric scores / 8 x 25	6.3
	Channel flow status	1		
			Sum of core element scores = overall TXRAM stream score	44
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				44

Representative Site Photograph:

Facing upstream near the downstream end of the SAR. Note the murky water pooled in this reach from runoff of recent rain.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-6 SAR No.: S-6-1 Size (LF): 1,394 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture Watershed Size: 80 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

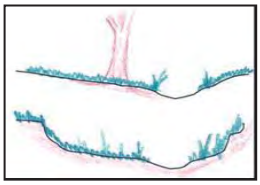
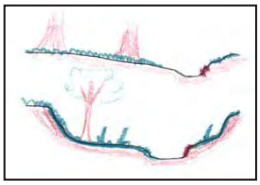
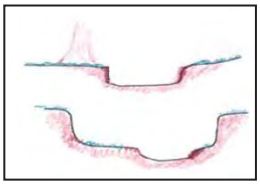
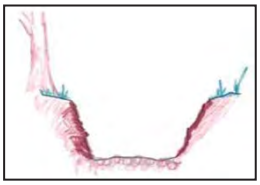
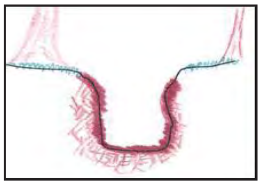
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	6	Avg. Banks:	3
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	2	Avg. OHWM:	1

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Minor pooling from recent rain.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 10 % Average: 10.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 28.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, Texas ash, Ashe juniper	70	Mix	High	2	90	1.8
2. Trail / Electric distribution line	0	Undesirable	High	1	10	0.1
3.						
4.						
5.						

Score: 1.9

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, Texas ash, Ashe juniper	70	Mix	High	2	90	1.8
2. Trail / Electric distribution line	0	Undesirable	High	1	10	0.1
3.						
4.						
5.						

Score: 1.9

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder:	Gravel: 30	Fines (silt, clay, muck): 50	Artificial:
Cobble: 20	Sand:	Bedrock:	Other:

Score: 3

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation	✓												
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	1												

Average: 1.0 **Score:** 1

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☒ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 1

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☒ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 1

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-7 SAR No.: S-7-1 Size (LF): 221 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Pond Watershed Size: 50 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Downslope of culvert under FM 4 with heavy erosion.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	10	Avg. Banks:	8
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	1	Avg. OHWM:	1

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	1	Sum of metric scores / 15 x 25	11.7
	Bank condition	1		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	2.0	Sum of bank scores / 10 x 25	10.0
	Riparian buffer (right bank)	2.0		
In-stream condition	Substrate composition	1	Sum of metric scores / 10 x 25	2.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0
	Channel flow status	0		
			Sum of core element scores = overall TXRAM stream score	24
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	24

Representative Site Photograph:

S-7-1 facing downstream (south).

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-7 SAR No.: S-7-1 Size (LF): 221 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Pond Watershed Size: 50 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

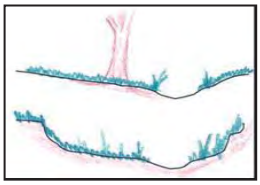
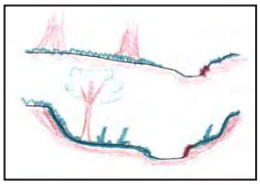
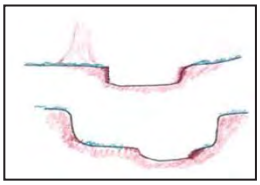
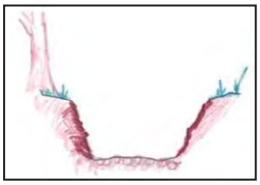
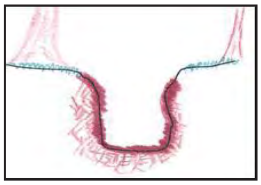
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	10	Avg. Banks:	8
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	1	Avg. OHWM:	1

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Downslope of culvert under FM 4 with heavy erosion.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	3	2	(1)

Score: 1

Bank Condition

Left Bank Active Erosion: 40 % Right Bank Active Erosion: 40 % Average: 40.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 1

Sediment Deposition

☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 30.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, hackberry	70	Mix	High	2	100	2
2.						
3.						
4.						
5.						

Score: 2.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, hackberry	70	Mix	High	2	100	2
2.						
3.						
4.						
5.						

Score: 2.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder:	Gravel:	Fines (silt, clay, muck): 100	Artificial:
Cobble:	Sand:	Bedrock:	Other:

Score: 1

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	0												

Average: 0.0 **Score:** 0

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☒ Dry channel and no observable pools or interstitial flow (0)

Score: 0

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-8 SAR No.: S-8-1 Size (LF): 1,021 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Pond Watershed Size: 350 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Minor pooling from recent rain.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	12	Avg. Banks:	8
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	2

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	2	Sum of metric scores / 15 x 25	15.0
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.9	Sum of bank scores / 10 x 25	9.5
	Riparian buffer (right bank)	1.9		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	12.5
	In-stream habitat	1		
Hydrologic condition	Flow regime	1	Sum of metric scores / 8 x 25	6.3
	Channel flow status	1		
			Sum of core element scores = overall TXRAM stream score	43
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	43

Representative Site Photograph:

S-8-1 facing upstream (south).

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-8 SAR No.: S-8-1 Size (LF): 1,021 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Pond Watershed Size: 350 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

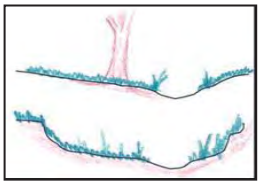
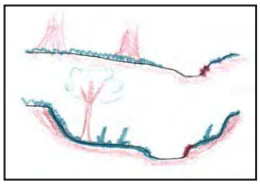
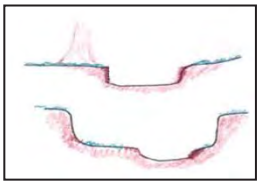
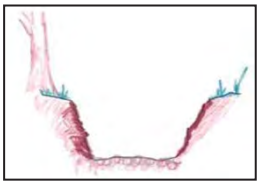
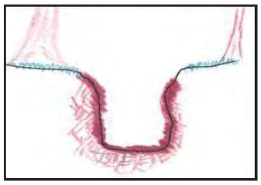
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	12	Avg. Banks:	8
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	2

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Minor pooling from recent rain.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	3	(2)	1

Score: 2

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 31.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, Texas ash, Ashe juniper	70	Mix	High	2	90	1.8
2. Trail / Electric distribution line	0	Undesirable	High	1	10	0.1
3.						
4.						
5.						

Score: 1.9

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, Texas ash, Ashe juniper	70	Mix	High	2	90	1.8
2. Trail / Electric distribution line	0	Undesirable	High	1	10	0.1
3.						
4.						
5.						

Score: 1.9

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 30	Fines (silt, clay, muck): 40	Artificial:
Cobble: 20	Sand:	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation	✓												
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	1												

Average: 1.0 **Score:** 1

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☒ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 1

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☒ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 1

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-9 SAR No.: S-9-1 Size (LF): 1,040 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 650 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Minor pooling from recent rain.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	30	Avg. Banks:	10
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	1

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	2	Sum of metric scores / 15 x 25	16.7
	Bank condition	4		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	2.0	Sum of bank scores / 10 x 25	9.8
	Riparian buffer (right bank)	1.9		
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	10.0
	In-stream habitat	1		
Hydrologic condition	Flow regime	1	Sum of metric scores / 8 x 25	6.3
	Channel flow status	1		
			Sum of core element scores = overall TXRAM stream score	43
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	43

Representative Site Photograph:

Facing upstream near the middle of the SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-9 SAR No.: S-9-1 Size (LF): 1,040 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 650 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

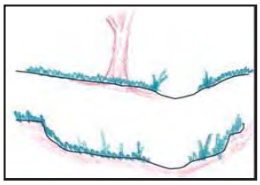
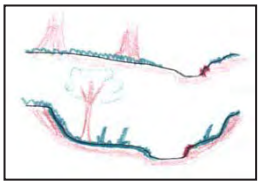
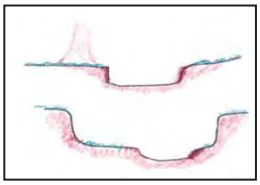
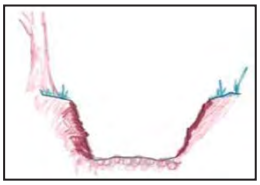
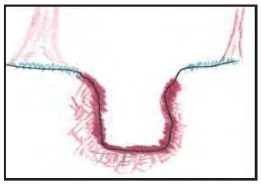
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	30	Avg. Banks:	10
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	1

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Minor pooling from recent rain.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	3	(2)	1

Score: 2

Bank Condition

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 10 % Average: 10.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 40.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, cottonwood, pecan, western soapberry, Ashe juniper	70	Mix	High	2	100	2
2.						
3.						
4.						
5.						

Score: 2.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, cottonwood, pecan, western soapberry, Ashe juniper	70	Mix	High	2	90	1.8
2. Trail / Electric distribution line	0	Undesirable	High	1	10	0.1
3.						
4.						
5.						

Score: 1.9

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 20	Fines (silt, clay, muck): 40	Artificial:
Cobble: 20	Sand: 10	Bedrock:	Other:

Score: 3

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓												
Overhanging Vegetation		✓											
Rootmats													
Rootwads													
Woody/Leafy Debris			✓										
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	1	1	1										

Average: 1.0 **Score:** 1

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☒ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 1

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☒ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 1

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-9 SAR No.: S-9-2 Size (LF): 1,040 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 650 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Minor pooling from recent rain.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	30	Avg. Banks:	10
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	1

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	18.3
	Bank condition	4		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.9	Sum of bank scores / 10 x 25	9.3
	Riparian buffer (right bank)	1.8		
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	10.0
	In-stream habitat	1		
Hydrologic condition	Flow regime	1	Sum of metric scores / 8 x 25	6.3
	Channel flow status	1		
			Sum of core element scores = overall TXRAM stream score	44
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	44

Representative Site Photograph:

Facing upstream near the middle of the SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-9 SAR No.: S-9-2 Size (LF): 1,040 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 650 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

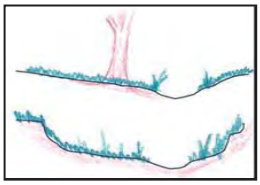
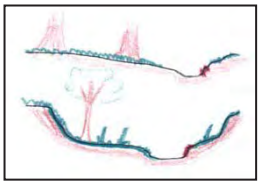
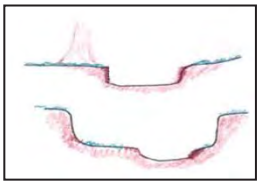
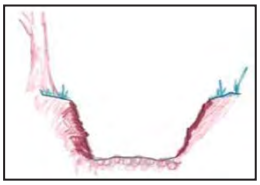
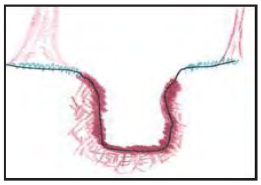
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	30	Avg. Banks:	10
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	1

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Minor pooling from recent rain.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 10 % Average: 10.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 40.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, cottonwood, pecan, western soapberry, Ashe juniper	70	Mix	High	2	90	1.8
2. Trail / Electric distribution line	0	Undesirable	High	1	10	0.1
3.						
4.						
5.						

Score: 1.9

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, cottonwood, pecan, western soapberry, Ashe juniper	70	Mix	High	2	80	1.6
2. Trail / Electric distribution line	0	Undesirable	High	1	20	0.2
3.						
4.						
5.						

Score: 1.8

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 30	Fines (silt, clay, muck): 40	Artificial:
Cobble: 10	Sand: 10	Bedrock:	Other:

Score: 3

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓												
Overhanging Vegetation		✓											
Rootmats													
Rootwads													
Woody/Leafy Debris			✓										
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	1	1	1										

Average: 1.0 **Score:** 1

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☒ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 1

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☒ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 1

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-9 SAR No.: S-9-3 Size (LF): 1,082 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 650 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Minor pooling from recent rain.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	30	Avg. Banks:	10
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	1

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	20.0
	Bank condition	4		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	2.0	Sum of bank scores / 10 x 25	10.0
	Riparian buffer (right bank)	2.0		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	12.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	1	Sum of metric scores / 8 x 25	6.3
	Channel flow status	1		
			Sum of core element scores = overall TXRAM stream score	49
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	49

Representative Site Photograph:

Facing upstream near the middle of the SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-9 SAR No.: S-9-3 Size (LF): 1,082 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 650 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

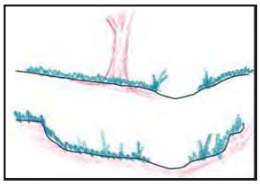
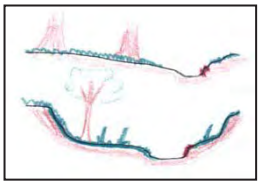
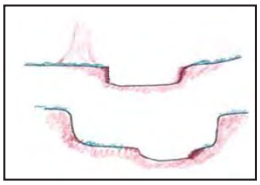
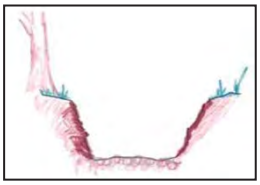
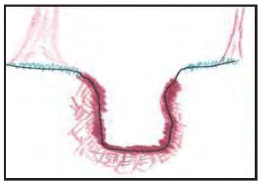
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	30	Avg. Banks:	10
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	1

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Minor pooling from recent rain.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	(4)	3	2	1

Score: 4

Bank Condition

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 10 % Average: 10.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 40.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, cottonwood, pecan, western soapberry, Ashe juniper	70	Mix	High	2	95	1.9
2. Trail	0	Undesirable	High	1	5	0.1
3.						
4.						
5.						

Score: 2.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, cottonwood, pecan, western soapberry, Ashe juniper	70	Mix	High	2	95	1.9
2. Trail	0	Undesirable	High	1	5	0.1
3.						
4.						
5.						

Score: 2.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 50	Fines (silt, clay, muck): 10	Artificial:
Cobble: 20	Sand: 10	Bedrock:	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present													

Average: _____ **Score:** 0

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☒ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 1

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☒ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 1

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-10 SAR No.: S-10-1 Size (LF): 1,092 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 2 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle and human use. In-stream habitat estimated. Minor pooling.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	40	Avg. Banks:	7
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	12	Avg. OHWM:	2

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	2	Sum of metric scores / 15 x 25	15.0
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.7	Sum of bank scores / 10 x 25	8.8
	Riparian buffer (right bank)	1.8		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	12.5
	In-stream habitat	1		
Hydrologic condition	Flow regime	1	Sum of metric scores / 8 x 25	6.3
	Channel flow status	1		
			Sum of core element scores = overall TXRAM stream score	43
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	43

Representative Site Photograph:

Facing downstream near the upper end of the SAR. Note the incision and bank erosion.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-10 SAR No.: S-10-1 Size (LF): 1,092 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 2 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

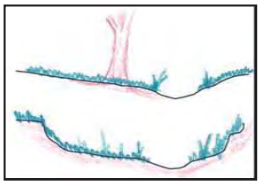
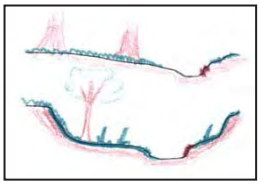
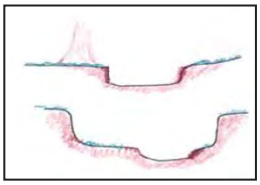
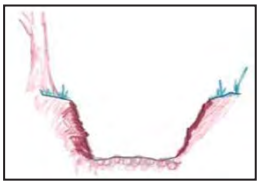
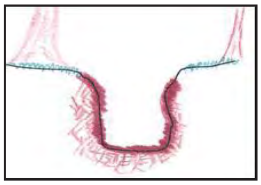
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	40	Avg. Banks:	7
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	12	Avg. OHWM:	2

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle and human use. In-stream habitat estimated. Minor pooling.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	3	(2)	1

Score: 2

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 45.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, Texas ash, Ashe juniper	70	Mix	High	2	70	1.4
2. Pasture	20	Undesirable	High	1	30	0.3
3.						
4.						
5.						

Score: 1.7

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, Texas ash, Ashe juniper	70	Mix	High	2	80	1.6
2. Pasture	20	Undesirable	High	1	20	0.2
3.						
4.						
5.						

Score: 1.8

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 40	Fines (silt, clay, muck): 30	Artificial:
Cobble: 20	Sand:	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓												
Overhanging Vegetation		✓											
Rootmats													
Rootwads													
Woody/Leafy Debris			✓										
Boulders/Cobbles				✓									
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	1	1	1	1									

Average: 1.0 **Score:** 1

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☒ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 1

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☒ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 1

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-10 SAR No.: S-10-2 Size (LF): 1,092 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 2 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle and human use. In-stream habitat estimated. Flows under bridge at Lakeview Dr. Minor pooling.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	40	Avg. Banks:	7
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	12	Avg. OHWM:	2

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	18.3
	Bank condition	4		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.7	Sum of bank scores / 10 x 25	9.0
	Riparian buffer (right bank)	1.9		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	15.0
	In-stream habitat	1		
Hydrologic condition	Flow regime	1	Sum of metric scores / 8 x 25	6.3
	Channel flow status	1		
			Sum of core element scores = overall TXRAM stream score	49
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	49

Representative Site Photograph:

Facing upstream near the middle of the SAR. Note the rocky substrate.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-10 SAR No.: S-10-2 Size (LF): 1,092 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 2 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

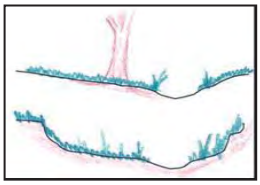
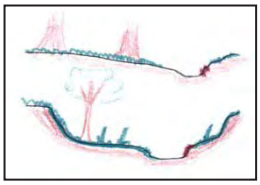
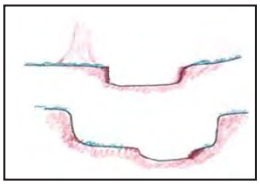
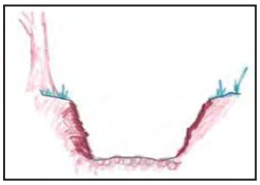
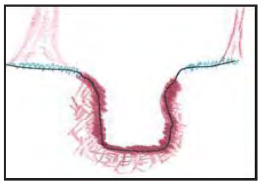
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	40	Avg. Banks:	7
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	12	Avg. OHWM:	2

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle and human use. In-stream habitat estimated. Flows under bridge at Lakeview Dr. Minor pooling.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 10 % Average: 10.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 45.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, Texas ash, Ashe juniper	70	Mix	High	2	80	1.6
2. Road Right-of-Way / Pasture	20	Undesirable	High	1	10	0.1
3. Road	0	-	Intensive	0	10	0
4.						
5.						

Score: 1.7

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, Texas ash, Ashe juniper	70	Mix	High	2	90	1.8
2. Road Right-of-Way / Pasture	20	Undesirable	High	1	5	0.1
3. Road	0	-	Intensive	0	5	0
4.						
5.						

Score: 1.9

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 40	Fines (silt, clay, muck): 10	Artificial:
Cobble: 30	Sand: 10	Bedrock:	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓												
Overhanging Vegetation		✓											
Rootmats													
Rootwads													
Woody/Leafy Debris			✓										
Boulders/Cobbles				✓									
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	1	1	1	1									

Average: 1.0 **Score:** 1

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☒ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 1

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☒ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 1

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-10 SAR No.: S-10-3 Size (LF): 875 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 2 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on 2017 site visit, review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle and human use. In-stream habitat estimated. Portion that parallels FM 4 and was channelized along the road in the past.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	40	Avg. Banks:	7
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	12	Avg. OHWM:	2

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	1	Sum of metric scores / 15 x 25	11.7
	Bank condition	2		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	0.5	Sum of bank scores / 10 x 25	6.3
	Riparian buffer (right bank)	2.0		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	10.0
	In-stream habitat	0		
Hydrologic condition	Flow regime	1	Sum of metric scores / 8 x 25	6.3
	Channel flow status	1		
			Sum of core element scores = overall TXRAM stream score	34
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				34

Representative Site Photograph:

Facing downstream from the middle of the SAR. Note the previous channelization in the ditch along the road and concrete placed in the channel.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-10 SAR No.: S-10-3 Size (LF): 875 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 2 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

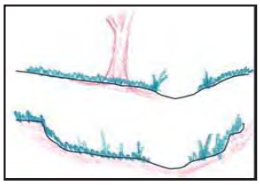
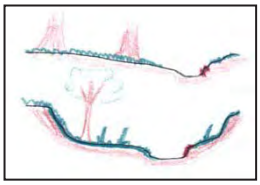
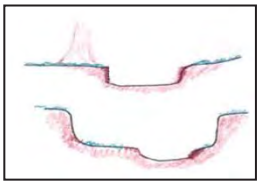
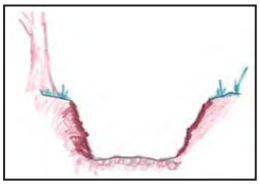
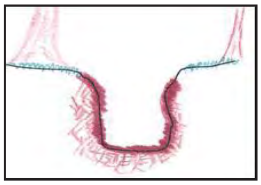
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	40	Avg. Banks:	7
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	12	Avg. OHWM:	2

Notes: Based on 2017 site visit, review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle and human use. In-stream habitat estimated. Portion that parallels FM 4 and was channelized along the road in the past.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	3	2	(1)

Score: 1

Bank Condition

Left Bank Active Erosion: 30 % Right Bank Active Erosion: 30 % Average: 30.0

Bank Protection/Stabilization: ☒ Natural ☒ Artificial: Concrete

Score: 2

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 45.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, Texas ash, Ashe juniper	70	Mix	High	2	5	0.1
2. Road Right-of-Way	10	Undesirable	High	1	40	0.4
3. Road	0	-	Intensive	0	55	0
4.						
5.						

Score: 0.5

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, Texas ash, Ashe juniper	70	Mix	High	2	100	2
2.						
3.						
4.						
5.						

Score: 2.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 30	Fines (silt, clay, muck): 10	Artificial: 10
Cobble: 20	Sand: 10	Bedrock: 10	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	0	0	0	0	0	0	0	0	0				

Average: 0.0 **Score:** 0

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☒ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 1

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☒ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 1

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-10 SAR No.: S-10-4 Size (LF): 891 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 2 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle and human use. In-stream habitat estimated. Parallels FM 4 but upstream / away from channelized segment. Minor pooling.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	40	Avg. Banks:	7
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	12	Avg. OHWM:	2

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	18.3
	Bank condition	4		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.8	Sum of bank scores / 10 x 25	9.5
	Riparian buffer (right bank)	2.0		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	12.5
	In-stream habitat	1		
Hydrologic condition	Flow regime	1	Sum of metric scores / 8 x 25	6.3
	Channel flow status	1		
			Sum of core element scores = overall TXRAM stream score	47
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				47

Representative Site Photograph:

Facing upstream near the lower end of the SAR. Note the mix of rock and fine substrates.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-10 SAR No.: S-10-4 Size (LF): 891 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 2 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

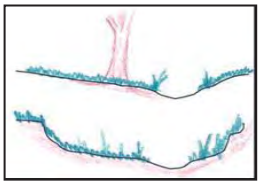
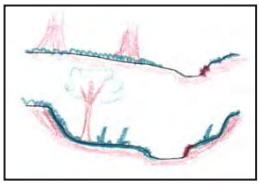
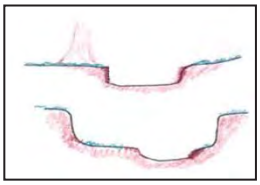
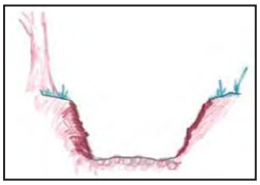
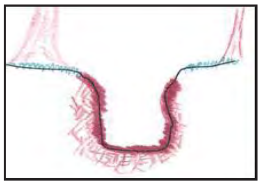
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	40	Avg. Banks:	7
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	12	Avg. OHWM:	2

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle and human use. In-stream habitat estimated. Parallels FM 4 but upstream / away from channelized segment. Minor pooling.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 10 % Average: 10.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 45.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, Texas ash, Ashe juniper	70	Mix	High	2	80	1.6
2. Road Right-of-Way / Pasture	10	Undesirable	High	1	15	0.2
3. Road	0	-	Intensive	0	5	0
4.						
5.						

Score: 1.8

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, Texas ash, Ashe juniper	70	Mix	High	2	100	2
2.						
3.						
4.						
5.						

Score: 2.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 40	Fines (silt, clay, muck): 30	Artificial:
Cobble: 20	Sand:	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓												
Overhanging Vegetation		✓											
Rootmats													
Rootwads													
Woody/Leafy Debris			✓										
Boulders/Cobbles				✓									
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	1	1	1	1									

Average: 1.0 **Score:** 1

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☒ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 1

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☒ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 1

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-11 SAR No.: S-11-1 Size (LF): 553 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 100 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle and human use. In-stream habitat estimated. Flows through culvert under FM 4.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	10	Avg. Banks:	4
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	5	Avg. OHWM:	2

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.7	Sum of bank scores / 10 x 25	8.5
	Riparian buffer (right bank)	1.7		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	10.0
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0
	Channel flow status	0		
			Sum of core element scores = overall TXRAM stream score	35
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	35

Representative Site Photograph:

S-11-1 facing downstream (south). Note the dry channel and rocky substrate.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-11 SAR No.: S-11-1 Size (LF): 553 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 100 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

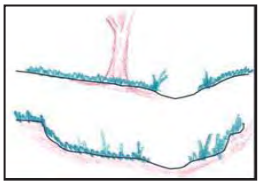
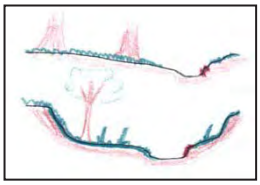
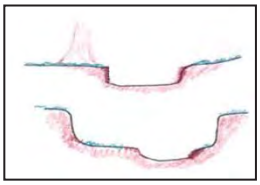
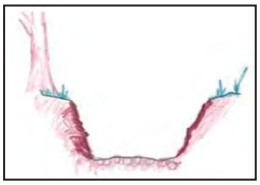
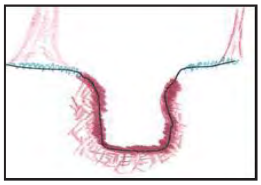
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	10	Avg. Banks:	4
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	5	Avg. OHWM:	2

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle and human use. In-stream habitat estimated. Flows through culvert under FM 4.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 30.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, Texas ash, Ashe juniper	70	Mix	High	2	80	1.6
2. Road Right-of-Way with bermudagrass	10	Undesirable	High	1	10	0.1
3. Road	0	-	Intensive	0	10	0
4.						
5.						

Score: 1.7

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, Texas ash, Ashe juniper	70	Mix	High	2	80	1.6
2. Road Right-of-Way with bermudagrass	10	Undesirable	High	1	10	0.1
3. Road	0	-	Intensive	0	10	0
4.						
5.						

Score: 1.7

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 40	Fines (silt, clay, muck): 30	Artificial:
Cobble: 20	Sand:	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	0												

Average: 0.0 **Score:** 0

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☒ Dry channel and no observable pools or interstitial flow (0)

Score: 0

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-12 SAR No.: S-12-1 Size (LF): 64 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 900 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle and human use. In-stream habitat estimated. Flows through culvert under FM 4. Minor pooling upstream of culvert. SAR for impacted portion below FM 4 culvert.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	12	Avg. Banks:	5
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	8	Avg. OHWM:	2

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	15.0
	Bank condition	3		
	Sediment deposition	3		
Riparian buffer condition	Riparian buffer (left bank)	1.8	Sum of bank scores / 10 x 25	8.8
	Riparian buffer (right bank)	1.7		
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	10.0
	In-stream habitat	1		
Hydrologic condition	Flow regime	1	Sum of metric scores / 8 x 25	6.3
	Channel flow status	1		
			Sum of core element scores = overall TXRAM stream score	40
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	40

Representative Site Photograph:

SAR facing upstream from FM 4 culvert crossing. Note the murky water pooled from recent runoff of rainfall.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-12 SAR No.: S-12-1 Size (LF): 64 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 900 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

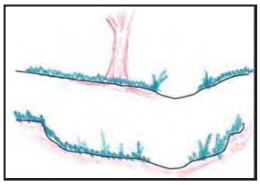
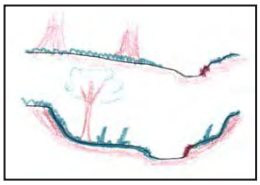
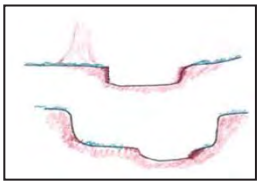
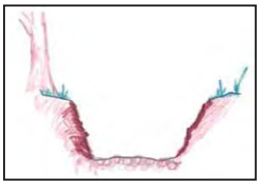
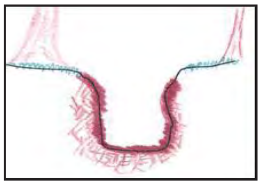
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	12	Avg. Banks:	5
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	8	Avg. OHWM:	2

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle and human use. In-stream habitat estimated. Flows through culvert under FM 4. Minor pooling upstream of culvert. SAR for impacted portion below FM 4 culvert.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☒ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 3

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 31.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, Texas ash, Ashe juniper	70	Mix	High	2	85	1.7
2. Road Right-of-Way with johnsongrass	10	Undesirable	High	1	10	0.1
3. Road	0	-	Intensive	0	5	0
4.						
5.						

Score: 1.8

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, Texas ash, Ashe juniper	70	Mix	High	2	75	1.5
2. Road Right-of-Way with johnsongrass	10	Undesirable	High	1	20	0.2
3. Road	0	-	Intensive	0	5	0
4.						
5.						

Score: 1.7

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder:	Gravel: 20	Fines (silt, clay, muck): 40	Artificial: 10
Cobble: 20	Sand:	Bedrock: 10	Other:

Score: 3

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation	✓												
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	1												

Average: 1.0 **Score:** 1

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☒ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 1

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☒ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 1

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-13 SAR No.: S-13-1 Size (LF): 1,151 Date: 2017 Evaluator(s): RW

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 464 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Eroded channel from Lake Palo Pinto spillway to confluence with Palo Pinto Creek natural channel. Pooling and seepage evident. Crosses Lakeview Dr.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	40	Avg. Banks:	12
Avg. Waters Edge:	15	Avg. Water:	2
Avg. OHWM:	25	Avg. OHWM:	6

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	1	Sum of metric scores / 15 x 25	11.7
	Bank condition	1		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	1.3	Sum of bank scores / 10 x 25	4.5
	Riparian buffer (right bank)	0.5		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	15.0
	In-stream habitat	1		
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	12.5
	Channel flow status	2		
			Sum of core element scores = overall TXRAM stream score	44
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				44

Representative Site Photograph:

Facing upstream near middle of SAR. Note the high erosion and incision of the spillway channel below Lake Palo Pinto.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-13 SAR No.: S-13-1 Size (LF): 1,151 Date: 2017 Evaluator(s): RW

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 464 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

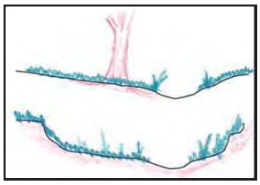
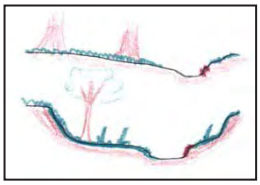
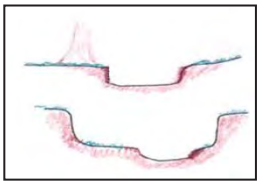
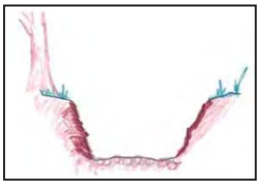
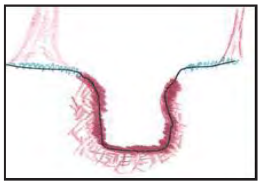
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	40	Avg. Banks:	12
Avg. Waters Edge:	15	Avg. Water:	2
Avg. OHWM:	25	Avg. OHWM:	6

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Eroded channel from Lake Palo Pinto spillway to confluence with Palo Pinto Creek natural channel. Pooling and seepage evident. Crosses Lakeview Dr.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	3	2	(1)

Score: 1

Bank Condition

Left Bank Active Erosion: 50 % Right Bank Active Erosion: 50 % Average: 50.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 1

Sediment Deposition

☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 70.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, Ashe juniper, mesquite, balck willow	60	Mix	Moderate	2	50	1.0
2. Right-of-Way and disturbed area with johnsongrass, baccharis	10	Undesirable	High	1	30	0.3
3. Road and Barren	0	-	Intensive	0	20	0
4.						
5.						

Score: 1.3

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, Ashe juniper, mesquite, balck willow	60	Mix	Moderate	2	10	0.2
2. Right-of-Way and disturbed area with johnsongrass, baccharis	10	Undesirable	High	1	30	0.3
3. Road and Barren	0	-	Intensive	0	60	0
4.						
5.						

Score: 0.5

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 30	Gravel: 20	Fines (silt, clay, muck): 10	Artificial:
Cobble: 30	Sand:	Bedrock: 10	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles	✓												
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	1												

Average: 1.0 **Score:** 1

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☒ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 2

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☒ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 2

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-14 SAR No.: S-14-1 Size (LF): 345 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 160 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle and human use. In-stream habitat estimated. Flows through culvert under Lakeview Dr and into spillway channel.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	8	Avg. Banks:	4
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	2	Avg. OHWM:	0.5

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	1	Sum of metric scores / 15 x 25	13.3
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.1	Sum of bank scores / 10 x 25	5.5
	Riparian buffer (right bank)	1.1		
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	7.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0
	Channel flow status	0		
			Sum of core element scores = overall TXRAM stream score	26
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	26

Representative Site Photograph:

S-14-1 facing upstream (southwest).

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-14 SAR No.: S-14-1 Size (LF): 345 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 160 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

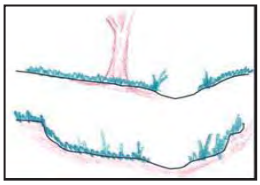
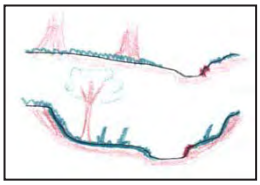
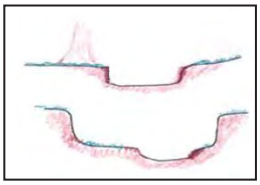
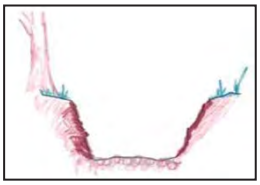
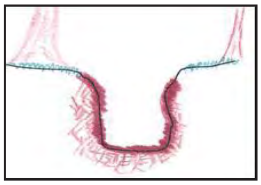
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	8	Avg. Banks:	4
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	2	Avg. OHWM:	0.5

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle and human use. In-stream habitat estimated. Flows through culvert under Lakeview Dr and into spillway channel.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	3	2	(1)

Score: 1

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 29.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, Texas ash, Ashe juniper	70	Mix	High	2	30	0.6
2. Disturbed area with baccharis, black willow, KR bluestem, johnsongrass	50	Undesirable	High	1	50	0.5
3. Road and Barren	0	-	Intensive	0	20	0
4.						
5.						

Score: 1.1

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, Texas ash, Ashe juniper	70	Mix	High	2	30	0.6
2. Disturbed area with baccharis, black willow, KR bluestem, johnsongrass	50	Undesirable	High	1	50	0.5
3. Road and Barren	0	-	Intensive	0	20	0
4.						
5.						

Score: 1.1

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 5	Gravel: 20	Fines (silt, clay, muck): 55	Artificial:
Cobble: 20	Sand:	Bedrock:	Other:

Score: 3

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	0												

Average: 0.0 **Score:** 0

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☒ Dry channel and no observable pools or interstitial flow (0)

Score: 0

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-15 SAR No.: S-15-1 Size (LF): 1,070 Date: 2014 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture Watershed Size: 40 acres

Aerial Photo Date and Source: 2012 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Flows across gravel ranch road.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	6	Avg. Banks:	3
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	1

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	20.0
	Bank condition	4		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.2	Sum of bank scores / 10 x 25	6.0
	Riparian buffer (right bank)	1.2		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	12.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0
	Channel flow status	0		
			Sum of core element scores = overall TXRAM stream score	39
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	39

Representative Site Photograph:

Facing downstream near the middle of the SAR. Note the rocky substrate.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-15 SAR No.: S-15-1 Size (LF): 1,070 Date: 2014 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture Watershed Size: 40 acres

Aerial Photo Date and Source: 2012 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

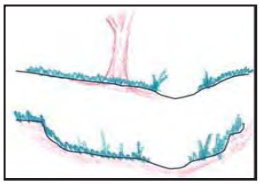
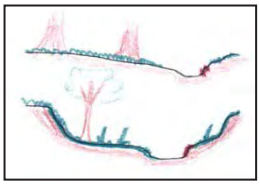
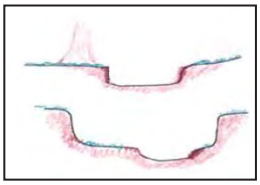
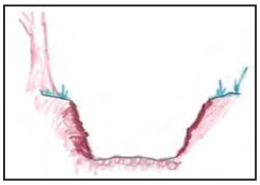
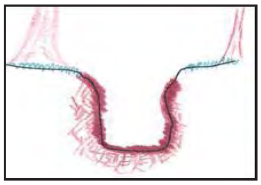
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	6	Avg. Banks:	3
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	1

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Flows across gravel ranch road.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	(4)	3	2	1

Score: 4

Bank Condition

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 10 % Average: 10.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 28.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, live oak, Texas ash, Ashe juniper	70	Mix	High	2	20	0.4
2. Brush with Ashe juniper and mesquite / Trail	20	Undesirable	High	1	80	0.8
3.						
4.						
5.						

Score: 1.2

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, live oak, Texas ash, Ashe juniper	70	Mix	High	2	20	0.4
2. Brush with Ashe juniper and mesquite / Trail	20	Undesirable	High	1	80	0.8
3.						
4.						
5.						

Score: 1.2

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 40	Fines (silt, clay, muck): 20	Artificial:
Cobble: 30	Sand:	Bedrock:	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	0												

Average: 0.0 **Score:** 0

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☒ Dry channel and no observable pools or interstitial flow (0)

Score: 0

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-16 SAR No.: S-16-1 Size (LF): 101 Date: 2017 Evaluator(s): RW

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 400 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Downstream of impoundment. Some pooling.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	25	Avg. Banks:	8
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	15	Avg. OHWM:	4

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	2	Sum of metric scores / 15 x 25	16.7
	Bank condition	4		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	3.0	Sum of bank scores / 10 x 25	15.0
	Riparian buffer (right bank)	3.0		
In-stream condition	Substrate composition	1	Sum of metric scores / 10 x 25	5.0
	In-stream habitat	1		
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	9.4
	Channel flow status	1		
			Sum of core element scores = overall TXRAM stream score	46
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	46

Representative Site Photograph:

Facing downstream near the middle of the SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☒ Fill/Impact (☐ Linear ☒ Non-linear) ☐ Mitigation/Conservation

Stream ID/Name: S-16 SAR No.: S-16-1 Size (LF): 101 Date: 2017 Evaluator(s): RW

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 400 acres

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

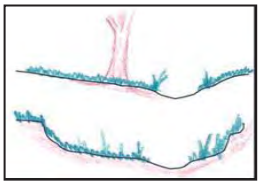
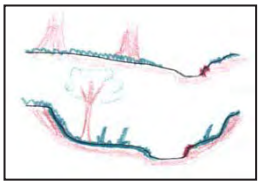
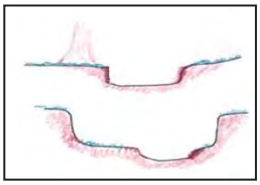
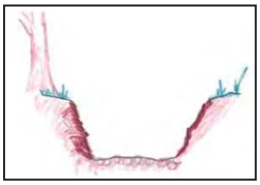
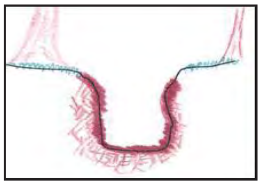
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	25	Avg. Banks:	8
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	15	Avg. OHWM:	4

Notes: Based on review of aerial photography and data from previous field delineation (see HDR report dated June 2009). Cattle use. In-stream habitat estimated. Downstream of impoundment. Some pooling.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	3	(2)	1

Score: 2

Bank Condition

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 10 % Average: 10.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 62.5

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, Ashe juniper	70	Mix	Moderate	3	100	3
2.						
3.						
4.						
5.						

