YP\_R

prod<-function(){

##archivos necesarios

##2 2) Fior all data.csv

##TEST TX 2018 Mac's Daily yield productivity.csv

##man-hours in a shift

mhsh\_tx<-34,680/60

##Max number of hours that the plant can stop per shift for breaks

brkhsh\_tx<-120\*5/2/60 ##5 machines, 120 mins each per day

tnovp<- read.csv("TEST TX 2018 Mac's Daily yield productivity.csv")

##read.csv("Texas Nov Production Recap.csv")[,1:7]

tnovp<-mutate(tnovp,lbsq=Lbs.Produced\*LBS.HR)

tnovp\_s<-summarize(tnovp,mlbh=sum(lbsq,na.rm=T)/sum(Lbs.Produced,na.rm=T))

##In this case it turns out that

##tnovp\_s

##mlbh (mean pounds/hour) baseline

## 528.3085

##Jan no hace falta, se saca de dat\_Tx

##tjanp<-read.csv("Texas Jan Production Recap.csv")[,1:7]

##tjanp<-mutate(tjanp,lbsq=Lbs.Produced\*LBS.HR)

##tjanp\_s<-summarize(tjanp,mlbh=sum(lbsq,na.rm=T)/sum(Lbs.Produced,na.rm=T))

##In this case it turns out that

##tjanp\_s

##mlbh (mean pounds/hour) current

## 650.6107

##yp\_fg<-read.csv("2 2) Fior all data.csv")

dat\_tx<-read.csv("TEST TX 2018 Mac's Daily yield productivity.csv")

##only select the columns needed, and extract the numbers. Include the "past" or "potential" constants

pty\_tx<-select(mutate(dat\_tx,location="TX",date=as.Date(dat\_tx$Date,"%m/%d/%Y"),weekc\_p=as.character(ymd(date)+(1-wday(ymd(date)))),fglb=parse\_number(PS.Total.FG.LBS)+parse\_number(CR.TT.Finished.Goods.Lbs),mhdl=parse\_number(MH.Direct.Labor),ot=parse\_number(Productivity),brk=Breaks.Taken.Minutes/60\*5,brk\_pt=brkhsh\_tx\*2,lbh=parse\_number(LBS.HR),wlbh= parse\_number(LBS.HR)\*(parse\_number(PS.Total.FG.LBS)+parse\_number(CR.TT.Finished.Goods.Lbs)),lbh\_pt= tnovp\_s$mlbh),location,date,weekc\_p,fglb,mhdl,ot,brk,brk\_pt,lbh,lbh\_pt,anlb=Lbs.Produced)

pty\_tx<-mutate(pty\_tx, wlbh=lbh\*fglb)

##Assign a weekc to every ot

i<-0

for(i in 2:nrow(pty\_tx)){

ifelse(is.na(pty\_tx$ot[i])==FALSE, pty\_tx$weekc[i]<-pty\_tx$weekc\_p[i-1], pty\_tx$weekc[i]<-pty\_tx$weekc\_p[i])

}

##Calculate productivity by week

pty\_tx1<-summarize(group\_by(pty\_tx,weekc\_p),fglb\_tot=sum(fglb,na.rm=T),mhdl\_tot=sum(mhdl,na.rm=T),lb\_mhdl=fglb\_tot/mhdl\_tot,brk\_tot=sum(brk,na.rm=T),lbh\_tot=sum(wlbh,na.rm=T)/fglb\_tot,brk\_pt\_tot=sum(brk\_pt,na.rm=T),lbh\_pt\_tot=mean(lbh\_pt,na.rm=T),anlb\_tot=sum(anlb,na.rm=T))

pty\_tx1<-pty\_tx1[is.na(pty\_tx1$weekc\_p)==FALSE,]

##Calculate 4 week weighted MA

i<-0

for(i in 1:nrow(pty\_tx1)){

ifelse(i<4, pty\_tx1$ma[i]<-pty\_tx1$lb\_mhdl[i],pty\_tx1$ma[i]<-sum(pty\_tx1$fglb\_tot[i-3:i],na.rm=T)/sum(pty\_tx1$mhdl\_tot[i-3:i],na.rm=T))

