

Standard KPIs M5

Version 24.x

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This set of sql contains the views and the sql needed for the delivered KPI's for the M5 dashboard. Please take note that there is a set for Oracle and another for SQLServer

Oracle

```
-- Accidents in the last 30 days --(work order jobs with accident reasons) select distinct .unit_no,
o.wo_no, o.open_dt, v.description from o_wo o, o_job j, job_visit_reason v, unit_main u where
o.company = j.company and j.company = v.company and o.company = u.company and o.unit_id
= u.unit_id and o.wo_no = j.wo_no and j.job_reason = v.job_reason and v.nmnt_accident_fl = 'Y'
and o.status != 'X' and o.open_dt between trunc(sysdate) - 30 and trunc(sysdate) and o.location
like ':<LOCATION>' order by 1, 3, 2
```

Breakdowns in the last 2 weeks

```
select u.unit_no, o.wo_no, o.open_dt, v.description from o_wo o, visit_reason v, unit_main u
where o.visit_reason = v.visit_reason and o.company = v.company and o.company = company
and o.unit_id = u.unit_id and v.breakdown_fl = 'Y' and o.open_dt between trunc(sysdate) - 14
and trunc(sysdate) and o.location = ':<LOCATION>' and o.status != 'X' order by 1, 3, 2
```

Jobs waiting for Parts

```
select u.unit_no, o.wo_no, j.job, j.job_reason, j.open_dt, j.wo_no from o_wo o, o_job j, nit_main
u where o.company = j.company and o.company = u.company and o.unit_id = u.unit_id and
o.wo_no = j.wo_no and j.location like ':<LOCATION>' and j.status = 'WFP' order by 1, 2, 3
```

Upcoming license expirations

```
select c.unit_no, a.licperm_no, a.expir_dt, a.licperm_type, a.state from licperm a, licpermassoc
b, unit_dept_comp_main c where a.company = b.company and a.company = c.company and
a.expir_dt is not null and a.expir_dt <= (trunc(sysdate) + 45) and a.expir_dt >= trunc(sysdate)
and a.licperm_no = b.licperm_no and b.unit_id = c.unit_id and c.maint_loc = ':<LOCATION>'
order by 2,1,3
```

Work orders opened for more than X Hours

```
select wo_no as Wo_Number, to_char(open_dt, 'dd-mon-yyyy hh24:mi:ss') as Open_Date,
round(((sysdate - open_dt)*24),2) as Hours_Open from o_wo where status = 'O' and location =
':<LOCATION>' and (sysdate - open_dt)*24 > :<HOURS_BACK>
```

Open Work Order jobs by Location

```
select u.unit_no, j.job, j.open_dt, j.status, z.description from o_wo o, unit_dept_comp_main u,
o_job j, dwn_status z where o.company = j.company and o.company = u.company and
j.company = z.company and j.status = z.status and o.unit_id = u.unit_id and o.wo_no = j.wo_no
and j.status not in ('DON','CAN','WR') and o.status not in ('X','C') and o.location =
':<LOCATION>' order by 3, 1, 2
```

Overdue Work Request Jobs by location -- (due date can be in the future)

```
select wo_no, unit_no, job, to_char(due_date, 'dd-mon-yyyy') as due_date, to_char (last_date,
'dd-mon-yyyy') as last_date from view_work_req_occ where job_completed_dt is null and
location = ':<LOCATION>'
```

Percent current indirect time by location

```
select (count(distinct a.emp_id) / (case when count(distinct b.emp_id) = 0 then 1 else
count(distinct b.emp_id) end)) * 100 as percent_indirect from curr_labor a, curr_labor b where
a.company = b.company and a.location = ':<LOCATION>' and b.location = ':<LOCATION>'
and a.ind_acct is not null
```

PM percentage by location for the last year (requires specific view)

```
select round(percent_pm * 100.00,2) as "Percent PM" from (select recur_fl,
ratio_to_report(labor_hours) over () as percent_pm from(SELECT sum(a.labor_hours) as
labor_hours, a.recur_fl FROM view_kpi_wo_labor_last_year a WHERE a.location =
':<LOCATION>' group by a.recur_fl)) where recur_fl = 'Y'
```

PMs overdue and due in the near future select location, wo_no, unit_no, job, work_req_no,
to_char(due_date, 'dd-mon-yyyy') as due_date, to_char(last_date, 'dd-mon-yyyy') as last_date
from view_work_req_occ where job_completed_dt is null and MNT_PREVENTIVE_FL = 'Y' and
due_date < sysdate + :<DAYS_AHEAD> and location = ':<LOCATION>' order by due_date

