कार्यालय प्रधान मुख्य वन संरक्षक (कक्ष–भू प्रबंध), वन भवन, मध्यप्रदेश, भोपाल

सी–ब्लॉक, द्वितीय तल, लिंक रोड नं.–2, तुलसी नगर, भोपाल–462003

क्रमांक / एफ–3 / 103 / 2022 / 10–11 / 16 / 3658 भोपाल, दिनांक 12-7-24

प्रति,

उप वन महानिदेशक (केन्द्रीय)
भारत सरकार, पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय,
क्षेत्रीय कार्यालय, पश्चिम क्षेत्र
केन्द्रीय पर्यावरण भवन, ई–5, लिंक रोड़ नं. 3
रविशंकर नगर भोपाल–462016

विषयः–जिला रतलाम के अंतर्गत कुआंझागर तालाब निर्माण हेतु 20.512 हेक्टेयर वन भूमि कार्यपालन यंत्री, जल संसाधन संभाग, रतलाम को उपयोग पर देने बाबत्। (FP/MP/IRRIG/150918/2022)

संदर्भः–भारत सरकार, पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय, क्षेत्रीय कार्यालय, पश्चिम क्षेत्र, भोपाल का पत्र क्रमांक 6–एमपीआर 002 / 2024–बीएचओ, दिनांक 01.03.2024

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विषयांकित प्रकरण में भारत सरकार के उक्त संदर्भित पत्र से चाही गई जानकारी का उत्तर निम्नानुसार संलग्न प्रेषित है :–

No	Conditions	Compliance
1	No objection certificates of concerned departments (Railway, Pipeline, Road, TL, etc) needs to be subniitted.	आवेदक विभाग द्वारा प्रस्तुत की गयी संबंधित विभागों से प्राप्त अनापत्ति प्रमाण पत्रों की प्रतियां संलग्न है।
2	Muck disposalscheme shall be submitted.	आवेदक विभाग द्वारा प्रस्तुत Muck disposal scheme की प्रति संलग्न है।
3	Justification for location of the project in forest land (counter signed by DFO) shall be submitted.	वनमण्डलाधिकारी, रतलाम द्वारा प्रति हस्तांक्षरित औचित्य टीप की प्रति संलग्न है।
4	KML file of Alternative alignments shall be submitted/uploaded on webportal.	आवेदक विभाग द्वारा वैकल्पिक साइटो की KML files को प्रस्ताव के आनलाईन भाग–1 के बिन्दु क्रमांक–C की टेबल के बिन्दु क्रमांक–4 में 0 हेक्टेयर के रूप में अपलोड की गई है।
5	Recommendation of CCF(T) Part—III needs to be uploaded on web portal.	वन संरक्षक, उज्जैन वृत्त उज्जैन द्वारा प्रकरण में की गयी अनुशंसा की प्रति को आनलाईन भाग–2 में निर्धारित बिन्दु पर अपलोड किया गया है, किन्तु तकनीकी कारणों से File Open नहीं हो रही है। सुलभ संदर्भ हेतु वन संरक्षक, उज्जैन वृत्त उज्जैन द्वारा की गयी अनुशंसा की प्रति संलग्न है।
6	Catchment Area Treatment Plan shall be submitted.	आवेदक विभाग द्वारा प्रकरण में तैयार किये गये Catchment Area Treatment Plan की प्रति संलग्न है।
7	Subrnergence should be less than 10% of the benefited area and in any case the submergence should not be more than 20% of the extent of the benefited area. The comments in this regard shall be submitted.	इस संबंध में आवेदक विभाग ने अवगत कराया है कि परियोजना अंतर्गत डूब क्षेत्र मापदंड अनुसार है।

–2–

8	The employment details filled in online portal is not filled in correct manner shall be rechecked.	इस संबंध में आवेदक विभाग द्वारा पोर्टल पर सुधार किया गया है।
9	This is not clear whether any other component is involved in the project or only submergence is required shall be clarified.	आवेदक विभाग द्वारा वन क्षेत्र में प्रस्तावित घटकों का विवरण पोर्टल पर संशोधित कर अपलोड किया गया है। जिसके अनुसार डूब क्षेत्र में 18.892 हेक्टेयर, डेम शीट में 0.620 हे0 एवं स्पील में 1.00 हे0 इस प्रकार प्रकरण में कुल 20.512 हे0 वनभूमि प्रभावित होगी।
10	In DSS analysis the minor area of the proposed diversion is going beyond the boundary of forest area as per the working plan. The State Govt needs to be clarified whether the area is part of revenue forest or non forest etc. The status of land shall be corrected accordingly in online Part II.	आवेदक विभाग द्वारा परियोजना की संशोधित KML file पोर्टल पर अपलोड की गयी है। जिसके अनुसार डूब क्षेत्र में 18.892 हेक्टेयर, डेम शीट में 0.620 हे0 एवं स्पील में 1.00 हे0 इस प्रकार प्रकरण में कुल 20.512 हे0 वनभूमि प्रभावित होगी।
11	It is important to ensure that the proposed project does not submerge or affect adversely any endangered species of flora or fauna. Therefore, it is desirable that botanical and zoological survey of the submergence area is done by experts from related fields. Is there any study taken up by the State Govt	परियोजना अंतर्गत प्रस्तावित वनक्षेत्र में कोई भी दुर्लभ संकटापन्न/विशिष्ट प्रजाति के पेड़ पौधे तथा दुर्लभ प्रजाति के वन्यप्राणी नहीं पाये जाने संबंधी वनमण्डलाधिकारी, रतलाम का प्रमाण पत्र संलग्न है।
12	The title of the project is construction of tank, while the KML depicts otherwise. No other components are depicted. Shall be clarified.	आवेदक विभाग द्वारा KML file में सुधार कर परियोजना अंतर्गत प्रस्तावित अन्य सभी घटको की KML file को पोर्टल पर निर्धारित बिन्दु में अपलोड किया गया है।

