



## Nadiifinta/Jeermis ka dilista Ceelka

Waraaqahaan la qeybinayo waxay ku siinayaan tilmaamo jeermiska lagaga nadiifinayo nidaamka biyahaaga, oo ay ku jiraan ceelka leh bamka quusisan iyo habka qaybinta biyaha ee la xiriirta labadaba. Tilmaamahan waxaa loo isticmaali karaa guri hal qoys ah ama ganacsiyo sida meelaha nasashada iyo kaamamka. Jeermis ka dilistu waxay meesha ka saari kartaa ama yarayn kartaa bakteeriyada waxyeelada leh, fayrasyada, ama noolaha ili ma qabatayga ah ee kale ee laga yaabo in laga helo biyahaaga la cabbo.

Waxaad ku nadiifin kartaa ceelkaaga adiga oo raacaya tilmaamahan, ama waxaad soo kiraysan karaa qandaraasle shatti leh. Qandaraaslayaasha ceelasha ee shatiga leh waxaa laga heli karaa: [Diiwaanka Qandaraasleyda Shatiga leh/Diiwaangashan ee Ceelka iyo Qodista](http://www.health.state.mn.us/communities/environment/water/wells/lwc/index.html) ([www.health.state.mn.us/communities/environment/water/wells/lwc/index.html](http://www.health.state.mn.us/communities/environment/water/wells/lwc/index.html)) (keliya waxaa lagu heli karaa Ingiriisi wakhtigan).

## Walaacyada laga qabo Badbaadada

**Hubi inaad sameyso waxyaabaha soo socda si aad u hubiso badbaadadaada iyo tan qoyskaaga, xayawaankaaga rabaayada ah, iyo xoolahaaga.**

- Akhri dhamaan buugyaraha kahor inta aadan bilaabin jeermis ka dilista nidaamka ceelkaaga
- Ka fogee caruurta iyo xoolaha ceelka marka aad nadiifinayso.
- Qofka yuuna ka isticmaalin biyo ceelka illaa oo ay dhamaato howsha nadiifintu.

## Korontada

**Isticmaal taxaddar** aad u sarreeya marka aad ka shaqaynayso korontada. Wada jirkooda biyaha iyo korantadu waxay noqon karaan kuwo dilaa ah. Haddii aadan ku kalsoonayn awooddaada inaad si badbaado leh ugu shaqeyso koronto, la xiriir qandaraasle ceel shati oo leh si aad u jeermiska uga dilo ceelkaaga.

## Kiimikooyinka

- Had iyo jeer raac tilmaamaha isticmaalka iyo badbaadada ee ka yimid soo saaraha.
- Ka fogow in ay kaa soo gaaraan indhaha iyo maqaarka. Xiro muraayadaha difaaca ama gaashaanka wejiga iyo galoofyada cinjirka ah markaad ku shaqaynayso warankiilo/bilijka.
- Ha isku darin bilijka/warankiilada iyo kiimikooyin kale sababtoo ah waxay samayn karaan gaas waxyeelo leh.
- Ha ka tagin warankiilada ama isku qaska warankiilada iyadoon la ilaalinaynin.

## Neefsashada

- Jeermis dilku wuxuu abuuri karaa gaas waxyeelo leh. Meelaha ku xeeran ceelka waa in ay ahaadaan kuwo si wanaagsan hawada ugu furan.
- Gaasaska waxyeellada leh waxay ku ururi karaan godka ceelasha waxayna abuuraan ogsijiin la'aan.

## Habka nadiifinta jeermis ka dilista nidaamka biyaha

Waxaad u baahantahay waxbaayaha soo socda si aad jeermiska uga disho nidaamkaaga biyaha:

- Tuubada lagu waraabiyo beerta oo dherar ahaan ku filan in ay soo gaarto qasabada biyaha ilaa ceelka Tuubadani waxa kale oo ay u baahan tahay in ay gaarto meel ka fog ceelkaaga, nidaamka septic-ga, qurxinta dhulka, iyo meelaha biyuhu joogaan.
- Baaldi shan galaan qaad ah oo nadiif ah.
- Masaf/hooriye
- Bac gogol caag ah.
- Ookiyaalo/gaashaanka wejiga iyo galoofyo caag ah.
- Shan galaan oo biyo cusub ah oo laga keenay meel la og yahay in aanay bakteeriyada lahayn, sida nidaamka biyaha dawladda hoose.
- Liidadka tijaabada ee koloriinta.
- Warankiilo koloriinta guriga oo aan la carfinin, oo aan lahayn wax lagu daray, oo la soo saaray lix bilood gudahood xilliga la isticmaalay. Calaamaddu waxay sheegi doontaa walaxda firfircooni waa 6 ama 8.25% sodium hypochlorite. Ha isticmaalin jeermis dilaha barkada dabaasha ama jeermis dilaha tuubada kulul sababtoo ah waxay ka kooban yihiin alji-dile (algicides) iyo fingi-dil (fungicides).