Percent of direct time on PM to total direct repair time

```
select round((sum(decode(v.mnt_preventive_fl, 'Y', c.duration, 0)) / sum(c.duration)) * 100.0,2)
as "Percent PM" from o_labor_chg c, o_job j, job_visit_reason v, o_wo o, unit_dept_comp_main
u where c.company = j.company and j.company = v.company and j.company = o.company and
o.company = u.company and o.unit_id = u.unit_id and c.job_id = j.job_id and c.wo_no = j.wo_no
and j.wo_no = o.wo_no and c.end_time between trunc(sysdate - 30) and trunc(sysdate) and
j.location = '<LOCATION>' having sum(c.duration) > 0
```

Warranty jobs in the last 30 days

```
select u.unit_no, o.wo_no, j.open_dt, j.job, v.description, decode(j.warranty_violation_fl, 'P',
'Part', 'S', 'System', 'C', 'Component', 'W', 'Whole Unit', 'J', 'Job Reason', 'Other') as "Violation"
from o_wo o, o_job j, job_visit_reason v, unit_main u where o.company = j.company and
j.company = v.company and o.company = u.company and o.unit_id = u.unit_id and o.wo_no =
j.wo_no and j.job_reason = v.job_reason and o.status != 'X' and j.warranty_violation_fl != 'N'
and j.open_dt between trunc(sysdate) - 30 and trunc(sysdate) and o.location like
:<LOCATION>' order by 1, 2, 3
```

Work Orders completed after promised in the last 30 days

```
select u.unit_no, o.wo_no, o.open_dt, o.completed_dt, o.promise_dt from o_wo o,
unit_dept_comp_main u where o.company = u.company and o.unit_id = u.unit_id and
o.completed_dt between trunc(sysdate) - 30 and trunc(sysdate) and o.completed_dt >
o.promise_dt and o.promise_dt is not null and o.location = '<LOCATION>' order by 5, 1, 2
```

Percent indirect time to total labor time for the current fiscal year

```
select round(sum(case when chg_type = 'I' then duration end) / sum(duration),2) from
view_emp_labor_jnl where location = '<LOCATION>' and duration != 0 and substr(fisc_pd, 1,
4) = (select substr(fisc_pd, 1, 4) from calendar_days where cal_date = trunc(sysdate))
```

Look for meter recent entries that exceeded the MCC limits (requires new view)

```
select unit_no, meter, prev_meter, meter_date, prev_meter_date, login_user from
view_meter_change where change_date > sysdate - <DAYS_BACK> and maint_loc =
:<LOCATION>' and meter_date != prev_meter_date and (meter_date - prev_meter_date) > .5
and ((ltd_usage - prev_ltd_usage)/(meter_date - prev_meter_date) > (max_usage / 30.0))
```

Look for units that have not had a meter update in a period of time - by location

```
select maint_loc, unit_no, meter, ltd_usage, meter_date, round(sysdate - meter_date,2) as days_since from unit_dept_comp_main where sysdate - meter_date > :<DAYS_BACK> and maint_loc = ':<LOCATION>' and meter_date is not null and meter is not null and unit_type = 'U'
```

Look for units that have not had a meter update in a period of time - by location group

```
select maint_loc, unit_no, meter, ltd_usage, meter_date, round(sysdate - meter_date,2) as days_since from unit_dept_comp_main where sysdate - meter_date > :<DAYS_BACK> and maint_loc in (select location from loc_group_locations where loc_group = ':<LOC_GROUP>') and meter_date is not null and meter is not null and unit_type = 'U'
```

Look for Fluid tanks that need more product

```
select case b.capacity when null then 0 when 0 then 0 else (a.on_hand_qty/b.capacity) * 100 end as percent_filled from f_prod_loc a, f_tank_type b where a.company = b.company and a.location = ':<LOCATION>' and a.tank_no = ':<TANK>' and a.tank_type = b.tank_type
```

List of Fluid tanks that are below 50% of capacity

```
select a.location, a.tank_no, a.prod_no, c.description as description, a.on_hand_qty as on_hand, b.capacity as capacity, round((a.on_hand_qty/b.capacity) * 100,0) as percent_filled from f_prod_loc a, f_tank_type b, prod_gen c where a.company = b.company and a.company = c.company and a.location = ':<LOCATION>' and a.tank_type = b.tank_type and a.prod_no = c.prod_no and b.capacity > 0 and (a.on_hand_qty/b.capacity) < .5 order by 7
```