अतः उपरोक्तानुसार अनुरोध है, कि प्रकरण में भारत सरकार की सैद्वांतिक स्वीकृति प्राप्त कर अवगत कराने का कष्ट करें।

संलग्नः–उपरोक्तानुसार।

(एच.एस.मोहन्ता)
अपर प्रधान मुख्य वन संरक्षक (भू–प्रबंध)
मध्यप्रदेश, भोपाल

पृ. क्रमांक/एफ–3/103/2022/10–11/16/3659 भोपाल, दिनांक 12-7-24

प्रतिलिपिः–

1. मुख्य वन संरक्षक (क्षेत्रीय), उज्जैन वृत्त उज्जैन, मध्यप्रदेश।
2. वनमंडलाधिकारी, (सा0) वनमंडल रतलाम, मध्यप्रदेश।
3. कार्यपालन यंत्री, जल संसाधन संभाग, रतलाम, जिला रतलाम, मध्यप्रदेश।

की ओर सूचनार्थ अग्रेषित।

अपर प्रधान मुख्य वन संरक्षक (भू–प्रबंध)
मध्यप्रदेश, भोपाल

कार्यालय कार्यपालन यंत्री, जल संसाधन सम्भाग रतलाम म.प्र.

Email - eewrdrtm@rediffmail.com

पत्र क्रमांक-1132 / कार्य / 2024 रतलाम, दिनांक 14-06-2024

प्रति

वनमण्डाधिकारी,
सामान्य वन मण्डल,
रतलाम

विषय – जिल रतलाम में अंतर्गत कुआझॉगर तालाब निर्माण हेतु 20.512 हेक्टेयर वन भूमि कार्यपालन यंत्री, जल संसाधन संभाग रतलाम को उपयोग पर देने बाबत् ।

संदर्भ – प्रधान मुख्य वन सरंक्षण (कक्ष–भू प्रबंध), वन भवन भोपाल के पत्र क्रमांक एफ–3 / 103 / 2022 / 10–11 / 16 / 1376–1377 भोपाल, दिनांक 04.03.2024

उपरोक्त विषयांतर्गत संदर्भित पत्र में दिये गये निर्देशानुसार कुँआझागर तालाब तहसील रतलाम के निर्माण से प्रभावित वन भूमि रकबा 20.512 हैक्टर के सम्बन्ध में चाही गई अतिरिक्त जानकारी का बिन्दुवार प्रतिवदेन निम्नानुसार एवं दो प्रति में बुकलेट आपकी आवश्यक कार्यवाही हेतु संलग्न प्रेषित हैं ।

बिन्दु क्रमांक	बिन्दु का विवरण	पालन प्रतिवेदन
1	No objection certificate of concerned departments (Railway, pipeline, Road TL, etc) needs to be submitted.	संबधित विभागों का अनापत्ति प्रमाण पत्र संलग्न है।
2	Muck disposal scheme shall be submitted.	मक डिस्पोजल संलग्न हैं
3	Justification for location of the project in forest land (counter signed by DFO) shall be submitted.	DFO कार्यालय से सम्बन्धित है।
4	KML file of Alternative alignments shall be submitted/Uploaded on web portal.	पोर्टल पर अपलोड कर दी गई है
5	Reccomendation of CCF(T) Part-II needs to be uploaded on web portal.	वन विभाग से सम्बन्धित ।
6	Catchment area Treatment Plan shall be submitted.	Catchment area Treatment Plan संलग्न है।
7	Submergence should be less than 10% of the benefited area and in any case the submergence should not be more than 20% of the extent of the benefited area. The comments in this regard shall be submitted.	डूब क्षेत्र मापदंड अनुसार है।
8	The employment details filled in online portal is not filled in correct manner shall be rechecked.	ऑनलाईन पोर्टल पर सुधार कर लिया गया है।
9	This is not clear whether any other component is involved in the project or only submergence is required shall be clarified.	कंपोनेंट वाइस ब्रेकअप कर दिया गया है।
10	In DSS analysis the minor area of the propsed diversion is going beyond the boundary of Forest area as per the working plan. The State Govt. needs to be clarified whether the area is part of revenue forest or non forest etc. the status of land shall be corrected accordingly in online Part-II	डूब क्षेत्र वोंकिग प्लान अनुसार वन क्षेत्र में आता है।

11	It is important to ensure that the proposed project does not submerge species of flora or fauna. Therefore, it is desirable that botanical and Zoological survey of the submergence area is fone by experts from related fielda. Is there any study taken up by the state Govt.	वन विभाग से संबन्धित ।
12	The title of the project is construction of tank. while the KML depicts otherwise. No other components are depicted. shall be clarified.	सुधार कर लिया गया है ।

सहपत्र – उपरोक्तानुसार

(एन.पी.देव)
कार्यपालन यंत्री
जल संसाधन संभाग रतलाम
रतलाम, दिनांक

पृ. क्रमांक————/कार्य/2024

प्रतिलिपि –

अनुविभागीय अधिकारी, जल संसाधन उपसंभाग सैलाना की ओर आपके पत्र क्रमांक 191 / कार्य/2024 सैलाना, दिनांक 03.06.2024 के सम्बन्ध में भेजकर लेख है कि सम्बन्धित कार्यालय में उपस्थिति होकर शीघ्र आवश्यक कार्यवाही सम्पादित करें ।

सहपत्र – शून्य

कार्यपालन यंत्री
जल संसाधन संभाग रतलाम

स्थापना/व्यय/स्टेनो/म.वि./राजस्व
निरीक्षण/ ...ल./ज.व.म.अ.
जनपदीय अधिकारी
रतलाम
18/6/24

1228
18/6/24

कार्यालय कार्यपालन यंत्री, लोक निर्माण विभाग
संभाग रतलाम

web site : www.mp.gov.in/pwdmp email: eepwdratlam@mp.nic.in
Phone- 07412-270437] Fax -232445