}

pty\_tx1<-mutate(pty\_dat=lb\_mhdl)

for(i in 1:nrow(pty\_tx1)){

ifelse(pty\_tx1$weekc\_p[i]>="2018-11-04",pty\_tx1$pty\_spd[i]<-**(**(pty\_tx1$lbh\_tot[i]-pty\_tx1$lbh\_pt\_tot[i])\*pty\_tx1$anlb\_tot[i]/pty\_tx1$lbh\_tot[i]**)**/pty\_tx1$mhdl\_tot[i] ,pty\_tx1$pty\_spd[i]<-0)

ifelse(as.Date(pty\_tx1$weekc\_p[i])>="2018-11-04",pty\_tx1$brk\_tot[i]<- pty\_tx1$brk\_tot[i],pty\_tx1$brk\_tot[i]<-pty\_tx1$brk\_pt\_tot[i])

ifelse(as.Date(pty\_tx1$weekc\_p[i])>="2018-11-04",pty\_tx1$pty\_brk[i]<- pty\_tx1$lbh\_pt\_tot[i]\*(pty\_tx1$brk\_pt\_tot[i]-pty\_tx1$brk\_tot[i])/pty\_tx1$mhdl\_tot[i] ,pty\_tx1$pty\_brk[i]<-0)

ifelse(as.Date(pty\_tx1$weekc\_p[i])<"2018-11-04",pty\_tx1$pty\_grl[i]<-pty\_tx1$lb\_mhdl[i], pty\_tx1$pty\_grl[i]<-pty\_tx1$lb\_mhdl[i]- pty\_tx1$lbh\_pt\_tot[i]\*(pty\_tx1$brk\_pt\_tot[i]-pty\_tx1$brk\_tot[i])/pty\_tx1$mhdl\_tot[i]- **(**(pty\_tx1$lbh\_tot[i]-pty\_tx1$lbh\_pt\_tot[i])\*pty\_tx1$anlb\_tot[i]/pty\_tx1$lbh\_tot[i]**)**/pty\_tx1$mhdl\_tot[i])

ifelse(as.Date(pty\_tx1$weekc\_p[i])>="2018-11-04",pty\_tx1$check[i]<-pty\_tx1$pty\_brk[i]+pty\_tx1$pty\_spd[i]+pty\_tx1$pty\_grl[i],pty\_tx1$check[i]<-pty\_tx1$lb\_mhdl[i])

pty\_tx1$pty\_dat[i]<-pty\_tx1$lb\_mhdl[i]

}

r<-ggplot(pty\_tx2,aes(x=as.Date(weekc\_p),y=pty\_dat))+geom\_point()+geom\_path()

r1<-r+geom\_path(aes(x=as.Date(weekc\_p),y=pty\_brk),color="springgreen2")

r2<-r1+geom\_path(aes(x=as.Date(weekc\_p),y=pty\_spd),color="blue")

r3<-r2+ geom\_path(aes(x=as.Date(weekc\_p),y=pty\_grl),color="red")

p<-ggplot(pty\_tx1,aes(x=as.Date(weekc\_p),y=ma))+geom\_point(aes(x=as.Date(weekc\_p),y=lb\_mhdl))

p1<-p+geom\_line(color="springgreen2",size=2)

p2<-p1+geom\_smooth(method=loess,se=F, color="springgreen2",linetype="dashed")

OLD STUFF, sHOULD I DELETE IT?

ypfg<-function()**{**

yp\_fg<-read.csv("2 2) Fior all data.csv")

yp\_p<-read.csv("2 2) PELLETS all data.csv")

##proper format for dates

yp\_fg<-mutate(yp\_fg,date=as.Date(as.character(Date),"%d-%b-%y"), weekc=as.Date(as.character(WeekC),"%d-%b-%y"),location=as.character(Location))

yp\_p<-mutate(yp\_p,date=as.Date(as.character(Date),"%d-%b-%y"), weekc=as.Date(as.character(WeekC),"%d-%b-%y"),location=as.character(Location))

yp\_p17<-filter(arrange(yp\_p,location,desc(weekc)),weekc<"2017-12-31"&weekc>="2017-09-01")

yp\_fg17<-filter(arrange(yp\_fg,location,desc(weekc)),weekc<"2017-12-31"&weekc>="2017-09-01")