### Tallaabada 1: Gooni yeelidda meelaha halista ah

Daar ama fur afka loogu talagalay dhaafinta ee "bypass" ama "aan shaqaynanin" ("out of service") ee dhammaan qalabka daaweynta biyaha (jilciyeyaasha biyaha, hababka reverse osmosis, iwm.) iyo qalabka aan u dulqaadan karin biliijka. Kuwani waxaa laga yaabaa in ay qarsanayaan nooleyaal ili ma qabatay ah oo waxaa laga yaabaa in ay u baahanyihiin in si gaar ah loo nadiifiyo Raac nidaamka nadiifinta ee loogu talagalay in lagu nadiifiyo.



Filtarada ka saar dhamaan alaabta iyo qalabka Taangiyada dabinnada iyo barkadaha lagu waraabiyo xooluhu waxay u baahan karaan fiiro gaar ah.

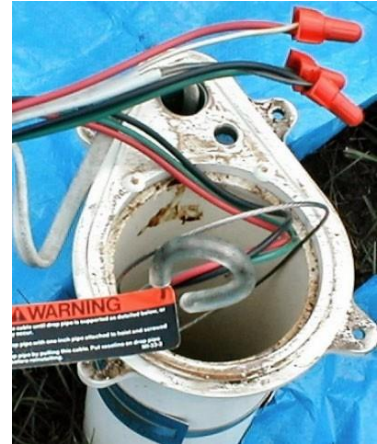
## TALAABADA 2: Badbaadada Korantada

Ka demi korantada bamka ceelka. Haddii sanduuqa korontada laga demiyo/daaro uu leeyahay quful laga xiro, isticmaal si aad uga ilaaliso daaraha in si lama filaan ah loo shido. Had iyo jeer isticmaal danab cabire (voltmeter) si aad u xaqiijiso in korantada ceelka laga gooyay kahor intaadan sii wadin habka jeermis ka nadiifinta.

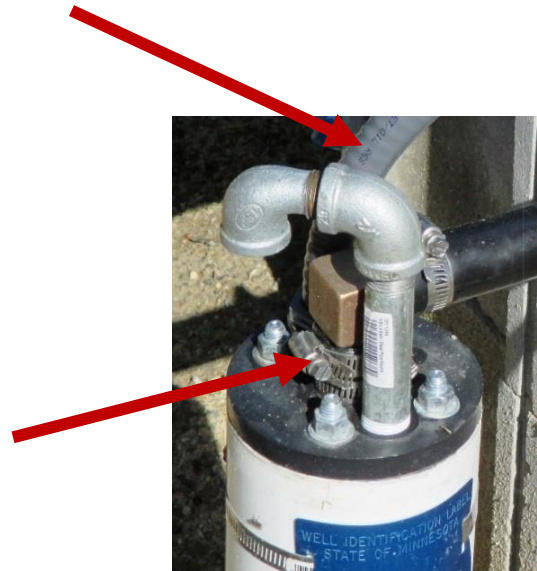


## TALAABADA 3: Fur Ceelka

- Daboolka Ceelka ee Caadiga ah: Ka saar furka ceelka oo uga soo saar wareeji fiilooyinka dibadda si aad uga fogaato in xiriiriyeyaasha fiiladu ay qoyan marka la samaynayo Tallaabooyinka 6 iyo 7 (eeg sawirka 1);  
**ama**
- Shaabadda Fayadhowrka Nadiifinta (Sanitary Seal): Ka saar hawo-mareenka (eeg sawirka 2- falaarta sare ah). Ha ka saarin boolalka cadaadiska ee ku xiran daboolka cadaadiska ee ceelka (eeg sawirka 2-falaarta hoose).



*Jaantuska 1*



*Jaantuska 2*

## TALAABADA 4: Baaritaan ku samee qaybahan

- Dahaarka fiilooyinka ka fiiri in ay dildilaaceen, diirmeen, ama isku xirayaasha xaruhu ay maqanyihiin.
- Fiiri in ceelka daboolkiisu dildilaacay ama waxyeelo kale gaartay.
- Fiiri in ceelka daboolkiisu boolal ka maqanyihiin, shashadaha hawo-mareenka ay dhaawacantay, ama lingaxa daboolku dabacsanyahay.