क्रमांक 1145 / टी.एस. / 24–25 रतलाम दिनांक 29-5-2024

प्रति,

कार्यपालन यंत्री
जल संसाधन
संभाग रतलाम

विषय : – जिला रतलाम के अंतर्गत कुआझागर तालाब निर्माण हेतु 20.512 हेक्टेयर वन भूमि कार्यपालन यंत्री जल संसाधन संभाग रतलाम को उपयोग पर देने बाबत्।

संदर्भ– आपका कार्यालयीन पत्र क्रमांक 696 / कार्य / कुआझागर तालाब / 2024 दिनांक 18. 04.24

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उपरोक्त विषयान्तर्गत संदर्भित पत्र से आपके द्वारा जिला रतलाम के अंतर्गत कुआझागर तालाब निर्माण हेतु 20.512 हेक्टेयर वन भूमि कार्यपालन यंत्री जल संसाधन संभाग रतलाम को उपयोग पर देने के संबंध में अनापत्ति प्रमाण पत्र चाहा गया है, जो आपकी ओर संलग्न प्रेषित है।

संलग्न :– उपरोक्तानुसार।

कार्यपालन यंत्री
लोक निर्माण विभाग संभाग रतलाम (म.प्र.)

कार्यालय कार्यपालन यंत्री, लोक निर्माण विभाग

संभाग रतलाम

web site : www.mp.gov.in/pwdmp email: eepwdratlam@mp.nic.in
Phone- 07412-270437] Fax -232445

//अनापत्ति प्रमाण पत्र//

जल संसाधन विभाग, संभाग रतलाम अंतर्गत वन प्रभावित कुआझागर की सिचांई तालाब योजना तहसील एवं जिला रतलाम के निर्माण से लोक निर्माण विभाग की कोई योजना प्रभावित नही होगी।

यह अनापत्ति प्रमाण पत्र कुआझागर सिचांई तालाब योजना के वन क्षेत्र में होने से निर्माण हेतु वन विभाग से अनुमति प्राप्त करने के लिए जल संसाधन विभाग संभाग रतलाम द्वारा चाहे जाने पर दिया जा रहा है।

कार्यपालन यंत्री
लोक निर्माण विभाग संभाग रतलाम (म.प्र.)

File No.WR-RTM0ENGG(ENCR)/2/2020-O/o SR DEN (CO)/RTM/WR

रजिस्टर एडी द्वारा;

मण्डल कार्यालय, पश्चिम रेलवे
दो बत्ती रतलाम (म.प्र.)-457001
Divisional Office, Western Railway
Do Batti, Ratlam (M.P.)
Mo.9752492200, Rly Ph(O) 44400
Email- srdenhqrtm@gmail.com

फाइल क्रमांक - 8379

दिनांक 12.06.2024

कार्यपालन यंत्री,
कार्यालय कार्यपालन यंत्री जलसंसाधन संभाग
रतलाम जिला रतलाम

विषय:- Proposal for NOC of construction of construction of Pond at Village Kuajhagar Teh Ratlam District Ratlam.
संदर्भ:- आपका पत्र क्रमांक 697/कार्य/कुआझागर तालाब/2024 दिनांक 18.04.24

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उपरोक्त विषय एवं संदर्भित पत्र के क्रम मे लेख है कि आपके द्वारा संदर्भित पत्र के माध्यम से रतलाम-गोधरा खंड के मोरवानी रेलवे स्टेशन से लगभग 7.10 किलोमीटर दूर ग्राम कुआझागर मे सिंचाई तालाब योजना अंतर्गत तालाब निर्माण के संबंध मे रेलवे विभाग की अनापत्ति चाही गई थी|

अत: प्रकरण मे किए गए संयुक्त स्थल निरीक्षण अनुसार आपको अवगत कराया जाता है कि रतलाम-गोधरा खंड के मोरवानी रेलवे स्टेशन से लगभग 7.10 किलोमीटर दूर ग्राम कुआझागर मे सिंचाई तालाब योजना अंतर्गत तालाब निर्माण करने से रेलवे विभाग की कोई योजना प्रभावित नहीं हो रही है व आपके विभाग द्वारा तालाब के जल निकासी की पर्याप्त व्यवस्था की जाती है तो रेलवे प्रशासन को कोई आपत्ति नहीं है ।

यह आपके सूचनार्थ प्रेषित है ।

मण्डल इंजी. (पश्चिम) रतलाम
Digitally Signed by Rachit Jain
Date: 13-06-2024 11:55:14
Reason: Approved

कार्यालय कार्यपालन यंत्री, लोक स्वास्थ्य यांत्रिकी खण्ड रतलाम म.प्र.
दूरभाष क्रमांक 07412–270439, फेक्स क्रमांक 267740 E-mail- eephedrat@nic.in
(ISO 9001:2015 Certified Office)

क्र 1655 /तक./का.य/लो.स्वा.या./2024 रतलाम दिनांक 02.05.2024

अनापत्ति प्रमाण पत्र

जल संसाधन, सम्भाग रतलाम अन्तर्गत वन प्रभावित कुआंझागर सिंचाई तालाब योजना तहसील एवं जिला रतलाम के निर्माण से लोक स्वास्थ्य यांत्रिकी विभाग की कोई योजना प्रभावित नहीं होगी।

यह अनापत्ति प्रमाण पत्र कुआंझागर सिंचाई तालाब योजना के वन क्षेत्र में होने से निर्माण हेतु वन विभाग से अनुमति लेने हेतु जल संसाधन, सम्भाग रतलाम द्वारा मांगे जाने पर दिया जा रहा है।

कार्यपालन यंत्री,
लोक स्वास्थ्य यांत्रिकी खण्ड,
रतलाम

पृ0क्रमांक 1656/तक./का.यं./लो.स्वा.यां./2024 रतलाम, दिनांक 02.05.2024

प्रतिलिपिः–

1. कार्यपालन यंत्री, जल संसाधन विभाग, सम्भाग रतलाम की ओर आपके पत्र कमांक 696/कार्य/कुआंझागर ता./2024 रतलाम दिनांक 18.04.2024 के तारतम्य में सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