List of employees who worked more than 8 hours in one calendar days

Create new view first create or replace view view_emp_daily_totals as select company, emp_id, max(location) as location, trunc(start_time) as start_time, round((sum(duration))/3600000,2) as hours, round(sum(labor_cost_do),2) as cost from view_emp_labor_jnl group by emp_id, trunc(start_time);

grant select on view_emp_daily_totals to m5user; create public synonym view_emp_daily_totals for view_emp_daily_totals;

List of employees who worked more than 8 hours in a calendar day by location

For list who worked less than 8 hours, just change the > 8 to < 8.

```
select emp_id, start_time, hours from view_emp_daily_totals; where start_time = (trunc(sysdate) - :<DAYS_BACK>) and location = ':<LOCATION>' and hours > 8
```

Show all product issues done with a bad meter in the last x days

```
select b.unit_no as unit, a.card_no as card, a.new_meter as fuel_meter1, a.new_meter2 as
fuel_meter2, a.new_meter as fuel_meter1, a.new_meter2 as fuel_meter2, b.meter as
unit_meter1, b.meter2 as unit_meter2, a.issue_dt as fuel_issue_date, b.meter_date as
unit_meter1_date, b.meter_date2 as unit_meter2_date, (select c.emp_no from emp_main c
where a.emp_id = c.emp_id) as fueling_employee from f_unit_prod_chg a,
unit_dept_comp_main b where a.company = b.company and a.bad_meter_fl = 'Y' and a.location
= ':<LOCATION>' and a.issue_dt > sysdate - :<DAYS_BACK> and a.unit_id = b.unit_id order by
a.issue_dt, b.unit_no
```

Show all recent product issues that were rejected by M5

```
select a.unit_no as unit, a.card_no as card, a.issue_dt as fuel_issue_date, a.issue_qty as qty,
(select c.emp_no from emp_main c where a.emp_id = c.emp_id) as fueling_employee
from f_unit_prod_chg_rej a where a.issue_dt > sysdate - :<DAYS_BACK> and a.location =
':<LOCATION>' order by a.issue_dt, a.unit_no
```

Find employee fuel cards that have not be used in the last "X" days

```
select b.location as location, b.emp_no as employee, b.name as employee_name, a.card_no
as card_no, a.eff_dt as card_effective_date from f_card a join emp_main b on a.assigned_id =
b.emp_id and a.company = b.company where a.end_dt is null and a.disabled_fl is null and
a.card_type = 'E' and not exists (select null from f_unit_prod_chg c where c.issue_dt >
(sysdate - :<X>) and b.company = c.company and c.emp_id = b.emp_id)
```

Show all tanks that have not done an issue in the last 24 hours

```
select a.location, a.tank_no, a.prod_no, b.description as ProdName, to_char(a.last_issue_dt,
'dd-mon-yyyy hh24:mi:ss') as last_issue_dt from f_prod_loc a, prod_gen b where a.company =
b.company and a.prod_no = b.prod_no and a.last_issue_dt < sysdate - 1 order by a.location,
a.last_issue_dt
```

Show all jobs that are waiting for parts and have been for 24 hours or more

```
select d.unit_no, b.location, a.wo_no, a.job, to_char(c.start_dt, 'dd-mon-yyyy hh24:mi:ss') as
start_date from o_job a, o_wo b, unit_downtime_detail c, unit_dept_comp_main d where
a.company = b.company and b.company = d.company and a.company = c.company and
a.status = 'WFP' and c.job_status = 'WFP' and a.wo_no = b.wo_no and b.unit_id = d.unit_id and
a.job_id = c.job_id and b.status <> 'C' and c.end_dt is null and sysdate - c.start_dt > 1 order by
b.location, a.wo_no, c.start_dt asc
```

find recent Telematic faults as reported by any source.

```
select location as Location, unit_no as Unit, protocol as Protocol, Description as Description,
last_dt as LastReportedDate, first_dt as FirstReportedDate, read_dt as ReadDate, case
protocol when 'OBDII' then element when 'J1939' then element when 'J1587' then
element_type || '-' || element else element end as FaultCode from view_tm_alerts where last_dt
> sysdate - :<DAYS_BACK>
```