Score: 3.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, post oak, Ashe juniper	70	Mix	Moderate	3	100	3
2.						
3.						
4.						
5.						

Score: 3.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder:	Gravel:	Fines (silt, clay, muck): 100	Artificial:
Cobble:	Sand:	Bedrock:	Other:

Score: 1

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation	✓												
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	1												

Average: 1.0 **Score:** 1

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☒ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 2

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☒ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 1

Appendix B: Stream Data Sheets and Final Scoring Sheets – Reference SARs Existing Condition

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-1 SAR No.: RS-1-1 Size (LF): 1,301 Date: 12/16/15 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): woods, pasture Watershed Size: 22 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: 24-30 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Reference reach within the PPMSP (managed by TPWD). Stream currently flowing due to a wet fall and from recent rain (3 days previous). Likely intermittent under normal conditions for year. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing. Flood event within past year has caused higher than normal bank erosion, expected to normalize.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	8
Avg. Waters Edge:	15	Avg. Water:	1
Avg. OHWM:	20	Avg. OHWM:	3

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	21.7
	Bank condition	4		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	2.0	Sum of bank scores / 10 x 25	9.5
	Riparian buffer (right bank)	1.8		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	4		
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	15.6
	Channel flow status	3		
			Sum of core element scores = overall TXRAM stream score	69
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	69

Representative Site Photograph:

Facing northeast (downstream) from near the downstream end of the SAR. View of a small riffle area entering a long shallow pool.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-1 SAR No.: RS-1-1 Size (LF): 1,301 Date: 12/16/15 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): woods, pasture Watershed Size: 22 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: 24-30 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

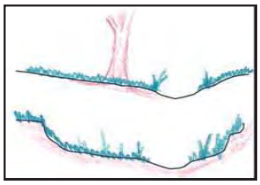
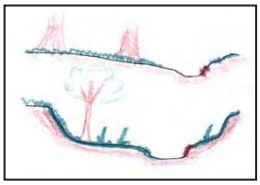
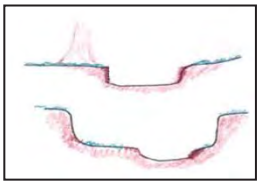
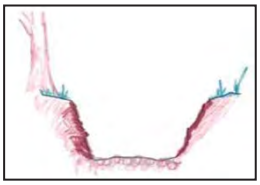
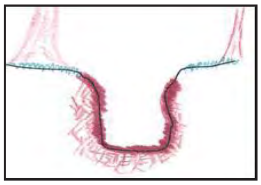
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	8
Avg. Waters Edge:	15	Avg. Water:	1
Avg. OHWM:	20	Avg. OHWM:	3

Notes: Reference reach within the PPMSP (managed by TPWD). Stream currently flowing due to a wet fall and from recent rain (3 days previous). Likely intermittent under normal conditions for year. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing. Flood event within past year has caused higher than normal bank erosion, expected to normalize.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	(4)	3	2	1

Score: 4

Bank Condition

Left Bank Active Erosion: 15 % Right Bank Active Erosion: 15 % Average: 15.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 75.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with elm, oak, & pecan (Ashe juniper understory)	70	Mix	High	2	100	2
2.						
3.						
4.						
5.						

Score: 2.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with elm, oak, & pecan (Ashe juniper understory)	70	Mix	High	2	80	1.6
2. Re-growth (old pasture) with elm & mesquite	10	Undesirable	High	1	20	0.2
3.						
4.						
5.						

Score: 1.8

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 5	Gravel: 10	Fines (silt, clay, muck):	Artificial:
Cobble: 75	Sand: 5	Bedrock: 5	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
Overhanging Vegetation													✓
Rootmats	✓			✓		✓			✓			✓	✓
Rootwads			✓		✓			✓		✓	✓		
Woody/Leafy Debris							✓	✓	✓	✓			
Boulders/Cobbles	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Aquatic Macrophytes		✓				✓	✓		✓	✓		✓	
Riffle/Pool Sequence		✓								✓			
Artificial Habitat Enhancement													
Other													
Total No. Present	3	4	3	3	3	4	3	4	5	5	3	4	4

Average: 3.7 **Score:** 4

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☒ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 2

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☒ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 3

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-1 SAR No.: RS-1-2 Size (LF): 1,226 Date: 12/16/15 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): woods, pasture Watershed Size: 22 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: 31-37 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Reference reach within the PPMSP (managed by TPWD). Stream currently flowing due to a wet fall and from recent rain (3 days previous). Likely intermittent under normal conditions for year. Overflow bench and secondary channel present. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing. Flood event within past year has caused higher than normal bank erosion, expected to normalize.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	8
Avg. Waters Edge:	15	Avg. Water:	1
Avg. OHWM:	20	Avg. OHWM:	3

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	20.0
	Bank condition	3		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	2.0	Sum of bank scores / 10 x 25	9.3
	Riparian buffer (right bank)	1.7		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	25.0
	In-stream habitat	5		
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	15.6
	Channel flow status	3		
			Sum of core element scores = overall TXRAM stream score	70
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	70

Representative Site Photograph:

Facing northeast (downstream) near the downstream end of the SAR. Note the steep vertical banks along the left bank that average 8 feet in height, however, this is an isolated occurrence along the reach, which has slight channel incision.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-1 SAR No.: RS-1-2 Size (LF): 1,226 Date: 12/16/15 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): woods, pasture Watershed Size: 22 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: 31-37 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

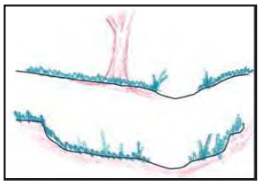
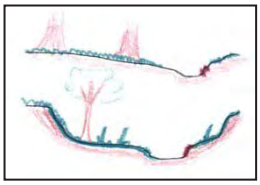
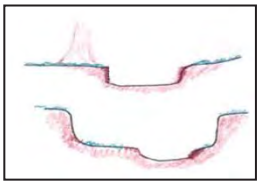
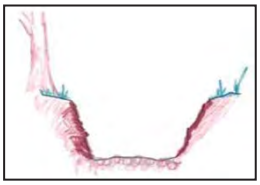
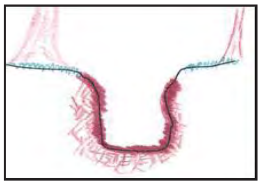
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	8
Avg. Waters Edge:	15	Avg. Water:	1
Avg. OHWM:	20	Avg. OHWM:	3

Notes: Reference reach within the PPMSP (managed by TPWD). Stream currently flowing due to a wet fall and from recent rain (3 days previous). Likely intermittent under normal conditions for year. Overflow bench and secondary channel present. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing. Flood event within past year has caused higher than normal bank erosion, expected to normalize.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	(4)	3	2	1

Score: 4

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 75.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with elm, oak, & juniper (Ashe juniper understory)	80	Mix	High	2	100	2
2.						
3.						
4.						
5.						

Score: 2.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with elm, oak, & juniper (Ashe juniper understory)	70	Mix	High	2	70	1.4
2. Re-growth (old pasture) with elm & mesquite	20	Undesirable	High	1	30	0.3
3.						
4.						
5.						

Score: 1.7

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 5	Gravel: 10	Fines (silt, clay, muck): 5	Artificial:
Cobble: 75	Sand: 5	Bedrock: 5	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓		✓	✓		✓	✓	✓	✓	✓		
Overhanging Vegetation						✓	✓		✓			✓	
Rootmats			✓	✓	✓								
Rootwads	✓	✓				✓	✓	✓	✓				
Woody/Leafy Debris		✓		✓	✓	✓		✓	✓		✓	✓	
Boulders/Cobbles	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Aquatic Macrophytes			✓		✓	✓			✓			✓	
Riffle/Pool Sequence	✓	✓				✓		✓		✓	✓		
Artificial Habitat Enhancement													
Other													
Total No. Present	4	5	3	4	5	6	4	5	6	3	4	4	

Average: 4.4 **Score:** 5

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☒ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 2

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☒ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 3

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-1 SAR No.: RS-1-3 Size (LF): 914 Date: 12/16/15 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): woods, pasture Watershed Size: 21 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: 43-47 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Reference reach within the PPMSP (managed by TPWD). Stream currently flowing due to a wet fall and from recent rain (3 days previous). Likely intermittent under normal conditions for year. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing. Flood event within past year has caused higher than normal bank erosion, expected to normalize.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	8
Avg. Waters Edge:	15	Avg. Water:	1
Avg. OHWM:	20	Avg. OHWM:	3

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	20.0
	Bank condition	4		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	1.9	Sum of bank scores / 10 x 25	9.8
	Riparian buffer (right bank)	2.0		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	25.0
	In-stream habitat	5		
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	15.6
	Channel flow status	3		
			Sum of core element scores = overall TXRAM stream score	70
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	70

Representative Site Photograph:

Facing southwest (upstream) at channel braid and small island covered with terrestrial vegetation found in the middle section of SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-1 SAR No.: RS-1-3 Size (LF): 914 Date: 12/16/15 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): woods, pasture Watershed Size: 21 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: 43-47 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

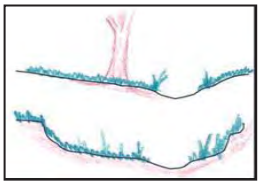
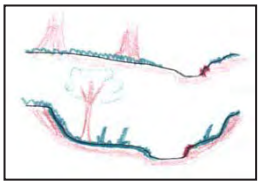
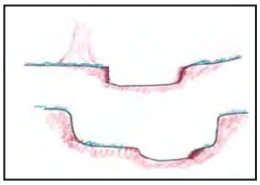
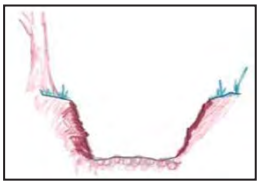
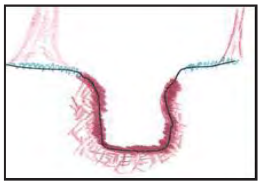
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	8
Avg. Waters Edge:	15	Avg. Water:	1
Avg. OHWM:	20	Avg. OHWM:	3

Notes: Reference reach within the PPMSP (managed by TPWD). Stream currently flowing due to a wet fall and from recent rain (3 days previous). Likely intermittent under normal conditions for year. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing. Flood event within past year has caused higher than normal bank erosion, expected to normalize.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 15 % Right Bank Active Erosion: 15 % Average: 15.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 75.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with elm, oak, & pecan (Ashe juniper understory)	70	Mix	High	2	90	1.8
2. Re-growth (old pasture) with elm & mesquite	10	Undesirable	High	1	10	0.1
3.						
4.						
5.						

Score: 1.9

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with elm, oak, & pecan (Ashe juniper understory)	80	Mix	High	2	95	1.9
2. Re-growth (old pasture) with elm & mesquite	10	Undesirable	High	1	5	0.1
3.						
4.						
5.						

Score: 2.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 5	Gravel: 20	Fines (silt, clay, muck): 5	Artificial:
Cobble: 65	Sand: 5	Bedrock:	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓	✓	✓	✓	✓			✓				
Overhanging Vegetation		✓	✓			✓	✓	✓					
Rootmats		✓	✓			✓		✓					
Rootwads				✓	✓				✓				
Woody/Leafy Debris	✓	✓	✓		✓	✓			✓				
Boulders/Cobbles			✓	✓	✓	✓	✓	✓	✓				
Aquatic Macrophytes	✓	✓	✓										
Riffle/Pool Sequence							✓		✓				
Artificial Habitat Enhancement													
Other													
Total No. Present	3	5	6	3	4	5	3	3	5				

Average: 4.1 **Score:** 5

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☒ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 2

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☒ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 3

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-1 SAR No.: RS-1-4 Size (LF): 928 Date: 12/16/15 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): woods, pasture Watershed Size: 21 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: 48, 49, 50 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Reference reach within the PPMSP (managed by TPWD). Stream currently flowing due to a wet fall and from recent rain (3 days previous). Likely intermittent under normal conditions for year. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing. Flood event within past year has caused higher than normal bank erosion, expected to normalize.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	8
Avg. Waters Edge:	15	Avg. Water:	1
Avg. OHWM:	20	Avg. OHWM:	3

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	20.0
	Bank condition	3		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	1.9	Sum of bank scores / 10 x 25	9.8
	Riparian buffer (right bank)	2.0		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	25.0
	In-stream habitat	5		
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	15.6
	Channel flow status	3		
			Sum of core element scores = overall TXRAM stream score	70
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	70

Representative Site Photograph:

Facing north (downstream) near the downstream end of SAR. Note the gravel bar along the left bank at this location.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-1 SAR No.: RS-1-4 Size (LF): 928 Date: 12/16/15 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): woods, pasture Watershed Size: 21 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: 48, 49, 50 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

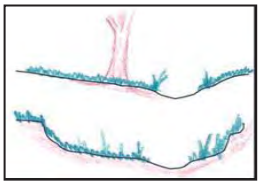
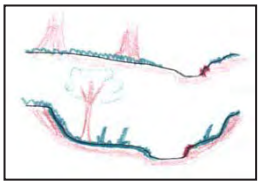
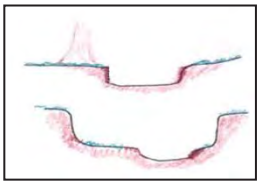
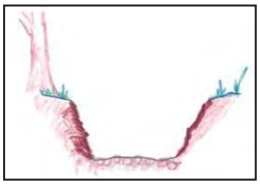
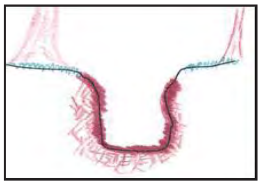
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	8
Avg. Waters Edge:	15	Avg. Water:	1
Avg. OHWM:	20	Avg. OHWM:	3

Notes: Reference reach within the PPMSP (managed by TPWD). Stream currently flowing due to a wet fall and from recent rain (3 days previous). Likely intermittent under normal conditions for year. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing. Flood event within past year has caused higher than normal bank erosion, expected to normalize.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	(4)	3	2	1

Score: 4

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 75.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with elm, oak, & pecan (Ashe juniper understory)	70	Mix	High	2	90	1.8
2. Re-growth (old pasture) with elm & mesquite	5	Undesirable	High	1	10	0.1
3.						
4.						
5.						

Score: 1.9

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with elm, oak, & pecan (Ashe juniper understory)	70	Mix	High	2	95	1.9
2. Re-growth (old pasture) with elm & mesquite	10	Undesirable	High	1	5	0.1
3.						
4.						
5.						

Score: 2.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 5	Gravel: 10	Fines (silt, clay, muck): 10	Artificial:
Cobble: 70	Sand: 5	Bedrock:	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks		✓		✓				✓	✓				
Overhanging Vegetation		✓		✓	✓	✓							
Rootmats	✓		✓	✓									
Rootwads		✓											
Woody/Leafy Debris	✓	✓		✓	✓	✓	✓	✓					
Boulders/Cobbles	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Aquatic Macrophytes			✓		✓	✓		✓	✓				
Riffle/Pool Sequence	✓			✓	✓		✓		✓				
Artificial Habitat Enhancement													
Other													
Total No. Present	4	5	3	6	5	4	3	4	4				

Average: 4.2 **Score:** 5

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☒ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 2

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☒ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 3

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-1 SAR No.: RS-1-5 Size (LF): 1,278 Date: 12/16/15 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): woods, pasture Watershed Size: 21 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: 51-57 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Reference reach within the PPMSP (managed by TPWD). Stream currently flowing due to a wet fall and from recent rain (3 days previous). Likely intermittent under normal conditions for year. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing. Flood event within past year has caused higher than normal bank erosion, expected to normalize.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	8
Avg. Waters Edge:	15	Avg. Water:	1
Avg. OHWM:	20	Avg. OHWM:	3

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	21.7
	Bank condition	4		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	2.0	Sum of bank scores / 10 x 25	10.0
	Riparian buffer (right bank)	2.0		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	25.0
	In-stream habitat	5		
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	15.6
	Channel flow status	3		
			Sum of core element scores = overall TXRAM stream score	72
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	72

Representative Site Photograph:

Facing southwest (upstream) from the downstream end of SAR. Palo Pinto Creek at this location is characterized by a wide, shallow pool over a dominantly cobble substrate with a wooded riparian buffer.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-1 SAR No.: RS-1-5 Size (LF): 1,278 Date: 12/16/15 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): woods, pasture Watershed Size: 21 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: 51-57 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

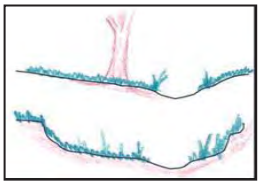
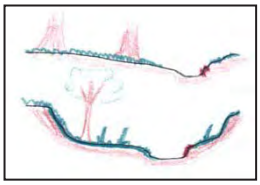
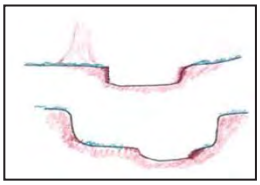
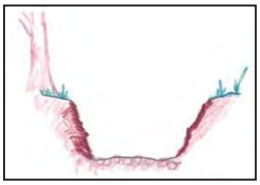
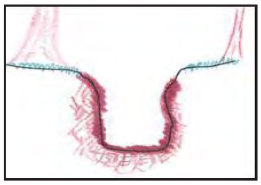
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	8
Avg. Waters Edge:	15	Avg. Water:	1
Avg. OHWM:	20	Avg. OHWM:	3

Notes: Reference reach within the PPMSP (managed by TPWD). Stream currently flowing due to a wet fall and from recent rain (3 days previous). Likely intermittent under normal conditions for year. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing. Flood event within past year has caused higher than normal bank erosion, expected to normalize.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	(4)	3	2	1

Score: 4

Bank Condition

Left Bank Active Erosion: 15 % Right Bank Active Erosion: 15 % Average: 15.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 75.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with elm, oak, & juniper	80	Mix	High	2	100	2
2.						
3.						
4.						
5.						

Score: 2.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with elm, oak, & juniper	80	Mix	High	2	100	2
2.						
3.						
4.						
5.						

Score: 2.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 5	Gravel: 5	Fines (silt, clay, muck): 10	Artificial:
Cobble: 75	Sand: 5	Bedrock:	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓	✓	✓	✓	✓	✓			✓	✓		
Overhanging Vegetation	✓	✓	✓			✓		✓	✓	✓	✓	✓	✓
Rootmats			✓	✓						✓		✓	✓
Rootwads	✓				✓	✓	✓	✓			✓		
Woody/Leafy Debris			✓		✓			✓	✓	✓			
Boulders/Cobbles	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Aquatic Macrophytes					✓			✓	✓	✓		✓	✓
Riffle/Pool Sequence								✓	✓	✓		✓	✓
Artificial Habitat Enhancement													
Other													
Total No. Present	4	3	5	3	5	4	3	6	5	7	4	5	5

Average: 4.5 **Score:** 5

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☒ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 2

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☒ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 3

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-2 SAR No.: RS-2-1 Size (LF): 1,497 Date: 12/16/15 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): woods, pasture Watershed Size: 620 acres

Aerial Photo Date and Source: 2014 NAIP Site Photos: 58, 59 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Reference reach within the PPMSP (managed by TPWD). Tributary to Palo Pinto Creek. Flowing as a result of an unusually wet fall and recent rainfall that fell 3 days prior to visit. Likely intermittent under normal conditions for year. Some spike rush along margin of channel but vegetation mostly upland species near channel. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	30	Avg. Banks:	6
Avg. Waters Edge:	5	Avg. Water:	0.5
Avg. OHWM:	10	Avg. OHWM:	2

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	21.7
	Bank condition	5		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	2.0	Sum of bank scores / 10 x 25	10.0
	Riparian buffer (right bank)	2.0		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	17.5
	In-stream habitat	3		
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	12.5
	Channel flow status	2		
			Sum of core element scores = overall TXRAM stream score	62
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	62

Representative Site Photograph:

Small Tributary of Palo Pinto Creek facing west-northwest (downstream) from the downstream portion of SAR. Note the wooded riparian buffer.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-2 SAR No.: RS-2-1 Size (LF): 1,497 Date: 12/16/15 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): woods, pasture Watershed Size: 620 acres

Aerial Photo Date and Source: 2014 NAIP Site Photos: 58, 59 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

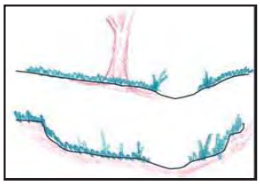
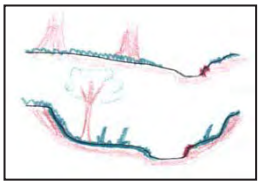
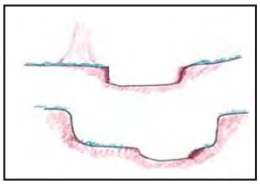
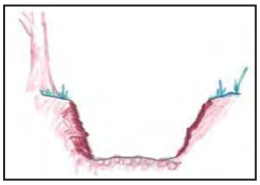
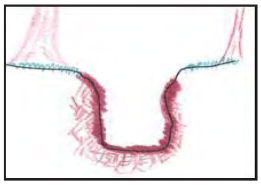
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	30	Avg. Banks:	6
Avg. Waters Edge:	5	Avg. Water:	0.5
Avg. OHWM:	10	Avg. OHWM:	2

Notes: Reference reach within the PPMSP (managed by TPWD). Tributary to Palo Pinto Creek. Flowing as a result of an unusually wet fall and recent rainfall that fell 3 days prior to visit. Likely intermittent under normal conditions for year. Some spike rush along margin of channel but vegetation mostly upland species near channel. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 5 % Right Bank Active Erosion: 5 % Average: 5.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial:

Score: 5

Sediment Deposition

☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 65.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with post/red/shin oak, elm, juniper, Texas ash	70	Mix	High	2	97	1.94
2. Trail	30	Mix	High	1	3	0.03
3.						
4.						
5.						

Score: 2.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with post/red/shin oak, elm, juniper, Texas ash	70	Mix	High	2	100	2
2.						
3.						
4.						
5.						

Score: 2.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 2	Gravel: 2	Fines (silt, clay, muck): 25	Artificial:
Cobble: 65	Sand: 5	Bedrock: 1	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rootmats													
Rootwads													
Woody/Leafy Debris	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Boulders/Cobbles	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	3	3	3	3	3	3	3	3	3	3	3	3	3

Average: 3.0 **Score:** 3

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☒ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 2

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☒ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 2

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-3 SAR No.: RS-3-1 Size (LF): 1,029 Date: 12/16/15 Evaluator(s): DT, RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Woods Watershed Size: 49 acres

Aerial Photo Date and Source: 2014 NAIP Site Photos: 60, 61, 62, 63, 64 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Reference reach within the PPMSP (managed by TPWD). Tributary to Palo Pinto Creek. Minor pools in channel due to an unusually wet fall and recent rain 3 days prior to visit. Likely dry under normal conditions for year. Rocky soil in buffer area. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	20	Avg. Banks:	5
Avg. Waters Edge:	--	Avg. Water:	--
Avg. OHWM:	5	Avg. OHWM:	1

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	21.7
	Bank condition	5		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	1.0	Sum of bank scores / 10 x 25	5.0
	Riparian buffer (right bank)	1.0		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	12.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0
	Channel flow status	0		
			Sum of core element scores = overall TXRAM stream score	39
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	39

Representative Site Photograph:

Facing northwest (downstream) in the middle section of SAR. Ephemeral stream that is dry under normal conditions. Large boulder and cobble were the dominant substrate materials.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-3 SAR No.: RS-3-1 Size (LF): 1,029 Date: 12/16/15 Evaluator(s): DT, RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Woods Watershed Size: 49 acres

Aerial Photo Date and Source: 2014 NAIP Site Photos: 60, 61, 62, 63, 64 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

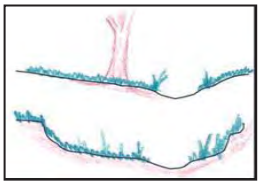
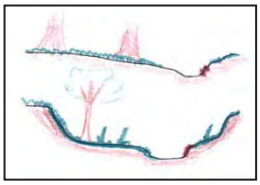
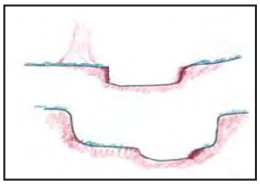
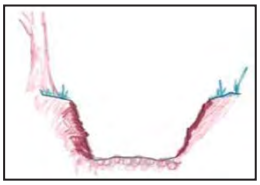
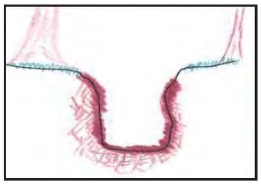
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	20	Avg. Banks:	5
Avg. Waters Edge:	--	Avg. Water:	--
Avg. OHWM:	5	Avg. OHWM:	1

Notes: Reference reach within the PPMSP (managed by TPWD). Tributary to Palo Pinto Creek. Minor pools in channel due to an unusually wet fall and recent rain 3 days prior to visit. Likely dry under normal conditions for year. Rocky soil in buffer area. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 5 % Right Bank Active Erosion: 5 % Average: 5.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 5

Sediment Deposition

☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 35.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with shin oak, red oak, Texas ash, juniper	50	Mix	High	1	100	1
2.						
3.						
4.						
5.						

Score: 1.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with shin oak, red oak, Texas ash, juniper	50	Mix	High	1	100	1
2.						
3.						
4.						
5.						

Score: 1.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 40	Gravel: 15	Fines (silt, clay, muck): 5	Artificial:
Cobble: 30	Sand: 15	Bedrock:	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	0	0	0	0	0	0	0	0	0	0	0		

Average: 0.0 **Score:** 0

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☒ Dry channel and no observable pools or interstitial flow (0)

Score: 0

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-4 SAR No.: RS-4-1 Size (LF): 805 Date: 12/16/15 Evaluator(s): DT, RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Woods & Pasture Watershed Size: 110 acres

Aerial Photo Date and Source: 2014 NAIP Site Photos: 73, 74, and 75 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Reference reach within the PPMSP (managed by TPWD). Tributary to Palo Pinto Creek. Minor pools in channel due to an unusually wet fall and recent rain 3 days prior to visit. Likely dry under normal conditions for year. Scattered piles of cut juniper in buffer area. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	20	Avg. Banks:	3
Avg. Waters Edge:	--	Avg. Water:	--
Avg. OHWM:	5	Avg. OHWM:	1

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	20.0
	Bank condition	4		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	1.0	Sum of bank scores / 10 x 25	5.0
	Riparian buffer (right bank)	1.0		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	12.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0
	Channel flow status	0		
			Sum of core element scores = overall TXRAM stream score	38
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	38

Representative Site Photograph:

Facing west-southwest (upstream) near the upstream end of SAR. Ephemeral stream that had water after a recent storm event but is dry under normal conditions. The buffer area along both banks has been partially cleared of juniper.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-4 SAR No.: RS-4-1 Size (LF): 805 Date: 12/16/15 Evaluator(s): DT, RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Woods & Pasture Watershed Size: 110 acres

Aerial Photo Date and Source: 2014 NAIP Site Photos: 73, 74, and 75 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

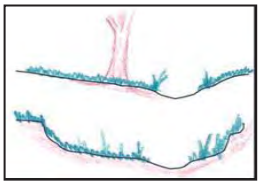
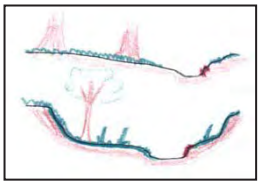
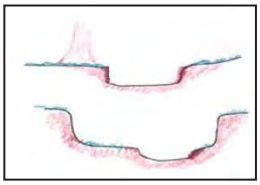
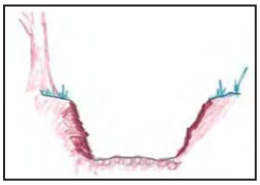
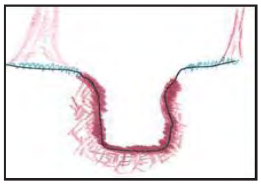
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	20	Avg. Banks:	3
Avg. Waters Edge:	--	Avg. Water:	--
Avg. OHWM:	5	Avg. OHWM:	1

Notes: Reference reach within the PPMSP (managed by TPWD). Tributary to Palo Pinto Creek. Minor pools in channel due to an unusually wet fall and recent rain 3 days prior to visit. Likely dry under normal conditions for year. Scattered piles of cut juniper in buffer area. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 10 % Average: 10.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 35.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with post oak, live oak, cedar elm, juniper	50	Mix	High	1	70	0.7
2. Savannah with oak and native grasses	20	Mix	High	1	30	0.3
3.						
4.						
5.						

Score: 1.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with post oak, live oak, cedar elm, juniper	50	Mix	High	1	60	0.6
2. Savannah with oak and native grasses	20	Mix	High	1	40	0.4
3.						
4.						
5.						

Score: 1.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 35	Gravel: 10	Fines (silt, clay, muck): 5	Artificial:
Cobble: 45	Sand: 5	Bedrock:	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	0	0	0	0	0	0	0	0	0				

Average: 0.0 **Score:** 0

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☒ Dry channel and no observable pools or interstitial flow (0)

Score: 0

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-5 SAR No.: RS-5-1 Size (LF): 1,167 Date: 12/17/15 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Woods, Pond Watershed Size: 110 acres

Aerial Photo Date and Source: 2014 NAIP Site Photos: 6, 7, 8, 9 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Reference reach within the PPMSP (managed by TPWD). Tributary to Palo Pinto Creek. Minor pools in channel due to an unusually wet fall and recent rain 3 days prior to visit. Likely dry under normal conditions for year. Scattered piles of cut juniper in buffer area. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	12	Avg. Banks:	4
Avg. Waters Edge:	--	Avg. Water:	--
Avg. OHWM:	5	Avg. OHWM:	1

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	21.7
	Bank condition	5		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.0	Sum of bank scores / 10 x 25	5.0
	Riparian buffer (right bank)	1.0		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	12.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0
	Channel flow status	0		
			Sum of core element scores = overall TXRAM stream score	39
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	39

Representative Site Photograph:

Facing northwest (downstream) from the upper portion of SAR. Note partial removal of juniper in the buffer area.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-5 SAR No.: RS-5-1 Size (LF): 1,167 Date: 12/17/15 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Woods, Pond Watershed Size: 110 acres

Aerial Photo Date and Source: 2014 NAIP Site Photos: 6, 7, 8, 9 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

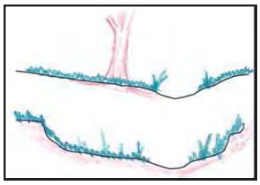
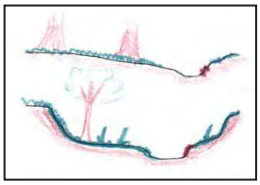
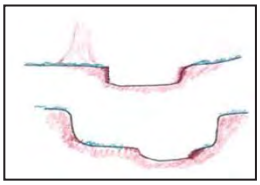
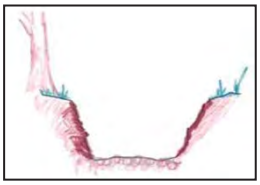
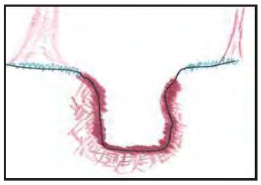
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	12	Avg. Banks:	4
Avg. Waters Edge:	--	Avg. Water:	--
Avg. OHWM:	5	Avg. OHWM:	1

Notes: Reference reach within the PPMSP (managed by TPWD). Tributary to Palo Pinto Creek. Minor pools in channel due to an unusually wet fall and recent rain 3 days prior to visit. Likely dry under normal conditions for year. Scattered piles of cut juniper in buffer area. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	(4)	3	2	1

Score: 4

Bank Condition

Left Bank Active Erosion: 5 % Right Bank Active Erosion: _____ % Average: 2.5

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 5

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 31.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with elm, oak, juniper, mesquite, and Texas ash	40	Mix	High	1	60	0.6
2. Savannah with oak and native grasses	10	Mix	High	1	40	0.4
3.						
4.						
5.						

Score: 1.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with elm, oak, juniper, mesquite, and Texas ash	40	Mix	High	1	80	0.8
2. Savannah with oak and native grasses	10	Mix	High	1	20	0.2
3.						
4.						
5.						

Score: 1.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 20	Gravel: 20	Fines (silt, clay, muck): 15	Artificial:
Cobble: 40	Sand: 5	Bedrock:	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	0	0	0	0	0	0	0	0	0	0	0	0	0

Average: 0.0 **Score:** 0

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☒ Dry channel and no observable pools or interstitial flow (0)

Score: 0

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-6 SAR No.: RS-6-1 Size (LF): 772 Date: 12/17/15 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Woods & Pasture Watershed Size: 500 acres

Aerial Photo Date and Source: 2014 NAIP Site Photos: 11, 12, 13, 14 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Reference reach within the PPMSP (managed by TPWD). Tributary to Palo Pinto Creek. Flowing due to recent rain. Likely intermittent under normal conditions for year. Some spike rush along margin of channel but vegetation mostly upland species near channel. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	30	Avg. Banks:	5
Avg. Waters Edge:	4	Avg. Water:	0.5
Avg. OHWM:	10	Avg. OHWM:	2

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	21.7
	Bank condition	5		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	2.0	Sum of bank scores / 10 x 25	7.5
	Riparian buffer (right bank)	1.0		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	15.0
	In-stream habitat	2		
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	12.5
	Channel flow status	2		
			Sum of core element scores = overall TXRAM stream score	57
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				57

Representative Site Photograph:

Facing southeast (upstream) from the downstream end of SAR. Flow was observed after recent rainfall but likely intermittent with isolated pools under normal conditions. Substrates were fairly diverse at this site.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-6 SAR No.: RS-6-1 Size (LF): 772 Date: 12/17/15 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Woods & Pasture Watershed Size: 500 acres

Aerial Photo Date and Source: 2014 NAIP Site Photos: 11, 12, 13, 14 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

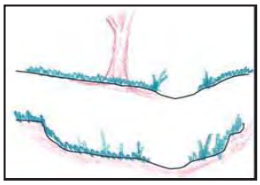
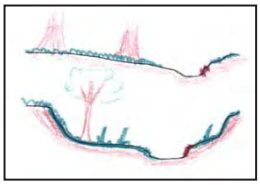
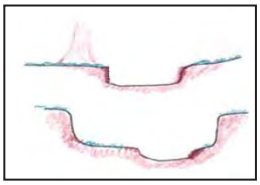
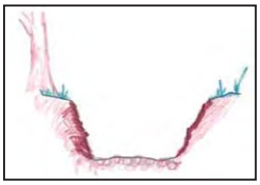
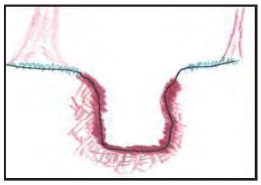
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	30	Avg. Banks:	5
Avg. Waters Edge:	4	Avg. Water:	0.5
Avg. OHWM:	10	Avg. OHWM:	2

Notes: Reference reach within the PPMSP (managed by TPWD). Tributary to Palo Pinto Creek. Flowing due to recent rain. Likely intermittent under normal conditions for year. Some spike rush along margin of channel but vegetation mostly upland species near channel. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	(4)	3	2	1

Score: 4

Bank Condition

Left Bank Active Erosion: 5 % Right Bank Active Erosion: 5 % Average: 5.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 5

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 65.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with elm, oak, juniper, & mesquite	65	Mix	High	2	100	2
2.						
3.						
4.						
5.						

Score: 2.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with elm, oak, juniper, & mesquite	60	Mix	High	1	60	0.6
2. Re-growth (old pasture) with elm & mesquite	20	Mix	High	1	40	0.4
3.						
4.						
5.						

Score: 1.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 5	Gravel: 40	Fines (silt, clay, muck): 10	Artificial:
Cobble: 15	Sand: 30	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation	✓	✓	✓	✓		✓		✓					
Rootmats													
Rootwads													
Woody/Leafy Debris				✓									
Boulders/Cobbles		✓	✓	✓				✓					
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	1	2	2	3	0	1	0	2					

Average: 1.4 **Score:** 2

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☒ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 2

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☒ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 2

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-7 SAR No.: RS-7-1 Size (LF): 1,286 Date: 12/17/15 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Woods Watershed Size: 60 acres

Aerial Photo Date and Source: 2014 NAIP Site Photos: 15, 16, 17, 18 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Reference reach within the PPMSP (managed by TPWD). Tributary to Palo Pinto Creek. Minor pools in channel due to an unusually wet fall and recent rain 3 days prior to visit. Likely dry under normal conditions for year. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	25	Avg. Banks:	5
Avg. Waters Edge:	--	Avg. Water:	--
Avg. OHWM:	5	Avg. OHWM:	1

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	20.0
	Bank condition	5		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	2.0	Sum of bank scores / 10 x 25	10.0
	Riparian buffer (right bank)	2.0		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	10.0
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0
	Channel flow status	0		
			Sum of core element scores = overall TXRAM stream score	40
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	40

Representative Site Photograph:

Facing southeast (upstream) in the upstream portion of SAR. This ephemeral tributary was characterized by mostly gravel substrates with noticeable cobble and sand materials. The channel is dry under normal conditions.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-7 SAR No.: RS-7-1 Size (LF): 1,286 Date: 12/17/15 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Woods Watershed Size: 60 acres

Aerial Photo Date and Source: 2014 NAIP Site Photos: 15, 16, 17, 18 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

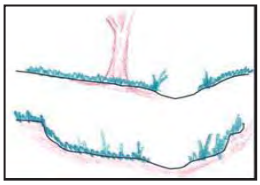
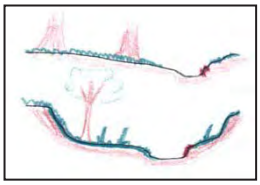
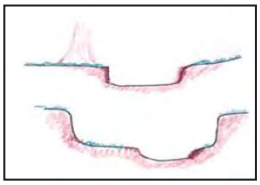
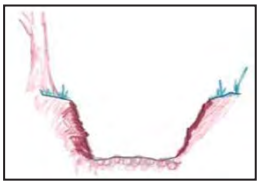
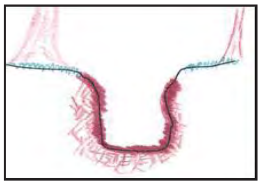
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	25	Avg. Banks:	5
Avg. Waters Edge:	--	Avg. Water:	--
Avg. OHWM:	5	Avg. OHWM:	1

Notes: Reference reach within the PPMSP (managed by TPWD). Tributary to Palo Pinto Creek. Minor pools in channel due to an unusually wet fall and recent rain 3 days prior to visit. Likely dry under normal conditions for year. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 5 % Right Bank Active Erosion: 10 % Average: 7.5

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 5

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 37.5

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with Texas ash, shin oak, cedar elm, juniper	70	Mix	High	2	100	2
2.						
3.						
4.						
5.						

Score: 2.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with Texas ash, shin oak, cedar elm, juniper	70	Mix	High	2	100	2
2.						
3.						
4.						
5.						