2. सहायक यंत्री, लोक स्वास्थ्य यांत्रिकी उपखण्ड रतलाम की ओर पत्र कमांक 367 तक/स.य./लो.स्वा.या.वि./2024 रतलाम दिनांक 01.05.2024 के तारतम्य में सूचनार्थ।

कार्यपालन यंत्री,
लोक स्वास्थ्य यांत्रिकी खण्ड,
रतलाम

कार्यालय सहायक यंत्री लोक स्वास्थ्य यांत्रिकी उपखण्ड रतलाम

क्र. 367 तक./स.यं./लो.स्वा.या.उप./2024 रतलाम, दिनांक 01/05/2024

प्रति,

कार्यपालन यंत्री
लोक स्वास्थ्य यांत्रिकी विभाग
खण्ड रतलाम (म.प्र.)

विषय :– जिला रतलाम के अन्तर्गत कुआझागर तालाब निर्माण हेतु 20.512 हेक्टेयर वन भूमि कार्ययपान यंत्री जल ससाधन संभाग रतलाम को उपयोग के संबंध में।
सन्दर्भ :– आपका पत्र क्र.1517 दिनांक 23.04.2024।

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उपरोक्त विषय एवं सन्दर्भ में निवेदन है कि ग्राम कुआंझागर सिंचाई तालाब योजना तहसील रतलाम जिला रतलाम के निर्माण हेतु प्रभावित वन भूमि रकबा 20.512 हेक्टेयर पर जल संसाधन विभाग द्वारा अनापत्ति प्रमाण पत्र चाहा गया है।

उक्त स्थल का निरीक्षण उपयंत्री एवं अधोहस्ताक्षरकर्ता द्वारा किया गया कि जिसमे पाया गया कि उक्त स्थल पर कोई विभागीय संरचना यथा पानी लाईन उच्च स्तरीय टंकी नल कनेक्शन हैण्डपम्प आदि स्थापित नही है।
अतः प्रतिवेदन आवश्यक कार्यवाही हेतु आपकी ओर प्रेषित है।

सलग्नः– उपरोक्तानुसार।

सहायक यंत्री
लोक स्वास्थ्य यांत्रिकी
उपखण्ड रतलाम

O/L

मध्यप्रदेश पश्चिम क्षेत्र विद्युत वितरण कम्पनी लि. (सं/स) सम्भाग

क्रमांक/क.य./कार्य/24–25/631 रतलाम, दिनांक 11/6/24

प्रति,

(एन. पी. देव)
कार्यपालन यंत्री
जल संसाधन संभाग रतलाम

विषयः– ग्राम कुआझागर तालाब निर्माण हेतु 20.512 हेक्टेयर वन भूमि कार्यपालन यंत्री जल संसाधन संभाग रतलाम को उपयोग पर देने बाबत ।

संदर्भ :– सहायक यंत्री का पत्र क्रमांक क्रमांक 114 रतलाम दिनांक 07-06-24

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उपरोक्तानुसार एन.पी. देव.कार्यपालन यंत्री जल संसाधन संभाग रतलाम द्वारा एक पत्र प्रेषित कर लेख किया गया है, कि कुआझागर सिंचाई तालाब योजना तहसील रतलाम ग्रामीण जिला रतलाम के निर्माण हेतु प्रभावित वन भूमि रकबा 20.512 हेक्टेयर वन-विभाग को दी जाने वाली कार्यवाही हेतु अनापत्ति पत्र दिए जाने हेतु लेख किया गया था, जिसकी वर्तमान में सहायक यंत्री द्वारा निरिक्षण करने पर पाया गया कि उक्त स्थान पर विद्युत विभाग की किसी प्रकार की लाइन नहीं गुजर रही है ।

संलग्नः– उपरोक्तानुसार।

कार्यपालन यंत्री (सं/स)
म.प्र.प.क्षे.वि.वि.कं.लि.रतलाम

KUAJHAGAR TANK FROIECT

TEHSIL: Ratlam DISTRICT: RATLAM

MUCK DISPOSAL PLAN

1. MUCK MANAAGEMENT PLAN

1.1.1 IMPACT DUE TO MUCK GENERATION

For construction of different components of the project, surface excavation in earth mixed with boulders, hard soil and disintegrated rock and hard rock would be carried out' The excavation shall result in large quantity of excavated material i.e. muck which shall have to be evacuated, disposed of and roller compacted or laid on mild slopes with the excavation work, to such designated areas where the muck piles do not substantially interfere with either environment / ecology or the river flow regime and cause turbidity impairing the quality of water. The disposal of muck has to be scientifically planned keeping in view the maximum reutilization of much in construction as this being earthen, dam requiring substantial amount of excavated material in construction. Reutilization would reduce / eliminate the transportation, storage and other pollution load on environment due to substantial amount of much excavated from foundation and laying of underground pipe line. The construction of dam and water conductor system for conveyance of water up to farm level would generate substantial amount of muck, as calculated below: -

(a) Muck from Dam's Foundation

Muck from dam's foundation has been computed by the design wing of WRD, during the preparation of DPR' Quantities received from excavation are given at Table 1 below.