##calculate 2017 averages

yp\_fg17s<-summarize(group\_by(select(yp\_fg17,location,weekc,PS.Actual.FG.LBS,PS.Fried.Lbs,CR.TT.Finished.Goods.Lbs,CR.TT.Fried.Lbs),location,weekc),psac=sum(PS.Actual.FG.LBS,na.rm=TRUE),psfr=sum(PS.Fried.Lbs,na.rm=TRUE),crac=sum(CR.TT.Finished.Goods.Lbs,na.rm=TRUE),crfr=sum(CR.TT.Fried.Lbs,na.rm=TRUE),psy=psac/psfr,cry=crac/crfr)

yp\_fg17m<-summarize(group\_by(yp\_fg17s,location),psac17=sum(psac),psfr17=sum(psfr),crac17=sum(crac),crfr17=sum(crfr),psy17=mean(psac17/psfr17),cry17=mean(crac17/crfr17))

##why not trying to calculate mean of weekly yields with a loop to avoid NaR…

*##yp\_p17s<-summarize(group\_by(select(yp\_p17,Location,weekc,………………..PS.Actual.FG.LBS,PS.Fried.Lbs,CR.TT.Finished.Goods.Lbs,CR.TT.Fried.Lbs),Location,WeekC),psac=sum(PS.Actual.FG.LBS,na.rm=TRUE),psfr=sum(PS.Fried.Lbs,na.rm=TRUE),crac=sum(CR.TT.Finished.Goods.Lbs,na.rm=TRUE),crfr=sum(CR.TT.Fried.Lbs,na.rm=TRUE))*

##first build the 2018 weekly yields data frame

yp\_fg18<-filter(arrange(yp\_fg,location,desc(weekc)),weekc<="2018-12-31"&weekc>="2017-12-31")

yp\_p18<-filter(arrange(yp\_p,location,desc(weekc)),weekc<="2018-12-31"&weekc>="2017-12-31")

yp\_fg18s<-summarize(group\_by(select(yp\_fg18,location,weekc,PS.Actual.FG.LBS,PS.Fried.Lbs,CR.TT.Finished.Goods.Lbs,CR.TT.Fried.Lbs),location,weekc),psac=sum(PS.Actual.FG.LBS,na.rm=TRUE),psfr=sum(PS.Fried.Lbs,na.rm=TRUE),crac=sum(CR.TT.Finished.Goods.Lbs,na.rm=TRUE),crfr=sum(CR.TT.Fried.Lbs,na.rm=TRUE),psy=ifelse(psac==0,NA,psac/psfr),cry=ifelse(crac==0,NA,crac/crfr))

yp\_fg18m<-summarize(group\_by(yp\_fg18s,location),psac18=sum(psac),psfr18=sum(psfr),crac18=sum(crac),crfr18=sum(crfr),psy18=mean(psac18/psfr18),cry18=mean(crac18/crfr18))

coiy18<-subset(yp\_fg18s,location=="COI",select=c(location,weekc,psy,cry))

##yp\_fg17m[6,6]<-min(coiy18$psy)

##yp\_fg17m[6,7]<-min(coiy18$cry)

yp\_fg17m[6,6]<-quantile((coiy18$psy),probs=0.33)

yp\_fg17m[6,7]<-quantile((coiy18$cry),probs=0.33)

yp\_fg17m[6,1]<-"COI"

pssav<-numeric()

crsav<-numeric()

k<-0

m<-0

for(i in 1:nrow(yp\_fg18s))**{**

pssav[i]=k+1.26\*(-as.numeric(yp\_fg18s[i,4])+as.numeric(yp\_fg18s[i,3])/ as.numeric(filter(yp\_fg17m,location==as.character(yp\_fg18s[i,1]))[,6]))

crsav[i]= m+1.26\*(-as.numeric(yp\_fg18s[i,6])+as.numeric(yp\_fg18s[i,5])/ as.numeric(filter(yp\_fg17m,location==as.character(yp\_fg18s[i,1]))[,7]))

ifelse(as.character(yp\_fg18s[i+1,1])== as.character(yp\_fg18s[i,1]),k<-pssav[i],k<-0)

ifelse(as.character(yp\_fg18s[i+1,1])== as.character(yp\_fg18s[i,1]),m<-crsav[i],m<-0)

**}**

sav18<-data.frame(yp\_fg18s$location, yp\_fg18s$weekc, yp\_fg18s$psy ,pssav, yp\_fg18s$cry ,crsav)