Score: 2.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder:	Gravel: 50	Fines (silt, clay, muck): 15	Artificial:
Cobble: 20	Sand: 15	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	0	0	0	0	0	0	0	0	0	0	0	0	0

Average: 0.0 **Score:** 0

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☒ Dry channel and no observable pools or interstitial flow (0)

Score: 0

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-8 SAR No.: RS-8-1 Size (LF): 861 Date: 12/17/15 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Woods, pasture Watershed Size: 36 acres

Aerial Photo Date and Source: 2014 NAIP Site Photos: 19 & 20 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Reference reach within the PPMSP (managed by TPWD). Tributary to Palo Pinto Creek. Minor pools in channel due to an unusually wet fall and recent rain 3 days prior to visit. Likely dry under normal conditions for year. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	8	Avg. Banks:	3
Avg. Waters Edge:	--	Avg. Water:	--
Avg. OHWM:	2	Avg. OHWM:	0.5

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	23.3
	Bank condition	5		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	1.0	Sum of bank scores / 10 x 25	5.0
	Riparian buffer (right bank)	1.0		
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	7.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0
	Channel flow status	0		
			Sum of core element scores = overall TXRAM stream score	36
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	36

Representative Site Photograph:

Facing north (upstream) in the central portion of SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-8 SAR No.: RS-8-1 Size (LF): 861 Date: 12/17/15 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Woods, pasture Watershed Size: 36 acres

Aerial Photo Date and Source: 2014 NAIP Site Photos: 19 & 20 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

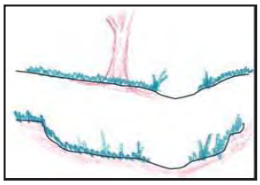
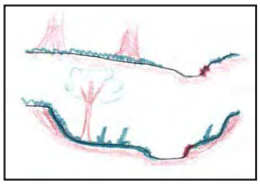
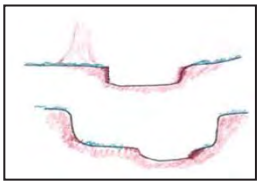
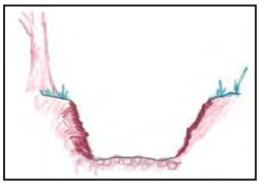
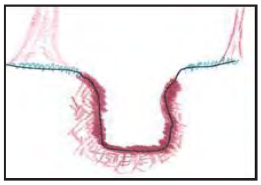
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	8	Avg. Banks:	3
Avg. Waters Edge:	--	Avg. Water:	--
Avg. OHWM:	2	Avg. OHWM:	0.5

Notes: Reference reach within the PPMSP (managed by TPWD). Tributary to Palo Pinto Creek. Minor pools in channel due to an unusually wet fall and recent rain 3 days prior to visit. Likely dry under normal conditions for year. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	(4)	3	2	1

Score: 4

Bank Condition

Left Bank Active Erosion: 1 % Right Bank Active Erosion: 1 % Average: 1.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 5

Sediment Deposition

☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 29.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with shin oak, red oak, Texas ash, elm, juniper	60	Mix	High	1	100	1
2.						
3.						
4.						
5.						

Score: 1.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with shin oak, red oak, Texas ash, elm, juniper	60	Mix	High	1	100	1
2.						
3.						
4.						
5.						

Score: 1.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder:	Gravel: 10	Fines (silt, clay, muck): 50	Artificial:
Cobble: 20	Sand: 20	Bedrock:	Other:

Score: 3

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	0	0	0	0	0	0	0	0	0	0			

Average: 0.0 **Score:** 0

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☒ Dry channel and no observable pools or interstitial flow (0)

Score: 0

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-9 SAR No.: RS-9-1 Size (LF): 899 Date: 12/17/15 Evaluator(s): DT, RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): woods, pasture Watershed Size: 240 acres

Aerial Photo Date and Source: 2014 NAIP Site Photos: 21, 22, 23, 24 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Reference reach within the PPMSP (managed by TPWD). Tributary to Palo Pinto Creek. Minor pools in channel due to an unusually wet fall and recent rain 3 days prior to visit. Likely dry under normal conditions for year. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	25	Avg. Banks:	6
Avg. Waters Edge:	--	Avg. Water:	--
Avg. OHWM:	6	Avg. OHWM:	1

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	23.3
	Bank condition	5		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	1.0	Sum of bank scores / 10 x 25	5.0
	Riparian buffer (right bank)	1.0		
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	7.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0
	Channel flow status	0		
			Sum of core element scores = overall TXRAM stream score	36
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	36

Representative Site Photograph:

Facing south (downstream) near the upstream portion of SAR. The stream is dry under normal conditions.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: TP - PPMSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-9 SAR No.: RS-9-1 Size (LF): 899 Date: 12/17/15 Evaluator(s): DT, RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): woods, pasture Watershed Size: 240 acres

Aerial Photo Date and Source: 2014 NAIP Site Photos: 21, 22, 23, 24 Representative: ☒ Yes ☐ No

Stressor(s): N / A Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

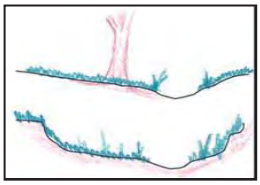
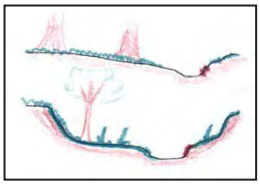
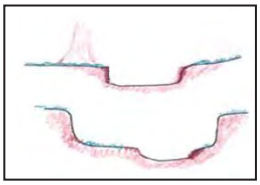
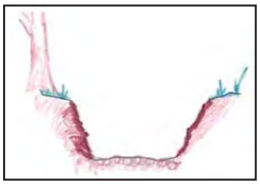
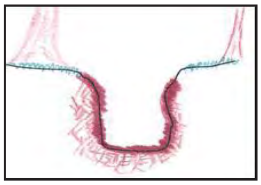
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	25	Avg. Banks:	6
Avg. Waters Edge:	--	Avg. Water:	--
Avg. OHWM:	6	Avg. OHWM:	1

Notes: Reference reach within the PPMSP (managed by TPWD). Tributary to Palo Pinto Creek. Minor pools in channel due to an unusually wet fall and recent rain 3 days prior to visit. Likely dry under normal conditions for year. Some evidence of on-going (but not intense) uncontrolled cattle use. Updated March 2017 for existing.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	(4)	3	2	1

Score: 4

Bank Condition

Left Bank Active Erosion: 5 % Right Bank Active Erosion: 5 % Average: 5.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 5

Sediment Deposition

☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 37.5

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with elm, oak, ash, juniper	50	Mix	High	1	100	1
2.						
3.						
4.						
5.						

Score: 1.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with elm, oak, ash, juniper	50	Mix	High	1	100	1
2.						
3.						
4.						
5.						

Score: 1.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 5	Gravel: 20	Fines (silt, clay, muck): 5	Artificial:
Cobble: 10	Sand: 10	Bedrock: 50	Other:

Score: 3

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	0	0	0	0	0	0	0	0	0	0			

Average: 0.0 **Score:** 0

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☒ Dry channel and no observable pools or interstitial flow (0)

Score: 0

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak / LMWSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RCR-1-1 SAR No.: RCR-1-1 Size (LF): 800 Date: 7/13/17 Evaluator(s): RW

Stream Type: Perennial Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Lake Watershed Size: ~63 sq. mi.

Aerial Photo Date and Source: 2016 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): None Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Rock Creek below Lake Mineral Wells in state park. Mature forest in riparian buffer with some ~24" DBH. Nearby grassland restored. Old distribution line noted but does not appear to be maintained.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	40	Avg. Banks:	8
Avg. Waters Edge:	25	Avg. Water:	2
Avg. OHWM:	30	Avg. OHWM:	5

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	23.3
	Bank condition	5		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	5.0	Sum of bank scores / 10 x 25	25.0
	Riparian buffer (right bank)	5.0		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	20.0
	In-stream habitat	4		
Hydrologic condition	Flow regime	4	Sum of metric scores / 8 x 25	25.0
	Channel flow status	4		
			Sum of core element scores = overall TXRAM stream score	93
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☒ ☒ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				5
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	98

Representative Site Photograph:

Facing upstream near the middle of the SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak / LMWSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RCR-1-1 SAR No.: RCR-1-1 Size (LF): 800 Date: 7/13/17 Evaluator(s): RW

Stream Type: Perennial Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Lake Watershed Size: ~63 sq. mi.

Aerial Photo Date and Source: 2016 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): None Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

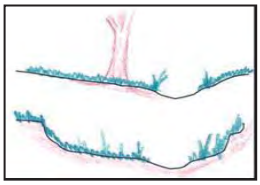
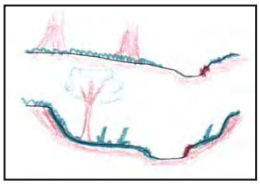
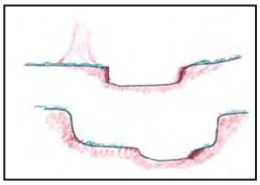
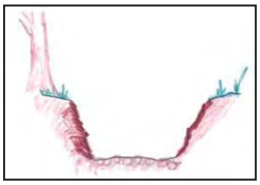
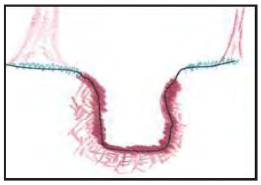
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	40	Avg. Banks:	8
Avg. Waters Edge:	25	Avg. Water:	2
Avg. OHWM:	30	Avg. OHWM:	5

Notes: Rock Creek below Lake Mineral Wells in state park. Mature forest in riparian buffer with some ~24" DBH. Nearby grassland restored. Old distribution line noted but does not appear to be maintained.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	(4)	3	2	1

Score: 4

Bank Condition

Left Bank Active Erosion: 5 % Right Bank Active Erosion: 5 % Average: 5.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 5

Sediment Deposition

☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 120.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Forest with pecan, hickory, bur oak, Texas red oak, American elm, cedar elm, ash, hackberry, dogwood, possumhaw, co	80	Native	Low	5	98	4.9
2. Grassland restored with natives such as eastern gamagrass	10	Native	Low	3	2	0.1
3.						
4.						
5.						

Score: 5.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Forest with pecan, hickory, bur oak, Texas red oak, American elm, cedar elm, ash, hackberry, dogwood, possumha	80	Native	Low	5	100	5
2.						
3.						
4.						
5.						

Score: 5.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 5	Gravel: 40	Fines (silt, clay, muck): 30	Artificial:
Cobble: 25	Sand:	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓	✓	✓	✓		✓						
Overhanging Vegetation		✓	✓		✓		✓						
Rootmats			✓			✓	✓	✓					
Rootwads	✓	✓		✓	✓			✓					
Woody/Leafy Debris			✓		✓								
Boulders/Cobbles		✓		✓	✓	✓	✓	✓					
Aquatic Macrophytes					✓	✓		✓					
Riffle/Pool Sequence						✓		✓					
Artificial Habitat Enhancement													
Other													
Total No. Present	2	4	4	3	6	4	4	5					

Average: 4.0 **Score:** 4

HYDROLOGIC CONDITION

Flow Regime

- ☒ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 4

Channel Flow Status

- ☒ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 4

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak / DVSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: PRR-1-1 SAR No.: PRR-1-1 Size (LF): 800 Date: 7/13/17 Evaluator(s): RW

Stream Type: Perennial Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060202 Watershed Condition (developed, pasture, etc.): Undeveloped Watershed Size: ~400 sq. mi.

Aerial Photo Date and Source: 2016 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): None Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Paluxy River in the downstream portion of Dinosaur Valley State Park. Right bank private but woods appear to be low use. Some large hickory and bur oak on right bank ~24" DBH. Some rain previous week. TPWD ecologically significant stream segment.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	70	Avg. Banks:	4
Avg. Waters Edge:	55	Avg. Water:	1
Avg. OHWM:	60	Avg. OHWM:	2

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	23.3
	Bank condition	5		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	5.0	Sum of bank scores / 10 x 25	24.8
	Riparian buffer (right bank)	4.9		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	4		
Hydrologic condition	Flow regime	4	Sum of metric scores / 8 x 25	25.0
	Channel flow status	4		
			Sum of core element scores = overall TXRAM stream score	96
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☒ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				2
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	98

Representative Site Photograph:

Facing downstream near the upper end of the SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak / DVSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: PRR-1-1 SAR No.: PRR-1-1 Size (LF): 800 Date: 7/13/17 Evaluator(s): RW

Stream Type: Perennial Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060202 Watershed Condition (developed, pasture, etc.): Undeveloped Watershed Size: ~400 sq. mi.

Aerial Photo Date and Source: 2016 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): None Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

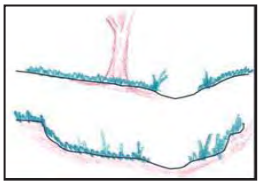
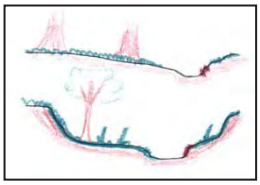
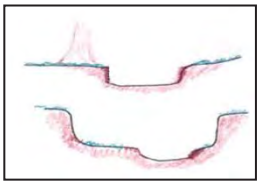
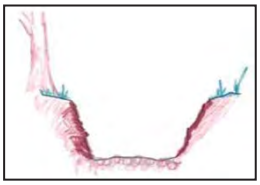
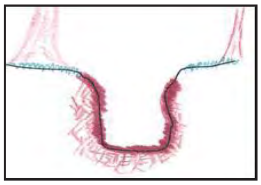
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	70	Avg. Banks:	4
Avg. Waters Edge:	55	Avg. Water:	1
Avg. OHWM:	60	Avg. OHWM:	2

Notes: Paluxy River in the downstream portion of Dinosaur Valley State Park. Right bank private but woods appear to be low use. Some large hickory and bur oak on right bank ~24" DBH. Some rain previous week. TPWD ecologically significant stream segment.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	(4)	3	2	1

Score: 4

Bank Condition

Left Bank Active Erosion: 5 % Right Bank Active Erosion: 5 % Average: 5.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 5

Sediment Deposition

☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 135.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, live oak, Texas Oak, mature Ashe juniper	65	Native	Low	5	100	5
2.						
3.						
4.						
5.						

Score: 5.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with hickory, oak, elm, ash, sycamore	70	Native	Low	5	95	4.8
2. Gavel bar with sycamore and forbs	5	Mix	Low	2	5	0.1
3.						
4.						
5.						

Score: 4.9

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 30	Fines (silt, clay, muck):	Artificial:
Cobble: 20	Sand:	Bedrock: 40	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks				✓	✓		✓						
Overhanging Vegetation				✓	✓		✓	✓					
Rootmats				✓	✓		✓	✓	✓				
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles	✓	✓	✓	✓		✓	✓	✓	✓				
Aquatic Macrophytes	✓	✓	✓	✓	✓		✓	✓	✓				
Riffle/Pool Sequence	✓	✓	✓			✓			✓				
Artificial Habitat Enhancement													
Other													
Total No. Present	3	3	3	5	4	2	5	4	4				

Average: 3.7 **Score:** 4

HYDROLOGIC CONDITION

Flow Regime

- ☒ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 4

Channel Flow Status

- ☒ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 4

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak / DVSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: PRR-1-2 SAR No.: PRR-1-2 Size (LF): 1050 Date: 7/13/17 Evaluator(s): RW

Stream Type: Perennial Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060202 Watershed Condition (developed, pasture, etc.): Undeveloped Watershed Size: ~400 sq. mi.

Aerial Photo Date and Source: 2016 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): None Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Paluxy River in the downstream portion of Dinosaur Valley State Park. Some large hickory and oak on both banks ~24" DBH. Some rain previous week. TPWD ecologically significant stream segment.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	70	Avg. Banks:	5
Avg. Waters Edge:	55	Avg. Water:	2
Avg. OHWM:	60	Avg. OHWM:	3

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	23.3
	Bank condition	5		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	5.0	Sum of bank scores / 10 x 25	22.5
	Riparian buffer (right bank)	4.0		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	20.0
	In-stream habitat	4		
Hydrologic condition	Flow regime	4	Sum of metric scores / 8 x 25	25.0
	Channel flow status	4		
			Sum of core element scores = overall TXRAM stream score	91
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☒ ☒ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				5
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	96

Representative Site Photograph:

Facing downstream near the middle of the SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak / DVSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: PRR-1-2 SAR No.: PRR-1-2 Size (LF): 1050 Date: 7/13/17 Evaluator(s): RW

Stream Type: Perennial Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060202 Watershed Condition (developed, pasture, etc.): Undeveloped Watershed Size: ~400 sq. mi.

Aerial Photo Date and Source: 2016 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): None Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

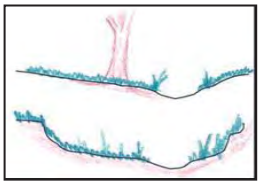
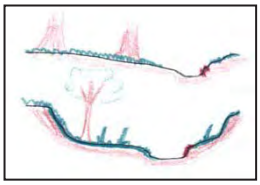
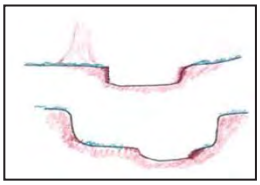
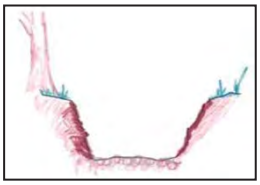
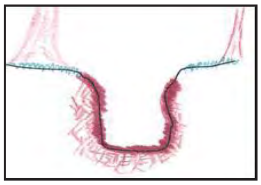
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	70	Avg. Banks:	5
Avg. Waters Edge:	55	Avg. Water:	2
Avg. OHWM:	60	Avg. OHWM:	3

Notes: Paluxy River in the downstream portion of Dinosaur Valley State Park. Some large hickory and oak on both banks ~24" DBH. Some rain previous week. TPWD ecologically significant stream segment.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	(4)	3	2	1

Score: 4

Bank Condition

Left Bank Active Erosion: 5 % Right Bank Active Erosion: 5 % Average: 5.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 5

Sediment Deposition

☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 135.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with hickory, cedar elm, Texas Oak, bur oak, sycamore, ash, mature Ashe juniper	65	Native	Low	5	100	5
2.						
3.						
4.						
5.						

Score: 5.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with hickory, Texas oak, live oak, elm, ash, mature Ashe juniper	70	Native	Low	5	65	3.3
2. Gavel bar with sycamore and forbs	5	Mix	Low	2	30	0.6
3. Grassland and dirt trail with bluestems and forbs	5	Mix	Moderate	1	5	0.1
4.						
5.						

Score: 4.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 20	Fines (silt, clay, muck):	Artificial:
Cobble: 20	Sand:	Bedrock: 50	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓		✓	✓	✓			✓				
Overhanging Vegetation	✓	✓	✓	✓	✓	✓							
Rootmats		✓			✓	✓	✓						
Rootwads				✓									
Woody/Leafy Debris				✓					✓				
Boulders/Cobbles	✓	✓			✓		✓	✓	✓	✓			
Aquatic Macrophytes	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Riffle/Pool Sequence							✓	✓	✓	✓			
Artificial Habitat Enhancement													
Other													
Total No. Present	4	5	2	5	5	4	4	3	5	2			

Average: 3.9 **Score:** 4

HYDROLOGIC CONDITION

Flow Regime

- ☒ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 4

Channel Flow Status

- ☒ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 4

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak / DVSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: PRR-1-3 SAR No.: PRR-1-3 Size (LF): 990 Date: 7/13/17 Evaluator(s): RW

Stream Type: Perennial Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060202 Watershed Condition (developed, pasture, etc.): Undeveloped Watershed Size: ~400 sq. mi.

Aerial Photo Date and Source: 2016 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): None Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Paluxy River upstream of Dinosaur Valley State Park and downstream of CR 1008. Private property on both banks. Some rain previous week. TPWD ecologically significant stream segment.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	70	Avg. Banks:	4
Avg. Waters Edge:	55	Avg. Water:	1
Avg. OHWM:	60	Avg. OHWM:	2

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	23.3
	Bank condition	5		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	5.0	Sum of bank scores / 10 x 25	24.0
	Riparian buffer (right bank)	4.6		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	25.0
	In-stream habitat	5		
Hydrologic condition	Flow regime	4	Sum of metric scores / 8 x 25	25.0
	Channel flow status	4		
			Sum of core element scores = overall TXRAM stream score	97
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	97

Representative Site Photograph:

Facing downstream near the lower end of the SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak / DVSP Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: PRR-1-3 SAR No.: PRR-1-3 Size (LF): 990 Date: 7/13/17 Evaluator(s): RW

Stream Type: Perennial Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060202 Watershed Condition (developed, pasture, etc.): Undeveloped Watershed Size: ~400 sq. mi.

Aerial Photo Date and Source: 2016 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): None Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

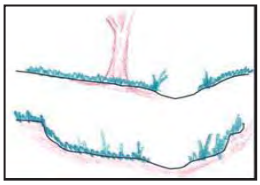
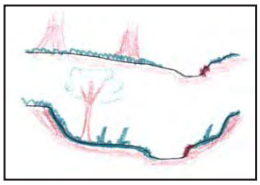
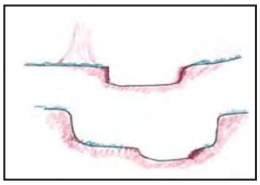
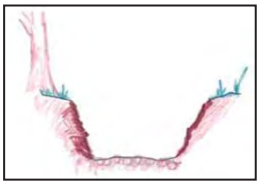
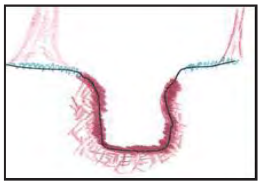
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	70	Avg. Banks:	4
Avg. Waters Edge:	55	Avg. Water:	1
Avg. OHWM:	60	Avg. OHWM:	2

Notes: Paluxy River upstream of Dinosaur Valley State Park and downstream of CR 1008. Private property on both banks. Some rain previous week. TPWD ecologically significant stream segment.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	(4)	3	2	1

Score: 4

Bank Condition

Left Bank Active Erosion: 0 % Right Bank Active Erosion: 5 % Average: 2.5

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 5

Sediment Deposition

☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 135.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with hickory, elm, Texas Oak, ash, sycamore, cottonwood, mature Ashe juniper	70	Native	Low	5	100	5
2.						
3.						
4.						
5.						

Score: 5.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with hickory, Texas oak, cedar elm, ash, hackberry, sycamore, mature Ashe juniper	70	Native	Low	5	85	4.3
2. Gavel bar with sycamore and forbs	2	Mix	Low	2	15	0.3
3.						
4.						
5.						

Score: 4.6

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 30	Fines (silt, clay, muck): 5	Artificial:
Cobble: 30	Sand:	Bedrock: 25	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks		✓	✓	✓	✓	✓		✓	✓				
Overhanging Vegetation	✓			✓		✓		✓	✓	✓			
Rootmats		✓		✓				✓	✓	✓			
Rootwads	✓					✓							
Woody/Leafy Debris		✓					✓		✓	✓			
Boulders/Cobbles	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Aquatic Macrophytes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Riffle/Pool Sequence		✓	✓	✓	✓	✓	✓			✓			
Artificial Habitat Enhancement													
Other													
Total No. Present	4	6	4	6	4	6	4	5	6	5			

Average: 5.0 **Score:** 5

HYDROLOGIC CONDITION

Flow Regime

- ☒ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 4

Channel Flow Status

- ☒ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 4

Appendix C: Stream Data Sheets and Final Scoring Sheets – Upstream Mitigation SARs Existing Condition

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-1 SAR No.: MS-1-1 Size (LF): 1,753 Date: 4/22/14 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 44 sq. mi.

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Extreme drought. Signs of cattle use. Portion of channel split. In-stream habitat estimated using reference reach.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	12
Avg. Waters Edge:	15	Avg. Water:	1
Avg. OHWM:	30	Avg. OHWM:	3

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	18.3
	Bank condition	4		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.0	Sum of bank scores / 10 x 25	7.5
	Riparian buffer (right bank)	2.0		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	4		
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	15.6
	Channel flow status	3		
			Sum of core element scores = overall TXRAM stream score	64
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	64

Representative Site Photograph:

MS-1-1 facing upstream (west).

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-1 SAR No.: MS-1-1 Size (LF): 1,753 Date: 4/22/14 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 44 sq. mi.

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

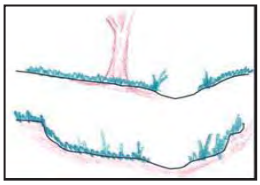
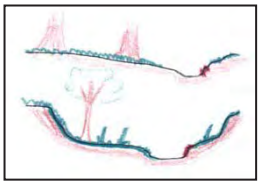
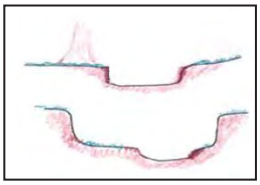
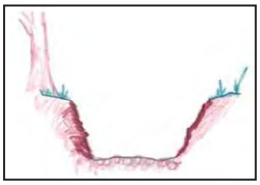
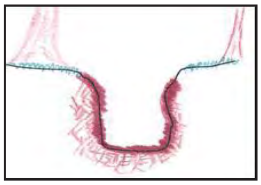
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	12
Avg. Waters Edge:	15	Avg. Water:	1
Avg. OHWM:	30	Avg. OHWM:	3

Notes: Extreme drought. Signs of cattle use. Portion of channel split. In-stream habitat estimated using reference reach.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 10 % Average: 15.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 75.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with mesquite, Ashe juniper, live oak	50	Mix	High	1	90	0.9
2. Gravel bar with mesquite, Ashe juniper	10	Undesirable	High	1	10	0.1
3.						
4.						
5.						

Score: 1.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, live oak, Ashe juniper	70	Mix	High	2	100	2
2.						
3.						
4.						
5.						

Score: 2.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 5	Gravel: 55	Fines (silt, clay, muck): 20	Artificial:
Cobble: 20	Sand:	Bedrock:	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓												
Overhanging Vegetation													
Rootmats													
Rootwads	✓												
Woody/Leafy Debris	✓												
Boulders/Cobbles	✓												
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	4												

Average: 4.0 **Score:** 4

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☒ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 2

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☒ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 3

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-1 SAR No.: MS-1-2 Size (LF): 716 Date: 4/22/14 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 44 sq. mi.

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Extreme drought. Signs of cattle use and juniper cutting. Erosion at bend. Parallels railroad tracks. In-stream habitat estimated from reference reach.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	10
Avg. Waters Edge:	25	Avg. Water:	2
Avg. OHWM:	30	Avg. OHWM:	4

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	2	Sum of metric scores / 15 x 25	15.0
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.0	Sum of bank scores / 10 x 25	4.5
	Riparian buffer (right bank)	0.8		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	4		
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	15.6
	Channel flow status	3		
			Sum of core element scores = overall TXRAM stream score	58
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	58

Representative Site Photograph:

MS-1-2 facing upstream (west).

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-1 SAR No.: MS-1-2 Size (LF): 716 Date: 4/22/14 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 44 sq. mi.

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

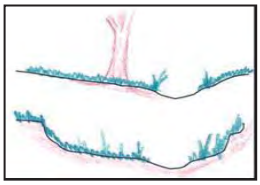
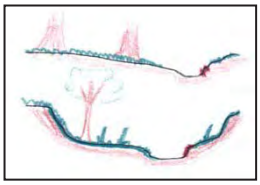
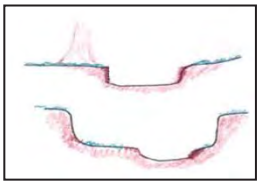
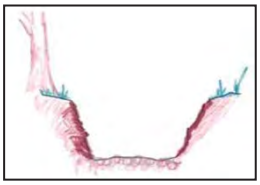
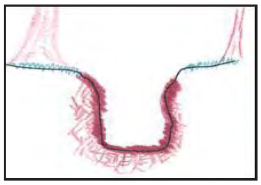
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	10
Avg. Waters Edge:	25	Avg. Water:	2
Avg. OHWM:	30	Avg. OHWM:	4

Notes: Extreme drought. Signs of cattle use and juniper cutting. Erosion at bend. Parallels railroad tracks. In-stream habitat estimated from reference reach.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	3	(2)	1

Score: 2

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 30 % Average: 25.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 75.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with Ashe juniper, live oak, cedar elm	60	Mix	High	1	100	1
2.						
3.						
4.						
5.						

Score: 1.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, live oak, Ashe juniper	60	Mix	High	1	80	0.8
2. Railroad ROW	0	N/A	Intense	0	20	0
3.						
4.						
5.						

Score: 0.8

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 5	Gravel: 75	Fines (silt, clay, muck): 10	Artificial:
Cobble: 10	Sand:	Bedrock:	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓												
Overhanging Vegetation	✓												
Rootmats	✓												
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles	✓												
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	1												

Average: 4.0 **Score:** 4

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☒ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 2

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☒ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 3

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-1 SAR No.: MS-1-3 Size (LF): 1,022 Date: 4/22/14 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 44 sq. mi.

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Extreme drought. Signs of cattle use. Erosion. Pool present over bedrock. In-stream habitat estimated from reference reach.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	8
Avg. Waters Edge:	10	Avg. Water:	1
Avg. OHWM:	30	Avg. OHWM:	3

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	18.3
	Bank condition	4		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	2.0	Sum of bank scores / 10 x 25	9.3
	Riparian buffer (right bank)	1.7		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	4		
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	12.5
	Channel flow status	2		
			Sum of core element scores = overall TXRAM stream score	63
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	63

Representative Site Photograph:

MS-1-3 facing upstream (northwest).

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-1 SAR No.: MS-1-3 Size (LF): 1,022 Date: 4/22/14 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 44 sq. mi.

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

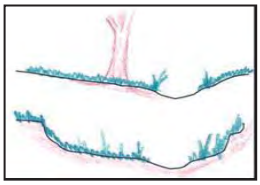
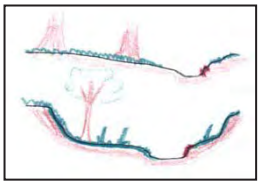
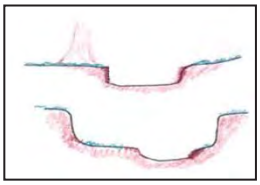
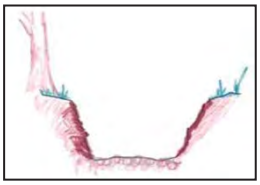
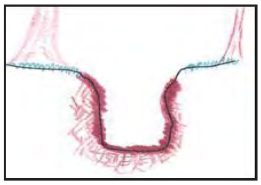
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	8
Avg. Waters Edge:	10	Avg. Water:	1
Avg. OHWM:	30	Avg. OHWM:	3

Notes: Extreme drought. Signs of cattle use. Erosion. Pool present over bedrock. In-stream habitat estimated from reference reach.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 5 % Average: 12.5

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 75.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with Ashe juniper, live oak, cedar elm	70	Mix	High	2	100	2
2.						
3.						
4.						
5.						

Score: 2.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, live oak, Ashe juniper	70	Mix	High	2	70	1.4
2. Gravel bar with mesquite, Ashe juniper	10	Undesirable	High	1	30	0.3
3.						
4.						
5.						

Score: 1.7

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 5	Gravel: 60	Fines (silt, clay, muck): 10	Artificial:
Cobble: 20	Sand:	Bedrock: 5	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓												
Overhanging Vegetation	✓												
Rootmats	✓												
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles	✓												
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	4												

Average: 4.0 **Score:** 4

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☒ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 2

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☒ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 2

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-1 SAR No.: MS-1-4 Size (LF): 984 Date: 4/22/14 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 44 sq. mi.

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Extreme drought. Cattle present. Some pooling present. Channel braided in portion. In-stream habitat estimated from reference reach.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	8
Avg. Waters Edge:	10	Avg. Water:	1
Avg. OHWM:	30	Avg. OHWM:	3

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	18.3
	Bank condition	4		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.6	Sum of bank scores / 10 x 25	8.5
	Riparian buffer (right bank)	1.8		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	4		
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	12.5
	Channel flow status	2		
			Sum of core element scores = overall TXRAM stream score	62
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	62

Representative Site Photograph:

MS-1-4 facing upstream (northwest).

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-1 SAR No.: MS-1-4 Size (LF): 984 Date: 4/22/14 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 44 sq. mi.

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

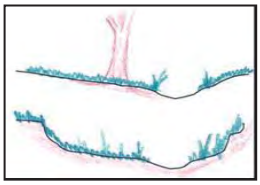
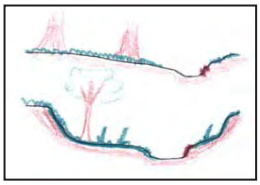
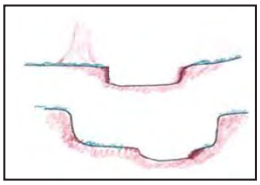
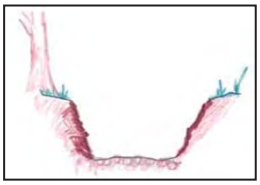
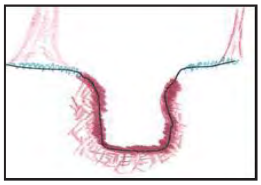
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	8
Avg. Waters Edge:	10	Avg. Water:	1
Avg. OHWM:	30	Avg. OHWM:	3

Notes: Extreme drought. Cattle present. Some pooling present. Channel braided in portion. In-stream habitat estimated from reference reach.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 10 % Average: 10.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 75.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with Ashe juniper, live oak, cedar elm	70	Mix	High	2	60	1.2
2. Gravel bar with mesquite, Ashe juniper	10	Undesirable	High	1	40	0.4
3.						
4.						
5.						

Score: 1.6

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, live oak, Ashe juniper	70	Mix	High	2	80	1.6
2. Gravel bar with mesquite, Ashe juniper	10	Undesirable	High	1	20	0.2
3.						
4.						
5.						

Score: 1.8

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 5	Gravel: 75	Fines (silt, clay, muck): 10	Artificial:
Cobble: 10	Sand:	Bedrock:	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓												
Overhanging Vegetation	✓												
Rootmats													
Rootwads													
Woody/Leafy Debris	✓												
Boulders/Cobbles	✓												
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	4												

Average: 4.0 **Score:** 4

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☒ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 2

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☒ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 2

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-1 SAR No.: MS-1-5 Size (LF): 1,090 Date: 4/22/14 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 44 sq. mi.

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Extreme drought. Cattle present. Pool present over bedrock. In-stream habitat estimated from reference reach.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	6
Avg. Waters Edge:	20	Avg. Water:	1
Avg. OHWM:	30	Avg. OHWM:	3

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	20.0
	Bank condition	4		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.0	Sum of bank scores / 10 x 25	5.0
	Riparian buffer (right bank)	1.0		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	4		
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	15.6
	Channel flow status	3		
			Sum of core element scores = overall TXRAM stream score	63
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	63

Representative Site Photograph:

MS-1-5 facing upstream (northwest).

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-1 SAR No.: MS-1-5 Size (LF): 1,090 Date: 4/22/14 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 44 sq. mi.

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

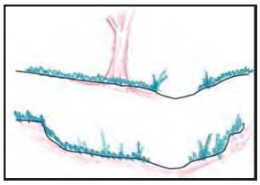
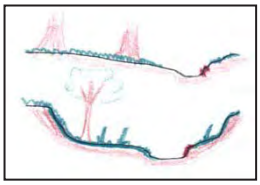
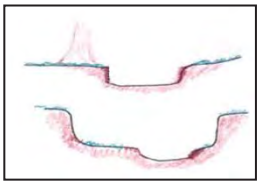
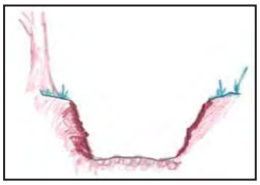
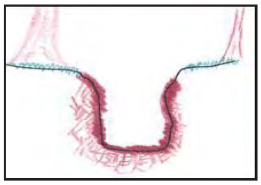
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	6
Avg. Waters Edge:	20	Avg. Water:	1
Avg. OHWM:	30	Avg. OHWM:	3

Notes: Extreme drought. Cattle present. Pool present over bedrock. In-stream habitat estimated from reference reach.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	(4)	3	2	1

Score: 4

Bank Condition

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 15 % Average: 12.5

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 75.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with Ashe juniper, live oak, cedar elm	50	Mix	High	1	50	0.5
2. Mesquite pasture	10	Undesirable	High	1	50	0.5
3.						
4.						
5.						

Score: 1.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, live oak, Ashe juniper	50	Mix	High	1	50	0.5
2. Mesquite pasture	10	Undesirable	High	1	50	0.5
3.						
4.						
5.						

Score: 1.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 5	Gravel: 20	Fines (silt, clay, muck): 10	Artificial:
Cobble: 10	Sand:	Bedrock: 55	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓												
Overhanging Vegetation	✓												
Rootmats	✓												
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles	✓												
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	4												

Average: 4.0 **Score:** 4

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☒ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 2

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☒ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 3

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-2 SAR No.: MS-2-1 Size (LF): 860 Date: 4/24/14 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 470 acres

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Extreme drought. Signs of cattle use. Downstream of moderate erosion, upstream of culvert under railroad tracks.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	40	Avg. Banks:	5
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	10	Avg. OHWM:	1

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	18.3
	Bank condition	4		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.9	Sum of bank scores / 10 x 25	9.5
	Riparian buffer (right bank)	1.9		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	15.0
	In-stream habitat	1		
Hydrologic condition	Flow regime	1	Sum of metric scores / 8 x 25	6.3
	Channel flow status	1		
			Sum of core element scores = overall TXRAM stream score	49
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	49

Representative Site Photograph:

MS-2-1 facing downstream (south).

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-2 SAR No.: MS-2-1 Size (LF): 860 Date: 4/24/14 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 470 acres

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

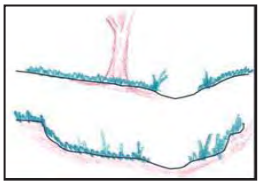
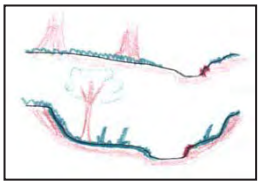
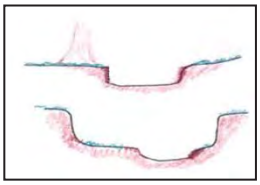
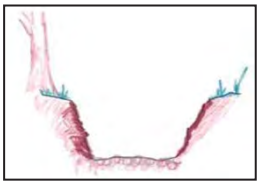
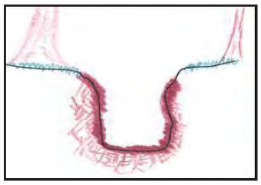
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	40	Avg. Banks:	5
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	10	Avg. OHWM:	1

Notes: Extreme drought. Signs of cattle use. Downstream of moderate erosion, upstream of culvert under railroad tracks.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 10 % Average: 10.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 45.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with Ashe juniper, live oak, cedar elm	70	Mix	High	2	90	1.8
2. Pasture / Trail	10	Undesirable	High	1	10	0.1
3.						
4.						
5.						

Score: 1.9

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, live oak, Ashe juniper	70	Mix	High	2	90	1.8
2. Pasture / Trail	10	Undesirable	High	1	10	0.1
3.						
4.						
5.						

Score: 1.9

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 60	Fines (silt, clay, muck): 20	Artificial:
Cobble: 10	Sand:	Bedrock:	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation	✓				✓								
Rootmats													
Rootwads													
Woody/Leafy Debris								✓					
Boulders/Cobbles	✓							✓					
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	2	0	0	0	1	0	0	2	0				

Average: 0.6 **Score:** 1

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☒ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 1

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☒ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 1

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-2 SAR No.: MS-2-2 Size (LF): 912 Date: 4/24/14 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 470 acres

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Extreme drought. Signs of cattle use. Downstream of gravel road, crossed by pipeline, minor pooling evident.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	20	Avg. Banks:	6
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	10	Avg. OHWM:	2

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	2	Sum of metric scores / 15 x 25	11.7
	Bank condition	2		
	Sediment deposition	3		
Riparian buffer condition	Riparian buffer (left bank)	1.0	Sum of bank scores / 10 x 25	5.0
	Riparian buffer (right bank)	1.0		
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	10.0
	In-stream habitat	1		
Hydrologic condition	Flow regime	1	Sum of metric scores / 8 x 25	6.3
	Channel flow status	1		
			Sum of core element scores = overall TXRAM stream score	33
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	33

Representative Site Photograph:

MS-2-2 facing downstream (southeast).

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-2 SAR No.: MS-2-2 Size (LF): 912 Date: 4/24/14 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 470 acres

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

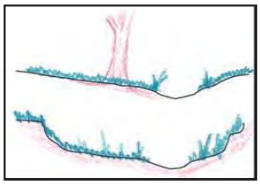
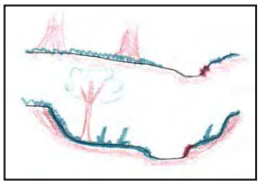
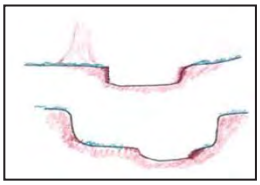
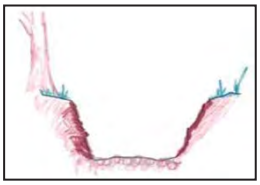
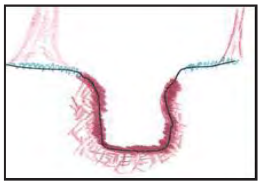
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	20	Avg. Banks:	6
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	10	Avg. OHWM:	2

Notes: Extreme drought. Signs of cattle use. Downstream of gravel road, crossed by pipeline, minor pooling evident.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	3	(2)	1

Score: 2

Bank Condition

Left Bank Active Erosion: 30 % Right Bank Active Erosion: 30 % Average: 30.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 2

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☒ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 3

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 35.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with Ashe juniper, live oak	60	Mix	High	1	50	0.5
2. Pasture	10	Undesirable	High	1	50	0.5
3.						
4.						
5.						