EARTH WORK UTILIZATION STATEMENT

Earthwork as per Quantity Sheet			132916.89 Cum
ADDITION			
(A) Qty of Benching/Striping			2353.91 Cum
(B) Qty ofNalla clearance			2653.02 Cum
(c) Qty ofNalla clearance			11543.4 Cum
	Total E/W		149467.22 Cum
DEDUCTION			
(A) Top Sand layer			1060.31 Cum
(B) Qty of puddle cover			3478.78 Cum
(C) Qty of Boulder Toe Above G.L.			204.19 Cum
(D) Qty of Inclined Filter Sand Layer			272.26 Cum
(E) Qty of Inclined Filter Gravel layer			3524.08 Cum
(F) Qty of Pitching Work (Housing)			3563.11 Cum
	Total		12102.73 Cum
	NET E/W		**137364.49 Cum**
USE FROM (Hard Soil+ Hard Moorum)			Cum
(A) Cut off Trench excavation		80%	1094.832 Cum
(B) Flank Slope cutting		80%	2308.68 Cum
(C) Filter &Boulder Toe excavation		80%	3652.2 Cum
(D) Excavation Soil for stripping		80%	94.5 Cum
(E) Excavation of D/S toe drain		100%	57.51 Cum
(F) Spill channel Excavation		80%	11926.648 Cum
			19134.37 Cum
Qty of Earth Work From borrow area			118230.12 Cum
(a) Hearting Soil as per sheet calculation			44174.32 Cum
(b) Casing soil			74055.80 Cum

S..NO	Particulars	Strata of Excavation			Total QTY of excavation	Utilization Quantity					Total QTY of Utilization in E/W	Where Has to be used
		Hard soil/ Hard moorum	D.I.R./Soft rock	Hard Rock		Hard soil/Hard Moorum			Hard Rock			
1	Cut off Trench excavation	1368.54	6842.69	912.36	9123.59	1094.832	80	%	912.36	100 %	1094.832	Soil Used on Bund & Hard Rock Used in B. toe
2	Flank Slope cutting	2885.85	8657.55		11543.4	2308.68	80	%	0	100	2308.68	Soil Used on Bund
3	Filter & Boulder Toe excavation	4683.38	1141.31		5824.69	3652.2	80	%	0	100 %	3746.7	Soil Used on Bund
4	Excavation of open drain	57.51	0		57.51	46.008	80	%	0	100 %	57.51	Soil Used on Bund
6	Excavation of Spill channel & Approach channel	14908.31	69572.11	14908.31	99388.73	11926.65	80	%	14908.31	100 %	11926.648	Soil Used on Bund & Hard Rock Used in B. toe
7	Construction of Sluice	164.01	281.17	23.43	468.61	0	0	%	23.43	100 %	0	Soil Used on Bund & Hard Rock Used in B. toe
7	Construction of flush bar	0	342.93	67.31	410.24	0	0	%	67.31	100 %	0	Soil Used on Bund & Hard Rock Used in B. toe
		24067.6	86837.76	15911.41	126816.77	19028.37			15911.41		19134.37	

Requirement of Hard Rock			Utilization of Hard Rock	
(i) Boulder Toe		cum	13792.25	cum
As single/ gravel	2606.05	cum		cum
As Boulder	4205.19	cum		cum
(ii) Pitching stone	5938.51	cum		cum
(iii) Shingle	890.78	cum		cum
(iv) Top Edging	97.2	cum		cum
(v) D/S Toe Drain	54.52	cum		cum
	13792.25	cum	13792.25	

A detailed estimate has also been prepared for the material required in construction of the dam, along with the quantity received and requirement of dumping of surplus material or net quantity deficit to be procured / quarried separately and same is given at Table 2 above.

Surplus excavated material which includes remaining hard soil, disintegrated rock and earth work from embankment of the order of 91876.99 cum, will be utilized during the construction of earthen dam. A dam of total length 270.00 m. (earthen dam), height of 23.54 m. and top width of 5.00 m., will require substantial amount of excavated material during construction.

1.1.2 MUCK MANAGEMNT

Muck requiring disposal from excavation has been estimated as 91876.99 cum. Alternatively, this surplus soil will be utilized for refilling of the trenches and the approach road proposed to be constructed for construction work at site and preparation of plat form for machinery. During excavation, care will be taken that top fertile soil is kept aside and will be used for re-filling the top area after laying pipe line. This top soil will be spread on adjoining farming fields with consent of farmers or alternatively will be used for green belt development.

Balance muck will be managed by spreading along the route in the low lying areas. As the topography is undulating, such low lying areas are available along the route. Any further surplus muck, shall be laid in the community undulating area of the connected villages with the consent of concerning Gram-Panchayat or Janpad Panchyat. The may also be used by nearby Gram Panchayats for construction of village roads etc.

Sub Divisional Officer
Water Resources Sub Division
Sailana

Executive Engineer
Water Resources Division,
Ratlam

PART III

S.N.	DESCRIPTION	FOLLOW UP
14	Whether site where the forestland involved is located has been inspected by concerned conservator of forest (Yes/No). If yes the date of inspection & observation made in form of inspection note to be enclosed.	Agree with Inspection of DFO Ratlam.
15	Whether the concerned Conservator of Forests agree with the information given in Part-B and the recommendation of Deputy Conservator of Forests.	**Yes**
16	Specific recommendation of concerned Conservator of Forest for acceptance or otherwise the proposal with detailed reasons.	Forest land required is bare minimum for the project. Hence the proposal recommended for acceptance.

(M.R. Baghel)
I.F.S
Conservator of Forest
Ujjain Circle, Ujjain

GOVERNMENT OF MADHYA PRADESH

CAT - PLAN OF KUAJHAGAR MINOR IRRIGATION PROJECT

TEHSIL :- Ratlam **DISTRICT :- RATLAM**

ESTIMATED COST	:	**RS. 5.83 LAKHS**
PROPOSED IRRIGATION	:	**RS. 300 HACT.**

Executive Engineer
Water Resources Division
Ratlam District Ratlam (M.P.)