##Exclude COI from the sum

evsav18<-summarize(group\_by(subset(sav18, yp\_fg18s.location!="COI"),yp\_fg18s.weekc),sum(pssav),sum(crsav,na.rm=TRUE))

evsav18<-mutate(evsav18,location="Evans")

names(evsav18)<-c("weekc","pssav","crsav","location")

write.csv(sav18,"sav18.csv")

write.csv(yp\_fg18s,"yp\_fg18s.csv")

write.csv(yp\_fg18m ,"yp\_fg18m.csv")

write.csv(yp\_fg17m,"yp\_fg17m.csv")

write.csv(evsav18,"evsav18.csv")

plot.new()

dev.new()

ifelse(min(evsav18$pssav,sav18$pssav,na.rm=TRUE)>0,y1<-0,y1<- min(evsav18$pssav,sav18$pssav,na.rm=TRUE))

ifelse(max(evsav18$pssav,sav18$pssav,na.rm=TRUE)<0,y2<-0,y2<-max(evsav18$pssav,sav18$pssav,na.rm=TRUE))

plot(filter(sav18,yp\_fg18s.location=="CAL")$yp\_fg18s.weekc,filter(sav18,yp\_fg18s.location=="CAL")$pssav,type="l",col="pink",lwd=2,xlab="weeks of 2018",ylab="Accumulated savings (k usd)",main="FG PS yield savings 2018 vs Q4 2017", ylim=c(y1,y2),yaxt="n",bty="n")

points(filter(sav18,yp\_fg18s.location=="TX")$yp\_fg18s.weekc,filter(sav18,yp\_fg18s.location=="TX")$pssav,col="green",type="l",lwd=2, bty="n")

pts <-seq(y1,y2,by=(y2-y1)/3) ## c(100000,200000,300000,400000)

ptsv<-seq(0,length(unique(evsav18$weekc)),by=1)

axis**(**2, at = c**(**0,as.numeric**(**evsav18[length(evsav18$pssav),2]**)** ,pts**)**, labels = c(0,formatC**(**as.numeric**(**evsav18[length**(**evsav18$pssav**)**,2]/1000**)**,format="f",digits=0,big.mark=","**)**,paste**(**formatC**(**pts/1000,format="f",digits=0,big.mark=","**)**, "k", sep = ""**)**),las=1**)**

##

##

points(filter(sav18,yp\_fg18s.location=="OH")$yp\_fg18s.weekc,filter(sav18,yp\_fg18s.location=="OH")$pssav,col="blue",type="l",lwd=2,bty="n")

points(filter(sav18,yp\_fg18s.location=="CHI")$yp\_fg18s.weekc,filter(sav18,yp\_fg18s.location=="CHI")$pssav,col="orange",type="l",lwd=2,bty="n")

points(filter(sav18,yp\_fg18s.location=="COI")$yp\_fg18s.weekc,filter(sav18,yp\_fg18s.location=="COI")$pssav,col="red",type="l",lwd=2,bty="n")

points(filter(sav18,yp\_fg18s.location=="MEX")$yp\_fg18s.weekc,filter(sav18,yp\_fg18s.location=="MEX")$pssav,col="purple",type="l",lwd=2,bty="n")

points(evsav18$weekc,evsav18$pssav,col="brown",type="l",lwd=2,bty="n")

legend("topleft",lty=1:1,col=c("pink","green","blue","orange","red","purple","brown"),legend=c("CAL","TX","OH","CHI","COI","MEX","Evans"),ncol=2,lwd=3)

##abline(h=pts,v=numeric(unique(month(evsav18$weekc,label=TRUE,abbr=TRUE))),col=" lightgray ", lwd=1,lty="dotted")

##abline(h=pts,v=(unique(month(evsav18$weekc))),col=" lightgray ", lwd=1,lty="dotted")

abline(h=pts,v=ptsv,col=" lightgray", lwd=1,lty="dotted")

abline(h=0,col=" lightgray", lwd=1,lty="dotted")

abline(h= as.numeric(evsav18[length(evsav18$pssav),2]),col=" lightgray", lwd=1,lty="dotted")

pause = function()

{

    if (interactive())

    {

        invisible(readline(prompt = " Please copy the graph, click on this window and press <Enter> to continue..."))