Score: 1.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with Ashe juniper, live oak	60	Mix	High	1	50	0.5
2. Pasture	10	Undesirable	High	1	50	0.5
3.						
4.						
5.						

Score: 1.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 5	Gravel: 20	Fines (silt, clay, muck): 70	Artificial:
Cobble: 5	Sand:	Bedrock:	Other:

Score: 3

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation		✓											
Rootmats													
Rootwads				✓									
Woody/Leafy Debris													
Boulders/Cobbles						✓							
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	0	1	0	1	0	1	0						

Average: 0.4 **Score:** 1

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☒ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 1

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☒ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 1

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-2 SAR No.: MS-2-3 Size (LF): 627 Date: 4/24/14 Evaluator(s): RW, JT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 470 acres

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Extreme drought. Signs of cattle use. Downstream of impoundment, flow has been re-routed. Currently abandoned channel that could be restored.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	12	Avg. Banks:	5
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	-	Avg. OHWM:	-

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	2	Sum of metric scores / 15 x 25	15.0
	Bank condition	4		
	Sediment deposition	3		
Riparian buffer condition	Riparian buffer (left bank)	1.0	Sum of bank scores / 10 x 25	5.0
	Riparian buffer (right bank)	1.0		
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	7.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0
	Channel flow status	0		
			Sum of core element scores = overall TXRAM stream score	28
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	28

Representative Site Photograph:

MS-2-3 facing downstream (south).

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-2 SAR No.: MS-2-3 Size (LF): 627 Date: 4/24/14 Evaluator(s): RW, JT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 470 acres

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

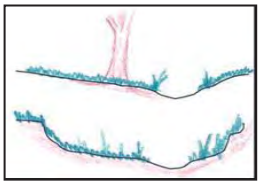
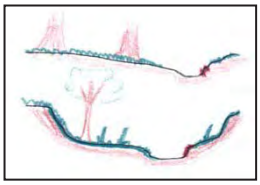
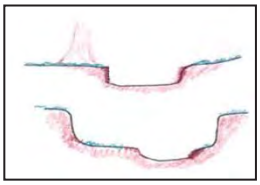
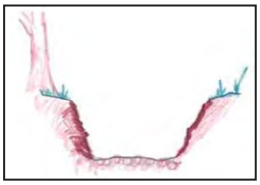
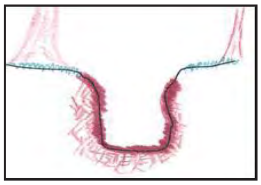
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	12	Avg. Banks:	5
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	-	Avg. OHWM:	-

Notes: Extreme drought. Signs of cattle use. Downstream of impoundment, flow has been re-routed. Currently abandoned channel that could be restored.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	3	(2)	1

Score: 2

Bank Condition

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 10 % Average: 10.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☒ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 3

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 35.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Ashe juniper	60	Undesirable	High	1	50	0.5
2. Pasture	10	Undesirable	High	1	50	0.5
3.						
4.						
5.						

Score: 1.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Ashe juniper	60	Undesirable	High	1	50	0.5
2. Pasture	10	Undesirable	High	1	50	0.5
3.						
4.						
5.						

Score: 1.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 5	Gravel: 20	Fines (silt, clay, muck): 70	Artificial:
Cobble: 5	Sand:	Bedrock:	Other:

Score: 3

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	0	0	0	0	0	0	0						

Average: 0.0 **Score:** 0

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☒ Dry channel and no observable pools or interstitial flow (0)

Score: 0

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-4 SAR No.: MS-4-1 Size (LF): 849 Date: 4/22/14 Evaluator(s): RW, JT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 185 acres

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Extreme drought. Signs of cattle use. Upstream of impoundment.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	10	Avg. Banks:	2
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	1

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	15.0
	Bank condition	3		
	Sediment deposition	2		
Riparian buffer condition	Riparian buffer (left bank)	1.0	Sum of bank scores / 10 x 25	5.0
	Riparian buffer (right bank)	1.0		
In-stream condition	Substrate composition	2	Sum of metric scores / 10 x 25	7.5
	In-stream habitat	1		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0
	Channel flow status	0		
			Sum of core element scores = overall TXRAM stream score	28
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	28

Representative Site Photograph:

MS-4-1 facing upstream (northeast).

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-4 SAR No.: MS-4-1 Size (LF): 849 Date: 4/22/14 Evaluator(s): RW, JT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 185 acres

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

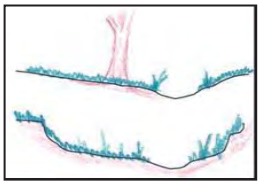
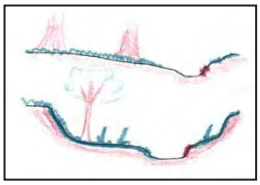
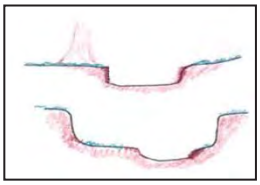
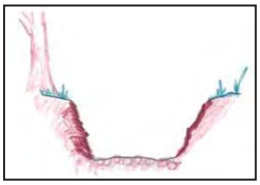
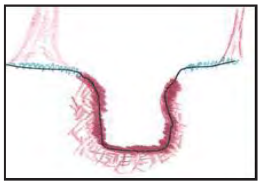
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	10	Avg. Banks:	2
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	1

Notes: Extreme drought. Signs of cattle use. Upstream of impoundment.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	(4)	3	2	1

Score: 4

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 25 % Average: 22.5

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☒ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 2

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 30.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Ashe juniper	50	Undesirable	High	1	60	0.6
2. Pasture	10	Undesirable	High	1	40	0.4
3.						
4.						
5.						

Score: 1.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Ashe juniper	50	Undesirable	High	1	60	0.6
2. Pasture	10	Undesirable	High	1	40	0.4
3.						
4.						
5.						

Score: 1.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder:	Gravel: 10	Fines (silt, clay, muck): 70	Artificial:
Cobble: 10	Sand: 10	Bedrock:	Other:

Score: 2

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks			✓				✓						
Overhanging Vegetation			✓				✓						
Rootmats													
Rootwads													
Woody/Leafy Debris			✓				✓						
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	0	0	3	0	0	0	3	0					

Average: 0.8 **Score:** 1

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☒ Dry channel and no observable pools or interstitial flow (0)

Score: 0

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-5 SAR No.: MS-5-2 Size (LF): 967 Date: 4/24/14 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture Watershed Size: 40 acres

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Extreme drought. Signs of cattle use. Downslope of swale in pasture to rock outcrop. Crossed by trail.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	12	Avg. Banks:	3
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	1

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	20.0
	Bank condition	4		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.0	Sum of bank scores / 10 x 25	5.0
	Riparian buffer (right bank)	1.0		
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	7.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0
	Channel flow status	0		
			Sum of core element scores = overall TXRAM stream score	33
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	33

Representative Site Photograph:

MS-5-2 facing downstream (southwest).

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-5 SAR No.: MS-5-2 Size (LF): 967 Date: 4/24/14 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture Watershed Size: 40 acres

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

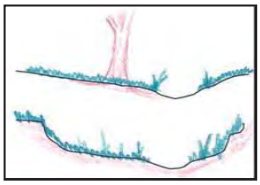
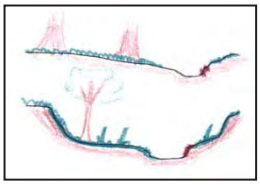
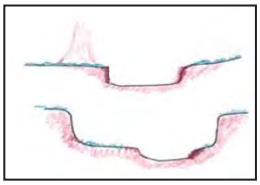
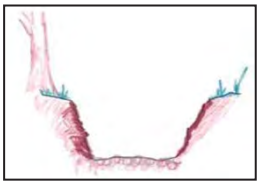
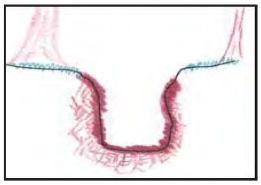
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	12	Avg. Banks:	3
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	1

Notes: Extreme drought. Signs of cattle use. Downslope of swale in pasture to rock outcrop. Crossed by trail.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	(4)	3	2	1

Score: 4

Bank Condition

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 10 % Average: 10.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 31.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Ashe juniper, mesquite, cactus, pasture grasses	20	Undesirable	High	1	100	1
2.						
3.						
4.						
5.						

Score: 1.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Ashe juniper, mesquite, cactus, pasture grasses	20	Undesirable	High	1	100	1
2.						
3.						
4.						
5.						

Score: 1.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 5	Gravel: 10	Fines (silt, clay, muck): 70	Artificial:
Cobble: 10	Sand:	Bedrock: 5	Other:

Score: 3

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	0	0	0	0	0	0	0	0	0				

Average: 0.0 **Score:** 0

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☒ Dry channel and no observable pools or interstitial flow (0)

Score: 0

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-6 SAR No.: MS-6-1 Size (LF): 2,600 Date: 4/23/14 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 120 acres

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Extreme drought. Signs of cattle use. Lower gradient, more incised, and fine substrate than upstream. Meanders and then parallels Palo Pinto Creek in old floodplain.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	12	Avg. Banks:	5
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	2

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.5	Sum of bank scores / 10 x 25	7.5
	Riparian buffer (right bank)	1.5		
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	7.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0
	Channel flow status	0		
			Sum of core element scores = overall TXRAM stream score	32
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	32

Representative Site Photograph:

MS-6-1 facing downstream (southeast).

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-6 SAR No.: MS-6-1 Size (LF): 2,600 Date: 4/23/14 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 120 acres

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

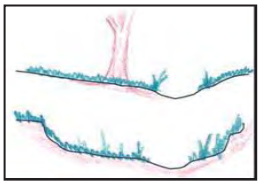
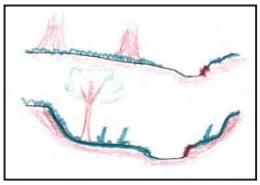
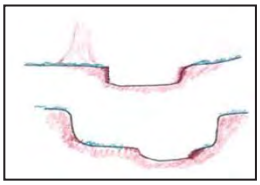
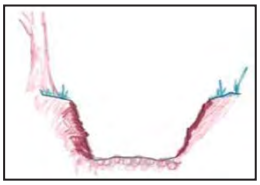
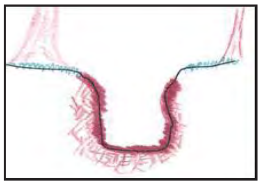
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	12	Avg. Banks:	5
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	2

Notes: Extreme drought. Signs of cattle use. Lower gradient, more incised, and fine substrate than upstream. Meanders and then parallels Palo Pinto Creek in old floodplain.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 31.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Ashe juniper, mesquite	60	Undesirable	High	1	50	0.5
2. Cedar elm, live oak, Ashe juniper	70	Mix	High	2	50	1
3.						
4.						
5.						

Score: 1.5

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Ashe juniper, mesquite	60	Undesirable	High	1	50	0.5
2. Cedar elm, live oak, Ashe juniper	70	Mix	High	2	50	1
3.						
4.						
5.						

Score: 1.5

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 5	Gravel: 10	Fines (silt, clay, muck): 75	Artificial:
Cobble: 10	Sand:	Bedrock:	Other:

Score: 3

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	0	0	0	0	0	0	0	0	0	0	0	0	0

Average: 0.0 **Score:** 0

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☒ Dry channel and no observable pools or interstitial flow (0)

Score: 0

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-6 SAR No.: MS-6-2 Size (LF): 735 Date: 4/23/14 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 100 acres

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Extreme drought. Signs of cattle use. Downstream of rock outcrop. Crossed by trail.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	12	Avg. Banks:	4
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	1

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	21.7
	Bank condition	4		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	1.0	Sum of bank scores / 10 x 25	5.0
	Riparian buffer (right bank)	1.0		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	12.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0
	Channel flow status	0		
			Sum of core element scores = overall TXRAM stream score	39
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	39

Representative Site Photograph:

MS-6-2 facing downstream (southwest).

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-6 SAR No.: MS-6-2 Size (LF): 735 Date: 4/23/14 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 100 acres

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

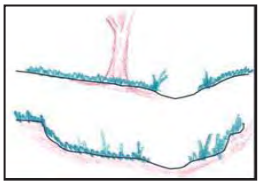
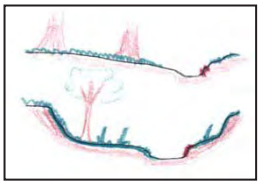
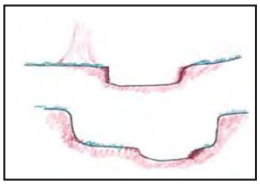
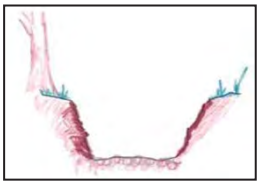
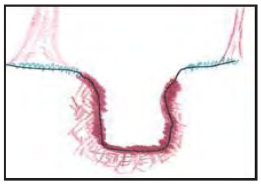
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	12	Avg. Banks:	4
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	1

Notes: Extreme drought. Signs of cattle use. Downstream of rock outcrop. Crossed by trail.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	(4)	3	2	1

Score: 4

Bank Condition

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 10 % Average: 10.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 31.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Ashe juniper, mesquite, live oak, cedar elm, cactus	60	Undesirable	High	1	50	0.5
2. Pasture	10	Undesirable	High	1	50	0.5
3.						
4.						
5.						

Score: 1.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Ashe juniper, mesquite, live oak, cedar elm, cactus	60	Undesirable	High	1	50	0.5
2. Pasture	10	Undesirable	High	1	50	0.5
3.						
4.						
5.						

Score: 1.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 25	Gravel: 20	Fines (silt, clay, muck): 10	Artificial:
Cobble: 20	Sand:	Bedrock: 25	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	0	0	0	0	0	0	0						

Average: 0.0 **Score:** 0

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☒ Dry channel and no observable pools or interstitial flow (0)

Score: 0

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-6 SAR No.: MS-6-3 Size (LF): 502 Date: 4/23/14 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 100 acres

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Extreme drought. Signs of cattle use. Downslope of swales in pasture to rock outcrop.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	10	Avg. Banks:	2
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	2	Avg. OHWM:	0.5

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	5	Sum of metric scores / 15 x 25	23.3
	Bank condition	5		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.0	Sum of bank scores / 10 x 25	5.0
	Riparian buffer (right bank)	1.0		
In-stream condition	Substrate composition	2	Sum of metric scores / 10 x 25	5.0
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0
	Channel flow status	0		
			Sum of core element scores = overall TXRAM stream score	33
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	33

Representative Site Photograph:

MS-6-3 facing downstream (west).

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-6 SAR No.: MS-6-3 Size (LF): 502 Date: 4/23/14 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 100 acres

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

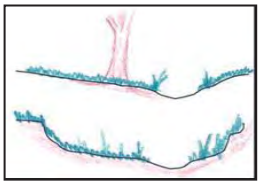
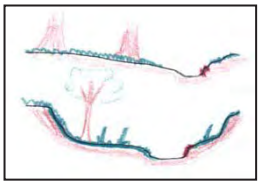
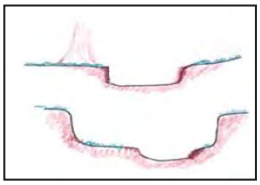
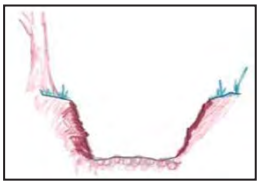
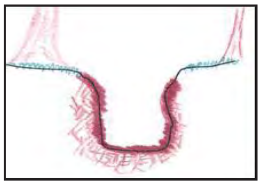
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	10	Avg. Banks:	2
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	2	Avg. OHWM:	0.5

Notes: Extreme drought. Signs of cattle use. Downslope of swales in pasture to rock outcrop.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
(5)	4	3	2	1

Score: 5

Bank Condition

Left Bank Active Erosion: 0 % Right Bank Active Erosion: 0 % Average: 0.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 5

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 30.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Pasture with grasses, cactus, mesquite, Ashe juniper	10	Undesirable	High	1	100	1
2.						
3.						
4.						
5.						

Score: 1.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Pasture with grasses, cactus, mesquite, Ashe juniper	10	Undesirable	High	1	100	1
2.						
3.						
4.						
5.						

Score: 1.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 5	Gravel: 5	Fines (silt, clay, muck): 80	Artificial:
Cobble: 5	Sand:	Bedrock: 5	Other:

Score: 2

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	0	0	0	0	0	0							

Average: 0.0 **Score:** 0

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☒ Dry channel and no observable pools or interstitial flow (0)

Score: 0

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-7 SAR No.: MS-7-1 Size (LF): 1,812 Date: 4/23/14 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 45 acres

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Extreme drought. Signs of cattle use. Downslope of gravel road to confluence with Palo Pinto Creek.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	12	Avg. Banks:	5
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	1

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	18.3
	Bank condition	4		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.4	Sum of bank scores / 10 x 25	7.0
	Riparian buffer (right bank)	1.4		
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	7.5
	In-stream habitat	0		
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0
	Channel flow status	0		
			Sum of core element scores = overall TXRAM stream score	33
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	33

Representative Site Photograph:

MS-7-1 facing upstream (north).

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-7 SAR No.: MS-7-1 Size (LF): 1,812 Date: 4/23/14 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 45 acres

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

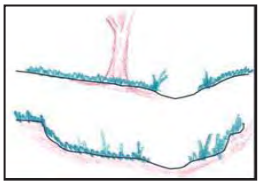
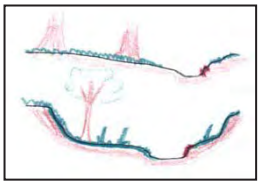
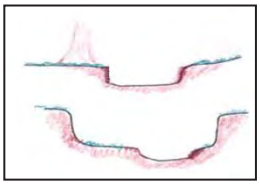
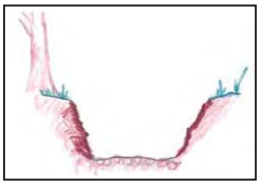
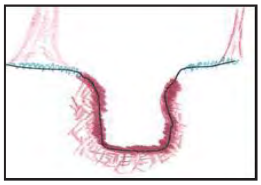
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	12	Avg. Banks:	5
Avg. Waters Edge:	-	Avg. Water:	-
Avg. OHWM:	3	Avg. OHWM:	1

Notes: Extreme drought. Signs of cattle use. Downslope of gravel road to confluence with Palo Pinto Creek.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 10 % Right Bank Active Erosion: 10 % Average: 10.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 4

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 31.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Ashe juniper, mesquite, live oak	50	Undesirable	High	1	60	0.6
2. Cedar elm, pecan, Ashe juniper	70	Mix	High	2	40	0.8
3.						
4.						
5.						

Score: 1.4

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Ashe juniper, mesquite, live oak	50	Undesirable	High	1	60	0.6
2. Cedar elm, pecan, Ashe juniper	70	Mix	High	2	40	0.8
3.						
4.						
5.						

Score: 1.4

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder:	Gravel: 30	Fines (silt, clay, muck): 60	Artificial:
Cobble: 10	Sand:	Bedrock:	Other:

Score: 3

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation													
Rootmats													
Rootwads													
Woody/Leafy Debris													
Boulders/Cobbles													
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	0	0	0	0	0	0	0	0	0	0	0	0	0

Average: 0.0 **Score:** 0

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☒ Dry channel and no observable pools or interstitial flow (0)

Score: 0

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☒ No water present in the channel; 100% of channel substrate exposed (0)

Score: 0

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-9 SAR No.: MS-9-1 Size (LF): 521 Date: 4/22/14 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 7 sq. mi.

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

Notes: Extreme drought. Signs of cattle use. Downstream of property boundary to confluence with Palo Pinto Creek. Small pool present. In-stream habitat estimated from reference reach.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	20	Avg. Banks:	5
Avg. Waters Edge:	6	Avg. Water:	0.5
Avg. OHWM:	10	Avg. OHWM:	2

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	21.7
	Bank condition	5		
	Sediment deposition	5		
Riparian buffer condition	Riparian buffer (left bank)	2.0	Sum of bank scores / 10 x 25	10.0
	Riparian buffer (right bank)	2.0		
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	17.5
	In-stream habitat	2		
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	12.5
	Channel flow status	2		
			Sum of core element scores = overall TXRAM stream score	62
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	62

Representative Site Photograph:

MS-9-1 facing upstream (northwest).

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-9 SAR No.: MS-9-1 Size (LF): 521 Date: 4/22/14 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☐ Previously ☒ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 7 sq. mi.

Aerial Photo Date and Source: 2012 NAIP / BING Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☐ Yes ☒ No (If no, explain in Notes)

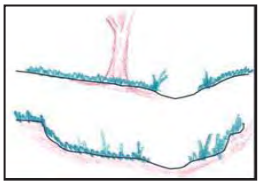
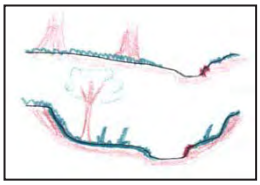
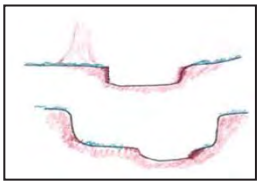
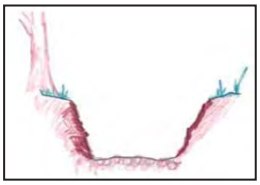
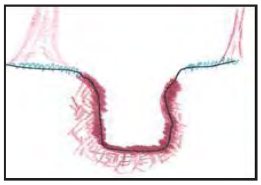
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	20	Avg. Banks:	5
Avg. Waters Edge:	6	Avg. Water:	0.5
Avg. OHWM:	10	Avg. OHWM:	2

Notes: Extreme drought. Signs of cattle use. Downstream of property boundary to confluence with Palo Pinto Creek. Small pool present. In-stream habitat estimated from reference reach.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 5 % Right Bank Active Erosion: 5 % Average: 5.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 5

Sediment Deposition

☒ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☐ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 5

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 60.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Cedar elm, pecan, live oak, Ashe juniper	70	Mix	High	2	100	2
2.						
3.						
4.						
5.						

Score: 2.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Cedar elm, pecan, live oak, Ashe juniper	70	Mix	High	2	100	2
2.						
3.						
4.						
5.						

Score: 2.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 5	Gravel: 60	Fines (silt, clay, muck): 5	Artificial:
Cobble: 20	Sand:	Bedrock: 10	Other:

Score: 5

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks													
Overhanging Vegetation	✓	✓		✓									
Rootmats													
Rootwads			✓										
Woody/Leafy Debris													
Boulders/Cobbles	✓	✓	✓	✓									
Aquatic Macrophytes													
Riffle/Pool Sequence													
Artificial Habitat Enhancement													
Other													
Total No. Present	2	2	2	2									

Average: 2.0 **Score:** 2

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☐ Continual pool of water but lacking noticeable flow (3)
- ☒ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 2

Channel Flow Status

- ☐ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☒ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 2

Appendix D: Stream Final Scoring Sheets for Proposed Mitigation – Upstream Mitigation SARs (including Reference) Proposed Conditions

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-1 / PS-1 SAR No.: 1 Size (LF): 1,753 Date: 2016 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 44 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-1 SAR No.: 1	Stream ID/Name: PS-1 SAR No.: 1	Stream ID/Name: PS-1 SAR No.: 1
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for floodplain connectivity based on upstream channel dam modification to restore channel processes, and scores will improve for bank condition and sediment deposition after cattle removal allows revegetation. In-stream habitat score will increase with upstream restoration and improvement of other metrics.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 50	Avg. Banks: 12	50	12	50	12	50	12
Avg. Waters Edge: 15	Avg. Water: 1	15	1	15	1	15	1
Avg. OHWM: 30	Avg. OHWM: 3	30	3	30	3	30	3

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	18.3	3	20.0	4	23.3	4	23.3
	Bank condition	4			4		5		5	
	Sediment deposition	4			5		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1	Sum of bank scores / 10 x 25	7.5	2.8	14.0	3.8	19.0	4.8	24.0
	Riparian buffer (right bank)	2			2.8		3.8		4.8	
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	22.5	5	22.5	5	25.0	5	25.0
	In-stream habitat	4			4		5		5	
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	15.6	2	15.6	2	15.6	2	15.6
	Channel flow status	3			3		3		3	
Sum of core element scores = overall TXRAM stream score				64	-	72	-	83	-	88
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				64	-	72	-	83	-	88

Representative Site Photograph:

Existing segment of stream (MS-1-1) facing upstream (west). A portion of channel is split with signs of livestock use.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of channel and planting vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-1 / PS-1 SAR No.: 2 Size (LF): 716 Date: 2016 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 44 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-1 SAR No.: 2	Stream ID/Name: PS-1 SAR No.: 2	Stream ID/Name: PS-1 SAR No.: 2
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for floodplain connectivity based on upstream channel dam modification to restore channel processes, and scores will improve for bank condition and sediment deposition after cattle removal allows revegetation. In-stream habitat score will increase with upstream restoration and improvement of other metrics.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 50	Avg. Banks: 10	50	10	50	10	50	10
Avg. Waters Edge: 25	Avg. Water: 2	25	2	25	2	25	2
Avg. OHWM: 30	Avg. OHWM: 4	30	4	30	4	30	4

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	2	Sum of metric scores / 15 x 25	15.0	2	16.7	3	21.7	3	21.7
	Bank condition	3			4		5		5	
	Sediment deposition	4			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1	Sum of bank scores / 10 x 25	4.5	2.8	11.5	3.8	16.5	5	22.5
	Riparian buffer (right bank)	0.8			1.8		2.8		4	
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	22.5	5	22.5	5	25.0	5	25.0
	In-stream habitat	4			4		5		5	
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	15.6	2	15.6	2	15.6	2	15.6
	Channel flow status	3			3		3		3	
Sum of core element scores = overall TXRAM stream score				58	-	66	-	79	-	85
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				58	-	66	-	79	-	85

Representative Site Photograph:

Existing segment of stream (MS-1-2) facing upstream. Stream banks exhibit livestock usage. Channel parallels railroad tracks.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of channel and planting vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-1 / PS-1 SAR No.: 3 Size (LF): 1,022 Date: 2016 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 44 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-1 SAR No.: 3	Stream ID/Name: PS-1 SAR No.: 3	Stream ID/Name: PS-1 SAR No.: 3
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for floodplain connectivity based on upstream channel dam modification to restore channel processes, and scores will improve for bank condition and sediment deposition after cattle removal allows revegetation. In-stream habitat score will increase with upstream restoration and improvement of other metrics.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 50	Avg. Banks: 8	50	8	50	8	50	8
Avg. Waters Edge: 10	Avg. Water: 1	10	1	10	1	10	1
Avg. OHWM: 30	Avg. OHWM: 3	30	3	30	3	30	3

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	18.3	3	20.0	4	23.3	4	23.3
	Bank condition	4			4		5		5	
	Sediment deposition	4			5		5		5	
Riparian buffer condition	Riparian buffer (left bank)	2	Sum of bank scores / 10 x 25	9.3	3	12.8	4	17.8	5	22.8
	Riparian buffer (right bank)	1.7			2.1		3.1		4.1	
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	22.5	5	22.5	5	25.0	5	25.0
	In-stream habitat	4			4		5		5	
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	12.5	2	12.5	2	12.5	2	12.5
	Channel flow status	2			2		2		2	
Sum of core element scores = overall TXRAM stream score				63	-	68	-	79	-	84
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				63	-	68	-	79	-	84

Representative Site Photograph:

Existing segment of stream (MS-1-3) facing upstream (northwest). A small pool of bedrock substrate was present. Signs of erosion and livestock usage observed.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of channel and planting vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-1 / PS-1 SAR No.: 4 Size (LF): 984 Date: 2016 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 44 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-1 SAR No.: 4	Stream ID/Name: PS-1 SAR No.: 4	Stream ID/Name: PS-1 SAR No.: 4
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for floodplain connectivity based on upstream channel dam modification to restore channel processes, and scores will improve for bank condition and sediment deposition after cattle removal allows revegetation. In-stream habitat score will increase with upstream restoration and improvement of other metrics.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 50	Avg. Banks: 8	50	8	50	8	50	8
Avg. Waters Edge: 10	Avg. Water: 1	10	1	10	1	10	1
Avg. OHWM: 30	Avg. OHWM: 3	30	3	30	3	30	3

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	18.3	3	20.0	4	23.3	4	23.3
	Bank condition	4			4		5		5	
	Sediment deposition	4			5		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1.6	Sum of bank scores / 10 x 25	8.5	2.8	14.0	3.8	19.0	3.8	21.5
	Riparian buffer (right bank)	1.8			2.8		3.8		4.8	
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	22.5	5	22.5	5	25.0	5	25.0
	In-stream habitat	4			4		5		5	
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	12.5	2	12.5	2	12.5	2	12.5
	Channel flow status	2			2		2		2	
Sum of core element scores = overall TXRAM stream score				62	-	69	-	80	-	82
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				62	-	69	-	80	-	82

Representative Site Photograph:

Existing section of stream (MS-1-4) facing upstream (northwest). Cattle present. Some pooling is present.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of channel and planting vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-1 / PS-1 SAR No.: 5 Size (LF): 1,023 Date: 2016 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 44 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-1 SAR No.: 5	Stream ID/Name: PS-1 SAR No.: 5	Stream ID/Name: PS-1 SAR No.: 5
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Scores will improve for bank condition and sediment deposition based on upstream channel dam modification to restore channel processes and after cattle removal allows revegetation. In-stream habitat score will increase with upstream restoration and improvement of other metrics.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 50	Avg. Banks: 6	50	6	50	6	50	6
Avg. Waters Edge: 20	Avg. Water: 1	20	1	20	1	20	1
Avg. OHWM: 30	Avg. OHWM: 3	30	3	30	3	30	3

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	20.0	4	20.0	4	23.3	4	23.3
	Bank condition	4			4		5		5	
	Sediment deposition	4			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1	Sum of bank scores / 10 x 25	5.0	2.8	14.0	3.8	19.0	5	25.0
	Riparian buffer (right bank)	1			2.8		3.8		5	
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	22.5	5	22.5	5	25.0	5	25.0
	In-stream habitat	4			4		5		5	
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	15.6	2	15.6	2	15.6	2	15.6
	Channel flow status	3			3		3		3	
Sum of core element scores = overall TXRAM stream score				63	-	72	-	83	-	89
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				63	-	72	-	83	-	89

Representative Site Photograph:

Existing stream segment (MS-1-5) facing upstream (northwest). A large shallow pool is present over a predominately bedrock substrate. Area frequented by livestock.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of channel and planting vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: Restoration of current impoundment / PS-1 SAR No.: 6 Size (LF): 1,199 Date: 2016 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 44 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-1 SAR No.: 6	Stream ID/Name: PS-1 SAR No.: 6	Stream ID/Name: PS-1 SAR No.: 6
Additional Notes: Proposed condition scores at the end of construction. Channel, in-stream, and hydrologic condition will increase (be re-established) with modification of channel dam to restore channel processes.	Additional Notes: Proposed condition scores at the end of monitoring.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: N/A	Avg. Banks: N/A	50	6	50	6	50	6
Avg. Waters Edge: N/A	Avg. Water: N/A	20	1	20	1	20	1
Avg. OHWM: N/A	Avg. OHWM: N/A	30	3	30	3	30	3

Scoring Table

					Year/Option ***End of Construction***		*Year/Option* ***End of Monitoring***		*Year/Option* ***At Maturity***	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	0	Sum of metric scores / 15 x 25	0	4	20	4	23.3	4	23.3
	Bank condition	0			4		5		5	
	Sediment deposition	0			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	0	Sum of bank scores / 10 x 25	0	2.7	14.3	3.6	19.0	4.5	23.8
	Riparian buffer (right bank)	0			3		4		5	
In-stream condition	Substrate composition	0	Sum of metric scores / 10 x 25	0	4	17.5	5	22.5	5	25.0
	In-stream habitat	0			3		4		5	
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0	2	15.6	2	15.6	2	15.6
	Channel flow status	0			3		3		3	
Sum of core element scores = overall TXRAM stream score				0	-	67	-	80	-	88
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				0	-	67	-	80	-	88

Representative Site Photograph:

Stream is currently impounded (right side of photo, upstream of channel dam)

See design and description of proposed activities in mitigation plan. After construction includes restoration of channel and planting vegetation with livestock exclusion.

See design and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.

See design and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-2 / PS-2 SAR No.: 1 Size (LF): 860 Date: 2016 Evaluator(s): RW, DT

Stream Type: Ephemeral/Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 470 acres.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-2 SAR No.: 1	Stream ID/Name: PS-2 SAR No.: 1	Stream ID/Name: PS-2 SAR No.: 1
Additional Notes: Proposed condition scores at the end of construction. Anticipated to become intermittent with upstream pond removals / channel restoration as well as vegetation management, considering watershed size and reference reaches.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for floodplain connectivity based on upstream dam removals to restore channel processes, and scores will improve for bank condition after cattle removal allows revegetation. In-stream habitat score will increase with upstream restoration and hydrology metrics based on restoring natural stream flows.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community. Score for sediment deposition will improve with restoration of channel processes and removal of cattle allowing revegetation.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 40	Avg. Banks: 5	40	5	40	5	40	5
Avg. Waters Edge: --	Avg. Water: --	--	--	--	--	--	--
Avg. OHWM: 10	Avg. OHWM: 1	10	1	10	1	10	1

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	18.3	3	18.3	4	23.3	4	23.3
	Bank condition	4			4		5		5	
	Sediment deposition	4			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1.9	Sum of bank scores / 10 x 25	9.5	2.5	12.5	3.5	17.5	4.5	22.5
	Riparian buffer (right bank)	1.9			2.5		3.5		4.5	
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	15.0	5	15.0	5	17.5	5	17.5
	In-stream habitat	1			1		2		2	
Hydrologic condition	Flow regime	1	Sum of metric scores / 8 x 25	6.3	1	6.3	2	12.5	2	12.5
	Channel flow status	1			1		2		2	
Sum of core element scores = overall TXRAM stream score				49	-	52	-	71	-	76
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				49	-	52	-	71	-	76

Representative Site Photograph:

Existing stream segment (MS-2-1) facing south (downstream). This area is located upstream of a culvert underneath railroad tracks. Signs of cattle usage and moderate erosion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of channel and planting vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation, as well as becoming intermittent as described above.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-2 / PS-2 SAR No.: 2 Size (LF): 912 Date: 2016 Evaluator(s): RW, DT

Stream Type: Ephemeral/Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 470 ac.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-2 SAR No.: 2	Stream ID/Name: PS-2 SAR No.: 2	Stream ID/Name: PS-2 SAR No.: 2
Additional Notes: Proposed condition scores at the end of construction. Anticipated to become intermittent with upstream pond removals / channel restoration as well as vegetation management, considering watershed size and reference reaches.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for floodplain connectivity based on upstream dam removals to restore channel processes, and scores will improve for bank condition after cattle removal allows revegetation. In-stream habitat and substrate scores will increase with upstream restoration and hydrology metrics based on restoring natural sediment transport and stream flows.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community. Score for sediment deposition will improve with restoration of channel processes and removal of cattle allowing revegetation.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 20	Avg. Banks: 6	20	6	20	6	20	6
Avg. Waters Edge: --	Avg. Water: --	--	--	--	--	--	--
Avg. OHWM: 10	Avg. OHWM: 2	10	2	10	2	10	2

Scoring Table

Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Year/Option _End of Construction_***		***Year/Option _End of Monitoring_***		***Year/Option _At Maturity_***	
					Proposed Metric Score	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	2	Sum of metric scores / 15 x 25	11.7	2	16.7	4	23.3	4	23.3
	Bank condition	2			4		5		5	
	Sediment deposition	3			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1	Sum of bank scores / 10 x 25	5.0	2.5	12.5	3.5	17.5	4.5	22.5
	Riparian buffer (right bank)	1			2.5		3.5		4.5	
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	10.0	3	10.0	4	15.0	4	15.0
	In-stream habitat	1			1		2		2	
Hydrologic condition	Flow regime	1	Sum of metric scores / 8 x 25	6.3	1	6.3	2	12.5	2	12.5
	Channel flow status	1			1		2		2	
Sum of core element scores = overall TXRAM stream score				33	-	46	-	68	-	73
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				33	-	46	-	68	-	73

Representative Site Photograph:

Existing stream segment (MS-2-2) facing downstream (southeast). Channel area is downstream of a gravel road and crossed by a pipeline ROW. Small pockets of water in channel used by livestock.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of channel and planting vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation, as well as becoming intermittent as described above.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-2 / PS-2 SAR No.: 3 Size (LF): 548 Date: 2016 Evaluator(s): RW, DT

Stream Type: Ephemeral/Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 470 ac.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-2 SAR No.: 3	Stream ID/Name: PS-2 SAR No.: 3	Stream ID/Name: PS-2 SAR No.: 3
Additional Notes: Proposed condition scores at the end of construction. Anticipated to become intermittent with upstream pond removals / channel restoration as well as vegetation management, considering watershed size and reference reaches.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for floodplain connectivity based on upstream dam removals to restore channel processes, and scores will improve for bank condition after cattle removal allows revegetation. In-stream habitat and substrate scores will increase with upstream restoration and hydrology metrics based on restoring natural sediment transport and stream flows.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community. Score for sediment deposition will improve with restoration of channel processes and removal of cattle allowing revegetation.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 12	Avg. Banks: 5	12	5	12	5	12	5
Avg. Waters Edge: --	Avg. Water: --	--	--	--	--	--	--
Avg. OHWM: --	Avg. OHWM: --	--	--	--	--	--	--

Scoring Table

Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Year/Option _End of Construction_ Proposed Metric Score***	***Year/Option _End of Construction_ Proposed Core Element Score***	***Year/Option _End of Monitoring_ Proposed Metric Score***	***Year/Option _End of Monitoring_ Proposed Core Element Score***	***Year/Option _At Maturity_ Proposed Metric Score***	***Year/Option _At Maturity_ Proposed Core Element Score***
Channel condition	Floodplain connectivity	2	Sum of metric scores / 15 x 25	15.0	4	20.0	4	23.3	4	23.3
	Bank condition	4			4		5		5	
	Sediment deposition	3			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1	Sum of bank scores / 10 x 25	5.0	2	10.0	3	15.0	4	20.0
	Riparian buffer (right bank)	1			2		3		4	
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	7.5	3	10.0	4	15.0	4	15.0
	In-stream habitat	0			1		2		2	
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0	1	6.3	2	12.5	2	12.5
	Channel flow status	0			1		2		2	
Sum of core element scores = overall TXRAM stream score				28	-	46	-	66	-	71
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				28	-	46	-	66	-	71

Representative Site Photograph:

Existing stream segment (MS-2-3) facing downstream (south). Abandoned channel downstream of an impoundment with restoration potential. Flow has been diverted from this area sometime in the past. Signs of cattle activity.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes restoration of channel and planting vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation as well as becoming intermittent as described above.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: Restoration of impoundment on MS-2 / PS-2 SAR No.: 4 Size (LF): 562 Date: 2016 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 442 ac.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-2 SAR No.: 4	Stream ID/Name: PS-2 SAR No.: 4	Stream ID/Name: PS-2 SAR No.: 4
Additional Notes: Proposed condition scores at the end of construction. Anticipated to become intermittent with upstream pond removals / channel restoration as well as vegetation management, considering watershed size and reference reaches. Channel, in-stream, and hydrologic condition will increase (be re-established) with dam removal to restore channel processes.	Additional Notes: Proposed condition scores at the end of monitoring.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: N/A	Avg. Banks: N/A	10	1	10	1	10	1
Avg. Waters Edge: N/A	Avg. Water: N/A	-	-	-	-	-	-
Avg. OHWM: N/A	Avg. OHWM: N/A	6	0.5	6	0.5	6	0.5

Scoring Table

					*Year/Option _End of Construction_*		*Year/Option _End of Monitoring_*		*Year/Option _At Maturity_*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	0	Sum of metric scores / 15 x 25	0	4	20.0	4	23.3	4	23.3
	Bank condition	0			4		5		5	
	Sediment deposition	0			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	0	Sum of bank scores / 10 x 25	0	2	10.0	3	15.0	4	20.0
	Riparian buffer (right bank)	0			2		3		4	
In-stream condition	Substrate composition	0	Sum of metric scores / 10 x 25	0	3	10.0	4	15.0	4	15.0
	In-stream habitat	0			1		2		2	
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0	1	6.3	2	12.5	2	12.5
	Channel flow status	0			1		2		2	
Sum of core element scores = overall TXRAM stream score				0	-	46	-	66	-	71
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				0	-	46	-	66	-	71

Representative Site Photograph:

Stream is currently impounded

See design and description of proposed activities in mitigation plan. After construction includes restoration of channel and planting vegetation with livestock exclusion.