KUAJHAGAR MINOR TANK PROJECT

Teh Ratlam **Dist. Ratlam**

CATCHMENT AREA TREATMENT PLAN FOR FOREST AREA

1.1 NEED FOR CATCHEMENT AREA TREATMENT

It is a well-established fact that reservoirs formed by dams on rivers areasubjected to sedimentation. The process of sedimentation embodies the sequential processes of erosion. Entrainment, transportation, deposition and compaction of sediment. The study of erosion and sediment yield from catchment is of almostimportance as the deposition of sediment in reservoir reduces its capacity, and thus affecting the water availability for the designated use. The eroded sediment fromcatchment when deposited on streambeds and banks causes braiding of river reach. The removal of top fertile soil from catchment adversely affects the grow plants thus,a well - designed catchment area treatment (CAT) Plan is essential to ameliorate the above mentioned adverse process of soil erosion.

Soil erosion may be defined as the detachment and transportation of soil.Water is the major agent responsible for this erosion in many locations, winds; glaciers, etc. also cause soil erosion. In a hilly catchment area as in the present case erosion due to water is a common phenomenon and the same has been studied as a part of the catchment area treatment (CAT) plan.

The catchment area treatment (CAT) plan highlights the management techniques to control erosion in the catchment area life span of a reservoir in case ofa seasonal storage dams is greatly reduced due to erosion in the catchment area.The catchment area considered for treatment of KUAJHAGAR Minor Irrigation project is

Total Catchment area =70.25 Sq.km and Dependable catchment area=41.75 sqkm The sub watersheds in the catchment area of considered for the present study is given in Figure -A

In the present study Silt Yield Index' (SYI) method has been used. In this method, the terrain is subdivided into various watersheds and the credibility is determined on relative basis. SYI provides a comparative credibility criteria of catchment (low, moderate, high, etc.) and do not provide the absolute silt yield. SYI method is widely used mainly because of the fact that it is easy to use and has lesser data requirement Moreover, it can be applied to larger areas like sub watersheds, etc.

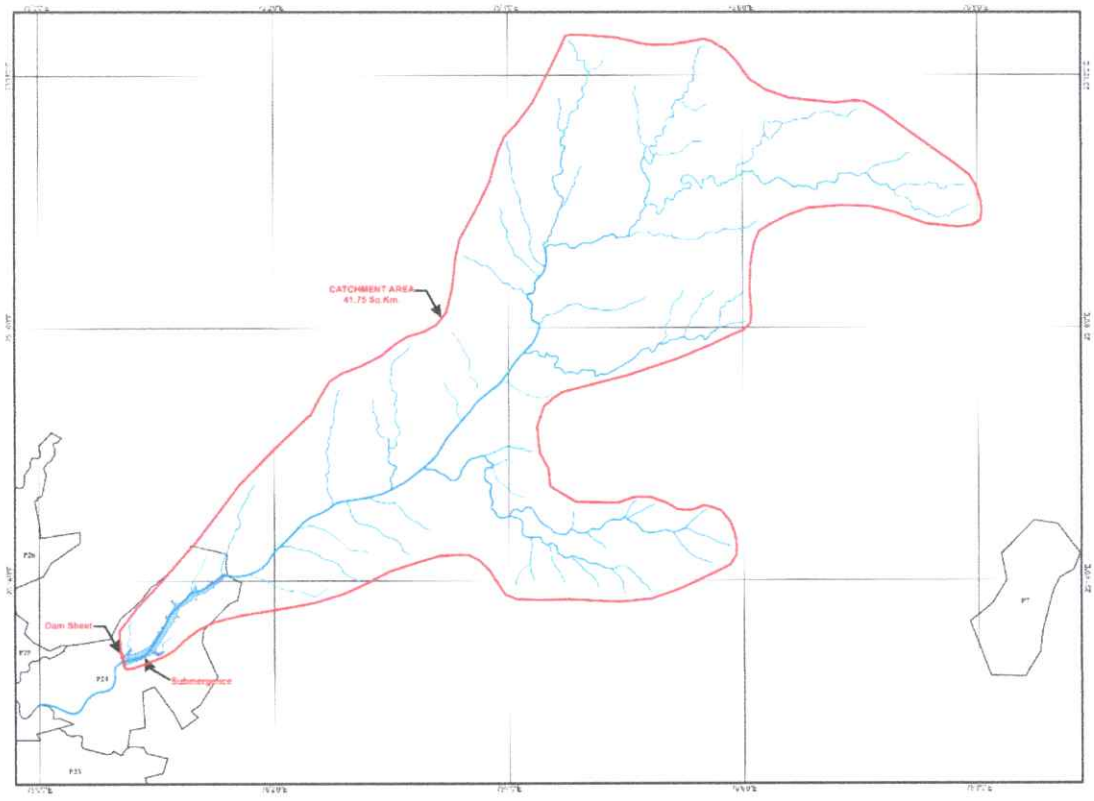

Figure 1.1 Drainage Map for KUAJHAGAR TANK

1.2 APPROACHES FOR THE STUDY

Various thematic maps have been used in preparation of the CAT plan. Due tothe spatial variability of site parameters such as soils, topography land use andrainfall, not all areas contribute equally to the erosion problem. Several techniqueslike manual overlay of spatially index-mapped data have been used to estimate soil Erosion in complex landscape.

Geographic information System (GIS) is a computerized resource data base system, which is referenced some geographic coordinate system. In the present study real coordinate system has been used. The GIS is a tool to store, analyse and display various spatial date. In addition, GIS because of its special hardware and software characteristics. Has a capacityto perform numerous function and operations on the various spatial data layers residing in the database. GIS provides the capability to analyse large amounts of data in relation to a setof established criteria. In order to ensure that latest and accurate data is used for the analysis, satellite data has been used for deriving land use data and ground truth studies toohave been conducted.

The various steps covered in the study are as follows:

- Data acquisition
- Data preparation
- Output presentation

The above mentioned steps are briefly described in the following paragraphs,

1.2.1 DATA ACQUISTION

The requirement of the study was first defined and the outputs expected were noted. The various data layers of the catchment area used for the study are as follows:

- Slope Map
- Soil Map
- Land use Classification Map
- Current Management Practices
- Catchment Area Map.