SQLServer

Accidents in the last DAYS_BACK days

```
select distinct u.unit_no, o.wo_no, o.open_dt, v.description from o_wo o, o_job j, b_visit_reason
v, unit_main u where o.company = j.company and j.company = v.company and
o.company = u.company and o.unit_id = u.unit_id and o.wo_no = j.wo_no and
j.job_reason = v.job_reason and v.nmnt_accident_fl = 'Y' and o.status != 'X' and
datediff(dd,o.open_dt,getdate()) < :<DAYS_BACK> and o.location like ':<LOCATION>' order by
1, 3, 2
```

Breakdowns in the DAYS_BACK days

```
select u.unit_no, o.wo_no, o.open_dt, v.description from o_wo o, visit_reason v, unit_main u
where o.visit_reason = v.visit_reason and o.company = v.company and
o.company = u.company and o.unit_id = u.unit_id and v.breakdown_fl = 'Y' and
datediff(dd,o.open_dt,getdate()) < :<DAYS_BACK> and o.location = ':<LOCATION>' and
o.status != 'X' order by 1, 3, 2
```

Jobs waiting for Parts

```
select u.unit_no, o.wo_no, j.job, j.job_reason, j.open_dt, j.wo_no from o_wo o, o_job j, nit_main
u where o.company = j.company and o.company = u.company and o.unit_id = u.unit_id and
o.wo_no = j.wo_no and j.location like ':<LOCATION>' and j.status = 'WFP' order by 1, 2, 3
```

Upcoming license expirations

```
select c.unit_no, a.licperm_no, a.expir_dt, a.licperm_type, a.state,
datediff(dd,a.expir_dt,getdate()) as days_late from licperm a, licpermassoc b,
unit_dept_comp_main c where a.company = b.company and a.company = c.company and
a.expir_dt is not null and datediff(dd,a.expir_dt,getdate()) < :<DAYS_BACK> and a.expir_dt >=
getdate() and a.licperm_no = b.licperm_no and b.unit_id = c.unit_id and
c.maint_loc = ':<LOCATION>' order by 2,1,3
```

Work orders opened for more than X Hours

```
select wo_no as Wo_Number, open_dt as Open_Date, datediff(hh,open_dt, getdate()) as
Hours_Open from o_wo where status = 'O' and location = ':<LOCATION>' and
datediff(hh,open_dt,getdate()) > :<HOURS_BACK>
```

Open work order jobs by Location

```
select u.unit_no, j.job, j.open_dt, j.status, z.description from o_wo o, unit_dept_comp_main u,
o_job j, dwn_status z where o.company = j.company and o.company = u.company and
j.company = z.company and j.status = z.status and o.unit_id = u.unit_id and o.wo_no = j.wo_no
and j.status not in ('DON','CAN','WR') and o.status not in ('X','C') and
o.location = ':<LOCATION>' order by 3, 1, 2
```

Overdue Work Request Jobs by location --(due date can be in the future)

```
select wo_no, unit_no, job, due_date, last_date from view_work_req_occ where
job_completed_dt is null and location = ':<LOCATION>'
```

Percent current indirect time by location

```
select (count(distinct a.emp_id) / (case when count(distinct b.emp_id) = 0 then 1 else
count(distinct b.emp_id) end)) * 100 as percent_indirect from curr_labor a, curr_labor b where
a.company = b.company and a.location = ':<LOCATION>' and b.location = ':<LOCATION>'
and a.ind_acct is not null
```

PM percentage by location for the last year (requires specific view)

```
select round((((select sum(labor_hours) from view_kpi_wo_labor_last_year where
location = ':<LOCATION>' and recur_fl = 'Y') / case when (select sum(labor_hours) from
view_kpi_wo_labor_last_year where location = ':<LOCATION>') is null then 1 when (select
sum(labor_hours) from view_kpi_wo_labor_last_year where location = ':<LOCATION>') = 0 then
1 else (select sum(labor_hours) from view_kpi_wo_labor_last_year where
location = ':<LOCATION>') end ) * 100.0,2) as "Percent PM"
```

PMs overdue and due in the near future

```
select location, wo_no, unit_no, job, work_req_no, due_date, last_date from
view_work_req_occ where job_completed_dt is null and MNT_PREVENTIVE_FL = 'Y' and
datediff(dd, due_date, getdate()) < :<DAYS_BACK> and location = ':<LOCATION>' order by
due_date
```