See design and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation, as well as becoming intermittent as described above.

See design and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-3 / PS-3 SAR No.: 1 Size (LF): 476 Date: 2016 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 165 ac.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-3 SAR No.: 1	Stream ID/Name: PS-3 SAR No.: 1	Stream ID/Name: PS-3 SAR No.: 1
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for bank condition after cattle removal allows revegetation.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community. Score for sediment deposition will improve with removal of cattle allowing revegetation.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 12	Avg. Banks: 3	12	3	12	3	12	3
Avg. Waters Edge: --	Avg. Water: --	--	--	--	--	--	--
Avg. OHWM: 3	Avg. OHWM: 1	3	1	3	1	3	1

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	20.0	4	20.0	4	23.3	4	23.3
	Bank condition	4			4		5		5	
	Sediment deposition	4			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1	Sum of bank scores / 10 x 25	5.0	2	10.0	3	15.0	4	20.0
	Riparian buffer (right bank)	1			2		3		4	
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	7.5	3	7.5	3	7.5	3	7.5
	In-stream habitat	0			0		0		0	
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0	0	0.0	0	0.0	0	0.0
	Channel flow status	0			0		0		0	
Sum of core element scores = overall TXRAM stream score				33	-	38	-	46	-	51
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				33	-	38	-	46	-	51

Representative Site Photograph:

	*Existing stream section (MS-3-1) facing downstream (south).*	*See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of channel and planting vegetation with livestock exclusion.*	*See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.*	*See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.*

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-3 / PS-3 SAR No.: 2 Size (LF): 1,344 Date: 2016 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 160 ac.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-3 SAR No.: 2	Stream ID/Name: PS-3 SAR No.: 2	Stream ID/Name: PS-3 SAR No.: 2
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for bank condition after cattle removal allows revegetation.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community. Score for sediment deposition will improve with removal of cattle allowing revegetation.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 12	Avg. Banks: 3	12	3	12	3	12	3
Avg. Waters Edge: --	Avg. Water: --	--	--	--	--	--	--
Avg. OHWM: 3	Avg. OHWM: 1	3	1	3	1	3	1

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	20.0	4	20.0	4	23.3	4	23.3
	Bank condition	4			4		5		5	
	Sediment deposition	4			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1	Sum of bank scores / 10 x 25	5.0	2	10.0	3	15.0	4	20.0
	Riparian buffer (right bank)	1			2		3		4	
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	7.5	3	7.5	3	7.5	3	7.5
	In-stream habitat	0			0		0		0	
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0	0	0.0	0	0.0	0	0.0
	Channel flow status	0			0		0		0	
Sum of core element scores = overall TXRAM stream score				33	-	38	-	46	-	51
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				33	-	38	-	46	-	51

Representative Site Photograph:

Existing stream section (MS-3-2) facing downstream (south).

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of channel and planting vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-4 / PS-4 SAR No.: 1 Size (LF): 852 Date: 2016 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 185 acres

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-4 SAR No.: 1	Stream ID/Name: PS-4 SAR No.: 1	Stream ID/Name: PS-4 SAR No.: 1
Additional Notes: Proposed condition scores at the end of construction. Flow regime score will increase with upstream dam removal to restore hydrology of natural stream flows and pooling.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for bank condition after cattle removal allows revegetation. Substrate composition score will increase with upstream restoration to improve sediment transport similar to reference site.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community. Score for sediment deposition will improve with restoration of channel processes and removal of cattle allowing revegetation.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 10	Avg. Banks: 2	10	2	10	2	10	2
Avg. Waters Edge: --	Avg. Water: --	--	--	--	--	--	--
Avg. OHWM: 3	Avg. OHWM: 1	3	1	3	1	3	1

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	15.0	4	18.3	4	23.3	4	23.3
	Bank condition	3			4		5		5	
	Sediment deposition	2			3		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1	Sum of bank scores / 10 x 25	5.0	2	10.0	3	15.0	4	20.0
	Riparian buffer (right bank)	1			2		3		4	
In-stream condition	Substrate composition	2	Sum of metric scores / 10 x 25	5.1	2	5.0	3	7.5	3	7.5
	In-stream habitat	0			0		0		0	
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0	1	3.1	1	3.1	1	3.1
	Channel flow status	0			0		0		0	
Sum of core element scores = overall TXRAM stream score				25	-	36	-	49	-	54
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				25	-	36	-	49	-	54

Representative Site Photograph:

Existing stream segment (MS-4-1) facing upstream (northeast). This area is located upstream of an impoundment with evidence of cattle usage.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of channel and planting vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-4 / PS-4 SAR No.: 2 Size (LF): 1,290 Date: 2016 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 130 ac.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-4 SAR No.: 2	Stream ID/Name: PS-4 SAR No.: 2	Stream ID/Name: PS-4 SAR No.: 2
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for bank condition after cattle removal allows revegetation.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community. Score for sediment deposition will improve with removal of cattle allowing revegetation.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 12	Avg. Banks: 3	12	3	12	3	12	3
Avg. Waters Edge: --	Avg. Water: --	--	--	--	--	--	--
Avg. OHWM: 3	Avg. OHWM: 1	3	1	3	1	3	1

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	20.0	4	20.0	4	23.3	4	23.3
	Bank condition	4			4		5		5	
	Sediment deposition	4			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1	Sum of bank scores / 10 x 25	5.0	2	10.0	3	15.0	4	20.0
	Riparian buffer (right bank)	1			2		3		4	
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	7.5	3	7.5	3	7.5	3	7.5
	In-stream habitat	0			0		0		0	
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0	0	0.0	0	0.0	0	0.0
	Channel flow status	0			0		0		0	
Sum of core element scores = overall TXRAM stream score				33	-	38	-	46	-	51
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				33	-	38	-	46	-	51

Representative Site Photograph:

Existing stream section (MS-4-2) facing downstream (southwest).

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of channel and planting vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-5 / PS-5 SAR No.: 1 Size (LF): 1,002 Date: 2016 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 40 ac.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-5 SAR No.: 1	Stream ID/Name: PS-5 SAR No.: 1	Stream ID/Name: PS-5 SAR No.: 1
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve bank condition after cattle removal allows revegetation	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 12	Avg. Banks: 4	12	4	12	4	12	4
Avg. Waters Edge: --	Avg. Water: --	--	--	--	--	--	--
Avg. OHWM: 3	Avg. OHWM: 1	3	1	3	1	3	1

Scoring Table

						Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***		***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	21.7		4	21.7	4	23.3	4	23.3
	Bank condition	4				4		5		5	
	Sediment deposition	5				5		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1	Sum of bank scores / 10 x 25	5.0		2	10.0	3	15.0	4	20.0
	Riparian buffer (right bank)	1				2		3		4	
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	12.5		5	12.5	5	12.5	5	12.5
	In-stream habitat	0				0		0		0	
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0		0	0.0	0	0.0	0	0.0
	Channel flow status	0				0		0		0	
Sum of core element scores = overall TXRAM stream score				39		-	44	-	51	-	56
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0		-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				39		-	44	-	51	-	56

Representative Site Photograph:

Existing segment of SAR MS-5-1 facing upstream (northwest) from the downstream end. Signs of cattle use.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of channel and planting vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-5 / PS-5 SAR No.: 2 Size (LF): 967 Date: 2016 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 40 ac.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-5 SAR No.: 2	Stream ID/Name: PS-5 SAR No.: 2	Stream ID/Name: PS-5 SAR No.: 2
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve bank condition after cattle removal allows revegetation.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community. Score for sediment deposition will improve with removal of cattle allowing revegetation.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 12	Avg. Banks: 3	12	3	12	3	12	3
Avg. Waters Edge: --	Avg. Water: --	--	--	--	--	--	--
Avg. OHWM: 3	Avg. OHWM: 1	3	1	3	1	3	1

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	20.0	4	20.0	4	23.3	4	23.3
	Bank condition	4			4		5		5	
	Sediment deposition	4			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1	Sum of bank scores / 10 x 25	5.0	2	10.0	3	15.0	4	20.0
	Riparian buffer (right bank)	1			2		3		4	
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	7.5	3	7.5	3	7.5	3	7.5
	In-stream habitat	0			0		0		0	
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0	0	0.0	0	0.0	0	0.0
	Channel flow status	0			0		0		0	
Sum of core element scores = overall TXRAM stream score				33	-	38	-	46	-	51
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				33	-	38	-	46	-	51

Representative Site Photograph:

Existing stream section (MS-5-2) facing downstream (southwest). Within pasture used by livestock downslope of rock outcropping.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of channel and planting vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-6 / PS-6 SAR No.: 1 Size (LF): 2,600 Date: 2016 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 120 ac.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-6 SAR No.: 1	Stream ID/Name: PS-6 SAR No.: 1	Stream ID/Name: PS-6 SAR No.: 1
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for bank condition after cattle removal allows revegetation.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community. Score for sediment deposition will improve with removal of cattle allowing revegetation.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 12	Avg. Banks: 5	12	5	12	5	12	5
Avg. Waters Edge: --	Avg. Water: --	--	--	--	--	--	--
Avg. OHWM: 3	Avg. OHWM: 2	3	2	3	2	3	2

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7	3	18.3	3	20.0	3	20.0
	Bank condition	3			4		4		4	
	Sediment deposition	4			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1.5	Sum of bank scores / 10 x 25	7.5	2.5	12.5	3.2	16.0	4	20.0
	Riparian buffer (right bank)	1.5			2.5		3.2		4	
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	7.5	3	7.5	3	7.5	3	7.5
	In-stream habitat	0			0		0		0	
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0	0	0.0	0	0.0	0	0.0
	Channel flow status	0			0		0		0	
Sum of core element scores = overall TXRAM stream score				32	-	38	-	44	-	48
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				32	-	38	-	44	-	48

Representative Site Photograph:

Existing stream section (MS-6-1) facing downstream (southeast). Channel meanders and parallels Palo Pinto Creek in old floodplain. Signs of cattle use.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of channel and planting vegetation with livestock exclusion

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-6 / PS-6 SAR No.: 2 Size (LF): 735 Date: 2016 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 100 ac.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-6 SAR No.: 2	Stream ID/Name: PS-6 SAR No.: 2	Stream ID/Name: PS-6 SAR No.: 2
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for bank condition after cattle removal allows revegetation.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 12	Avg. Banks: 4	12	4	12	4	12	4
Avg. Waters Edge: --	Avg. Water: --	--	--	--	--	--	--
Avg. OHWM: 3	Avg. OHWM: 1	3	1	3	1	3	1

Scoring Table

Core Element	*Metric*	*Existing Metric Score*	*Core Element Score Calculation*	*Existing Core Element Score*	*Year/Option End of Construction* Proposed Metric Score	*Year/Option End of Construction* Proposed Core Element Score	*Year/Option End of Monitoring* Proposed Metric Score	*Year/Option End of Monitoring* Proposed Core Element Score	*Year/Option At Maturity* Proposed Metric Score	*Year/Option At Maturity* Proposed Core Element Score
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	21.7	4	21.7	4	23.3	4	23.3
	Bank condition	4			4		5		5	
	Sediment deposition	5			5		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1	Sum of bank scores / 10 x 25	5.0	2	10.0	3	15.0	4	20.0
	Riparian buffer (right bank)	1			2		3		4	
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	12.5	5	12.5	5	12.5	5	12.5
	In-stream habitat	0			0		0		0	
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0	0	0.0	0	0.0	0	0.0
	Channel flow status	0			0		0		0	
Sum of core element scores = overall TXRAM stream score				39	-	44	-	51	-	56
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				39	-	44	-	51	-	56

Representative Site Photograph:

Existing segment of creek (MS-6-2) facing downstream (southwest).Signs of cattle use. Area downstream of rock outcropping.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of channel and planting vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-6 / PS-6 SAR No.: 3 Size (LF): 502 Date: 2016 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 100 acres.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-6 SAR No.: 3	Stream ID/Name: PS-6 SAR No.: 3	Stream ID/Name: PS-6 SAR No.: 3
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community. Score for sediment deposition will improve with removal of cattle allowing revegetation.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 10	Avg. Banks: 2	10	2	10	2	10	2
Avg. Waters Edge: --	Avg. Water: --	--	--	--	--	--	--
Avg. OHWM: 2	Avg. OHWM: 0.5	2	0.5	2	0.5	2	0.5

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	5	Sum of metric scores / 15 x 25	23.3	5	23.3	5	25.0	5	25.0
	Bank condition	5			5		5		5	
	Sediment deposition	4			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1	Sum of bank scores / 10 x 25	5.0	2	10.0	3	15.0	4	20.0
	Riparian buffer (right bank)	1			2		3		4	
In-stream condition	Substrate composition	2	Sum of metric scores / 10 x 25	5.0	2	5.0	2	5.0	2	5.0
	In-stream habitat	0			0		0		0	
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0	0	0.0	0	0.0	0	0.0
	Channel flow status	0			0		0		0	
Sum of core element scores = overall TXRAM stream score				33	-	38	-	45	-	50
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				33	-	38	-	45	-	50

Representative Site Photograph:

Existing stream segment (MS-6-3) facing downstream (west). Signs of cattle activity. Area is downslope of several swales in a pasture with rock outcropping.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of channel and planting vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-7 / PS-7 SAR No.: 1 Size (LF): 1,812 Date: 2016 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 45 ac.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-7 SAR No.: 1	Stream ID/Name: PS-7 SAR No.: 1	Stream ID/Name: PS-7 SAR No.: 1
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score for sediment deposition will improve with removal of cattle allowing revegetation.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 12	Avg. Banks: 5	12	5	12	5	12	5
Avg. Waters Edge: --	Avg. Water: --	--	--	--	--	--	--
Avg. OHWM: 3	Avg. OHWM: 1	3	1	3	1	3	1

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	18.3	3	20.0	3	21.7	3	21.7
	Bank condition	4			5		5		5	
	Sediment deposition	4			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1.4	Sum of bank scores / 10 x 25	7.0	3.2	16.0	4	20.0	5	25.0
	Riparian buffer (right bank)	1.4			3.2		4		5	
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	7.5	3	7.5	3	7.5	3	7.5
	In-stream habitat	0			0		0		0	
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0	0	0.0	0	0.0	0	0.0
	Channel flow status	0			0		0		0	
Sum of core element scores = overall TXRAM stream score				33	-	44	-	49	-	54
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				33	-	44	-	49	-	54

Representative Site Photograph:

Existing section of stream (MS-7-1) facing upstream (north).Downslope of gravel road leading to confluence with Palo Pinto Creek. Signs of cattle use.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of channel and planting vegetation with livestock exclusion

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-8 / PS-8 SAR No.: 1 Size (LF): 730 Date: 2016 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 30 ac.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-8 SAR No.: 1	Stream ID/Name: PS-8 SAR No.: 1	Stream ID/Name: PS-8 SAR No.: 1
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for bank condition after cattle removal allows revegetation.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community. Score for sediment deposition will improve with removal of cattle allowing revegetation.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 12	Avg. Banks: 3	12	3	12	3	12	3
Avg. Waters Edge: --	Avg. Water: --	--	--	--	--	--	--
Avg. OHWM: 3	Avg. OHWM: 1	3	1	3	1	3	1

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	20.0	4	20.0	4	23.3	4	23.3
	Bank condition	4			4		5		5	
	Sediment deposition	4			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1	Sum of bank scores / 10 x 25	5.0	2	10.0	3	15.0	4	20.0
	Riparian buffer (right bank)	1			2		3		4	
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	7.5	3	7.5	3	7.5	3	7.5
	In-stream habitat	0			0		0		0	
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0.0	0	0.0	0	0.0	0	0.0
	Channel flow status	0			0		0		0	
Sum of core element scores = overall TXRAM stream score				33	-	38	-	46	-	51
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				33	-	38	-	46	-	51

Representative Site Photograph:

Existing stream section (MS-8-1) facing downstream (south).

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of channel and planting vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: MS-9 / PS-9 SAR No.: 1 Size (LF): 521 Date: 2016 Evaluator(s): RW, DT

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 7 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-9 SAR No.: 1	Stream ID/Name: PS-9 SAR No.: 1	Stream ID/Name: PS-9 SAR No.: 1
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 20	Avg. Banks: 5	20	5	20	5	20	5
Avg. Waters Edge: 6	Avg. Water: 0.5	6	0.5	6	0.5	6	0.5
Avg. OHWM: 10	Avg. OHWM: 2	10	2	10	2	10	2

Scoring Table

					Year/Option ***End of Construction***		*Year/Option* ***End of Monitoring***		*Year/Option* ***At Maturity***	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	21.7	3	20.0	3	21.7	3	21.7
	Bank condition	5			5		5		5	
	Sediment deposition	5			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	2	Sum of bank scores / 10 x 25	10.0	3	15.0	4	19.8	5	24.8
	Riparian buffer (right bank)	2			3		3.9		4.9	
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	17.5	5	17.5	5	17.5	5	17.5
	In-stream habitat	2			2		2		2	
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	12.5	2	12.5	2	12.5	2	12.5
	Channel flow status	2			2		2		2	
Sum of core element scores = overall TXRAM stream score				62	-	65	-	72	-	77
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				62	-	65	-	72	-	77

Representative Site Photograph:

Existing stream segment (MS-9-1) facing upstream (northwest).Area downstream of property boundary to confluence with Palo Pinto Creek. Small pool present in area frequented by livestock.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of channel and planting vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: Stream restoration / PS-10 SAR No.: 1 Size (LF): 1,381 Date: 2016 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Pond Watershed Size: 198 ac.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: PS-10 SAR No.: 1	Stream ID/Name: PS-10 SAR No.: 1	Stream ID/Name: PS-10 SAR No.: 1
Additional Notes: Proposed condition scores at the end of construction. Channel, in-stream, and hydrologic condition will increase (be re-established) with dam removal to restore channel processes. Flow regime score will increase with dam removal to restore hydrology of natural stream flows and design for pooling.	Additional Notes: Proposed condition scores at the end of monitoring.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: N/A	Avg. Banks: N/A	7	1	7	1	7	1
Avg. Waters Edge: N/A	Avg. Water: N/A	-	-	-	-	-	-
Avg. OHWM: N/A	Avg. OHWM: N/A	3	0.5	3	0.5	3	0.5

Scoring Table

					*Year/Option _End of Construction_*		*Year/Option _End of Monitoring_*		*Year/Option _At Maturity_*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	0	Sum of metric scores / 15 x 25	0	4	21.7	4	23.3	4	23.3
	Bank condition	0			4		5		5	
	Sediment deposition	0			5		5		5	
Riparian buffer condition	Riparian buffer (left bank)	0	Sum of bank scores / 10 x 25	0	2	10.0	3	15.0	4	20.0
	Riparian buffer (right bank)	0			2		3		4	
In-stream condition	Substrate composition	0	Sum of metric scores / 10 x 25	0	3	7.5	4	10.0	4	10.0
	In-stream habitat	0			0		0		0	
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0	1	3.1	1	3.1	1	3.1
	Channel flow status	0			0		0		0	
Sum of core element scores = overall TXRAM stream score				0	-	42	-	51	-	56
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				0	-	42	-	51	-	56

Representative Site Photograph:

Stream is currently non-existent due to upslope pond.	*See design and description of proposed activities in mitigation plan. After construction includes restoration of channel and planting vegetation with livestock exclusion.*	*See design and description of proposed activities in mitigation plan. After monitoring includes growth of vegetation.*	*See design and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.*

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-1 SAR No.: 1 Size (LF): 1,301 Date: 2017 Evaluator(s): RW

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Woods Watershed Size: 22 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: 24-30 Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on current reference reach conditions.

Stream ID/Name: RS-1 SAR No.: 1	Stream ID/Name: RS-1 SAR No.: 1	Stream ID/Name: RS-1 SAR No.: 1
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for bank condition after flooding affects normalize and cattle removal allows revegetation.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 50	Avg. Banks: 8	50	8	50	8	50	8
Avg. Waters Edge: 15	Avg. Water: 1	15	1	15	1	15	1
Avg. OHWM: 20	Avg. OHWM: 3	20	3	20	3	20	3

Scoring Table

					Year/Option ***End of Construction***		*Year/Option* ***End of Monitoring***		*Year/Option* ***At Maturity***	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	21.7	4	21.7	4	23.3	4	23.3
	Bank condition	4			4		5		5	
	Sediment deposition	5			5		5		5	
Riparian buffer condition	Riparian buffer (left bank)	2	Sum of bank scores / 10 x 25	9.5	4	19.5	4.5	22.0	4.5	22.5
	Riparian buffer (right bank)	1.8			3.8		4.3		4.5	
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	22.5	5	22.5	5	22.5	5	22.5
	In-stream habitat	4			4		4		4	
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	15.6	2	15.6	2	15.6	2	15.6
	Channel flow status	3			3		3		3	
Sum of core element scores = overall TXRAM stream score				69	-	79	-	83	-	84
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				69	-	79	-	83	-	84

Representative Site Photograph:

Existing SAR facing upstream near the middle of the SAR.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-1 SAR No.: 2 Size (LF): 1,226 Date: 2017 Evaluator(s): RW

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Woods Watershed Size: 22 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: 31-37 Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on current reference reach conditions.

Stream ID/Name: RS-1 SAR No.: 2	Stream ID/Name: RS-1 SAR No.: 2	Stream ID/Name: RS-1 SAR No.: 2
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for bank condition after flooding affects normalize and cattle removal allows revegetation.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 50	Avg. Banks: 8	50	8	50	8	50	8
Avg. Waters Edge: 15	Avg. Water: 1	15	1	15	1	15	1
Avg. OHWM: 20	Avg. OHWM: 3	20	3	20	3	20	3

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	20.0	4	20.0	4	21.7	4	21.7
	Bank condition	3			3		4		4	
	Sediment deposition	5			5		5		5	
Riparian buffer condition	Riparian buffer (left bank)	2	Sum of bank scores / 10 x 25	9.3	4	19.3	5	24.3	5	25.0
	Riparian buffer (right bank)	1.7			3.7		4.7		5	
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	25.0	5	25.0	5	25.0	5	25.0
	In-stream habitat	5			5		5		5	
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	15.6	2	15.6	2	15.6	2	15.6
	Channel flow status	3			3		3		3	
Sum of core element scores = overall TXRAM stream score				70	-	80	-	87	-	87
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				70	-	80	-	87	-	87

Representative Site Photograph:

Existing SAR facing downstream near the middle of the SAR.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-1 SAR No.: 3 Size (LF): 914 Date: 2017 Evaluator(s): RW

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Woods Watershed Size: 21 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: 43-47 Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on current reference reach conditions.

Stream ID/Name: RS-1 SAR No.: 3	Stream ID/Name: RS-1 SAR No.: 3	Stream ID/Name: RS-1 SAR No.: 3
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for bank condition after flooding affects normalize and cattle removal allows revegetation.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 50	Avg. Banks: 8	50	8	50	8	50	8
Avg. Waters Edge: 15	Avg. Water: 1	15	1	15	1	15	1
Avg. OHWM: 20	Avg. OHWM: 3	20	3	20	3	20	3

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	20.0	3	20.0	3	21.7	3	21.7
	Bank condition	4			4		5		5	
	Sediment deposition	5			5		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1.9	Sum of bank scores / 10 x 25	9.8	3.9	16.5	4.9	20.5	5	20.8
	Riparian buffer (right bank)	2			2.7		3.3		3.3	
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	25.0	5	25.0	5	25.0	5	25.0
	In-stream habitat	5			5		5		5	
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	15.6	2	15.6	2	15.6	2	15.6
	Channel flow status	3			3		3		3	
Sum of core element scores = overall TXRAM stream score				70	-	77	-	83	-	83
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				70	-	77	-	83	-	83

Representative Site Photograph:

Existing SAR facing downstream near the middle of the SAR.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-1 SAR No.: 4 Size (LF): 928 Date: 2017 Evaluator(s): RW

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Woods Watershed Size: 21 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: 48-50 Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on current reference reach conditions.

Stream ID/Name: RS-1 SAR No.: 4	Stream ID/Name: RS-1 SAR No.: 4	Stream ID/Name: RS-1 SAR No.: 4
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for bank condition after flooding affects normalize and cattle removal allows revegetation.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 50	Avg. Banks: 8	50	8	50	8	50	8
Avg. Waters Edge: 15	Avg. Water: 1	15	1	15	1	15	1
Avg. OHWM: 20	Avg. OHWM: 3	20	3	20	3	20	3

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	20.0	4	20.0	4	21.7	4	21.7
	Bank condition	3			3		4		4	
	Sediment deposition	5			5		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1.9	Sum of bank scores / 10 x 25	9.8	3.9	19.8	4.9	24.8	5	25.0
	Riparian buffer (right bank)	2			4		5		5	
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	25.0	5	25.0	5	25.0	5	25.0
	In-stream habitat	5			5		5		5	
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	15.6	2	15.6	2	15.6	2	15.6
	Channel flow status	3			3		3		3	
Sum of core element scores = overall TXRAM stream score				70	-	80	-	87	-	87
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				70	-	80	-	87	-	87

Representative Site Photograph:

Existing SAR facing upstream near the middle of the SAR.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: RS-1 SAR No.: 5 Size (LF): 1,278 Date: 2017 Evaluator(s): RW

Stream Type: Intermittent Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Woods Watershed Size: 21 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: 51-57 Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on current reference reach conditions.

Stream ID/Name: RS-1 SAR No.: 5	Stream ID/Name: RS-1 SAR No.: 5	Stream ID/Name: RS-1 SAR No.: 5
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for bank condition after flooding affects normalize and cattle removal allows revegetation.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 50	Avg. Banks: 8	50	8	50	8	50	8
Avg. Waters Edge: 15	Avg. Water: 1	15	1	15	1	15	1
Avg. OHWM: 20	Avg. OHWM: 3	20	3	20	3	20	3

Scoring Table

					Year/Option ***End of Construction***		*Year/Option* ***End of Monitoring***		*Year/Option* ***At Maturity***	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	21.7	4	21.7	4	23.3	4	23.3
	Bank condition	4			4		5		5	
	Sediment deposition	5			5		5		5	
Riparian buffer condition	Riparian buffer (left bank)	2	Sum of bank scores / 10 x 25	10.0	4	20.0	4.9	24.8	4.9	24.8
	Riparian buffer (right bank)	2			4		5		5	
In-stream condition	Substrate composition	5	Sum of metric scores / 10 x 25	25.0	5	25.0	5	25.0	5	25.0
	In-stream habitat	5			5		5		5	
Hydrologic condition	Flow regime	2	Sum of metric scores / 8 x 25	15.6	2	15.6	2	15.6	2	15.6
	Channel flow status	3			3		3		3	
Sum of core element scores = overall TXRAM stream score				72	-	82	-	89	-	89
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				72	-	82	-	89	-	89

Representative Site Photograph:

Existing SAR facing upstream near the middle of the SAR.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes enhancement of vegetation with livestock exclusion.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes natural re-generation and growth of vegetation.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

Appendix E: Stream Final Scoring Sheets for Proposed Mitigation – On-Site Mitigation SARs Proposed Conditions

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: On-site stream enhancement SAR No.: S-17-1 Size (LF): 510 Date: 2016 Evaluator(s): RW, DT

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 110 ac.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: S-17 SAR No.: 1	Stream ID/Name: S-17 SAR No.: 1	Stream ID/Name: S-17 SAR No.: 1
Additional Notes: Proposed condition scores at the end of construction. Score for substrate composition will improve after upstream pond removal restores sediment transport and cattle removal allows revegetation.	Additional Notes: Proposed condition scores at the end of monitoring. Score for sediment deposition will improve after upstream pond removal restores sediment transport and cattle removal allows revegetation.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management to reduce brush and improve native community. Score for bank condition will improve with restoration of channel processes and removal of cattle allowing revegetation.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 8	Avg. Banks: 2	8	2	8	2	8	2
Avg. Waters Edge: -	Avg. Water: -	-	-	-	-	-	-
Avg. OHWM: 4	Avg. OHWM: 0.5	4	0.5	4	0.5	4	0.5

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	4	Sum of metric scores / 15 x 25	20.0	4	20.0	4	23.3	4	23.3
	Bank condition	4			4		5		5	
	Sediment deposition	4			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1.7	Sum of bank scores / 10 x 25	8.5	2.4	12.0	3.7	18.5	4	20.0
	Riparian buffer (right bank)	1.7			2.4		3.7		4	
In-stream condition	Substrate composition	3	Sum of metric scores / 10 x 25	7.5	4	10.0	4	10.0	4	10.0
	In-stream habitat	0			0		0		0	
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0	0	0	0	0	0	0
	Channel flow status	0			0		0		0	
Sum of core element scores = overall TXRAM stream score				36	-	42	-	52	-	53
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				36	-	42	-	52	-	53

Representative Site Photograph:

Facing downstream near the middle of the existing SAR.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After construction includes restricting clearing and livestock access as well as upstream channel restoration to restore sediment transport.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. After monitoring includes growth of vegetation.

See TXRAM Reference SAR data and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: On-site stream restoration SAR No.: OPSR-2-1 Size (LF): 827 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 19 ac.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: OPSR-2 SAR No.: 1	Stream ID/Name: OPSR-2 SAR No.: 1	Stream ID/Name: OPSR-2 SAR No.: 1
Additional Notes: Proposed condition scores at the end of construction. Channel and in-stream condition will increase (be re-established) with dam removal to restore channel processes. Substrate composition score will increase with dam removal to restore sediment transport of natural stream flows and design / natural rock drops.	Additional Notes: Proposed condition scores at the end of monitoring.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management/planting to increase native tree canopy and diversity of community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: N/A	Avg. Banks: N/A	5	1	5	1	5	1
Avg. Waters Edge: N/A	Avg. Water: N/A	-	-	-	-	-	-
Avg. OHWM: N/A	Avg. OHWM: N/A	2	0.5	2	0.5	2	0.5

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	0	Sum of metric scores / 15 x 25	0	4	21.7	4	23.3	4	23.3
	Bank condition	0			4		5		5	
	Sediment deposition	0			5		5		5	
Riparian buffer condition	Riparian buffer (left bank)	0	Sum of bank scores / 10 x 25	0	2	10.0	3	15.0	4	20.0
	Riparian buffer (right bank)	0			2		3		4	
In-stream condition	Substrate composition	0	Sum of metric scores / 10 x 25	0	4	10.0	4	10.0	4	10.0
	In-stream habitat	0			0		0		0	
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0	0	0	0	0	0	0
	Channel flow status	0			0		0		0	
Sum of core element scores = overall TXRAM stream score				0	-	42	-	48	-	53
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				0	-	42	-	48	-	53

Representative Site Photograph:

Facing east below and existing pond that will be removed to restore the proposed SAR OPSR-2-1.

See TXRAM Reference SAR data, design and description of proposed activities in mitigation plan. After construction includes restoration of channel and planting vegetation with livestock exclusion.

See TXRAM Reference SAR data, design and description of proposed activities in mitigation plan. After monitoring includes growth of vegetation.

See TXRAM Reference SAR data, design and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: On-site stream restoration SAR No.: 5-1 Size (LF): 1,001 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 102 ac.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: OPSR-5 SAR No.: 1	Stream ID/Name: OPSR-5 SAR No.: 1	Stream ID/Name: OPSR-5 SAR No.: 1
Additional Notes: Proposed condition scores at the end of construction. Channel and in-stream condition will increase (be re-established) with dam removal to restore channel processes. Substrate composition score will increase with dam removal to restore sediment transport of natural stream flows and design / natural rock drops.	Additional Notes: Proposed condition scores at the end of monitoring.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management/planting to increase native tree canopy and diversity of community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: N/A	Avg. Banks: N/A	8	1	8	1	8	1
Avg. Waters Edge: N/A	Avg. Water: N/A	-	-	-	-	-	-
Avg. OHWM: N/A	Avg. OHWM: N/A	2	0.5	2	0.5	2	0.5

Scoring Table

					Year/Option ***End of Construction***		*Year/Option* ***End of Monitoring***		*Year/Option* ***At Maturity***	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	0	Sum of metric scores / 15 x 25	0	4	21.7	4	23.3	4	23.3
	Bank condition	0			4		5		5	
	Sediment deposition	0			5		5		5	
Riparian buffer condition	Riparian buffer (left bank)	0	Sum of bank scores / 10 x 25	0	2	10.0	3	15.0	4	20.0
	Riparian buffer (right bank)	0			2		3		4	
In-stream condition	Substrate composition	0	Sum of metric scores / 10 x 25	0	4	10.0	4	10.0	4	10.0
	In-stream habitat	0			0		0		0	
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0	0	0	0	0	0	0
	Channel flow status	0			0		0		0	
Sum of core element scores = overall TXRAM stream score				0	-	42	-	48	-	53
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				0	-	42	-	48	-	53

Representative Site Photograph:

Facing north at existing pond where no stream currently exists.

See TXRAM Reference SAR data, design and description of proposed activities in mitigation plan. After construction includes restoration of channel and planting vegetation with livestock exclusion.

See TXRAM Reference SAR data, design and description of proposed activities in mitigation plan. After monitoring includes growth of vegetation.

See TXRAM Reference SAR data, design and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: On-site stream restoration SAR No.: OPSR-17-1 Size (LF): 1,319 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 109 ac.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: OPSR-17 SAR No.: 1	Stream ID/Name: OPSR-17 SAR No.: 1	Stream ID/Name: OPSR-17 SAR No.: 1
Additional Notes: Proposed condition scores at the end of construction. Channel and in-stream condition will increase (be re-established) with dam removal to restore channel processes. Substrate composition score will increase with dam removal to restore sediment transport of natural stream flows and design / natural rock drops.	Additional Notes: Proposed condition scores at the end of monitoring.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management/planting to increase native tree canopy and diversity of community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: N/A	Avg. Banks: N/A	8	1	8	1	8	1
Avg. Waters Edge: N/A	Avg. Water: N/A	-	-	-	-	-	-
Avg. OHWM: N/A	Avg. OHWM: N/A	2	0.5	2	0.5	2	0.5

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	0	Sum of metric scores / 15 x 25	0	4	21.7	4	23.3	4	23.3
	Bank condition	0			4		5		5	
	Sediment deposition	0			5		5		5	
Riparian buffer condition	Riparian buffer (left bank)	0	Sum of bank scores / 10 x 25	0	2	10.0	3	15.0	4	20.0
	Riparian buffer (right bank)	0			2		3		4	
In-stream condition	Substrate composition	0	Sum of metric scores / 10 x 25	0	4	10.0	4	10.0	4	10.0
	In-stream habitat	0			0		0		0	
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0	0	0	0	0	0	0
	Channel flow status	0			0		0		0	
Sum of core element scores = overall TXRAM stream score				0	-	42	-	48	-	53
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				0	-	42	-	48	-	53

Representative Site Photograph:

Facing east at existing pond that will be removed to restore the proposed SAR OPSR-17-1.

See TXRAM Reference SAR data, design and description of proposed activities in mitigation plan. After construction includes restoration of channel and planting vegetation with livestock exclusion.

See TXRAM Reference SAR data, design and description of proposed activities in mitigation plan. After monitoring includes growth of vegetation.

See TXRAM Reference SAR data, design and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: On-site stream restoration SAR No.: OPSR-18-1 Size (LF): 470 Date: 2017 Evaluator(s): RW

Stream Type: Ephemeral Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 11 ac.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan and based on reference reach conditions.

Stream ID/Name: OPSR-18 SAR No.: 1	Stream ID/Name: OPSR-18 SAR No.: 1	Stream ID/Name: OPSR-18 SAR No.: 1
Additional Notes: Proposed condition scores at the end of construction. Channel and in-stream condition will increase (be re-established) with dam removal to restore channel processes. Substrate composition score will increase with dam removal to restore sediment transport of natural stream flows and design / natural rock drops.	Additional Notes: Proposed condition scores at the end of monitoring.	Additional Notes: Proposed condition scores target at maturity. Scores will improve for riparian buffer with cattle removal and vegetation management/planting to increase native tree canopy and diversity of community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: N/A	Avg. Banks: N/A	5	1	5	1	5	1
Avg. Waters Edge: N/A	Avg. Water: N/A	-	-	-	-	-	-
Avg. OHWM: N/A	Avg. OHWM: N/A	2	0.5	2	0.5	2	0.5

Scoring Table

					Year/Option ***End of Construction***		*Year/Option* ***End of Monitoring***		*Year/Option* ***At Maturity***	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	0	Sum of metric scores / 15 x 25	0	4	21.7	4	23.3	4	23.3
	Bank condition	0			4		5		5	
	Sediment deposition	0			5		5		5	
Riparian buffer condition	Riparian buffer (left bank)	0	Sum of bank scores / 10 x 25	0	2	10.0	3	15.0	4	20.0
	Riparian buffer (right bank)	0			2		3		4	
In-stream condition	Substrate composition	0	Sum of metric scores / 10 x 25	0	4	10.0	4	10.0	4	10.0
	In-stream habitat	0			0		0		0	
Hydrologic condition	Flow regime	0	Sum of metric scores / 8 x 25	0	0	0	0	0	0	0
	Channel flow status	0			0		0		0	
Sum of core element scores = overall TXRAM stream score				0	-	42	-	48	-	53
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				0	-	42	-	48	-	53

Representative Site Photograph:

Facing southeast at existing pond that will be removed to restore the proposed SAR OPSR-18-1.

See TXRAM Reference SAR data, design and description of proposed activities in mitigation plan. After construction includes restoration of channel and planting vegetation with livestock exclusion.

See TXRAM Reference SAR data, design and description of proposed activities in mitigation plan. After monitoring includes growth of vegetation.

See TXRAM Reference SAR data, design and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation based on reference.

Appendix F: Stream Data Sheets and Final Scoring Sheets – Downstream Mitigation SARs Existing Conditions

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: DS-1 SAR No.: DS-1-1 Size (LF): 990 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation of upstream reach (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	10
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	2.0	Sum of bank scores / 10 x 25	10.0
	Riparian buffer (right bank)	2.0		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	5		
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9
	Channel flow status	4		
			Sum of core element scores = overall TXRAM stream score	71
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	71

Representative Site Photograph:

Facing downstream near the upper end of the SAR. Note erosion and sedimentation. A riffle stabilized with construction debris occurs just downstream.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: DS-1 SAR No.: DS-1-1 Size (LF): 990 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

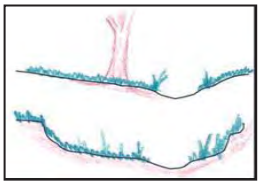
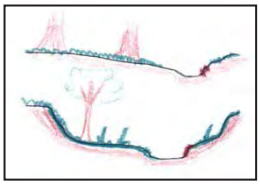
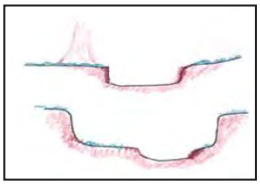
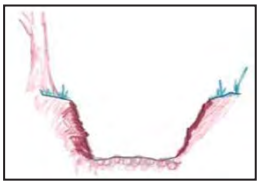
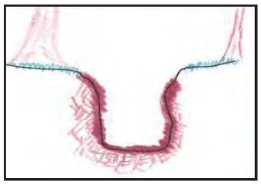
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	10
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Notes: Based on review of aerial photography and data from previous field delineation of upstream reach (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 125.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, box elder	70	Mix	Moderate	3	50	1.5
2. Savannah with pecan and bermudagrass	60	Mix	High	1	50	0.5
3.						
4.						
5.						