Waa muhiim in wixii tubooyinka ama cilladaha ceelka la hagaajiyo si aanay biyaha dusha sare, cayayaanka, dulinka ama wasakheeyayaasha kale u soo geli karin ceelka.

## TALAABADA 5: Ku qas dareere warankiilo ah

Kiimikada biyaha iyo cabbirka nidaamka biyuhu way kala duwan yihiin. Kala duwanaanshan ayaa go'aamin doona cadadka qaska warankiilada ee loo baahan yahay si loo jeermis dilo habka biyahaaga. Waxaa laga yaabaa in aad u baahato inta u dhaxaysa 50-200 qaybood halkii milyan (ppm) oo koloriin ah dib-wareejinta biyaha (Tallaabada 7) si aad jeermiska uga disho nidaamka biyahaaga. Ha isticmaalin qas biliij ka badan 200 ppm sababtoo ah waxay yaraynaysaa waxtarka jeermis ka dilista.

1. Biyo ku shub ka yimid nidaamkaaga biyaha baaquli/baaldi 5 galaan qaad ah ilaa uu afar meelood - saddex uu buuxo, kadibna afar

Ku dar xaddiga warankiilada/biliijka ee lagu muujiyey shaxda hoose.

Xaddiga biyaha ee ceelka ku jira (inta fiit/dhudhun)	Cabbirka dhumucda Daloolka Ceelka(inji)		
	2	4	6
10	2 koob	2 koob	2 koob
50	2 koob	2 koob	3 koob
100	2 koob	3 koob	4 koob
300	3 koob	4 koob	10 koob

Qadarka biyaha ceelku waa wadarta qotada dhererka ee ceelka oo laga jaray heerka biyaha taagan. Haddi aan la garanayn xaddiga biyaha ceelka ku jira, booqo [Diiwaanka Ceelasha Minnesota \(Minnesota Well Index\)](#)

([www.health.state.mn.us/communities/environment/water/mwi](http://www.health.state.mn.us/communities/environment/water/mwi)) (kaliya waxaa lagu heli karaa Ingiriisi wakhtigan) ama la xiriir MDH. Haddii aad awoodi waydo inaad go'aamiso cadadka biyaha ceelka, isticmaal wadarta qotada dhererka ee ceelka bedelkiisa.

Qasitaanka biliijka ee shaxdani waxa uu u fiican yahay jeermis ka dilista ceelka iyo nidaamka biyaha ee guri dhexdhexaad ah, oo ay ku jiraan tubooyinka biyaha, taangiyada biyaha, iyo kuleyliyaha biyaha. Ka yaree xadiga warankiilada 1 koob haddi ceelka keligii u baahan yahay in jeermiska laga nadiifiyo. Waxaa laga yaabaa inaad u baahato inaad kordhiso xaddiga warankiilada haddii.

- Haddii nidaamka ceelku uu ka koobanyahay dhowr dhisme,
- Haddii uu leeyahay tubooyin badan oo qaybinta ah ama kadinta biyaha, ama

- Haddii aad jeermis ka nadiifinayso sababtoo ah ceelkaaga daad baa galay, waxaa ku jirta bakteeriyadu dhib leh, ama ceel dhex ballaaran.

## TALAABADA 6: Dareeraha warankiilada ku dar ceelka

1. Isticmaal masaf/ weel afdhuuban oo u shuba marka aad warankiilada ku darayso ceelka

Iska ilaali in ay soo gaarto bilijku qaybaha daboolka birta iyo fiilooyinka. Waxay keeni doontaa daxal.