Percent of direct time on PM to total direct repair time

```
select (sum(case when v.mnt_preventive_fl = 'Y' then c.duration else 0 end)/ sum(c.duration)) *
100.0 as "Percent PM" from o_labor_chg c, o_job j, job_visit_reason v, o_wo o,
unit_dept_comp_main u where c.company = j.company and j.company = v.company and
j.company = o.company and o.company = u.company and o.unit_id = u.unit_id and
c.job_id = j.job_id and c.wo_no = j.wo_no and j.wo_no = o.wo_no and
datediff(hh,end_time,getdate()) < :<DAYS_BACK> and j.location = ':<LOCATION>' having
sum(c.duration) > 0
```

Warranty jobs in the last 30 days

```
select u.unit_no, o.wo_no, j.open_dt, j.job, v.description, case when j.warranty_violation_fl = 'P'
then 'Part' when j.warranty_violation_fl = 'S' then 'System' when j.warranty_violation_fl = 'C' then
'Component' when j.warranty_violation_fl = 'W' then 'Whole Unit' when
j.warranty_violation_fl = 'J' then 'Job Reason' else 'Other' end as Violation from o_wo o, o_job j,
job_visit_reason v, unit_main u where o.company = j.company and j.company = v.company
and o.company = u.company and o.unit_id = u.unit_id and o.wo_no = j.wo_no and
j.job_reason = v.job_reason and o.status != 'X' and j.warranty_violation_fl != 'N' and
datediff(dd,j.open_dt, getdate()) < 30 and o.location like ':<LOCATION>' order by 1, 2, 3
```

Work Orders completed after promised in the last 30 days

```
select u.unit_no, o.wo_no, o.open_dt, o.completed_dt, o.promise_dt from o_wo o,
unit_dept_comp_main u where o.company = u.company and o.unit_id = u.unit_id and
datediff(DD,o.completed_dt, getdate()) < 30 and o.completed_dt > o.promise_dt and
o.promise_dt is not null and o.location = ':<LOCATION>' order by 5, 1, 2
```

Percent indirect time to total labor time for the current fiscal year

```
select (select sum(coalesce(duration,0) /3600000) from acc_lab_chg where
location = ':<LOCATION>' and substring(fisc_pd,1,4) = (select substring(fisc_pd,1,4) from
calendar_days where cal_date = getdate())) / (select sum(coalesce(duration,0) /3600000) from
view_emp_labor_jnl where location = ':<LOCATION>' and substring(fisc_pd,1,4) = (select
substring(fisc_pd,1,4) from calendar_days where cal_date = convert(varchar, getdate(), 101)))
as indirect_percentage
```


Look for meter recent entries that exceeded the MCC limits (requires new view)

```
select unit_no, meter, prev_meter, meter_date, prev_meter_date, login_user, datediff(DD,
prev_meter_date, meter_date) as days_between from view_meter_change where datediff(DD,
change_date, getdate()) > :<DAYS_BACK> and maint_loc = ':<LOCATION>' and
meter_date != prev_meter_date and datediff(DD, prev_meter_date, meter_date) > 0 and
((ltd_usage - prev_ltd_usage)/(datediff(DD, prev_meter_date, meter_date))) > (max_usage /
30.0))
```

Look for units that have not had a meter update in a period of time - by location

```
select maint_loc, unit_no, meter, ltd_usage, meter_date, datediff(DD, meter_date, getdate()) as
days_since from unit_dept_comp_main where datediff(DD, meter_date, getdate()) >
:<DAYS_BACK> and maint_loc = ':<LOCATION>' and meter_date is not null and meter is not
null and unit_type = 'U'
```

Look for units that have not had a meter update in a period of time - by location group

```
select maint_loc, unit_no, meter, ltd_usage, meter_date, datediff(DD, meter_date, getdate()) as
days_since from unit_dept_comp_main where datediff(DD, meter_date, getdate()) >
:<DAYS_BACK> and maint_loc in (select location from loc_group_locations where loc_group =
':<LOC_GROUP>') and meter_date is not null and meter is not null and unit_type = 'U'
```

Look for Fluid tanks that need more product

```
select case b.capacity when null then 0 when 0 then 0 else (a.on_hand_qty/b.capacity) * 100
end as percent_filled from f_prod_loc a, f_tank_type b where a.company = b.company and
a.location = ':<LOCATION>' and a.tank_no = ':<TANK>' and a.tank_type = b.tank_type
```

List of Fluid tanks that are below 50% of capacity

```
select a.location, a.tank_no, a.prod_no, c.description as description, a.on_hand_qty as
on_hand, b.capacity as capacity, round((a.on_hand_qty/b.capacity) * 100,0) as percent_filled
from f_prod_loc a, f_tank_type b, prod_gen c where a.company = b.company and
a.company = c.company and a.location = ':<LOCATION>' and a.tank_type = b.tank_type and
a.prod_no = c.prod_no and b.capacity > 0 and (a.on_hand_qty/b.capacity) < .5 order by 7
```