    }

    else

    {

        cat("Please copy the graph, click on this window and press <Enter> to continue...")

        invisible(readLines(file("stdin"), 1))

    }

}

pause()

plot.new()

dev.new()

ifelse(min(evsav18$crsav,sav18$crsav,na.rm=TRUE)>0,y1<-0,y1<- min(evsav18$crsav,sav18$crsav,na.rm=TRUE))

ifelse(max(evsav18$crsav,sav18$crsav,na.rm=TRUE)<0,y2<-0,y2<- max(evsav18$crsav,sav18$crsav,na.rm=TRUE))

plot(filter(sav18,yp\_fg18s.location=="CAL")$yp\_fg18s.weekc,filter(sav18,yp\_fg18s.location=="CAL")$crsav,type="l",col="pink",lwd=2,xlab="weeks of 2018",ylab="Accumulated savings (k usd)",main="FG CR yield savings 2018 vs Q4 2017", ylim=c(y1,y2),yaxt="n",bty="n")

points(filter(sav18,yp\_fg18s.location=="TX")$yp\_fg18s.weekc,filter(sav18,yp\_fg18s.location=="TX")$crsav,col="green",type="l",lwd=2, bty="n")

pts <-seq(y1,y2,by=(y2-y1)/3) ## c(-25000,50000,100000,150000,200000)

ptsv<-seq(0,length(unique(evsav18$weekc)),by=1)

##axis(2, at = c(0,pts), labels = c(0,paste(formatC(pts/1000,format="f",digits=0,big.mark=","), "k", sep = "")),las=1)

axis**(**2, at = c**(**as.numeric**(**evsav18[length(evsav18$crsav),3]**)**,0,pts**)**, labels = c(formatC**(**as.numeric**(**evsav18[length**(**evsav18$crsav**)**,3]/1000**)**,format="f",digits=0,big.mark=","**)**,0,paste**(**formatC**(**pts/1000,format="f",digits=0,big.mark=","**)**, "k", sep = ""**)**),las=1**)**

##axis(2, at = c(0,pts,as.numeric(evsav18[length(evsav18$crsav),3])), labels = c(0,paste(formatC(pts/1000,format="f",digits=0,big.mark=","), "k", sep = ""), formatC(as.numeric(evsav18[length(evsav18$crsav),3]),format="f",digits=0,big.mark=",")))

points(filter(sav18,yp\_fg18s.location=="OH")$yp\_fg18s.weekc,filter(sav18,yp\_fg18s.location=="OH")$crsav,col="blue",type="l",lwd=2,bty="n")

points(filter(sav18,yp\_fg18s.location=="CHI")$yp\_fg18s.weekc,filter(sav18,yp\_fg18s.location=="CHI")$crsav,col="orange",type="l",lwd=2,bty="n")

points(filter(sav18,yp\_fg18s.location=="COI")$yp\_fg18s.weekc,filter(sav18,yp\_fg18s.location=="COI")$crsav,col="red",type="l",lwd=2,bty="n")

points(filter(sav18,yp\_fg18s.location=="MEX")$yp\_fg18s.weekc,filter(sav18,yp\_fg18s.location=="MEX")$crsav,col="purple",type="l",lwd=2,bty="n")

points(evsav18$weekc,evsav18$crsav,col="brown",type="l",lwd=2,bty="n")

legend("bottomleft",lty=1:1,col=c("pink","green","blue","red","brown"),legend=c("CAL","TX","OH","COI","Evans"),ncol=2,lwd=3)

abline(h=pts,v=ptsv,col=" lightgray", lwd=1,lty="dotted")

abline(h=0,col=" lightgray", lwd=1,lty="dotted")

abline(h= as.numeric(evsav18[length(evsav18$crsav),3]),col=" lightgray", lwd=1,lty="dotted")

**}**

**##Now just for OHIO recovery tanks**

ypoh<-function()**{**

yp\_fg<-read.csv("2 2) Fior all data.csv")

##proper format for dates

yp\_fg<-mutate(yp\_fg,date=as.Date(as.character(Date),"%d-%b-%y"), weekc=as.Date(as.character(WeekC),"%d-%b-%y"),location=as.character(Location))

yp\_fgbl<-filter(arrange(yp\_fg,location,desc(weekc)),weekc>="2017-12-31"&weekc<"2018-12-09")

##calculate baseline averages

yp\_fgbls<-summarize(group\_by(select(yp\_fgbl,location,weekc,PS.Actual.FG.LBS,PS.Fried.Lbs,CR.TT.Finished.Goods.Lbs,CR.TT.Fried.Lbs),location,weekc),psac=sum(PS.Actual.FG.LBS,na.rm=TRUE),psfr=sum(PS.Fried.Lbs,na.rm=TRUE),crac=sum(CR.TT.Finished.Goods.Lbs,na.rm=TRUE),crfr=sum(CR.TT.Fried.Lbs,na.rm=TRUE),psy=psac/psfr,cry=crac/crfr)

yp\_fgblm<-summarize(group\_by(yp\_fgbls,location),psacbl=sum(psac),psfrbl=sum(psfr),cracbl=sum(crac),crfrbl=sum(crfr),psybl=mean(psacbl/psfrbl),crybl=mean(cracbl/crfrbl))