Score: 2.0

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, box elder	70	Mix	Moderate	3	50	1.5
2. Brush with Ashe juniper, oak, mesquite	50	Mix	High	1	30	0.3
3. Trail and regenerative with non-natives	10	Undesirable	High	1	20	0.2
4.						
5.						

Score: 2.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 30	Fines (silt, clay, muck): 10	Artificial: 5
Cobble: 20	Sand: 25	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Overhanging Vegetation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Rootmats	✓	✓	✓	✓	✓	✓	✓	✓					
Rootwads	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Woody/Leafy Debris	✓	✓			✓	✓	✓	✓	✓		✓	✓	
Boulders/Cobbles	✓		✓	✓	✓	✓	✓	✓					
Aquatic Macrophytes													
Riffle/Pool Sequence	✓		✓		✓	✓			✓				
Artificial Habitat Enhancement													
Other													
Total No. Present	7	5	6	5	7	7	6	6	5	3	4	3	

Average: 5.3 **Score:** 5

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☒ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 3

Channel Flow Status

- ☒ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 4

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: DS-1 SAR No.: DS-1-5 Size (LF): 1,022 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation of upstream reach (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	10
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	2.1	Sum of bank scores / 10 x 25	10.5
	Riparian buffer (right bank)	2.1		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	5		
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9
	Channel flow status	4		
			Sum of core element scores = overall TXRAM stream score	72
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	72

Representative Site Photograph:

Facing downstream near the middle of the SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: DS-1 SAR No.: DS-1-5 Size (LF): 1,022 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

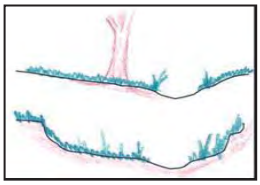
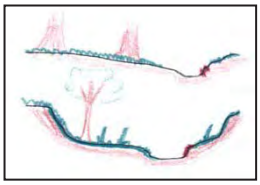
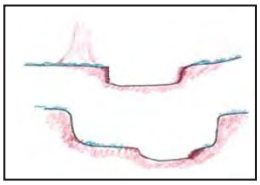
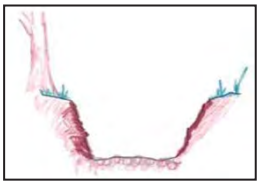
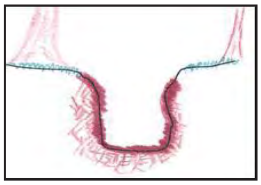
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	10
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Notes: Based on review of aerial photography and data from previous field delineation of upstream reach (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 125.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, box elder	70	Mix	Moderate	3	30	0.9
2. Savannah with pecan and bermudagrass	70	Mix	High	2	60	1.2
3. Trail	10	Undesirable	Intensive	0	10	0
4.						
5.						

Score: 2.1

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, box elder	70	Mix	Moderate	3	60	1.8
2. Brush with Ashe juniper, oak, mesquite	50	Mix	High	1	20	0.2
3. Pasture / berm with non-natives	10	Undesirable	High	1	15	0.1
4. Trail	10	Undesirable	Intensive	0	5	0
5.						

Score: 2.1

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 30	Fines (silt, clay, muck): 10	Artificial: 5
Cobble: 20	Sand: 25	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Overhanging Vegetation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Rootmats	✓	✓	✓	✓	✓	✓	✓	✓					
Rootwads	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Woody/Leafy Debris	✓	✓			✓	✓	✓	✓	✓		✓	✓	
Boulders/Cobbles	✓		✓	✓	✓	✓	✓	✓					
Aquatic Macrophytes													
Riffle/Pool Sequence	✓		✓		✓	✓			✓				
Artificial Habitat Enhancement													
Other													
Total No. Present	7	5	6	5	7	7	6	6	5	3	4	3	

Average: 5.3 **Score:** 5

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☒ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 3

Channel Flow Status

- ☒ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 4

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: DS-1 SAR No.: DS-1-10 Size (LF): 1,229 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation of upstream reach (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	10
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.9	Sum of bank scores / 10 x 25	8.5
	Riparian buffer (right bank)	1.5		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	5		
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9
	Channel flow status	4		
			Sum of core element scores = overall TXRAM stream score	70
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	70

Representative Site Photograph:

Facing downstream near the middle of the SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: DS-1 SAR No.: DS-1-10 Size (LF): 1,229 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

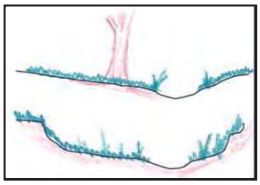
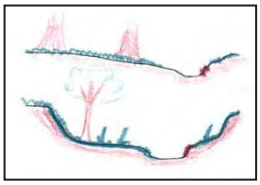
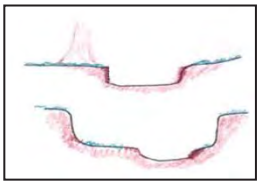
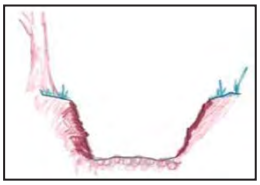
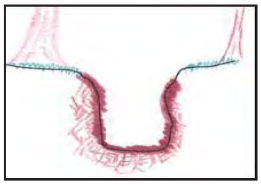
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	10
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Notes: Based on review of aerial photography and data from previous field delineation of upstream reach (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 125.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, box elder	70	Mix	Moderate	3	50	1.5
2. Savannah with pecan and bermudagrass	50	Mix	High	1	40	0.4
3. Trail	10	Undesirable	Intensive	0	10	0
4.						
5.						

Score: 1.9

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, box elder	70	Mix	Moderate	3	30	0.9
2. Pasture with bermudagrass and scattered pecans	30	Undesirable	High	1	60	0.6
3. Trail	10	Undesirable	Intensive	0	10	0
4.						
5.						

Score: 1.5

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 30	Fines (silt, clay, muck): 10	Artificial: 5
Cobble: 20	Sand: 25	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Overhanging Vegetation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Rootmats	✓	✓	✓	✓	✓	✓	✓	✓					
Rootwads	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Woody/Leafy Debris	✓	✓			✓	✓	✓	✓	✓		✓	✓	
Boulders/Cobbles	✓		✓	✓	✓	✓	✓	✓					
Aquatic Macrophytes													
Riffle/Pool Sequence	✓		✓		✓	✓			✓				
Artificial Habitat Enhancement													
Other													
Total No. Present	7	5	6	5	7	7	6	6	5	3	4	3	

Average: 5.3 **Score:** 5

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☒ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 3

Channel Flow Status

- ☒ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 4

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TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: DS-1 SAR No.: DS-1-13 Size (LF): 1,229 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation of upstream reach (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	10
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.8	Sum of bank scores / 10 x 25	8.8
	Riparian buffer (right bank)	1.7		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	5		
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9
	Channel flow status	4		
			Sum of core element scores = overall TXRAM stream score	70
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	70

Representative Site Photograph:

Facing upstream at the downstream end of the SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: DS-1 SAR No.: DS-1-13 Size (LF): 1,229 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

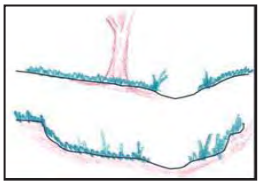
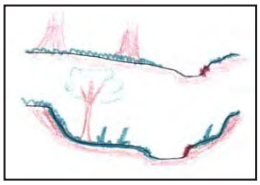
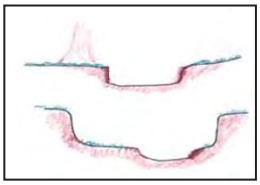
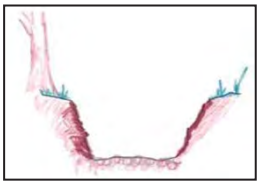
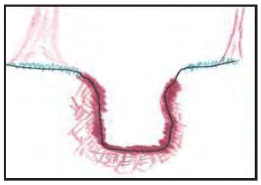
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	10
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Notes: Based on review of aerial photography and data from previous field delineation of upstream reach (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 125.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, box elder	70	Mix	Moderate	3	40	1.2
2. Savannah with pecan and bermudagrass	50	Mix	High	1	60	0.6
3.						
4.						
5.						

Score: 1.8

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, box elder	70	Mix	Moderate	3	40	1.2
2. Savannah with pecan and bermudagrass	50	Mix	High	1	50	0.5
3. Cultivated field	0	Undesirable	Intensive	0	10	0
4.						
5.						

Score: 1.7

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 30	Fines (silt, clay, muck): 10	Artificial: 5
Cobble: 20	Sand: 25	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Overhanging Vegetation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Rootmats	✓	✓	✓	✓	✓	✓	✓	✓					
Rootwads	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Woody/Leafy Debris	✓	✓			✓	✓	✓	✓	✓		✓	✓	
Boulders/Cobbles	✓		✓	✓	✓	✓	✓	✓					
Aquatic Macrophytes													
Riffle/Pool Sequence	✓		✓		✓	✓			✓				
Artificial Habitat Enhancement													
Other													
Total No. Present	7	5	6	5	7	7	6	6	5	3	4	3	

Average: 5.3 **Score:** 5

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☒ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 3

Channel Flow Status

- ☒ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 4

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: DS-1 SAR No.: DS-1-14 Size (LF): 1,024 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation of upstream reach (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	10
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.8	Sum of bank scores / 10 x 25	10.5
	Riparian buffer (right bank)	2.4		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	5		
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9
	Channel flow status	4		
			Sum of core element scores = overall TXRAM stream score	72
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	72

Representative Site Photograph:

Facing downstream near the upstream end of the SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: DS-1 SAR No.: DS-1-14 Size (LF): 1,024 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

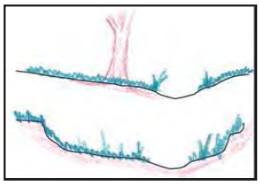
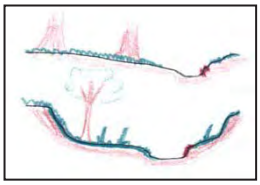
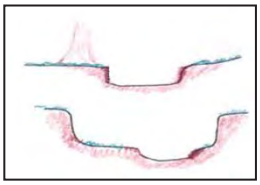
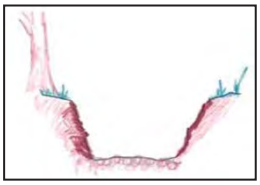
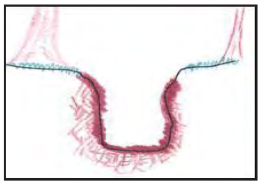
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	10
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Notes: Based on review of aerial photography and data from previous field delineation of upstream reach (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 125.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, box elder	70	Mix	Moderate	3	40	1.2
2. Savannah with pecan and bermudagrass	50	Mix	High	1	60	0.6
3.						
4.						
5.						

Score: 1.8

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, box elder	70	Mix	Moderate	3	70	2.1
2. Savannah with pecan and bermudagrass	50	Mix	High	1	30	0.3
3.						
4.						
5.						

Score: 2.4

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 30	Fines (silt, clay, muck): 10	Artificial: 5
Cobble: 20	Sand: 25	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Overhanging Vegetation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Rootmats	✓	✓	✓	✓	✓	✓	✓	✓					
Rootwads	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Woody/Leafy Debris	✓	✓			✓	✓	✓	✓	✓		✓	✓	
Boulders/Cobbles	✓		✓	✓	✓	✓	✓	✓					
Aquatic Macrophytes													
Riffle/Pool Sequence	✓		✓		✓	✓			✓				
Artificial Habitat Enhancement													
Other													
Total No. Present	7	5	6	5	7	7	6	6	5	3	4	3	

Average: 5.3 **Score:** 5

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☒ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 3

Channel Flow Status

- ☒ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 4

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: DS-1 SAR No.: DS-1-17 Size (LF): 1,228 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation of upstream reach (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	10
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	2.2	Sum of bank scores / 10 x 25	13.0
	Riparian buffer (right bank)	3.0		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	5		
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9
	Channel flow status	4		
			Sum of core element scores = overall TXRAM stream score	74
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	74

Representative Site Photograph:

Facing downstream at the SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: DS-1 SAR No.: DS-1-17 Size (LF): 1,228 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

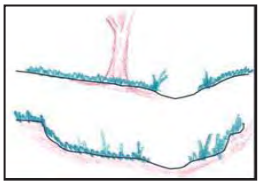
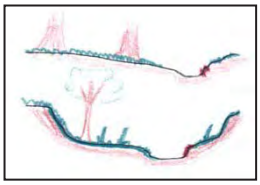
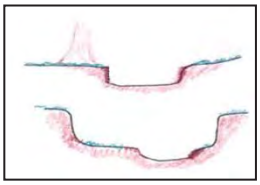
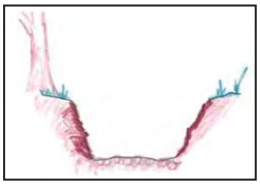
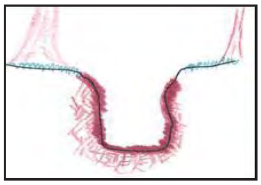
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	10
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Notes: Based on review of aerial photography and data from previous field delineation of upstream reach (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 125.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, box elder	70	Mix	Moderate	3	60	1.8
2. Savannah with pecan and bermudagrass	50	Mix	High	1	40	0.4
3.						
4.						
5.						

Score: 2.2

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, box elder	70	Mix	Moderate	3	100	3.0
2.						
3.						
4.						
5.						

Score: 3.0

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 30	Fines (silt, clay, muck): 10	Artificial: 5
Cobble: 20	Sand: 25	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Overhanging Vegetation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Rootmats	✓	✓	✓	✓	✓	✓	✓	✓					
Rootwads	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Woody/Leafy Debris	✓	✓			✓	✓	✓	✓	✓		✓	✓	
Boulders/Cobbles	✓		✓	✓	✓	✓	✓	✓					
Aquatic Macrophytes													
Riffle/Pool Sequence	✓		✓		✓	✓			✓				
Artificial Habitat Enhancement													
Other													
Total No. Present	7	5	6	5	7	7	6	6	5	3	4	3	

Average: 5.3 **Score:** 5

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☒ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 3

Channel Flow Status

- ☒ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 4

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: DS-1 SAR No.: DS-1-20 Size (LF): 1,228 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation of upstream reach (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	10
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	2.2	Sum of bank scores / 10 x 25	10.0
	Riparian buffer (right bank)	1.8		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	5		
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9
	Channel flow status	4		
			Sum of core element scores = overall TXRAM stream score	71
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	71

Representative Site Photograph:

Facing downstream at the SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: DS-1 SAR No.: DS-1-20 Size (LF): 1,228 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

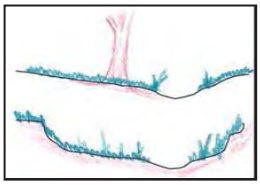
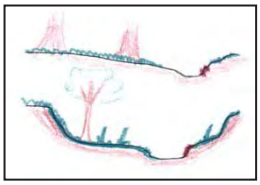
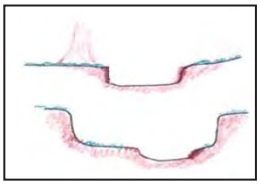
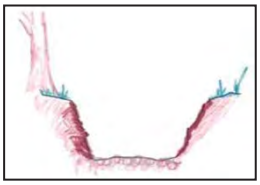
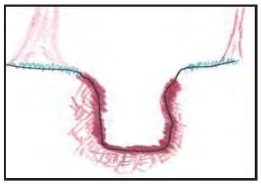
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	10
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Notes: Based on review of aerial photography and data from previous field delineation of upstream reach (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 125.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, box elder	70	Mix	Moderate	3	60	1.8
2. Savannah with pecan and bermudagrass	50	Mix	High	1	40	0.4
3.						
4.						
5.						

Score: 2.2

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, box elder	70	Mix	Moderate	3	40	1.2
2. Savannah with pecan and bermudagrass	50	Mix	High	1	60	0.6
3.						
4.						
5.						

Score: 1.8

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 30	Fines (silt, clay, muck): 10	Artificial: 5
Cobble: 20	Sand: 25	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Overhanging Vegetation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Rootmats	✓	✓	✓	✓	✓	✓	✓	✓					
Rootwads	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Woody/Leafy Debris	✓	✓			✓	✓	✓	✓	✓		✓	✓	
Boulders/Cobbles	✓		✓	✓	✓	✓	✓	✓					
Aquatic Macrophytes													
Riffle/Pool Sequence	✓		✓		✓	✓			✓				
Artificial Habitat Enhancement													
Other													
Total No. Present	7	5	6	5	7	7	6	6	5	3	4	3	

Average: 5.3 **Score:** 5

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☒ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 3

Channel Flow Status

- ☒ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 4

Version 1.0 - Final Draft

TXRAM STREAM FINAL SCORING SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: DS-1 SAR No.: DS-1-24 Size (LF): 1,016 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Based on review of aerial photography and data from previous field delineation of upstream reach (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	10
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Scoring Table

Core Element	***Metric***	***Metric Score***	***Core Element Score Calculation***	***Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7
	Bank condition	3		
	Sediment deposition	4		
Riparian buffer condition	Riparian buffer (left bank)	1.7	Sum of bank scores / 10 x 25	7.5
	Riparian buffer (right bank)	1.3		
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5
	In-stream habitat	5		
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9
	Channel flow status	4		
			Sum of core element scores = overall TXRAM stream score	69
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0
			Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**	69

Representative Site Photograph:

Facing downstream at the SAR.

TXRAM STREAM DATA SHEET

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: DS-1 SAR No.: DS-1-24 Size (LF): 1,016 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Impoundment Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP / Bing Site Photos: Yes Representative: ☒ Yes ☐ No

Stressor(s): Land use Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

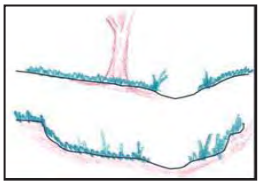
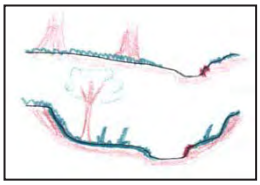
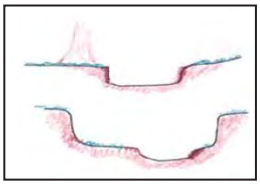
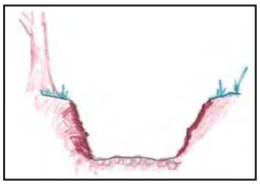
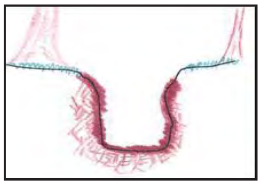
Stream Characteristics

Stream Width (Feet)		*Stream Height/Depth (Feet)*	
Avg. Bank to Bank:	50	Avg. Banks:	10
Avg. Waters Edge:	20	Avg. Water:	4
Avg. OHWM:	25	Avg. OHWM:	6

Notes: Based on review of aerial photography and data from previous field delineation of upstream reach (see HDR report dated June 2009) as well as aquatic life monitoring surveys (see water rights application dated January 2009). Artificial flow from Lake Palo Pinto releases, so flow regime score reduced by 1. Incision and widening from upstream lake. Cattle and human use. In-stream habitat estimated.

CHANNEL CONDITION

Floodplain Connectivity

				
Very little incision and access to the original floodplain or fully developed wide bankfull benches.	Slight incision and likely having regular (i.e., at least once a year) access to bankfull benches or newly developed floodplains along majority of the reach.	Moderate incision and presence of near vertical/ undercut banks; irregular (i.e., greater than 2 year return interval) access to floodplain or possible access to floodplain or bankfull benches at isolated areas.	Overwidened or incised channel and likely to widen further; majority of both banks near vertical/undercut; unlikely/rarely having access to floodplain or bankfull benches.	Deeply incised channel or channelized flow; severe incision with flow contained within the banks; majority of banks vertical/undercut.
5	4	(3)	2	1

Score: 3

Bank Condition

Left Bank Active Erosion: 20 % Right Bank Active Erosion: 20 % Average: 20.0

Bank Protection/Stabilization: ☒ Natural ☐ Artificial: _____

Score: 3

Sediment Deposition

☐ Less than 20% of the bottom covered by excessive sediment deposition; bars with established vegetation (5)

☒ 20–40% of the bottom covered by excessive sediment deposition; some established bars with indicators of recently deposited sediments (4)

☐ 40–60% of the bottom covered by excessive sediment deposition; moderate deposition on old bars and creating new bars; moderate sediment deposits at in-stream structures; OR obstructed view of the channel bottom and a lack of other depositional features (3)

☐ 60–80% of the bottom covered by excessive sediment deposition; newly created bars prevalent; heavy sediment deposits at in-stream structures (2)

☐ Greater than 80% of the bottom covered by excessive sediment deposition resulting in aggrading channel (1)

Score: 4

RIPARIAN BUFFER CONDITION

Riparian Buffer - See Table 22 to determine appropriate buffer distance. Confirm in office review.

Identify each buffer type and score according to canopy cover, vegetation community, and land use (see section 3.3.2.1.3).

Left Bank — Buffer Distance: 125.0

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, box elder	70	Mix	Moderate	3	40	1.2
2. Savannah with pecan and bermudagrass	50	Mix	High	1	50	0.5
3. Eroded bank	0	Undesirable	Intensive	0	10	0
4.						
5.						

Score: 1.7

Right Bank

Buffer Type	*Canopy Cover*	*Vegetation Community*	*Land Use*	*Score*	*Percentage of Area*	*Subtotal*
1. Woods with cedar elm, pecan, hackberry, box elder	70	Mix	Moderate	3	20	0.6
2. Pasture with bermudagrass and scattered pecans	30	Undesirable	High	1	70	0.7
3. Trail	10	Undesirable	Intensive	0	10	0
4.						
5.						

Score: 1.3

IN-STREAM CONDITION

Substrate Composition (estimate percentages)

Boulder: 10	Gravel: 30	Fines (silt, clay, muck): 10	Artificial: 5
Cobble: 20	Sand: 25	Bedrock:	Other:

Score: 4

In-stream Habitat (check all habitat types that are present)

Habitat Type	*T1*	*T2*	*T3*	*T4*	*T5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*T12*	*T13*
Undercut Banks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Overhanging Vegetation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Rootmats	✓	✓	✓	✓	✓	✓	✓	✓					
Rootwads	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Woody/Leafy Debris	✓	✓			✓	✓	✓	✓	✓		✓	✓	
Boulders/Cobbles	✓		✓	✓	✓	✓	✓	✓					
Aquatic Macrophytes													
Riffle/Pool Sequence	✓		✓		✓	✓			✓				
Artificial Habitat Enhancement													
Other													
Total No. Present	7	5	6	5	7	7	6	6	5	3	4	3	

Average: 5.3 **Score:** 5

HYDROLOGIC CONDITION

Flow Regime

- ☐ Noticeable surface flow present (4)
- ☒ Continual pool of water but lacking noticeable flow (3)
- ☐ Isolated pools and interstitial (subsurface) flow (2)
- ☐ Isolated pools and no evidence of surface or interstitial flow (1)
- ☐ Dry channel and no observable pools or interstitial flow (0)

Score: 3

Channel Flow Status

- ☒ Water covering greater than 75% of the channel bottom width; less than 25% of channel substrate is exposed (4)
- ☐ Water covering 50–75% of the channel bottom width; 25–50% of channel substrate is exposed (3)
- ☐ Water covering 25–50% of the channel bottom width; 50–75% of channel substrate is exposed (2)
- ☐ Water present but covering less than 25% of the channel bottom width; greater than 75% of channel substrate is exposed (1)
- ☐ No water present in the channel; 100% of channel substrate exposed (0)

Score: 4

Appendix G: Stream Final Scoring Sheets for Proposed Mitigation – Downstream Mitigation SARs Proposed Conditions

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: Palo Pinto Creek (DS-1) Downstream Enhancement SAR No.: DS-1-1 Size (LF): 990 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan.

Stream ID/Name: DS-1 SAR No.: 1	Stream ID/Name: DS-1 SAR No.: 1	Stream ID/Name: DS-1 SAR No.: 1
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for floodplain connectivity with proposed operations plan of project to increase high flow events that provide regular flow access to bankfull benches. Score will improve for sediment deposition after cattle removal and planting allows revegetation to stabilize soils.	Additional Notes: Proposed condition scores target at maturity. Score will improve for bank condition after cattle removal and planting allows revegetation to stabilize soils. Scores will improve for riparian buffer with cattle removal and vegetation management / planting to improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 50	Avg. Banks: 10	50	10	50	10	50	10
Avg. Waters Edge: 20	Avg. Water: 4	20	4	20	4	20	4
Avg. OHWM: 25	Avg. OHWM: 6	25	6	25	6	25	6

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7	3	16.7	4	23.3	4	23.3
	Bank condition	3			3		5		5	
	Sediment deposition	4			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	2.0	Sum of bank scores / 10 x 25	10.0	3.5	17.0	4	20.0	5	25.0
	Riparian buffer (right bank)	2.0			3.3		4		5	
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5	4	22.5	4	22.5	4	22.5
	In-stream habitat	5			5		5		5	
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9	3	21.9	3	21.9	3	21.9
	Channel flow status	4			4		4		4	
Sum of core element scores = overall TXRAM stream score				71	-	78	-	88	-	93
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				71	-	78	-	88	-	93

Representative Site Photograph:

Facing downstream near the upper end of the existing SAR.

See figure and description of proposed activities in mitigation plan. After construction includes planting trees and restricting clearing and livestock access.

See figure and description of proposed activities in mitigation plan. After monitoring includes growth of vegetation.

See figure and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: Palo Pinto Creek (DS-1) Downstream Enhancement SAR No.: DS-1-5 Size (LF): 1,022 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan.

Stream ID/Name: DS-1 SAR No.: 5	Stream ID/Name: DS-1 SAR No.: 5	Stream ID/Name: DS-1 SAR No.: 5
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for floodplain connectivity with proposed operations plan of project to increase high flow events that provide regular flow access to bankfull benches. Score will improve for sediment deposition after cattle removal and planting allows revegetation to stabilize soils.	Additional Notes: Proposed condition scores target at maturity. Score will improve for bank condition after cattle removal and planting allows revegetation to stabilize soils. Scores will improve for riparian buffer with cattle removal and vegetation management / planting to improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 50	Avg. Banks: 10	50	10	50	10	50	10
Avg. Waters Edge: 20	Avg. Water: 4	20	4	20	4	20	4
Avg. OHWM: 25	Avg. OHWM: 6	25	6	25	6	25	6

Scoring Table

					Year/Option _End of Construction_		***Year/Option _End of Monitoring_***		***Year/Option _At Maturity_***	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7	3	16.7	4	23.3	4	23.3
	Bank condition	3			3		5		5	
	Sediment deposition	4			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	2.1	Sum of bank scores / 10 x 25	10.5	3.8	18.0	4	20.0	5	25.0
	Riparian buffer (right bank)	2.1			3.4		4		5	
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5	4	22.5	4	22.5	4	22.5
	In-stream habitat	5			5		5		5	
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9	3	21.9	3	21.9	3	21.9
	Channel flow status	4			4		4		4	
Sum of core element scores = overall TXRAM stream score				72	-	79	-	88	-	93
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				72	-	79	-	88	-	93

Representative Site Photograph:

Facing downstream near the middle of the existing SAR.

See figure and description of proposed activities in mitigation plan. After construction includes planting trees and restricting clearing and livestock access.

See figure and description of proposed activities in mitigation plan. After monitoring includes growth of vegetation.

See figure and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: Palo Pinto Creek (DS-1) Downstream Enhancement SAR No.: DS-1-10 Size (LF): 1,229 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan.

Stream ID/Name: DS-1 SAR No.: 10	Stream ID/Name: DS-1 SAR No.: 10	Stream ID/Name: DS-1 SAR No.: 10
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for floodplain connectivity with proposed operations plan of project to increase high flow events that provide regular flow access to bankfull benches. Score will improve for sediment deposition after cattle removal and planting allows revegetation to stabilize soils.	Additional Notes: Proposed condition scores target at maturity. Score will improve for bank condition after cattle removal and planting allows revegetation to stabilize soils. Scores will improve for riparian buffer with cattle removal and vegetation management / planting to improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 50	Avg. Banks: 10	50	10	50	10	50	10
Avg. Waters Edge: 20	Avg. Water: 4	20	4	20	4	20	4
Avg. OHWM: 25	Avg. OHWM: 6	25	6	25	6	25	6

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7	3	16.7	4	23.3	4	23.3
	Bank condition	3			3		5		5	
	Sediment deposition	4			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1.9	Sum of bank scores / 10 x 25	8.5	3.4	15.0	4	20.0	5	25.0
	Riparian buffer (right bank)	1.5			2.6		4		5	
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5	4	22.5	4	22.5	4	22.5
	In-stream habitat	5			5		5		5	
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9	3	21.9	3	21.9	3	21.9
	Channel flow status	4			4		4		4	
Sum of core element scores = overall TXRAM stream score				70	-	76	-	88	-	93
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				70	-	76	-	88	-	93

Representative Site Photograph:

Facing downstream near the middle of the existing SAR.

See figure and description of proposed activities in mitigation plan. After construction includes planting trees and restricting clearing and livestock access.

See figure and description of proposed activities in mitigation plan. After monitoring includes growth of vegetation.

See figure and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: Palo Pinto Creek (DS-1) Downstream Enhancement SAR No.: DS-1-13 Size (LF): 1,229 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan.

Stream ID/Name: DS-1 SAR No.: 13	Stream ID/Name: DS-1 SAR No.: 13	Stream ID/Name: DS-1 SAR No.: 13
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for floodplain connectivity with proposed operations plan of project to increase high flow events that provide regular flow access to bankfull benches. Score will improve for sediment deposition after cattle removal and planting allows revegetation to stabilize soils.	Additional Notes: Proposed condition scores target at maturity. Score will improve for bank condition after cattle removal and planting allows revegetation to stabilize soils. Scores will improve for riparian buffer with cattle removal and vegetation management / planting to improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 50	Avg. Banks: 10	50	10	50	10	50	10
Avg. Waters Edge: 20	Avg. Water: 4	20	4	20	4	20	4
Avg. OHWM: 25	Avg. OHWM: 6	25	6	25	6	25	6

Scoring Table

					Year/Option _End of Construction_		***Year/Option _End of Monitoring_***		***Year/Option _At Maturity_***	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7	3	16.7	4	23.3	4	23.3
	Bank condition	3			3		5		5	
	Sediment deposition	4			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1.8	Sum of bank scores / 10 x 25	8.8	3.4	15.8	4	20.0	5	25.0
	Riparian buffer (right bank)	1.7			2.9		4		5	
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5	4	22.5	4	22.5	4	22.5
	In-stream habitat	5			5		5		5	
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9	3	21.9	3	21.9	3	21.9
	Channel flow status	4			4		4		4	
Sum of core element scores = overall TXRAM stream score				70	-	77	-	88	-	93
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				70	-	77	-	88	-	93

Representative Site Photograph:

Facing upstream at the downstream end of the existing SAR.

See figure and description of proposed activities in mitigation plan. After construction includes planting trees and restricting clearing and livestock access.

See figure and description of proposed activities in mitigation plan. After monitoring includes growth of vegetation.

See figure and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: Palo Pinto Creek (DS-1) Downstream Enhancement SAR No.: DS-1-14 Size (LF): 1,024 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan.

Stream ID/Name: DS-1 SAR No.: 14	Stream ID/Name: DS-1 SAR No.: 14	Stream ID/Name: DS-1 SAR No.: 14
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for floodplain connectivity with proposed operations plan of project to increase high flow events that provide regular flow access to bankfull benches. Score will improve for sediment deposition after cattle removal and planting allows revegetation to stabilize soils.	Additional Notes: Proposed condition scores target at maturity. Score will improve for bank condition after cattle removal and planting allows revegetation to stabilize soils. Scores will improve for riparian buffer with cattle removal and vegetation management / planting to improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 50	Avg. Banks: 10	50	10	50	10	50	10
Avg. Waters Edge: 20	Avg. Water: 4	20	4	20	4	20	4
Avg. OHWM: 25	Avg. OHWM: 6	25	6	25	6	25	6

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7	3	16.7	4	23.3	4	23.3
	Bank condition	3			3		5		5	
	Sediment deposition	4			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1.8	Sum of bank scores / 10 x 25	10.5	3.4	17.8	4	20.0	5	25.0
	Riparian buffer (right bank)	2.4			3.7		4		5	
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5	4	22.5	4	22.5	4	22.5
	In-stream habitat	5			5		5		5	
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9	3	21.9	3	21.9	3	21.9
	Channel flow status	4			4		4		4	
Sum of core element scores = overall TXRAM stream score				72	-	79	-	88	-	93
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				72	-	79	-	88	-	93

Representative Site Photograph:

	*Facing downstream at the upstream end of the existing SAR.*	*See figure and description of proposed activities in mitigation plan. After construction includes planting trees and restricting clearing and livestock access.*	*See figure and description of proposed activities in mitigation plan. After monitoring includes growth of vegetation.*	*See figure and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation.*

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: Palo Pinto Creek (DS-1) Downstream Enhancement SAR No.: DS-1-17 Size (LF): 1,228 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan.

Stream ID/Name: DS-1 SAR No.: 17	Stream ID/Name: DS-1 SAR No.: 17	Stream ID/Name: DS-1 SAR No.: 17
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for floodplain connectivity with proposed operations plan of project to increase high flow events that provide regular flow access to bankfull benches. Score will improve for sediment deposition after cattle removal and planting allows revegetation to stabilize soils.	Additional Notes: Proposed condition scores target at maturity. Score will improve for bank condition after cattle removal and planting allows revegetation to stabilize soils. Scores will improve for riparian buffer with cattle removal and vegetation management / planting to improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 50	Avg. Banks: 10	50	10	50	10	50	10
Avg. Waters Edge: 20	Avg. Water: 4	20	4	20	4	20	4
Avg. OHWM: 25	Avg. OHWM: 6	25	6	25	6	25	6

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7	3	16.7	4	23.3	4	23.3
	Bank condition	3			3		5		5	
	Sediment deposition	4			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	2.2	Sum of bank scores / 10 x 25	13.0	3.6	19.0	4	20.0	5	25.0
	Riparian buffer (right bank)	3.0			4.0		4		5	
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5	4	22.5	4	22.5	4	22.5
	In-stream habitat	5			5		5		5	
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9	3	21.9	3	21.9	3	21.9
	Channel flow status	4			4		4		4	
Sum of core element scores = overall TXRAM stream score				74	-	80	-	88	-	93
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				74	-	80	-	88	-	93

Representative Site Photograph:

Facing downstream at the existing SAR.

See figure and description of proposed activities in mitigation plan. After construction includes planting trees and restricting clearing and livestock access.

See figure and description of proposed activities in mitigation plan. After monitoring includes growth of vegetation.

See figure and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: Palo Pinto Creek (DS-1) Downstream Enhancement SAR No.: DS-1-20 Size (LF): 1,228 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan.

Stream ID/Name: DS-1 SAR No.: 20	Stream ID/Name: DS-1 SAR No.: 20	Stream ID/Name: DS-1 SAR No.: 20
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for floodplain connectivity with proposed operations plan of project to increase high flow events that provide regular flow access to bankfull benches. Score will improve for sediment deposition after cattle removal and planting allows revegetation to stabilize soils.	Additional Notes: Proposed condition scores target at maturity. Score will improve for bank condition after cattle removal and planting allows revegetation to stabilize soils. Scores will improve for riparian buffer with cattle removal and vegetation management / planting to improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 50	Avg. Banks: 10	50	10	50	10	50	10
Avg. Waters Edge: 20	Avg. Water: 4	20	4	20	4	20	4
Avg. OHWM: 25	Avg. OHWM: 6	25	6	25	6	25	6

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7	3	16.7	4	23.3	4	23.3
	Bank condition	3			3		5		5	
	Sediment deposition	4			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	2.2	Sum of bank scores / 10 x 25	10.0	3.6	17.5	4	20.0	5	25.0
	Riparian buffer (right bank)	1.8			3.4		4		5	
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5	4	22.5	4	22.5	4	22.5
	In-stream habitat	5			5		5		5	
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9	3	21.9	3	21.9	3	21.9
	Channel flow status	4			4		4		4	
Sum of core element scores = overall TXRAM stream score				71	-	79	-	88	-	93
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				71	-	79	-	88	-	93

Representative Site Photograph:

Facing downstream at the existing SAR.

See figure and description of proposed activities in mitigation plan. After construction includes planting trees and restricting clearing and livestock access.

See figure and description of proposed activities in mitigation plan. After monitoring includes growth of vegetation.

See figure and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation.

TXRAM STREAM FINAL SCORING SHEET FOR EVALUATING PROPOSED MITIGATION/IMPACT ACTIVITIES

Project/Site Name/No.: Turkey Peak Project Type: ☐ Fill/Impact (☐ Linear ☐ Non-linear) ☒ Mitigation/Conservation

Stream ID/Name: Palo Pinto Creek (DS-1) Downstream Enhancement SAR No.: DS-1-24 Size (LF): 1,016 Date: 2017 Evaluator(s): RW

Stream Type: Perennial - Artificial Ecoregion: Cross Timbers Delineation Performed: ☒ Previously ☐ Currently

8-Digit HUC: 12060201 Watershed Condition (developed, pasture, etc.): Pasture, Ponds Watershed Size: 471 sq. mi.

Aerial Photo Date and Source: 2014 NAIP Site Photos: N/A Representative: ☒ Yes ☐ No

Stressor(s): N/A Are normal climatic/hydrologic conditions present? ☒ Yes ☐ No (If no, explain in Notes)

Notes: Proposed conditions for SAR following activities described in mitigation plan.

Stream ID/Name: DS-1 SAR No.: 24	Stream ID/Name: DS-1 SAR No.: 24	Stream ID/Name: DS-1 SAR No.: 24
Additional Notes: Proposed condition scores at the end of construction.	Additional Notes: Proposed condition scores at the end of monitoring. Score will improve for floodplain connectivity with proposed operations plan of project to increase high flow events that provide regular flow access to bankfull benches. Score will improve for sediment deposition after cattle removal and planting allows revegetation to stabilize soils.	Additional Notes: Proposed condition scores target at maturity. Score will improve for bank condition after cattle removal and planting allows revegetation to stabilize soils. Scores will improve for riparian buffer with cattle removal and vegetation management / planting to improve native community.