## TALLAABADA 7 - Dib ugu wareeji biyaha koloriinta leh

1. KA DAAR meesha laga demiyo/daaro baamka. Digniin: fiilooyinka ku yaalla ceelka dushiisa hadda way danabaysanyihiin.
2. Ku xir tuubada beerta lagu waraabiyo qasabada ugu dhow.
3. Kaga daadi biyaha tuubada meel ceelka ka fog, nidaamka septic-ga, qurxinta dhulka, iyo meelaha biyuhu fadhiyaan ilaa aad urinayso warankiilo ama aad ka ogaato koloriin in ay leeyihiin adigoo isticmaalaya xariijimaha tijaabada. Tani waxay qaadan kartaa ilaa 5-10 daqiiqo oo waxaa laga yaabaa in ay midab doorsoomeen. Sii wad in aad insha ku hayso iyo socodsiinta biyaha ilaa ay ka noqdaan saafi. Haddii socodka uu aad u yaraado, dami korontada baamka oo la xiriir qandaraasle ceel oo shati leh.
4. Xir/demi biyaha.
5. Tuubada biyaha geli ceelka
6. DAAR/FUR biyaha.
7. Isku qas/walaaq biyaha Sii wad inaad dib u wareejiyo ilaa 30 daqiiqo kadib markaad marka hore ka uriso warankiilada tuubada beerta. Isticmaal laba xabbo oo xariijimaha tijaabada ah oo koloriinta ah sida uga dhigato tilmaame muuqaal si aad u go'aamiso in biyaha tuubada ka yimid ay yihiin ugu yaraan 50 ppm koloriin leh (qiyaas sare) ama in ka yar 1 ppm (caddadadka raadraaca). Haddii ay ka hooseyso 50 ppm, u gudub TALLAABADA 5 oo ku dar qas warankiilo/bilij ah oo dheeraad ah oo ku celi TALLAABOYINKA 6 iyo 7.
8. KA DEMI meesha laga demiyo/daaro baamka.
9. Ka biyo raaci qaybaha si fiican biyo cusub oo aan koloriin lahayn. Ka biyo raacintu waxay ka saartaa xal bilijka ah si looga hortago daxalka.
10. Beddel fiilooyinka iyo daboolka ceelka.



KA DAAR meesha laga demiyo/daaro baamka.

## **TALLAABADA 8 - Ka shub/soo daadi biyaha warankiilada/biliiyka leh dhammaan tubooyinka iyo qalabka ku rakiban:**

1. Dooro qasabaddaada ama tuubada biyaha laga shubto ee ugu horraysa.
2. Ka saar biyo tashiilaha tuubada (aerator), haddii uu jiro. Tani waxay ka ilaalin doontaa inay xiraan dabacsanaantu.
3. Shub biyaha kulul ilaa xariiqda baarista ee koloriintu ay muujineyso ugu yaraan 50 ppm. Tani waxay qaadan doontaa wakhti maadaama biyaha koloriinta leh ee ku jira nidaamka ceelku ay tahay inay beddelaan dhammaan mugga kuleyliyahaaga biyaha. Haddii ay ka hooseyso 50 ppm, u gudub TALLAABADA 5 oo ku dar qas warankiilo/biliiyah ah oo dheeraad ah oo ku celi TALLAABOYINKA 6, 7, iyo 8.
4. Ku celi samaynta habka tuubada biyaha qabow. Waxay ku qaadan doontaa wakhti aad u yar in ay soo baxaan biyaha qabow ee koloriin leh.



DAMI qasabadda oo sidaas ku celi dhammaan tubooyinka iyo qalabka lagu rakibay ee hadhay, oo ay ku jiraan qubayska, saxanka maydhashada, musqulaha, qalabka biyaha lagu isticmaalo, tubooyinka bannaanka, biyo-waraabka dayrka, iyo dhismayaasha bannaanka.

## **TALLAABADA 9 - Wakhtiga jeermis ka nadiifinta**

1. KA DEMI meesha laga demiyo/daaro baamka.
2. Ku dheji calamado ama dami qasabadaha iyo qalabyada si aad dadka uga ilaaliso isticmaalka biyaha.

Qaska warankiiladu ha ku fadhiisto qalabka biyaha ugu yaraan laba saacadood, iyadoo la doorbidayo lix saacadood, ama habeen.

## **TALLAABADA 10 – Ka saar biyaha koloriinaysan**

1. KA DAAR meesha laga demiyo/daaro baamka.
2. Ku rakib tuubada beerta dhanka dibadda ama tuubada dayrka. Ha ku daadin biyaha koloriin leh gudaha ama meel u dhow nidaamka septic-ga, dhulka daarada ee hagaajisan, ama meel kasta oo biyo fadhiyaan, maaddama warankiiladu waxyeello u geysan doonto.
3. Ku shub biyaha si aad ceelka uga soo saartid isku qaska warankiilada. La soco habka waxay qaadan kartaa 30 daqiiqo ilaa 24 saacadood ama ka badan si aad ceelka uga nadiifiso dhammaan qaska warankiilada.
4. Isticmaal xariijimaha baarista koloriinta si aad u xaqiijiso in biyaha ka imaanaya tubada dibadda ama qasabada deyrku ayna lahayn wax warankiilo ah.
5. Ka daadi biyaha koloriinta leh kululeeyaha biyaha.