List of employees who worked more than 8 hours in one calendar days - Create new view first
create view view_emp_daily_totals as select company, emp_id, max(location) as location,
convert(varchar, start_time, 101) as start_time, round((sum(duration))/3600000,2) as hours,
round(sum(labor_cost_do),2) as cost from view_emp_labor_jnl group by emp_id,
convert(varchar, start_time, 101)

go

List of employees who worked more than 8 hours in a calendar day by location - For list who worked less than 8 hours, just change the > 8 to < 8.

```
select emp_id, start_time, hours from view_emp_daily_totals where datediff(DD, start_time,
getdate()) > :<DAYS_BACK> and location = ':<LOCATION>' and hours > 8
```

Show all product issues done with a bad meter in the last x days

```
select b.unit_no as unit, a.card_no as card, a.new_meter as fuel_meter1, a.new_meter2 as
fuel_meter2, a.new_meter as fuel_meter1, a.new_meter2 as fuel_meter2, b.meter as
unit_meter1, b.meter2 as unit_meter2, a.issue_dt as fuel_issue_date, b.meter_date as
unit_meter1_date, b.meter_date2 as unit_meter2_date, (select c.emp_no from emp_main c
where a.emp_id = c.emp_id) as fueling_employee from f_unit_prod_chg a,
unit_dept_comp_main b where a.company = b.company and a.bad_meter_fl = 'Y' and
datediff(DD, getdate(), a.issue_dt) > :<DAYS_BACK> and a.location = ':<LOCATION>' and
a.unit_id = b.unit_id order by a.issue_dt, b.unit_no
```

Show all recent product issues that were rejected by M5

```
select a.unit_no as unit, a.card_no as card, a.issue_dt as fuel_issue_date, a.issue_qty as qty,
(select c.emp_no from emp_main c where a.emp_id = c.emp_id) as fueling_employee from
f_unit_prod_chg_rej a where datediff(DD, getdate(), a.issue_dt) > :<DAYS_BACK> and
a.location = ':<LOCATION>' order by a.issue_dt, a.unit_no
```

Find employee fuel cards that have not be used in the last "X" days

```
select b.location as location, b.emp_no as employee, b.name as employee_name, a.card_no as
card_no, a.eff_dt as card_effective_date from f_card a join emp_main b on
a.assigned_id = b.emp_id and a.company = b.company where a.end_dt is null and a.disabled_fl
is null and a.card_type = 'E' and not exists (select null from f_unit_prod_chg c where
datediff(DD,getdate(),c.issue_dt) < :<X> and b.company = c.company and
c.emp_id = b.emp_id)
```

Show all tanks that have not done an issue in the last 24 hours

```
select a.location, a.tank_no, a.prod_no, b.description as ProdName, a.last_issue_dt as
last_issue_dt from f_prod_loc a, prod_gen b where a.company = b.company and
a.prod_no = b.prod_no and datediff(HH, getdate(), a.last_issue_dt) > 24 order by a.location,
a.last_issue_dt
```

Show all jobs that are waiting for parts and have been for 24 hours or more

```
select d.unit_no, b.location, a.wo_no, a.job, c.start_dt as start_date from o_job a, o_wo b,  
unit_downtime_detail c, unit_dept_comp_main d where a.company = b.company and  
b.company = d.company and a.company = c.company and a.status = 'WFP' and  
c.job_status = 'WFP' and a.wo_no = b.wo_no and b.unit_id = d.unit_id and a.job_id = c.job_id  
and b.status <> 'C' and c.end_dt is null and datediff(HH, getdate(), c.start_dt) > 24 order by  
b.location, a.wo_no, c.start_dt asc
```

find recent Telematic faults as reported by any source.

```
select location as Location, unit_no as Unit, protocol as Protocol, Description as Description,  
last_dt as LastReportedDate, first_dt as FirstReportedDate, read_dt as ReadDate, case  
protocol when 'OBDII' then element when 'J1939' then element when 'J1587' then  
element_type + '-' + element else element end as FaultCode from view_tm_alerts where  
datediff(HH, getdate(), last_dt) < :<DAYS_BACK> GO
```

Updates

| Release | Section | Description |
|---------|--------------|--|
| 23.2 | All sections | Applied miscellaneous writing style updates throughout the document. |