Stream Characteristics

Stream Width (Feet)	*Stream Height/Depth (Feet)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*	*Stream Width (Ft)*	*Stream Height (Ft)*
Avg. Bank to Bank: 50	Avg. Banks: 10	50	10	50	10	50	10
Avg. Waters Edge: 20	Avg. Water: 4	20	4	20	4	20	4
Avg. OHWM: 25	Avg. OHWM: 6	25	6	25	6	25	6

Scoring Table

					Year/Option End of Construction		*Year/Option End of Monitoring*		*Year/Option At Maturity*	
Core Element	***Metric***	***Existing Metric Score***	***Core Element Score Calculation***	***Existing Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***	***Proposed Metric Score***	***Proposed Core Element Score***
Channel condition	Floodplain connectivity	3	Sum of metric scores / 15 x 25	16.7	3	16.7	4	23.3	4	23.3
	Bank condition	3			3		5		5	
	Sediment deposition	4			4		5		5	
Riparian buffer condition	Riparian buffer (left bank)	1.7	Sum of bank scores / 10 x 25	7.5	3.3	16.0	4	20.0	5	25.0
	Riparian buffer (right bank)	1.3			3.1		4		5	
In-stream condition	Substrate composition	4	Sum of metric scores / 10 x 25	22.5	4	22.5	4	22.5	4	22.5
	In-stream habitat	5			5		5		5	
Hydrologic condition	Flow regime	3	Sum of metric scores / 8 x 25	21.9	3	21.9	3	21.9	3	21.9
	Channel flow status	4			4		4		4	
Sum of core element scores = overall TXRAM stream score				69	-	77	-	88	-	93
Additional points for limited habitats = overall TXRAM stream score x 0.025 for each bank (right/left) if: L R ☐ ☐ Dominated by native trees greater than 24-inch diameter at breast height ☐ ☐ Dominated by hard mast (i.e., acorns and nuts) producing native species in the tree strata				0	-	0	-	0	-	0
Sum of overall TXRAM stream score and additional points = **total overall TXRAM stream score**				69	-	77	-	88	-	93

Representative Site Photograph:

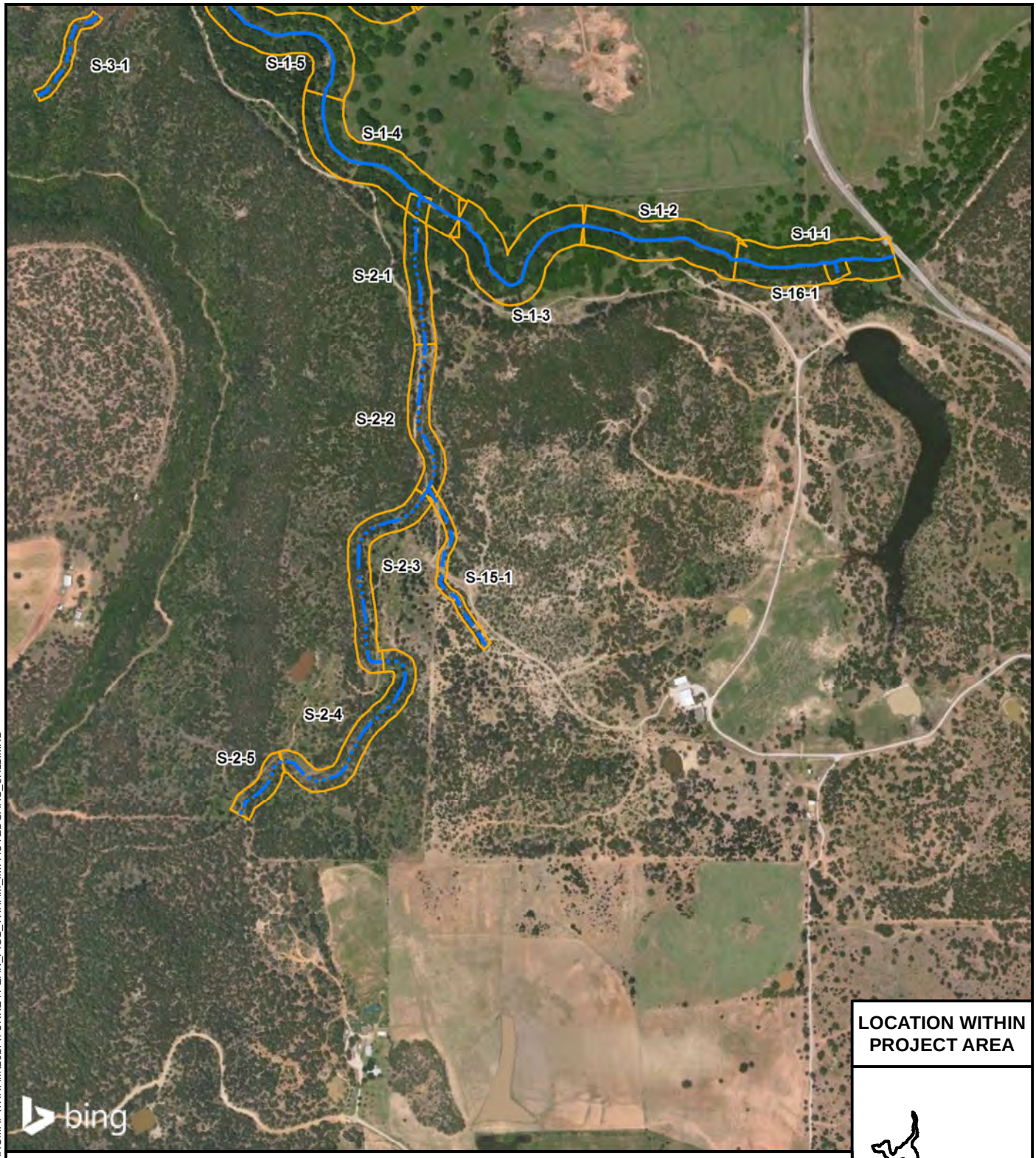
Facing downstream at the existing SAR.

See figure and description of proposed activities in mitigation plan. After construction includes planting trees and restricting clearing and livestock access.

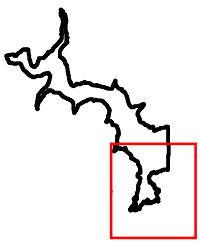
See figure and description of proposed activities in mitigation plan. After monitoring includes growth of vegetation.

See figure and description of proposed activities in mitigation plan. At maturity includes target scores for mitigation.

Appendix H: Maps



LOCATION WITHIN PROJECT AREA

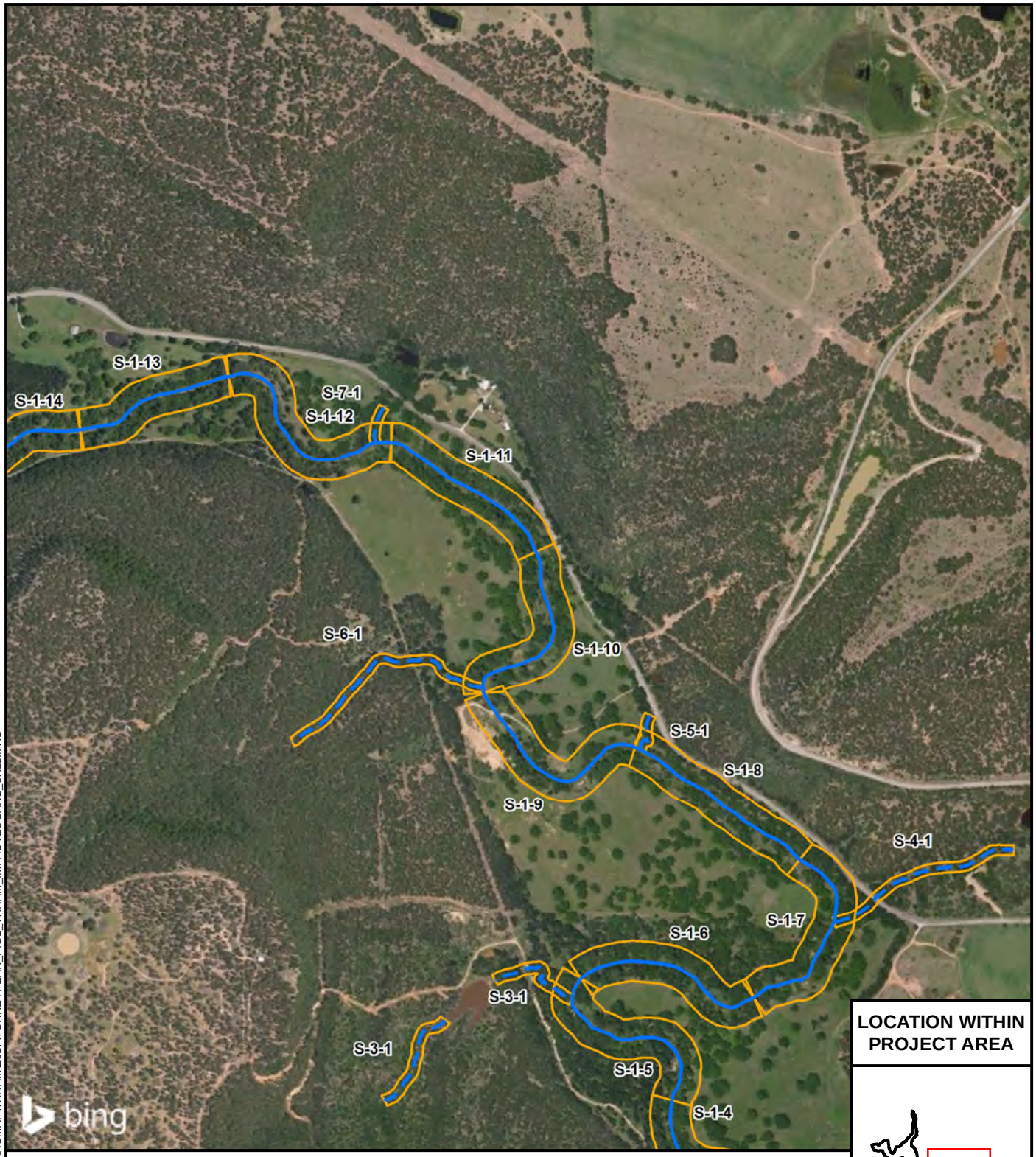


WATERS OF THE U.S.
- EPHEMERAL STREAM
- INTERMITTENT STREAM
- PERENNIAL STREAM

FEATURES NOT WATERS OF THE U.S.
- SAR RIPARIAN BUFFER

TURKEY PEAK **TXRAM EVALUATION** IMPACTED SAR MAPS	N 0 250 500 FEET	**PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1**	HDR JUN 2017 | FIGURE 1-1

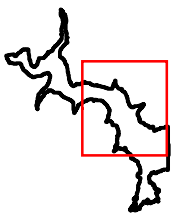
PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG1_TXRAM_IMPACTEDSARS_8X11.MXD



WATERS OF THE U.S.
- EPHEMERAL STREAM
- INTERMITTENT STREAM
- PERENNIAL STREAM

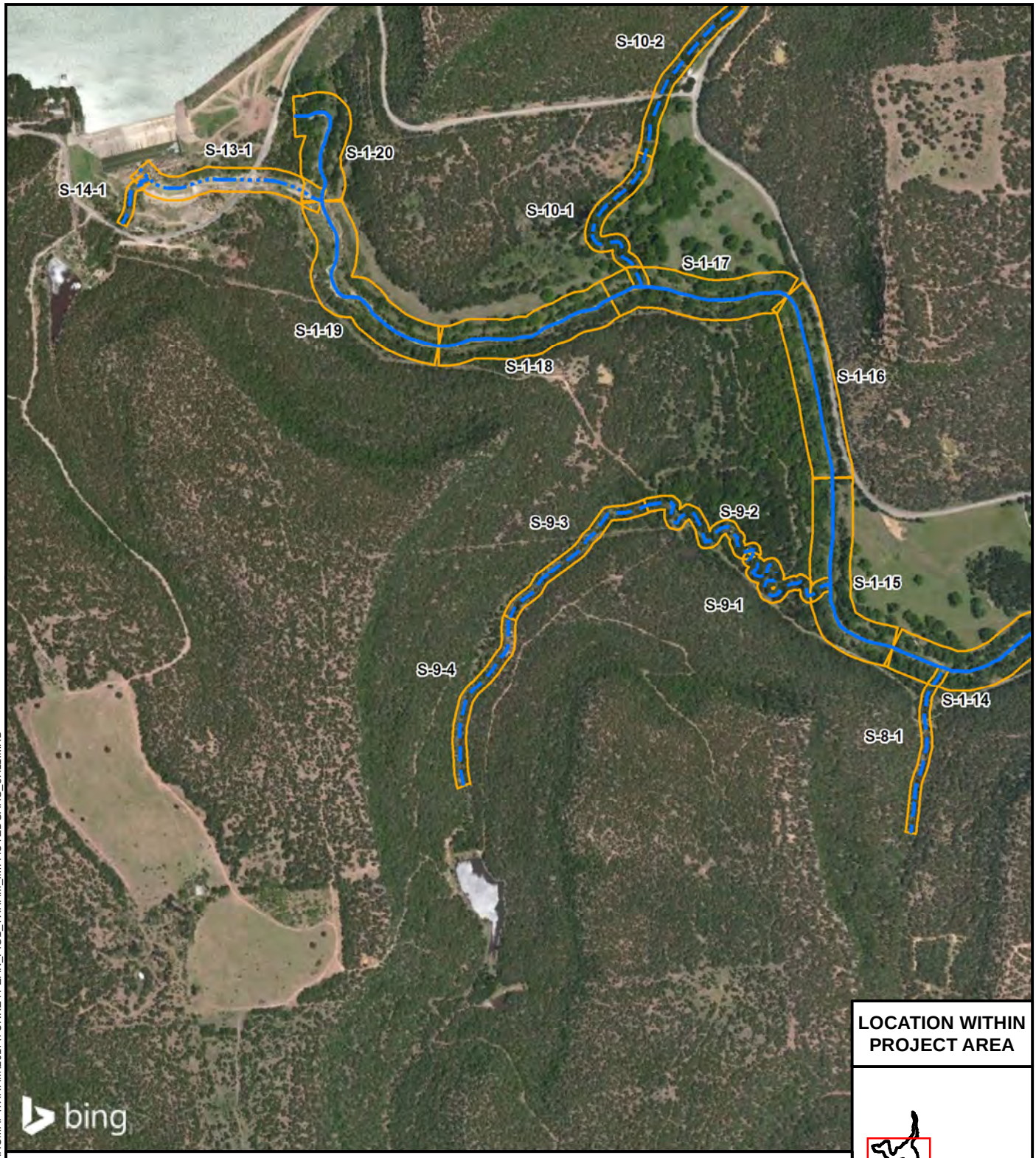
FEATURES NOT WATERS OF THE U.S.
- SAR RIPARIAN BUFFER

LOCATION WITHIN PROJECT AREA

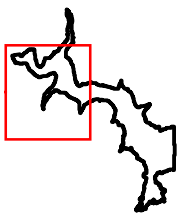


PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG1_TXRAM_IMPACTEDSARS_8X11.MXD

TURKEY PEAK **TXRAM EVALUATION** IMPACTED SAR MAPS	N 0 250 500 FEET	**PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1**	HDR	JUN 2017 / FIGURE 1-2



LOCATION WITHIN PROJECT AREA

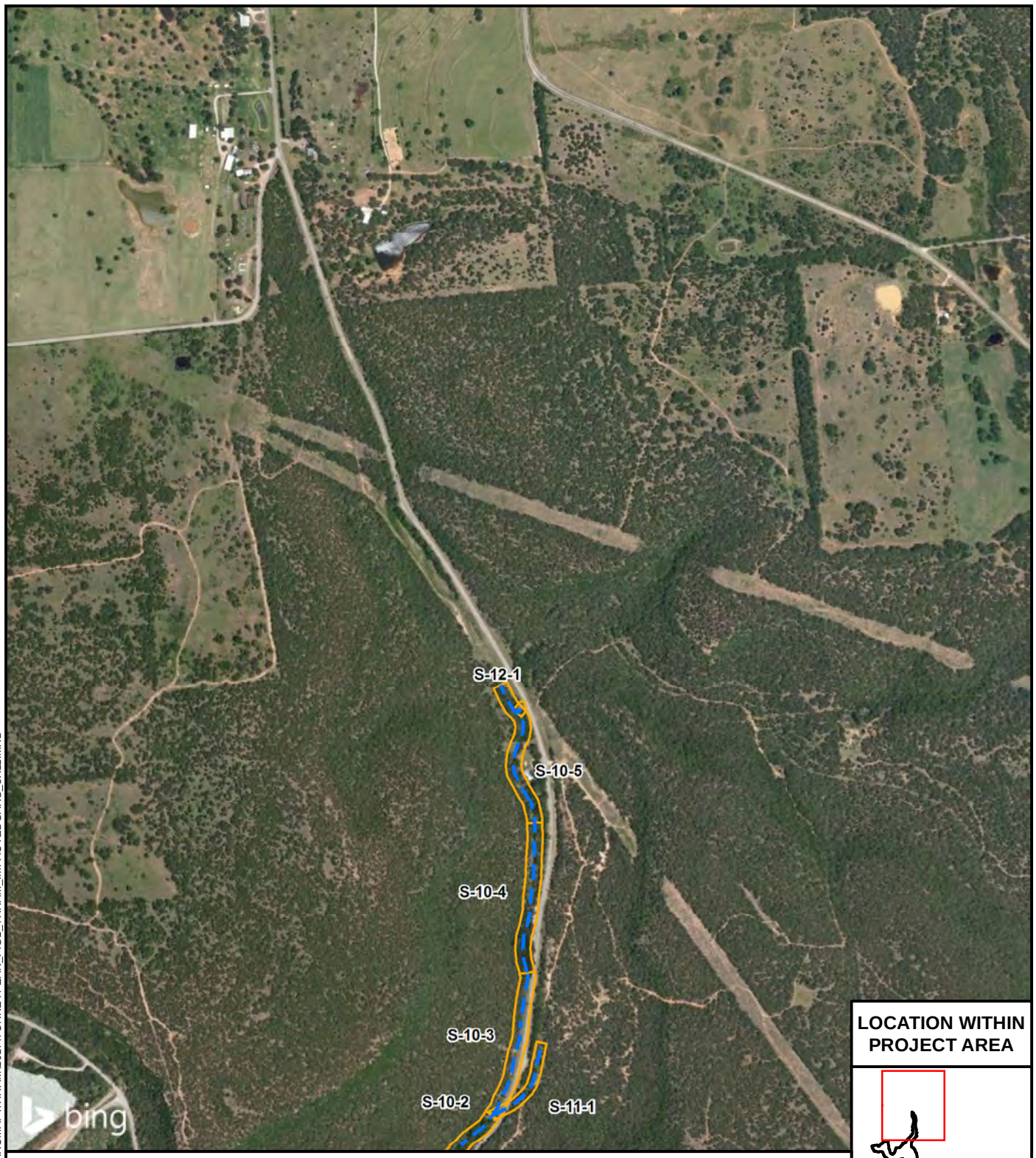


WATERS OF THE U.S.
- EPHEMERAL STREAM
- INTERMITTENT STREAM
- PERENNIAL STREAM

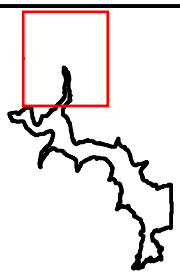
FEATURES NOT WATERS OF THE U.S.
- SAR RIPARIAN BUFFER

TURKEY PEAK **TXRAM EVALUATION** IMPACTED SAR MAPS	N 0 250 500 FEET	**PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1**	HDR JUN 2017 | FIGURE 1-3

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG1_TXRAM_IMPACTEDSARS_8X11.MXD



LOCATION WITHIN PROJECT AREA



WATERS OF THE U.S.
- EPHEMERAL STREAM
- INTERMITTENT STREAM
- PERENNIAL STREAM

FEATURES NOT WATERS OF THE U.S.
- SAR RIPARIAN BUFFER

TURKEY PEAK
TXRAM EVALUATION
IMPACTED SAR MAPS

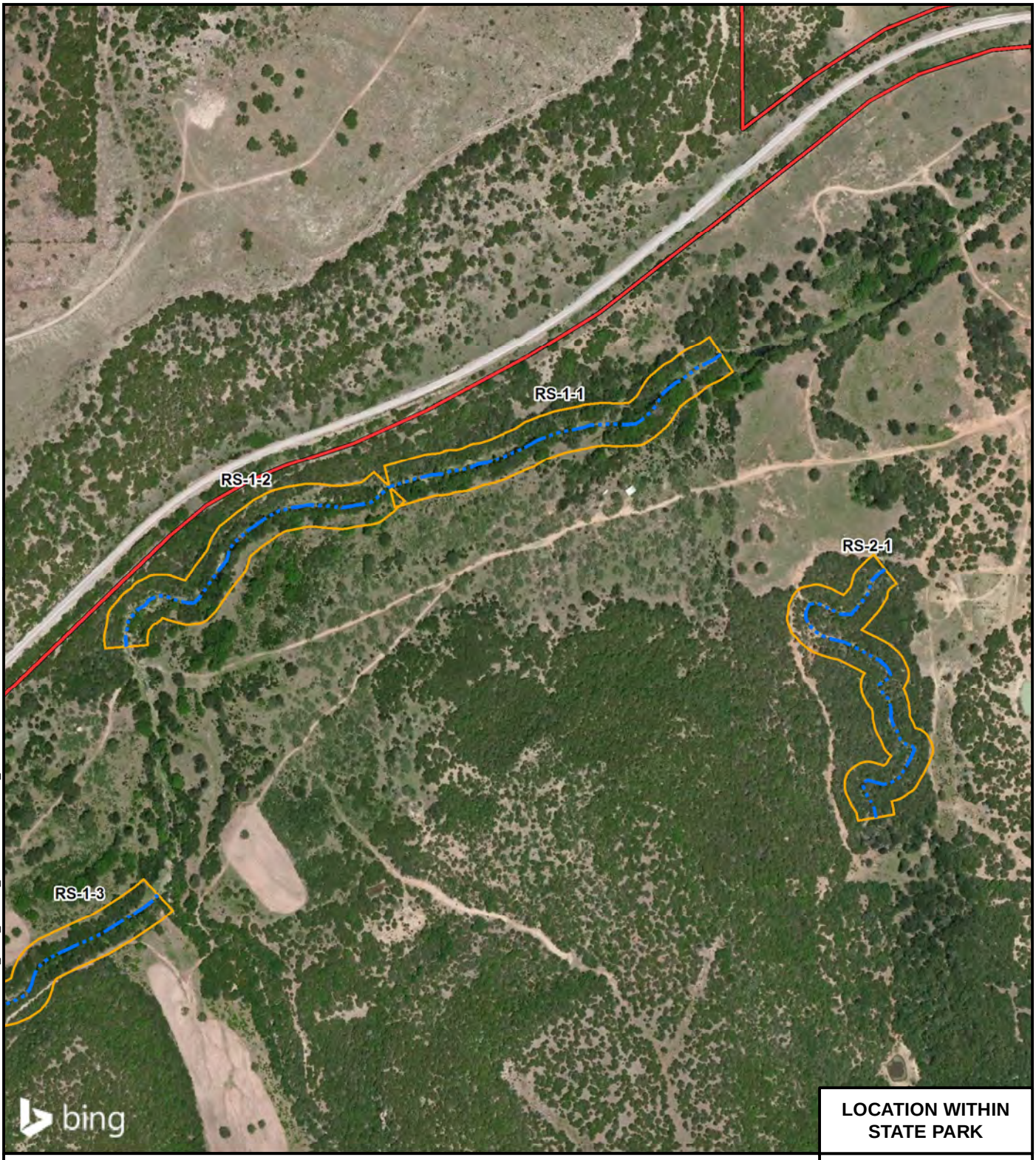
N
0 250 500
FEET

PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1

JUN 2017

FIGURE 1-4

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG1_TXRAM_IMPACTEDSARS_8X11.MXD



LOCATION WITHIN STATE PARK

WATERS OF THE U.S.

REFERENCE SARs

- EPHEMERAL STREAM
- INTERMITTENT STREAM

FEATURES NOT WATERS OF THE U.S.

- PALO PINTO MOUNTAINS STATE PARK
- SAR RIPARIAN BUFFER

TURKEY PEAK

TXRAM EVALUATION

REFERENCE SAR MAPS

N

0 250 500

FEET

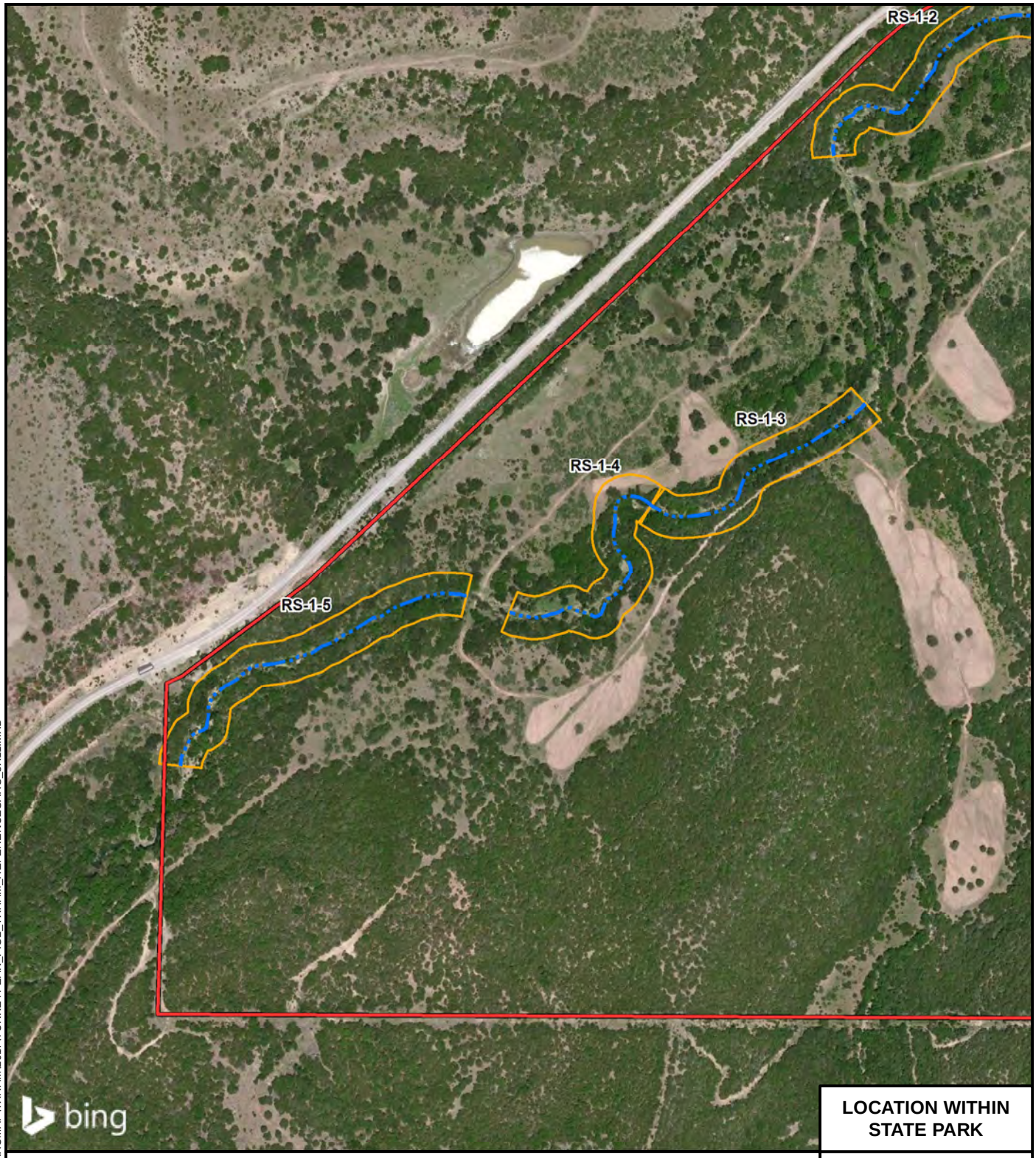
PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1

HDR

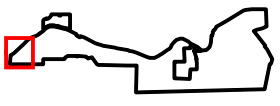
MAY 2017

FIGURE 2-1

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG2_TXRAM_REFERENCESARS_8X11.MXD



LOCATION WITHIN STATE PARK



WATERS OF THE U.S.

REFERENCE SARs

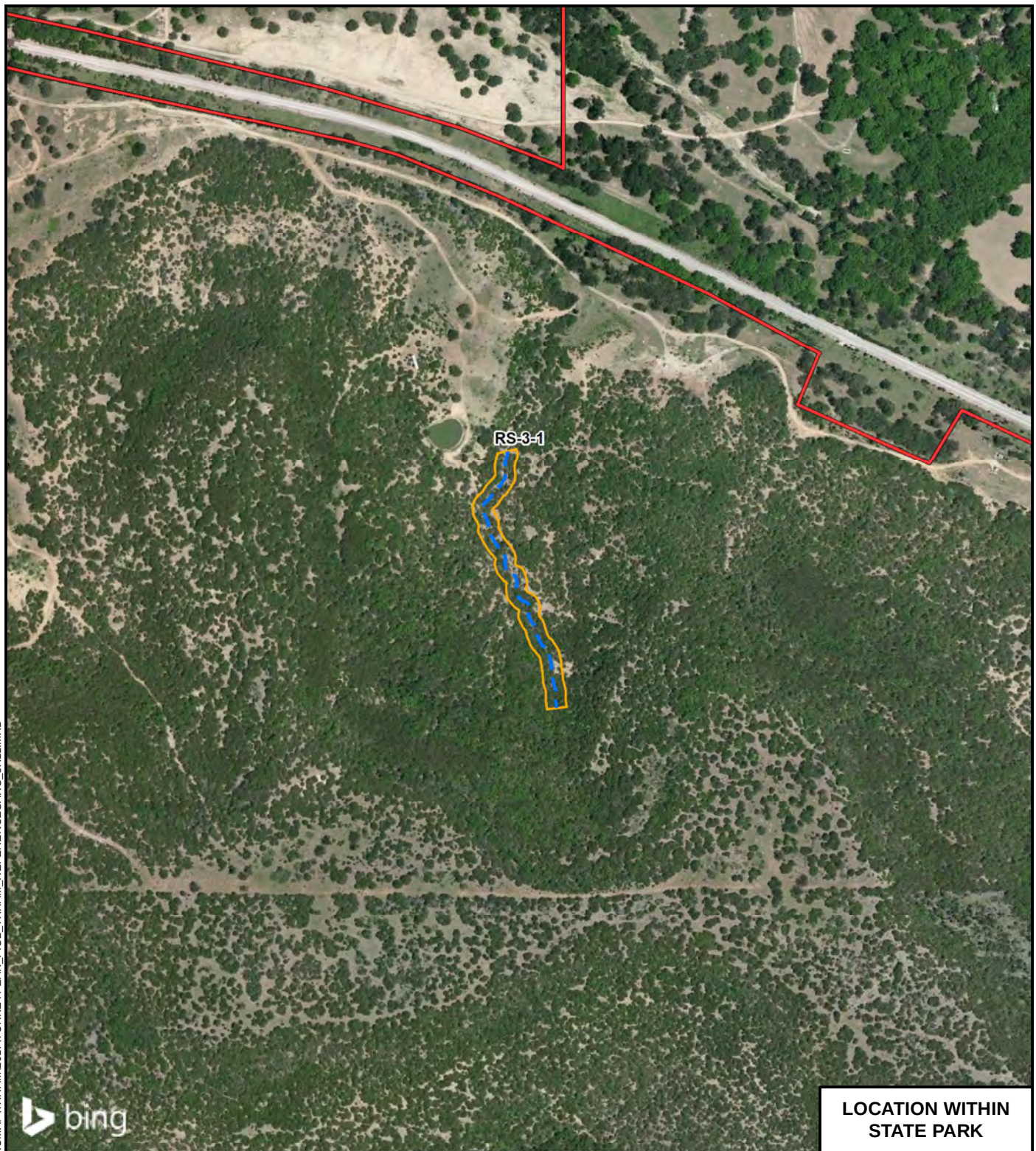
- EPHEMERAL STREAM
- INTERMITTENT STREAM

FEATURES NOT WATERS OF THE U.S.

- PALO PINTO MOUNTAINS STATE PARK
- SAR RIPARIAN BUFFER

TURKEY PEAK **TXRAM EVALUATION** REFERENCE SAR MAPS	N 0 250 500 FEET	**PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1**	HDR MAY 2017 | FIGURE 2-2

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG2_TXRAM_REFERENCESARS_8X11.MXD



LOCATION WITHIN STATE PARK

WATERS OF THE U.S.

REFERENCE SARs

- EPHEMERAL STREAM
- INTERMITTENT STREAM

FEATURES NOT WATERS OF THE U.S.

- PALO PINTO MOUNTAINS STATE PARK
- SAR RIPARIAN BUFFER

TURKEY PEAK

TXRAM EVALUATION

REFERENCE SAR MAPS

N

0 250 500

FEET

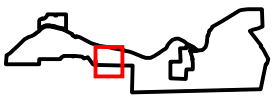
PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1

HDR

MAY 2017 | FIGURE 2-3

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG2_TXRAM_REFERENCESARS_8X11.MXD

LOCATION WITHIN STATE PARK



WATERS OF THE U.S.

REFERENCE SARs

- EPHEMERAL STREAM
- INTERMITTENT STREAM

FEATURES NOT WATERS OF THE U.S.

- PALO PINTO MOUNTAINS STATE PARK
- SAR RIPARIAN BUFFER

TURKEY PEAK

TXRAM EVALUATION

REFERENCE SAR MAPS

N

0 250 500

FEET

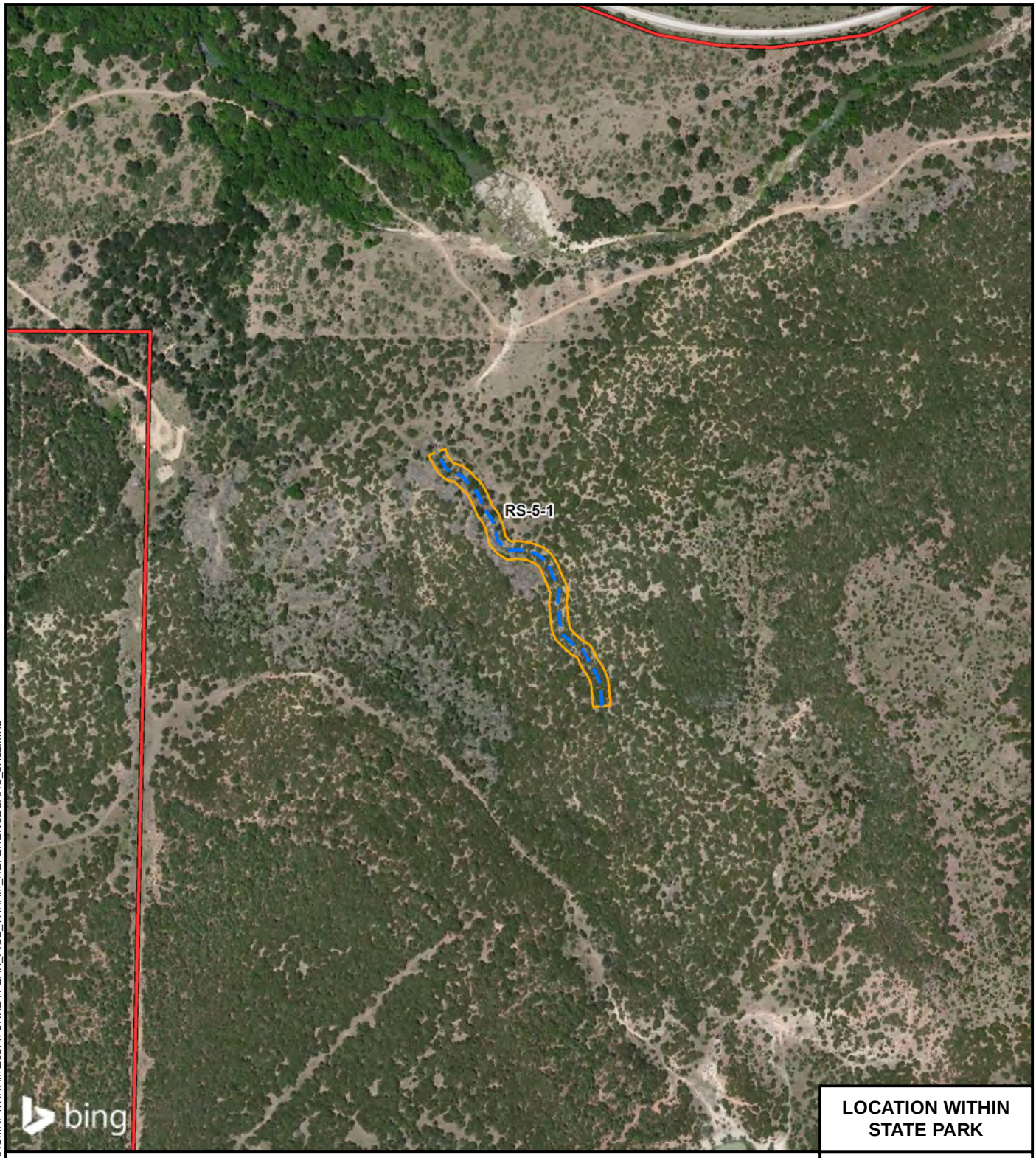
PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1

HDR

MAY 2017

FIGURE 2-4

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG2_TXRAM_REFERENCESARS_8X11.MXD



LOCATION WITHIN STATE PARK

WATERS OF THE U.S.

REFERENCE SARs

- EPHEMERAL STREAM
- INTERMITTENT STREAM

FEATURES NOT WATERS OF THE U.S.

- PALO PINTO MOUNTAINS STATE PARK
- SAR RIPARIAN BUFFER

TURKEY PEAK

TXRAM EVALUATION

REFERENCE SAR MAPS

N

0 250 500

FEET

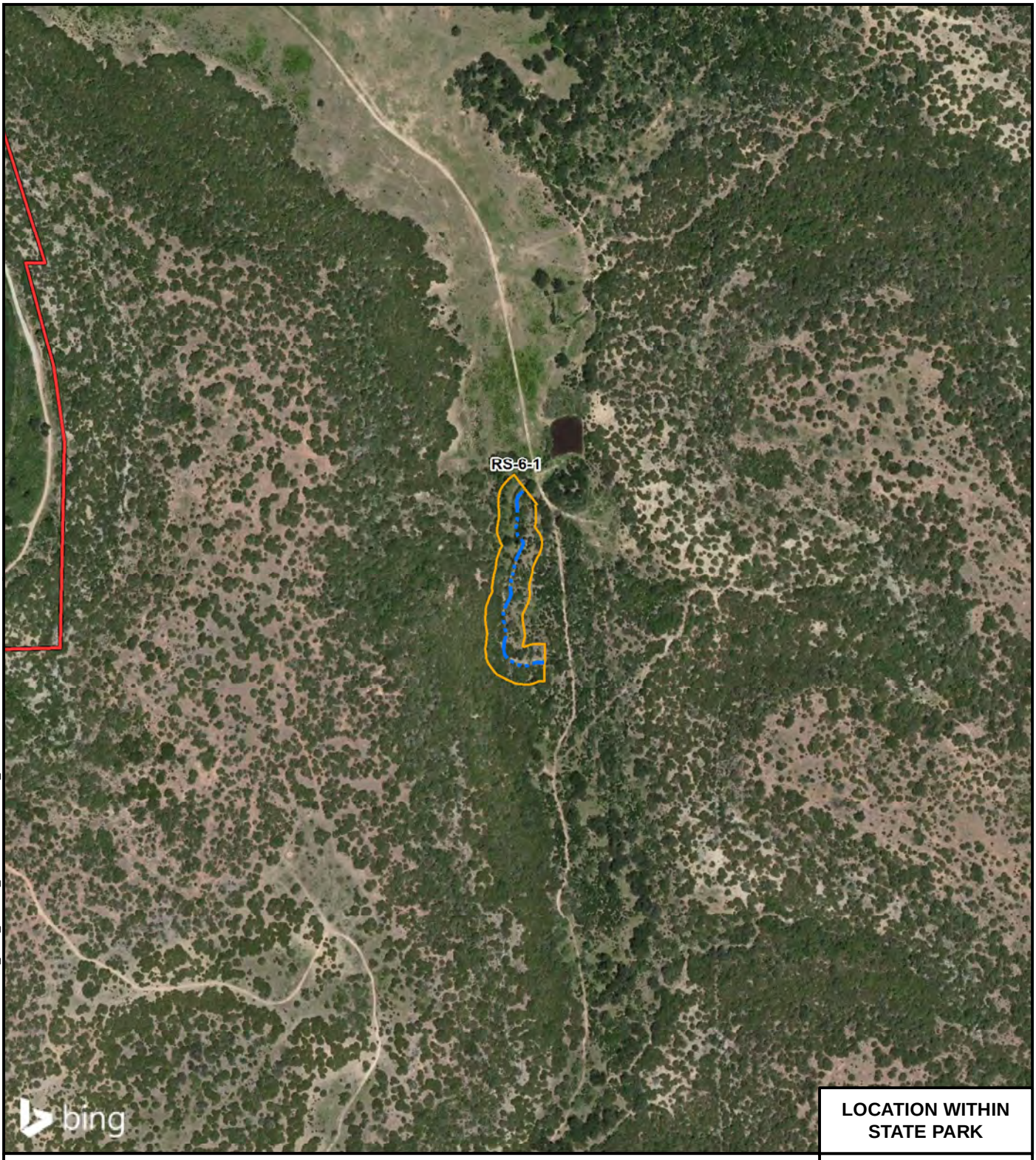
PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1

HDR

MAY 2017

FIGURE 2-5

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG2_TXRAM_REFERENCESARS_8X11.MXD



LOCATION WITHIN STATE PARK

WATERS OF THE U.S.

REFERENCE SARs

- EPHEMERAL STREAM
- INTERMITTENT STREAM

FEATURES NOT WATERS OF THE U.S.