##first build the 20nw weekly yields data frame

yp\_fgnw<-filter(arrange(yp\_fg,location,desc(weekc)),weekc<="2019-12-31"&weekc>="2018-12-09")

yp\_fgnws<-summarize(group\_by(select(yp\_fgnw,location,weekc,PS.Actual.FG.LBS,PS.Fried.Lbs,CR.TT.Finished.Goods.Lbs,CR.TT.Fried.Lbs),location,weekc),psac=sum(PS.Actual.FG.LBS,na.rm=TRUE),psfr=sum(PS.Fried.Lbs,na.rm=TRUE),crac=sum(CR.TT.Finished.Goods.Lbs,na.rm=TRUE),crfr=sum(CR.TT.Fried.Lbs,na.rm=TRUE),psy=ifelse(psac==0,NA,psac/psfr),cry=ifelse(crac==0,NA,crac/crfr))

yp\_fgnwm<-summarize(group\_by(yp\_fgnws,location),psacnw=sum(psac),psfrnw=sum(psfr),cracnw=sum(crac),crfrnw=sum(crfr),psynw=mean(psacnw/psfrnw),crynw=mean(cracnw/crfrnw))

##Starting on 2018 COI has results, so I don't need the following four lines anymore

##coiynw<-subset(yp\_fgnws,location=="COI",select=c(location,weekc,psy,cry))

##yp\_fgblm[6,6]<-quantile((coiynw$psy),probs=0.33)

##yp\_fgblm[6,7]<-quantile((coiynw$cry),probs=0.33)

##yp\_fgblm[6,1]<-"COI"

pssav<-numeric()

crsav<-numeric()

k<-0

m<-0

for(i in 1:nrow(yp\_fgnws))**{**

pssav[i]=k+1.26\*(-as.numeric(yp\_fgnws[i,4])+as.numeric(yp\_fgnws[i,3])/ as.numeric(filter(yp\_fgblm,location==as.character(yp\_fgnws[i,1]))[,6]))

crsav[i]= m+1.26\*(-as.numeric(yp\_fgnws[i,6])+as.numeric(yp\_fgnws[i,5])/ as.numeric(filter(yp\_fgblm,location==as.character(yp\_fgnws[i,1]))[,7]))

ifelse(as.character(yp\_fgnws[i+1,1])== as.character(yp\_fgnws[i,1]),k<-pssav[i],k<-0)

ifelse(as.character(yp\_fgnws[i+1,1])== as.character(yp\_fgnws[i,1]),m<-crsav[i],m<-0)

**}**

savnw<-data.frame(yp\_fgnws$location, yp\_fgnws$weekc, yp\_fgnws$psy ,pssav, yp\_fgnws$cry ,crsav)

##Exclude COI from the sum

evsavnw<-summarize(group\_by(subset(savnw, yp\_fgnws.location!="COI"),yp\_fgnws.weekc),sum(pssav),sum(crsav,na.rm=TRUE))

evsavnw<-mutate(evsavnw,location="Evans")

names(evsavnw)<-c("weekc","pssav","crsav","location")

write.csv(savnw,"savnw.csv")

write.csv(yp\_fgnws,"yp\_fgnws.csv")

write.csv(yp\_fgnwm ,"yp\_fgnwm.csv")

write.csv(yp\_fgblm,"yp\_fgblm.csv")

write.csv(evsavnw,"evsavnw.csv")

**##To extend the table to all 2019 weeks and make the YE savings projection, on a new table savnw\_oh\_prj**

days2019<-seq(from=as.Date("2019-01-01"),to=as.Date("2019-12-31"),by =1)

days2019\_d<-transform(as.Date(days2019))

weeks2019<-mutate(days2019\_d,weekc=days2019\_d[,1]+1-wday(days2019\_d[,1]))

weeks19u<-unique(weeks2019$weekc)

write.csv(weeks19u,"weeks19u.csv")