Ka daadi biyaha dhammaan qasabadaha biyaha ee gudaha iyo dibadda iyo qalabka lagu rakibo si aad uga nadiifiso qaska warankiilada inta ka hartay nidaamka biyaha. Isticmaal xariijimaha baarista koloriinta oo sheegaya ilaa 0 ppm oo koloriin ah si aad u xaqiijisaan in ayna wax warakiilo ah ku jirin ceelka

## **TALLAABADA 11 – Ka nadiifi jeermiska nidaamka daaweynta biyaha iyo qalabkaba**

Si aad jeermiska uga disho hababka daaweynta biyaha iyo qalabka, raac tilmaamaha shirkada qalabka soo saartay ee qalab kasta oo lagu daweyyo biyaha. Haddii macluumaadka jeermis ka dilista la heli karin, la xiriir daawayntaada biyaha ama bixiyaha qalabka adeega. Qaka warankiilada/bilijku waxay dhaawici karaan ama si khaldan u jeermiska uga nadiifin kartaa filtarrada qayb ka ah nidaamka daaweynta biyaha ama qalabka.

## **TALAABADA 12: Dib ugu rakib alaabada guriga, jilciyaha biyaha, iyo qalabka kale ee daaweynta.**

Ku soo celi daboolka dhaafinta (bypass) booska DAARNAANTA ka dib markaad raacdo tilmaamaha soo-saaraha ee jeermis ka dilista qalabka iyo alaabada biyaha lagu daweyyo.

## **TALAABADA 13: Baaritaan ku sameeya biyaha**

Kadib marka qaska warankiilada laga saaro nidaamka biyaha, muunad ayaa lagu talinayaa in laga qaado si loo hubiyo in biyaha ceelka laga waayo total coliform kahor inta aadan u isticmaalin cabbitaanka ama wax karinta. MDH waxay ku talinaysaa in la isticmaalo shaybaare la aqoonsan yahay in ay baaritaan ku sameeyaan biyahaaga. [La xiriir shaybaaro la aqoonsan yahay](https://eldo.web.health.state.mn.us/public/accreditedlabs/labsearch.seam) (<https://eldo.web.health.state.mn.us/public/accreditedlabs/labsearch.seam>) (kaliya waxaa lagu heli karaa Ingiriisi wakhtigan) si aad u hesho weel muunad lagu soo qaado iyo tilmaamo ama weydii adeegyada deegaanka ama caafimaadka ee degmadaada in ay bixiyaan adeegyo baarista ceelasha.



Ku beddel filtarrada dhammaan alaabada iyo qalabka marka MDH ama shaybaarka ay shahaadaysay MDH uu xaqiijiyo in nidaamka biyuhu yahay uuna lahayn coliform.

## **Ka dabataga/dib u eegid**

Bakteeriyada Total Coliform ayaa dib ugu beermi niydaamka ceelka karta Sababtaas darteed, waa muhiim inaad dib baaritaan ugu samaysaan ceelkaaga lama illaa afar asbuuc kadib marka nadiifinta/jeermis dilista lagu sameeyo. Haddii bakteeriyada total coliform laga helo , ku laba celi hab daaweynta.

Ma aha wax aan caadi ahayn in jeermiska laga dilo nidaamka biyaha dhowr jeer si loo baabi'iyoo total coliform haddii ay ku soo koraysay nidaamka ceelka muddo dheer. Haddii nadiifinta jeermis ka dilistu ay guuldaraysato, waxaa laga yaabaa in loo baahanyahay in la nadiifiyo iyo in jeermis ka dilis labadaba lagu sameeyo. La xidhiidh qandaraasle ceel oo MDH shati siisay si uu kuu siiyo caawimo dheeraad ah.

Macluumaad dheeraad ah oo ku saabsan ceelkaaga iyo nidaamka biyaha, eeg [Well Owner's Handbook \(Buugga Gacmeedka Milkiilaha Ceelka\) \[PDF\]](http://www.health.state.mn.us/communities/environment/water/docs/wells/construction/handbook.pdf) ([www.health.state.mn.us/communities/environment/water/docs/wells/construction/handbook.pdf](http://www.health.state.mn.us/communities/environment/water/docs/wells/construction/handbook.pdf)) (kaliya waxa lagu heli karaa Ingiriisi wakhtigan) oo laga heli karo Qaybta Maaraynta Ceelasha ee Websaydka MDH.

Si aad macluumaadkan ugu hesho qaab kale, soo wac 651-201-4600.  
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