- PALO PINTO MOUNTAINS STATE PARK
- SAR RIPARIAN BUFFER

TURKEY PEAK

TXRAM EVALUATION

REFERENCE SAR MAPS

N

0 250 500

FEET

PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1

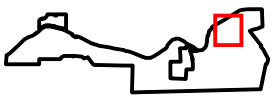
HDR

MAY 2017

FIGURE 2-6

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG2_TXRAM_REFERENCESARS_8X11.MXD

LOCATION WITHIN STATE PARK



WATERS OF THE U.S.

REFERENCE SARs

- EPHEMERAL STREAM
- INTERMITTENT STREAM

FEATURES NOT WATERS OF THE U.S.

- PALO PINTO MOUNTAINS STATE PARK
- SAR RIPARIAN BUFFER

TURKEY PEAK

TXRAM EVALUATION

REFERENCE SAR MAPS

N

0 250 500

FEET

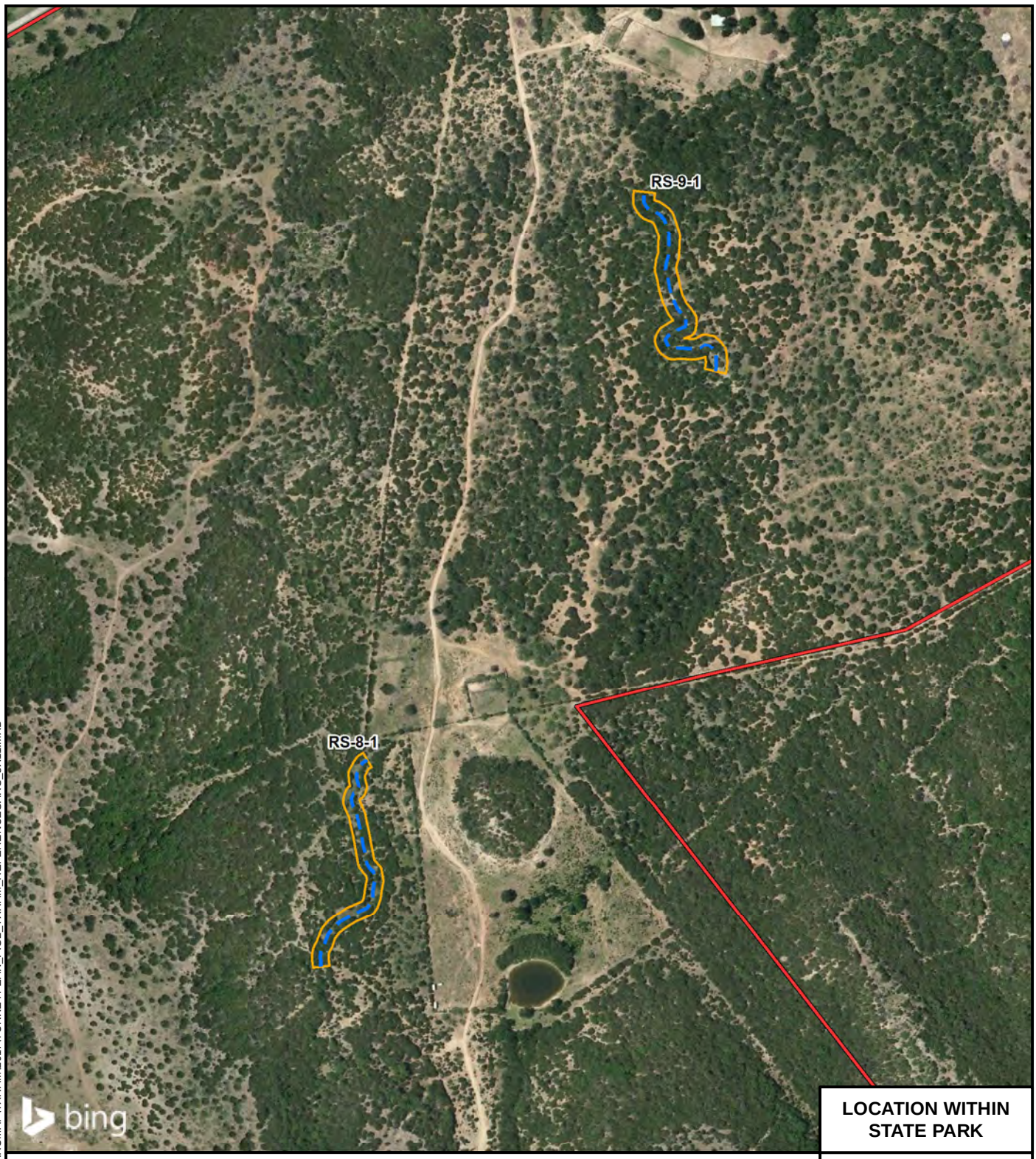
PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1

HDR

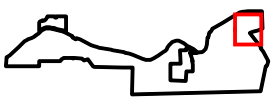
MAY 2017

FIGURE 2-7

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG2_TXRAM_REFERENCESARS_8X11.MXD



LOCATION WITHIN STATE PARK



WATERS OF THE U.S.

REFERENCE SARs

- EPHEMERAL STREAM
- INTERMITTENT STREAM

FEATURES NOT WATERS OF THE U.S.

- PALO PINTO MOUNTAINS STATE PARK
- SAR RIPARIAN BUFFER

TURKEY PEAK

TXRAM EVALUATION

REFERENCE SAR MAPS

N

0 250 500

FEET

PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1

HDR

MAY 2017

FIGURE 2-8

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG2_TXRAM_REFERENCESARS_8X11.MXD

LOCATION RELATED TO PROJECT AREA

WATERS OF THE U.S.

PERENNIAL STREAM

FEATURES NOT WATERS OF THE U.S.

SAR RIPARIAN BUFFER

TURKEY PEAK

TXRAM EVALUATION

REFERENCE SAR MAPS

N

0 200 400

FEET

PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1

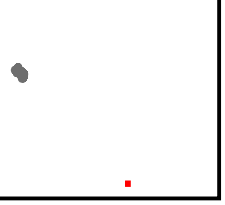
HDR

JUL 2017

FIGURE 2-9

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG2-9-11_TXRAM_NEWREFERENCESARS_8X11.MXD

LOCATION RELATED TO PROJECT AREA



WATERS OF THE U.S.

PERENNIAL STREAM

FEATURES NOT WATERS OF THE U.S.

SAR RIPARIAN BUFFER

TURKEY PEAK

TXRAM EVALUATION

REFERENCE SAR MAPS

N

0 200 400

FEET

PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1

HDR

JUL 2017

FIGURE 2-10

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG2-9-11_TXRAM_NEWREFERENCESARS_8X11.MXD

LOCATION RELATED TO PROJECT AREA

WATERS OF THE U.S.

PERENNIAL STREAM

FEATURES NOT WATERS OF THE U.S.

SAR RIPARIAN BUFFER

TURKEY PEAK

TXRAM EVALUATION

REFERENCE SAR MAPS

N

0 200 400

FEET

PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1

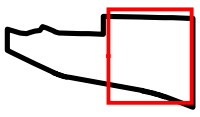
HDR

JUL 2017

FIGURE 2-11

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG2-9-11_TXRAM_NEWREFERENCESARS_8X11.MXD

LOCATION WITHIN MITIGATION AREA



WATERS OF THE U.S.
REPRESENTATIVE SARs
- EPHEMERAL STREAM
- INTERMITTENT STREAM

INFERRED SARs
- EPHEMERAL STREAM
- INTERMITTENT STREAM

FEATURES NOT WATERS OF THE U.S.
- POTENTIAL MITIGATION AREA
- SAR RIPARIAN BUFFER

TURKEY PEAK

TXRAM EVALUATION

EXISTING UPSTREAM MITIGATION SAR MAPS

N

0 250 500

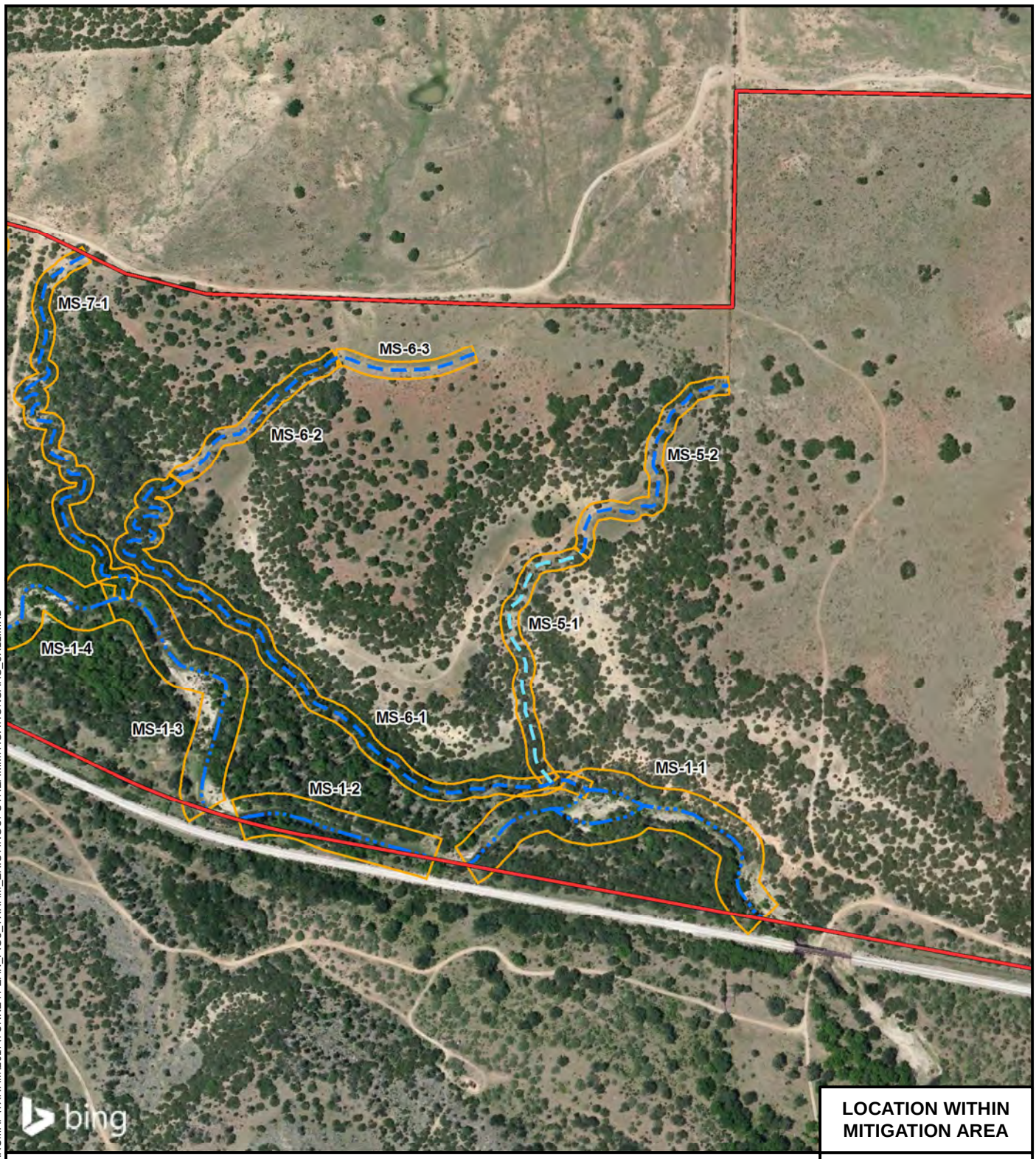
FEET

PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1

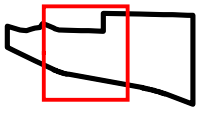
MAY 2017

FIGURE 3-1

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG3_TXRAM_EXISTINGUPSTREAMMITIGATIONSARS_8X11.MXD



LOCATION WITHIN MITIGATION AREA



WATERS OF THE U.S.

REPRESENTATIVE SARs
- EPHEMERAL STREAM
- INTERMITTENT STREAM

INFERRED SARs
- EPHEMERAL STREAM
- INTERMITTENT STREAM

FEATURES NOT WATERS OF THE U.S.
- POTENTIAL MITIGATION AREA
- SAR RIPARIAN BUFFER

TURKEY PEAK

TXRAM EVALUATION

EXISTING UPSTREAM MITIGATION SAR MAPS

N

0 250 500

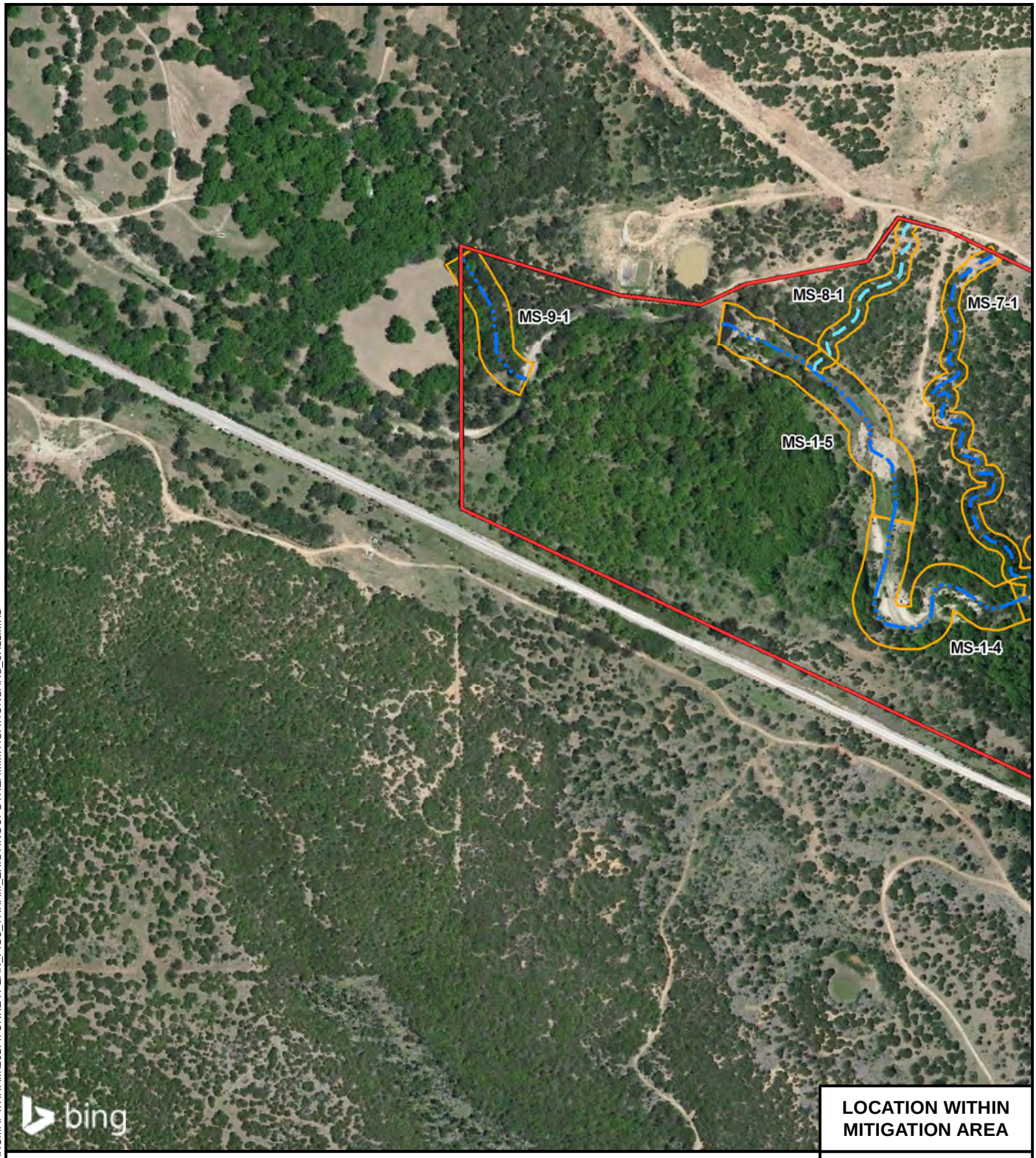
FEET

PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1

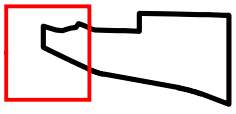
MAY 2017

FIGURE 3-2

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG3_TXRAM_EXISTINGUPSTREAMMITIGATIONSARS_8X11.MXD



LOCATION WITHIN MITIGATION AREA



WATERS OF THE U.S.
REPRESENTATIVE SARs
- EPHEMERAL STREAM
- INTERMITTENT STREAM

INFERRED SARs
- EPHEMERAL STREAM
- INTERMITTENT STREAM

FEATURES NOT WATERS OF THE U.S.
- POTENTIAL MITIGATION AREA
- SAR RIPARIAN BUFFER

TURKEY PEAK

TXRAM EVALUATION

EXISTING UPSTREAM MITIGATION SAR MAPS

N

0 250 500

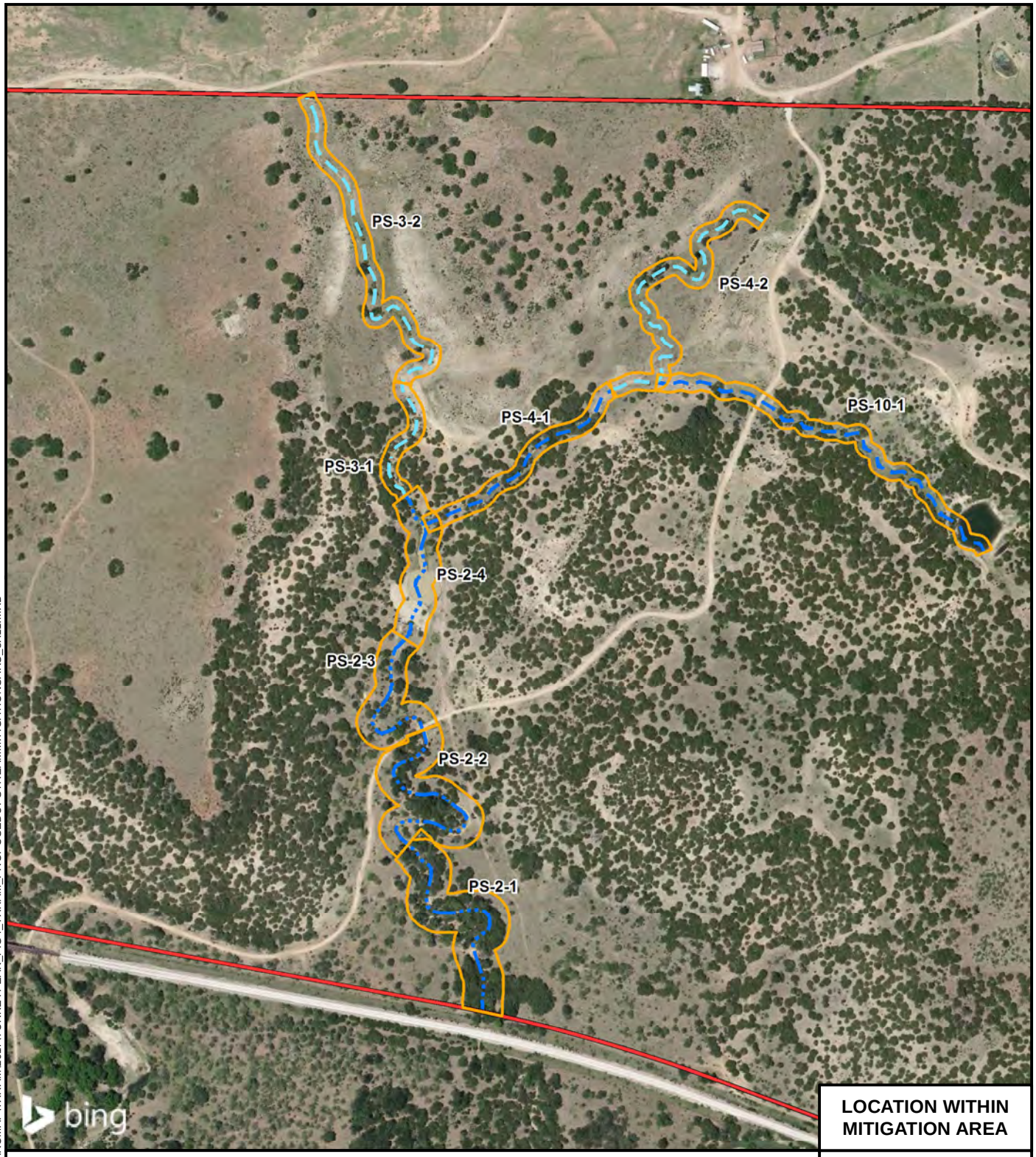
FEET

PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1

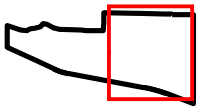
MAY 2017

FIGURE 3-3

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG3_TXRAM_EXISTINGUPSTREAMMITIGATIONSARS_8X11.MXD



LOCATION WITHIN MITIGATION AREA



WATERS OF THE U.S.

REPRESENTATIVE SARs
- EPHEMERAL STREAM
- INTERMITTENT STREAM

INFERRED SARs
- EPHEMERAL STREAM

FEATURES NOT WATERS OF THE U.S.
- POTENTIAL MITIGATION AREA
- SAR RIPARIAN BUFFER

TURKEY PEAK

TXRAM EVALUATION

PROPOSED UPSTREAM MITIGATION SAR MAPS

N

0 250 500

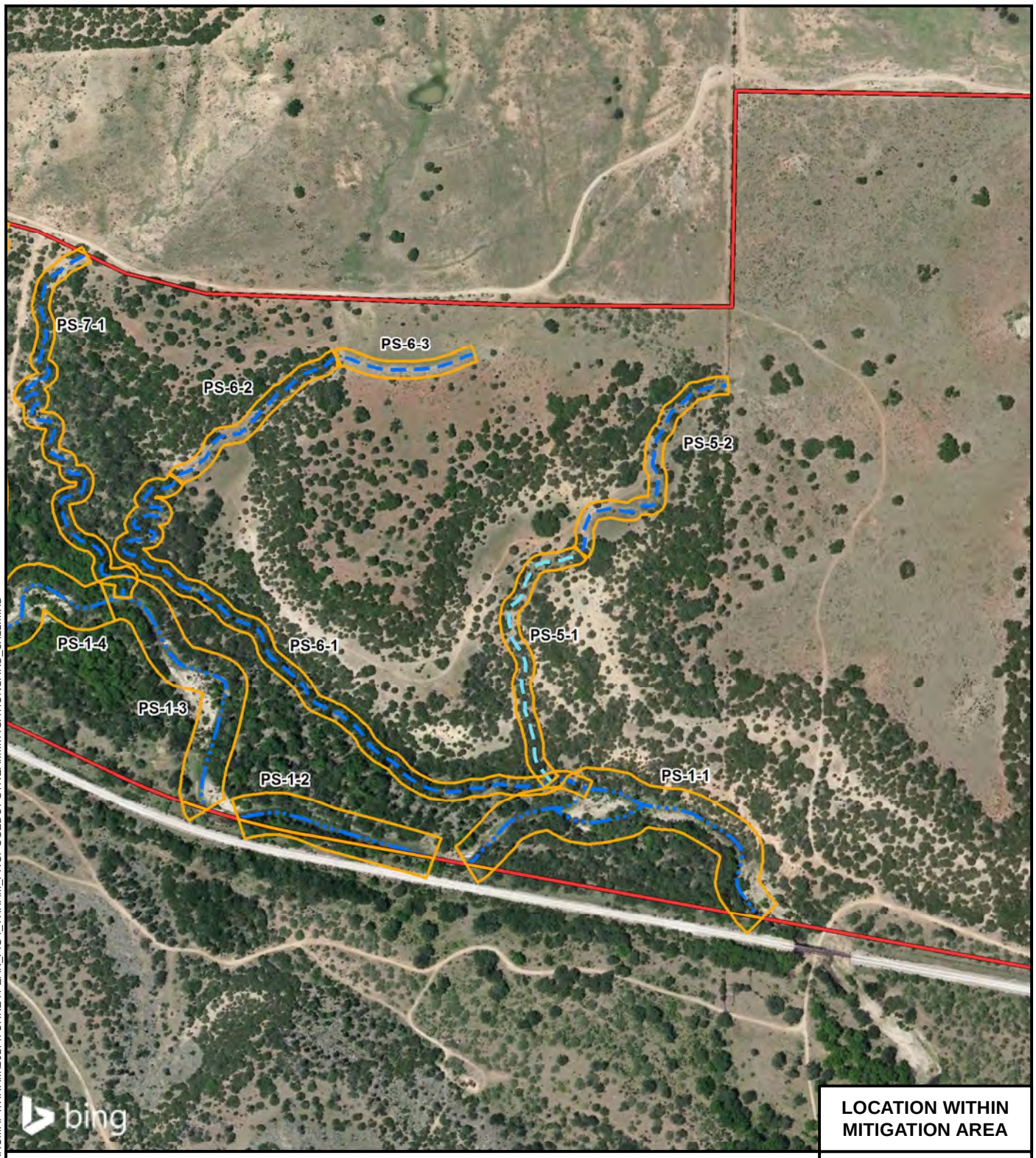
FEET

PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1

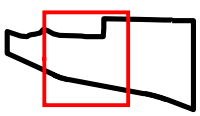
MAY 2017

FIGURE 4-1

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG4_TXRAM_PROPOSEDUPSTREAMMITIGATIONSARS_8X11.MXD



LOCATION WITHIN MITIGATION AREA



WATERS OF THE U.S.
REPRESENTATIVE SARs
- EPHEMERAL STREAM
- INTERMITTENT STREAM

INFERRED SARs
- EPHEMERAL STREAM

FEATURES NOT WATERS OF THE U.S.
- POTENTIAL MITIGATION AREA
- SAR RIPARIAN BUFFER

TURKEY PEAK

TXRAM EVALUATION

PROPOSED UPSTREAM MITIGATION SAR MAPS

N

0 250 500

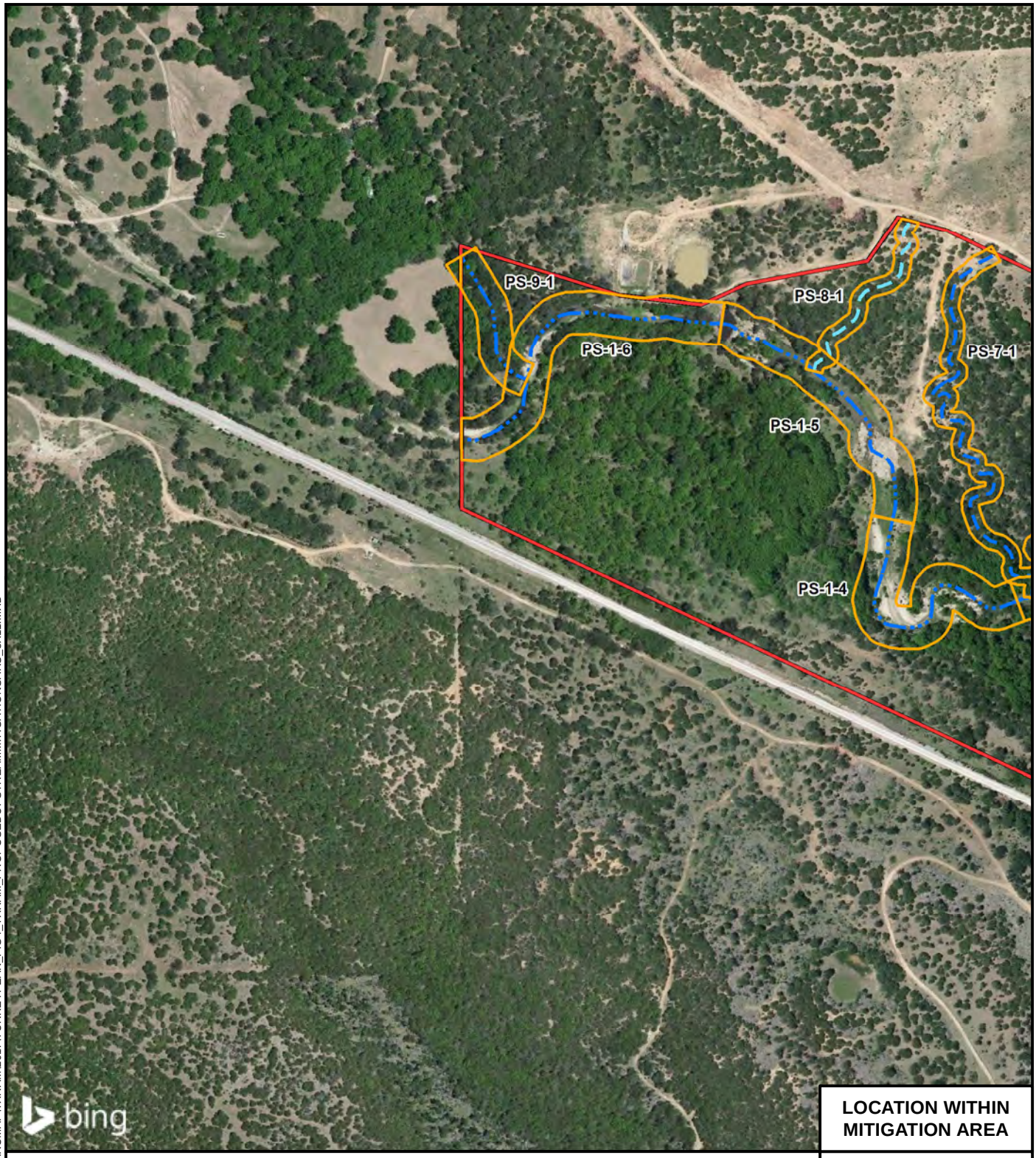
FEET

PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1

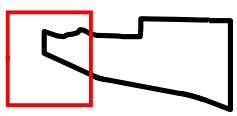
MAY 2017

FIGURE 4-2

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG4_TXRAM_PROPOSEDUPSTREAMMITIGATIONSARS_8X11.MXD



LOCATION WITHIN MITIGATION AREA



WATERS OF THE U.S.
REPRESENTATIVE SARs
- EPHEMERAL STREAM
- INTERMITTENT STREAM

INFERRED SARs
- EPHEMERAL STREAM

FEATURES NOT WATERS OF THE U.S.
- POTENTIAL MITIGATION AREA
- SAR RIPARIAN BUFFER

TURKEY PEAK

TXRAM EVALUATION

PROPOSED UPSTREAM MITIGATION SAR MAPS

N

0 250 500

FEET

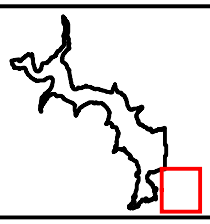
PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1

MAY 2017

FIGURE 4-3

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG4_TXRAM_PROPOSEDUPSTREAMMITIGATIONSARS_8X11.MXD

LOCATION WITHIN PROJECT AREA



WATERS OF THE U.S.

SARs

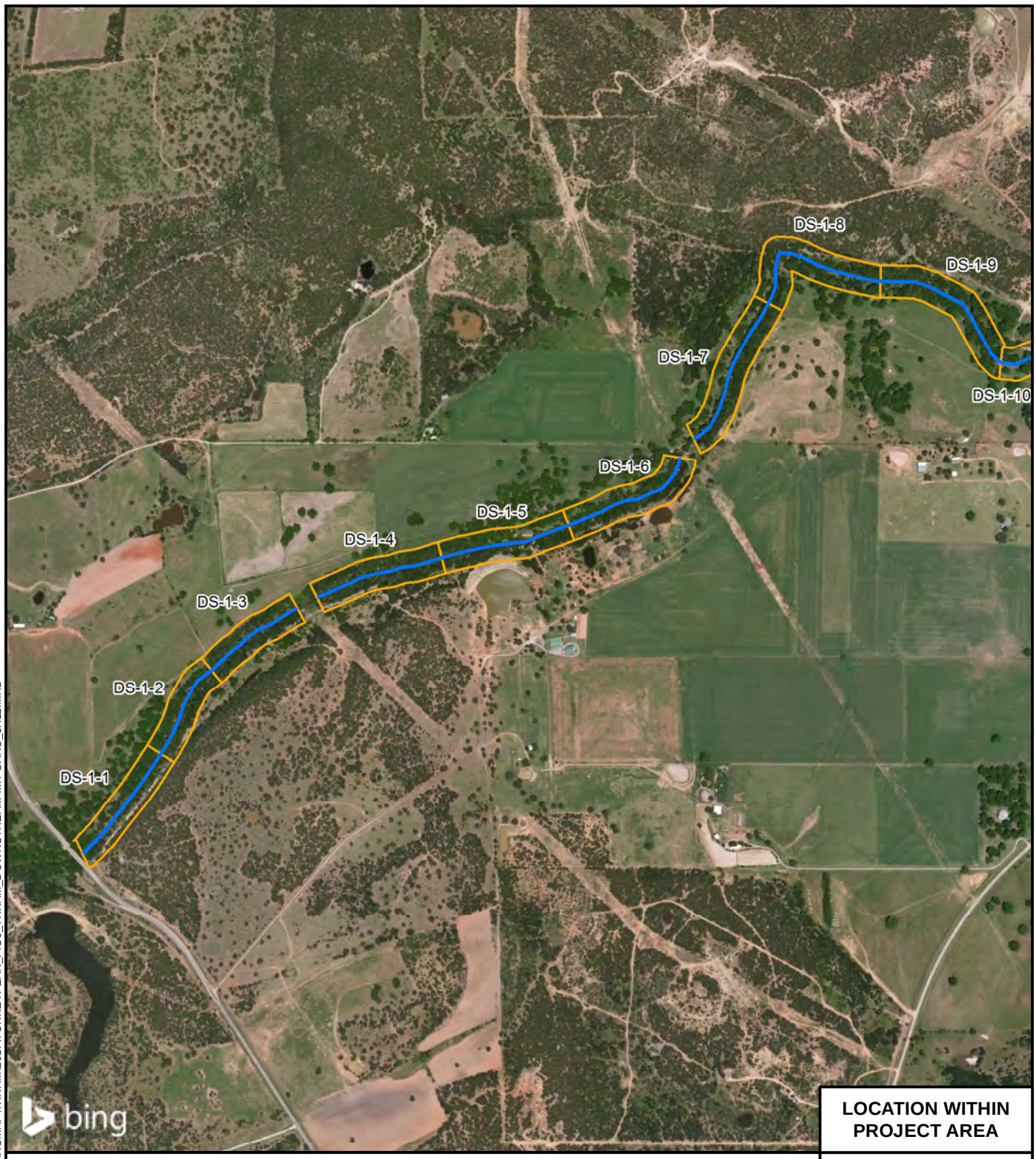
- INTERMITTENT STREAM
- EPHEMERAL STREAM

FEATURES NOT WATERS OF THE U.S.

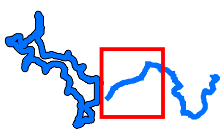
- PROJECT AREA (CONSERVATION POOL)
- SAR RIPARIAN BUFFER

TURKEY PEAK **TXRAM EVALUATION** ON-SITE MITIGATION SAR MAPS	N 0 200 400 FEET	**PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1**	HDR JUL 2017 | FIGURE 5-1

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG5_TXRAM-ADN_ON-SITE-MIT-SARS_8X11.MXD



LOCATION WITHIN PROJECT AREA



WATERS OF THE U.S.

SARs

PERENNIAL STREAM

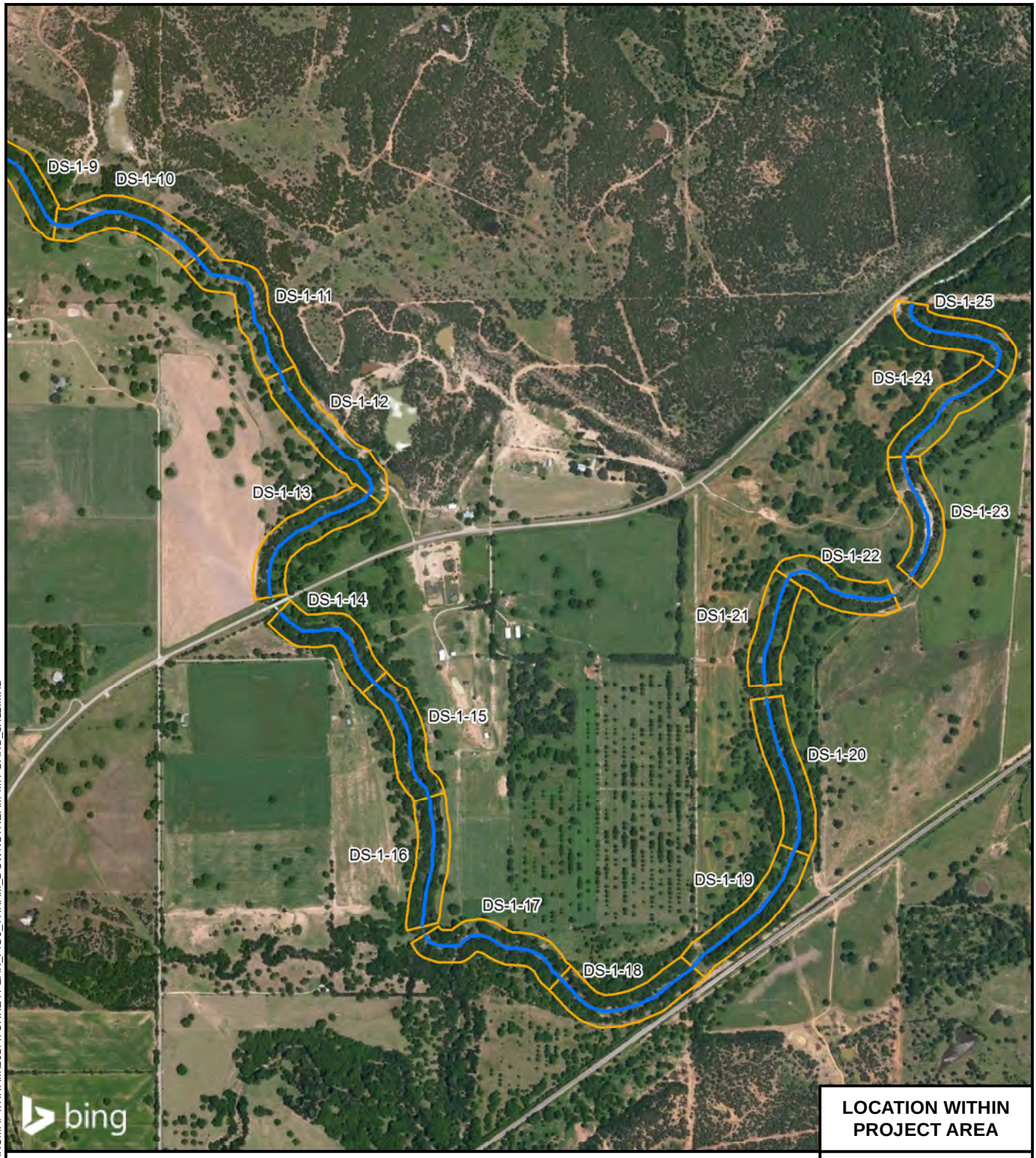
FEATURES NOT WATERS OF THE U.S.

PROJECT AREA (CONSERVATION POOL)

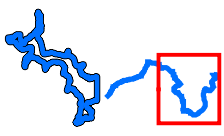
SAR RIPARIAN BUFFER

TURKEY PEAK **TXRAM EVALUATION** DOWNSTREAM MITIGATION SAR MAPS	N 0 500 1,000 FEET	**PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1**	HDR MAY 2017 | FIGURE 6-1

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG6_TXRAM_DOWNSTREAM-MIT-SARS_8X11.MXD



LOCATION WITHIN PROJECT AREA



WATERS OF THE U.S.

SARs

PERENNIAL STREAM

FEATURES NOT WATERS OF THE U.S.

PROJECT AREA (CONSERVATION POOL)

SAR RIPARIAN BUFFER

TURKEY PEAK **TXRAM EVALUATION** DOWNSTREAM MITIGATION SAR MAPS	N 0 500 1,000 FEET	**PALO PINTO COUNTY MUNICIPAL WATER DISTRICT NO. 1**	HDR MAY 2017 | FIGURE 6-2

PATH: O:\94042_037_TURKEY_PEAK\MAPDOCS\ARCMAP\TXRAM\2017\TURKEYPEAK_FIG6_TXRAM_DOWNSTREAM-MIT-SARS_8X11.MXD