##This will be the new weeks column for the savngs table

##total\_weeks<-unique(c(savnw$yp\_fgnws.weekc,weeks19u))

total\_weeks<-seq(yp\_fgnws$weekc[1],yp\_fgnws$weekc[1]%m+% weeks(51),by=7)

savnw\_oh<-savnw**[grep("oh",savnw$yp\_fgnws.location,ignore.case=TRUE),]**

write.csv(savnw\_oh,"savnw\_oh.csv")

pssav\_oh<-numeric()

crsav\_oh<-numeric()

totsav\_oh<-numeric()

psy\_oh<-numeric()

cry\_oh<-numeric()

k<-0

for(i in 1:length(total\_weeks))**{**

pssav\_oh[i]=ifelse(i<=nrow(savnw\_oh),savnw\_oh$pssav[i],savnw\_oh$pssav[nrow(savnw\_oh)]+ (i-nrow(savnw\_oh))\*savnw\_oh$pssav[nrow(savnw\_oh)]/nrow(savnw\_oh))

crsav\_oh[i]=ifelse(i<=nrow(savnw\_oh),savnw\_oh$crsav[i],savnw\_oh$crsav[nrow(savnw\_oh)]+ (i-nrow(savnw\_oh))\*savnw\_oh$crsav[nrow(savnw\_oh)]/nrow(savnw\_oh))

totsav\_oh[i]<-sum(pssav\_oh[i]+crsav\_oh[i])

##For all future weeks we just project the savings by adding the average saving obtained so far

k<-ifelse(i<nrow(yp\_fgnws),totsav\_oh[i],totsav\_oh[i]+ totsav\_oh[nrow(yp\_fgnws)]/nrow(yp\_fgnws))

##This below is just to fill all future weeks in the dataframe with the supporting variables

psy\_oh[i]<-ifelse(i<=nrow(savnw\_oh),savnw\_oh$yp\_fgnws.psy[i],NA)

cry\_oh[i] <-ifelse(i<=nrow(savnw\_oh),savnw\_oh$yp\_fgnws.cry[i],NA)

**}**

**savnw\_oh\_prj**<-data.frame(total\_weeks,location="Ohio",pssav\_oh,crsav\_oh,totsav\_oh,psy\_oh,cry\_oh)

**write.csv(savnw\_oh\_prj,"savnw\_oh\_prj.csv")**

dev.new()

**h<-ggplot(data=savnw\_oh\_prj, aes(x=total\_weeks, y=totsav\_oh))**

**hi<-h+geom\_point()+geom\_line(size=1.05,color="blue")+theme\_bw()+labs(x="Date",y="Accumulated FG yield savings (usd)",title="Ohio accumulated FG yield savings (usd) - recovery tank")+ theme**(plot.title = element\_text(hjust = 0.5))**+geom\_vline**(xintercept= max(savnw\_oh$yp\_fgnws.weekc),linetype="dashed")**+geom\_vline**(xintercept=max(savnw\_oh\_prj$total\_weeks),linetype="dashed",color="purple")+**scale\_y\_continuous(**labels = scales::comma\_format(accuracy=1),expand=c(0,0),breaks=c**(**seq**(**0,ifelse**(**max**(**savnw\_oh\_prj$totsav\_oh**)**- abs**(**min**(**savnw\_oh\_prj$totsav\_oh**))<=0,** min**(**savnw\_oh\_prj$totsav\_oh**),** max**(**savnw\_oh\_prj$totsav\_oh**))**,by= ifelse**(**max**(**savnw\_oh\_prj$totsav\_oh**)**- abs**(**min**(**savnw\_oh\_prj$totsav\_oh**))<=0,** min**(**savnw\_oh\_prj$totsav\_oh**),** max**(**savnw\_oh\_prj$totsav\_oh**))**/5**)**, savnw\_oh\_prj$totsav\_oh**[grep(max(savnw\_oh$yp\_fgnws.weekc),savnw\_oh\_prj$total\_weeks)]**,max(savnw\_oh\_prj$totsav\_oh), min(savnw\_oh\_prj$totsav\_oh)**)**, limits=c(**min(**savnw\_oh\_prj$totsav\_oh**), max(0,max(**savnw\_oh\_prj$totsav\_oh**))))** +scale\_x\_date(breaks=c(max(savnw\_oh$ yp\_fgnws.weekc)+6,max(savnw\_oh\_prj$total\_weeks)+6),limits=c**(max(yp\_fgbls$weekc), max(savnw\_oh\_prj$total\_weeks))**)**+theme(axis.text.x = element\_text(face="italic", color="#993333", size=9, angle=60,vjust=0.3),** axis.ticks.length =unit(0,"pt")**)**+**geom\_hline**(aes**(**yintercept=savnw\_oh\_prj$totsav\_oh**[grep(max(savnw\_oh$yp\_fgnws.weekc),savnw\_oh\_prj$total\_weeks)])**,linetype="dashed",color="purple")+**geom\_hline**(aes**(**yintercept=max(savnw\_oh\_prj$totsav\_oh)**)**,linetype="dashed",color="purple")+theme(axis.line = element\_line(colour = "black"), panel.border = element\_blank())+geom\_segment(aes(x = **max(yp\_fgbls$weekc)** , y = 0, xend = **min(savnw\_oh\_prj$total\_weeks)**, yend = savnw\_oh\_prj$totsav\_oh[1]))