1.2.2 DATA PREPARATION

The data available from various sources was collected. The ground maps, contour information etc. were scanned, digitized and registered as per the requirement. Data was prepared depending on the level of. Accuracy required and any corrections required were made. All the layers were geo-referenced brought to a common scale (real coordinates) so that overlay could be performed. A computer programmed was used to estimate the soil loss. The formats of outputs from each layer were firmed up to match the formats of inputs in the program. The gird size to be used was also decided to match the level of accuracy required the data availability and the software and time limitations. The format of output was finalized. Ground frothing and data collection was also included in the procedure.

For the present study IRS IC-LISS III digital satellite data was used for interpretation & classification the classified land use map of the catchment area of various dams considered for the study are shown in Figure-B. The land use pattern of the catchment area issummarized in Table-13.1.

TABLE- 1.1:- LAND USE PATTERN OF THE CATCHMENT AREA

Category	Area (ha)	Area (%)
Vegetation	92.84	9.18
Scrubs/ Grass Land	17.60	5.90
Agricultural Land	14.33	26.28
Revenue	4010	43.59
Barren Land	30.25	10.59
River	7.73	1.38
Settlements	2.25	3.08
Total	**4175.00**	**100**

Digitized contours from toposheets were used for preparation of Digital Elevation Model (DEM) of the catchment area and to prepare a slope map. The first step in generation of slope map is to create surface using the elevation values stored in the form of contours or points. After marking the catchment area, all the contours on the toposheets were digitized (100 m interval). The output of the digitization procedure was the contours as well as points contours in form of x, y & z points (x,y location and their elevation) All this information was inreal world coordinates (latitude, longitude and height in meters above sea level.)

A Digital Terrain Model (DTM) of the area was then prepared, which was used to derive a slope map.

Various layers thus prepared were used for modelling Software was prepared to calculate the soil loss using input from all the layers.

1.2.3 OUTPUT PRESENTATION

The result of the modelling was interpreted in pictorial form to identify the areas with high soilerosion rates. The primary and secondary data collected as a part of the field studies were used as an input for the model.

1.3 ESTIMATION OF SOIL LOSS USING SILT YIELD INDEX (SYI) METHOD.

The Silt Yield Index Model (SYI), considering sedimentation as product of erosivity, credibility and arial extent was conceptualized in the All India Soil and Land Use Survey (AISLUS) as early as 1969 and has been in operational use since then to meet the requirement

of prioritization of smaller hydrologic units.

The erosivity determinants are the climatic have direct or reciprocal bearing on the relationship can be expressed as factors and soil and land attributes that unit of the detached soil material. The relationship can be expressed as :

Soil erosivity = 1(Climate, physiographic, Slope, soil parameters, land use / land cover, soil management)

The Silt Yield Index (SYI) is defined as the Yield per unit area and SYI value for hydrologic unit is obtained by taking the weighted arithmetic mean over the entire area of the hydrologic unit by using suitable empirical equation.

Prioritization of Watersheds / Sub water heads:

The prioritization of smaller hydrologic units within the vast catchments are based on the Silt Yield Indices (SYI) of the smaller units, the boundary values or range of SYI values for different priority categories are arrived at by studying the frequency distribution of SYI values and locating the suitable breaking points. The watersheds/ Sub-watersheds are subsequently rated into various categories corresponding to their respective SYI values.

The application of SYI model of prioritization of sub watersheds in the catchmentareas involves the evaluation of :

a) Climatic factors comprising total precipitation, its frequency and intensity.
b) Geomorphic, factors comprising land forms, physiographic, slope and drainage characteristics.
c) Surface cover factors governing the flow hydraulics and
d) Management factors.

The data on climatic factors can be obtained for different locations in the catchment area from the meteorological stations whereas the field investigations area required for estimating the other attributes.

The various steps involved in the application of model are :

- Preparation of a framework of sub-watershed through systematic delineation.
- Rapid reconnaissance surveys on 1:50,000 scale leading to the generation of a mapindicating erosion - intensity mapping units'
- Assignment of weight age value of various mapping units based on relative silt yieldpotential.
- Computing Silt Yield index for individual watersheds / Sub watersheds.
- Grading of watersheds/ sub watersheds into very high, high medium. low and very lowpriority categories.

The area of each of the mapping units is computed and silt yield indices of individual sub watersheds area calculated using the following equations.

a Silt Yield Index

$$SYI = \frac{X(Ai \times Wi) \times 100 \text{ where } i=L \text{ to } n}{Aw}$$

Ai = Area of ith unit (EIMU)

Wi = Weightage Value of ith mapping

unitn = No. of mapping units

Aw = Total area of sub watershed.

The SYI values for classification of various categories of erosion intensity rates are given in.

TABLE - 1.2 CRITERIA FOR EROSION INTENSITY RATE

Priority Categories	SYI Values
Very high	>1300
High	1200-1299
Medium	1100-1199
Low	1000-1099
Very Low	<1000

1.4 WATERSHED MANAGEMENT - AVAILABLE TECHNIQUES

Watershed management is the optimal use of soil and water resources within a given geographical area so as to enable sustainable production. It implies changes in land use, vegetative cover, and other structural and non-structural action that are taken in a watershed to achieve specific watershed management objectives. The overall objectives of watershed management programme are to:

- increase infiltration into soil
- Control excessive runoff;
- Manage & utilize runoff for useful purpose

Following Engineering and Biological measures have been suggested for the catchment areatreatment .

1. Engineering measures

- Nallah Bunding
- Contour Bunding
- Angle iron barbed wire fencing

2. Biological measures

- Development of nurseries
- Plantation / afforestation
- Pasture development
- Social forestry

The basis of site selection for different biological and engineering treatment measures underCAT are given in Table-13.3.