print(hi)

**}**

**##+ theme**(plot.title = element\_text(hjust = 0.5))**+geom\_vline**(xintercept= as.Date(ymd(today())+(1-wday(ymd(today())))),linetype="dashed")**+geom\_vline**(xintercept=max(savnw\_oh\_prj$total\_weeks),linetype="dashed",color="purple")+**scale\_y\_continuous(**labels = scales::comma\_format(accuracy=1),expand=c(0,0),breaks=c**(**seq**(**0,max**(**savnw\_oh\_prj$totsav\_oh**)**,by= max(savnw\_oh\_prj$totsav\_oh)/4), savnw\_oh\_prj$totsav\_oh**[grep(max(savnw\_oh$yp\_fgnws.weekc),savnw\_oh\_prj$total\_weeks)]**,max(savnw\_oh\_prj$totsav\_oh)), limits=c(**0, max(**savnw\_oh\_prj$totsav\_oh**)))** +scale\_x\_date(limits=c**(max(yp\_fgbls$weekc), max(savnw\_oh\_prj$total\_weeks))**)**+theme(axis.text.x = element\_text(face="italic", color="#993333", size=9, angle=0))**+**geom\_hline**(aes**(**yintercept=savnw\_oh\_prj$totsav\_oh**[grep(max(savnw\_oh$yp\_fgnws.weekc),savnw\_oh\_prj$total\_weeks)])**,linetype="dashed",color="purple")+**geom\_hline**(aes**(**yintercept=max(savnw\_oh\_prj$totsav\_oh)**)**,linetype="dashed",color="purple")+theme(axis.line = element\_line(colour = "black"), panel.border = element\_blank())+geom\_segment(aes(x = **max(yp\_fgbls$weekc)** , y = 0, xend = **min(savnw\_oh\_prj$total\_weeks)**, yend = savnw\_oh\_prj$totsav\_oh[1]))

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| yp\_fgnws.location | yp\_fgnws.weekc | yp\_fgnws.psy | pssav | yp\_fgnws.cry | crsav |
| CAL | 12/9/2018 | 1.386953 | -89.1323 | 0.880084 | -1498.33 |
| CAL | 12/16/2018 | 1.399736 | -4.8303 | 0.886458 | -3081.54 |
| CAL | 12/23/2018 | 1.362168 | -404.928 | 0.892624 | -3587.43 |
| CHI | 12/9/2018 | 1.187547 | -4130.53 | NA | NA |
| CHI | 12/16/2018 | 1.204648 | -7666.22 | NA | NA |
| CHI | 12/23/2018 | 1.222169 | -8787.6 | NA | NA |
| COI | 12/9/2018 | 1.273584 | 1270.163 | 0.88283 | 2716.345 |
| COI | 12/16/2018 | 1.240582 | 1337.869 | 0.878838 | 4255.886 |
| COI | 12/23/2018 | 1.270757 | 2246.384 | 0.89003 | 6377.513 |
| OH | 12/9/2018 | 1.191367 | -11979.8 | 0.921642 | 1041.686 |
| OH | 12/16/2018 | 1.214152 | -18102.7 | 0.906343 | 3360.102 |
| OH | 12/23/2018 | 1.289295 | -17813.8 | 0.926033 | 4940.584 |
| TX | 12/9/2018 | 1.357119 | 682.3496 | 0.84097 | -4476.16 |
| TX | 12/16/2018 | 1.359541 | 1707.563 | 0.87262 | -4210.64 |
| TX | 12/23/2018 | 1.378999 | 4080.137 | 0.796516 | -12621 |

As of Jan 8, 2019…