TABLE - 1.3: BASIS FOR SELECTION OF CATCHMENT AREA TREATMENT MEASURES

Treatment measure	Basis for selection
Social forestry, fuel wood and fodder grass development	Near settlements to control tree felling
Contour Bunding	Control of soil erosion from agricultural fields.
Pasture Development	Open canopy, barren land, degraded surface
Afforestation	Open canopy, degraded surface, high soil erosion, gentle to moderate slope
Barbed wire fencing	In the vicinity of afforestation work to protectis from grazing etc.
Nallah Bunding	Nalla bonding work consists of constructing bunds of suitable dimensions across thenalla or gullies to hold the maximum runoffwater to create flooding of the upstream areatemporarily for some days or weeks, withSurplusing arrangements at suitable intervals to drain the water.
Nursery	Centrally located points for better supervision of proposed afforestation minimize cost of transportation of seedling and ensure better survival.

1.5 CATCHMENT AREA TREATMENT METASURES

The erosion category of sub-watersheds in the catchment area as per a SYI index is given in Table-13.4. The details are shown in Figure-C. The area under different erosion categories is given in Table-13.5.

TABLE-1.4: EROSION INTENSITY CATEGORIZATION AS PER SYI CLASSIFICATION

SWS	Area (ha)	SYI	Erosion Category
W1	338	1230	High
W2	426	1150	Medium
W3	285	1160	Medium
W4	328	1180	High
W5	285	1150	Medium
W6	420	1210	High
W7	452	1230	High
W8	227	1150	Medium
W9	389	1160	Medium
W10	348	1180	High
W11	256	1150	Medium
W12	374	1210	High
Total :-	4175		

TABLE - 1.5 : AREA UNDER DIFFERENT EROSION CATEGORIES

Category	Area (ha)	Percentage
Very low	-	-
Low	-	-
Medium	1987	47.59
High	2188	52.41
Very High	-	-
Total :-	**4175**	**100.00**

The objective of the SYI method is to prioritize sub- watersheds in a catchment area for treatment. The total area under high erosion category in various dams is to be treated as a part of the project cost. The various measures suggested for catchment area treatment are depicted in Figure -D.

1.6 COST ESTIMATE FOR CAT PLAN

The cost required for Catchment Area Treatment is Rs. 0.5835 million. The details are given inTables - 13.6 and 13.7

TABLE. 1.5: COST ESTIMATE FOR CATCHMENT AREA TREATMENT OF KUAJHAGAR DAM . BIOLOGICAL MEASURES

S.No.	Item	Rate/Unit (Rs.) (including maintenance cost)	Target	
			Physical	Financial (Rs. millions)
1	Gap Plantation	186800/ha	1.00 ha	0.1868
2	Pasture Development	97500/ ha	1.00 ha	0.0975
3	Social forestry	70000/ha	0.50 ha	0.0350
4	Nursery development	30000 /No.	1.00 No.	0.0300
5	Maintenance of nursery	27000/ No.	1.00 No.	0.0270
6	Barbed wire fencing	100000/km	0.500	0.050
7	Watch and ward for 3years for 2 persons	75000/ man-month	6 man- month	0.045
	Total (A)			**0.471**

TABTE = 1.7 : COST ESTIMATE FOR CATCHMENT AREA TREATMENT OF PAHARIYA DAM - ENGINEERING MEASURES

S.No.	Item	Rate (Rs.)	Unit	Target	
				Physical	Financial (Rs. millions)
1	Contour Bunding	15000/ha	Ha.	1.50 Ha.	0.0225
2	Nallah Bunding	10,000	No.	1.00 No.	0.010
	Total :-				**0.0325**

Total cost for Biological and Engineering measures = Rs. 0.5035 million (A)
administrativeexpenditure.

-	Governme`nt Expenditure 3% of A (including O&M)	Rs. 0.015 million
-	Establishment cost 8% of A	Rs. 0.040 million
-	Contingency 5% of A	Rs. 0.025 million
	Total :-	**Rs. 0.08 million**

1.5 (B) COST ESTTMATES OF CAT PLAN FOR FOREST AREA

The Total Catchment Area of KAUJHAGAR TANK is 4175.00 I-hectares out of this 165 Hectares Forest Land. The cost required for Catchment Area treatment of Forest is Rs. 0.5035 million. The details are given in Tables-7 and 8.

TABLE-7 : COST ESTIMATE FOR TREATMENT OF CATCHMENT AREA IN FOREST AREA OFKUAJHAGAR DAM.BIOLOGICAL MEASURES

S.No.	Item	Rate/Unit (Rs.) (including maintenance cost)	Targe t	
			Physical	Financial (Rs. millions)
1	Gap Plantation	186800/ha	1.00 ha	0.1868
2	Pasture Development	97500/ ha	1.00 ha	0.0975
3	Social forestry	70000/ha	0.50 ha	0.0350
4	Nursery development	30000 /No.	1.00 No.	0.0300
5	Maintenance of nursery	27000/ No.	1.00 No.	0.0270
6	Barbed wire fencing	100000/km	0.500	0.050
7	Watch and ward for 3 years for 2 persons	75000/ man-month	6 man- month	0.045
	Total (A)			**0.471**

TABLE.8 : COST ESTIMATE FOR TREATMENT OF CATCHMENT AREA IN FOREST AREA OF KUAJHAGAR DAM ENGTNEERING MEASURES

S. No.	Item	Rate (Rs.)	Unit	Target	
				Physical	Financial (Rs. millions)
1	Contour Bunding	15000/ha	Ha.	1.50 Ha.	0.0225
2	Nallah Bunding	10,000	No.	1.00 No.	0.010
	Total :-				**0.0325**

Total cost for Biological and Engineering measures = Rs. 0.5035 million (A) administrative

expenditure.

-	Government Expenditure 3% of A (including O&M)	Rs. 0.015 million
-	Establishment cost 8% of A	Rs. 0.040 million
-	Contingency 5% of A	Rs. 0.025 million
	Total :-	**Rs. 0.08 million**

Total Cost for Catchment Area Treatment for Forest Area of KUAJHAGHAR TANK = 0.5835 million.