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FILE LOCATION: L:\ShareData\Denver\Rockies\CD\DWGS\LEGENDS\OXY-PID-STD-00010.dwg LAST SAVED: 1/9/2020 BY: Iva Palumbo PLOT STYLE: oxy-std-00010.dwt

EQUIPMENT NUMBERING STANDARD

EQUIPMENT IDENTIFICATION CODE
 X-####
 AREA NUMBER
 TRAIN NUMBER(*)
 EQUIPMENT ID

*TRAIN NUMBER (USE 0 FOR COMMON EQUIPMENT)(OR COMPRESSOR UNIT NUMBER - CTF SITES ONLY)
 INSTRUMENTATION NUMBERS - MATCH EQUIPMENT ID AND INCREMENT NUMERICALLY ONLY.
 ELECTRICAL NUMBERS - MATCH EQUIPMENT ID AND INCREMENT NUMERICALLY ONLY.
 ALPHAS ONLY AS APPROVED BY APC ENGINEERING.

EQUIPMENT IDENTIFICATION CODE

AC-#### AIR COOLED FIN FAN	T-#### TOWER
C-#### COMPRESSOR	TK-#### TANK ATMOSPHERE
E-#### EXCHANGER	V-#### VESSEL, PROCESS
F-#### FILTER	VS-#### VESSEL, STORAGE
H-#### FIRED HEATERS	FL-#### SPECIALTY I.E., VENT STACK, FLARE, INCINERATOR, ECD
M-#### MOTOR	TO-#### THERMAL OXIDIZER
P-#### PUMP	X-#### MISC. EQUIPMENT
R-#### REACTOR	

EQUIPMENT NUMBERING SYSTEM

AREA NUMBERS	AREA REFERENCED	TYPICAL EQUIPMENT
10000	INLET GAS AREA	SLUG CATCHERS & SEPARATORS
20000	CRUDE OIL TRANSFER EQUIPMENT	LINE HEATERS, PUMPS & SURGE VESSELS
30000	CONDENSATE HANDLING	PUMPS, WATER SEPARATION & SURGE/STORAGE
40000	COMPRESSION	ENGINE/COMP. SKID EQUIP., COOLERS, ON-SKID SEPARATORS
50000	DISCHARGE SEPARATION, DEHYDRATION	DISCHARGE SEPARATORS, FILTERS & DEHYDRATION EQUIP.
60000	AMINE SYSTEM	CONTACTOR, REGEN SYSTEM & FILTERS
70000	OUTLET AREA	GAS METERS, LACTS, PUMPS & STORAGE
80000	SWD	TANKS & PUMPS
90000	FLARE & UTILITIES	

COMPRESSOR STATIONS & OIL PUMPING FACILITIES

AREA NUMBERS	AREA REFERENCED	TYPICAL EQUIPMENT
10000	INLET AREA	SLUG CATCHERS, SURGE/SEPARATOR VESSELS, LACTS & INLET HEATERS
20000	PROCESS EQUIPMENT	VESSLS, TOWERS, EXCHANGERS, REFLUX SYSTEM
30000	COMPRESSION	COMPRESSORS, AFTERCOOLERS, COMPRESSOR ASSOCIATED VESSELS
40000	NGL STORAGE AND LACT	STORAGE VESSELS, PUMPS, METERS, LP GAS METERS
50000	PRODUCT COOLING	HEAT EXCHANGERS, CHILLERS, PUMPS, REFRIGERANT COMPRESSORS
60000	OUTLET AREA	OIL BOOSTER PUMPS, OIL PIPELINE PUMPS, OIL LACT
70000	HEAT MEDIUM SYSTEM	HEATERS, HM PUMPS, FILTERS
80000	FLARE & UTILITIES	FLARE, KNOCKOUTS, ECD'S, T.O., AIR COMPRESSORS, DRAINS, FUEL GAS

OIL STABILIZATION FACILITIES

AREA NUMBERS	AREA REFERENCED	TYPICAL EQUIPMENT
10000	INLET AREA	SLUG CATCHERS, SURGE/SEPARATOR VESSELS, LACTS & INLET HEATERS
20000	PROCESS EQUIPMENT	VESSLS, TOWERS, EXCHANGERS, REFLUX SYSTEM
30000	COMPRESSION	COMPRESSORS, AFTERCOOLERS, COMPRESSOR ASSOCIATED VESSELS
40000	NGL STORAGE AND LACT	STORAGE VESSELS, PUMPS, METERS, LP GAS METERS
50000	PRODUCT COOLING	HEAT EXCHANGERS, CHILLERS, PUMPS, REFRIGERANT COMPRESSORS
60000	OUTLET AREA	OIL BOOSTER PUMPS, OIL PIPELINE PUMPS, OIL LACT
70000	HEAT MEDIUM SYSTEM	HEATERS, HM PUMPS, FILTERS
80000	FLARE & UTILITIES	FLARE, KNOCKOUTS, ECD'S, T.O., AIR COMPRESSORS, DRAINS, FUEL GAS

GAS PLANTS

AREA NUMBERS	AREA REFERENCED	TYPICAL EQUIPMENT
10000	INLET GAS AREA	SLUG CATCHERS & SEPARATORS
20000	CRUDE OIL TRANSFER EQUIPMENT	LINE HEATERS, PUMPS & SURGE VESSELS
30000	CONDENSATE HANDLING	PUMPS, WATER SEPARATION & SURGE/STORAGE
40000	COMPRESSION	ENGINE/COMP. SKID EQUIP., COOLERS, ON-SKID SEPARATORS
50000	DISCHARGE SEPARATION, DEHYDRATION	DISCHARGE SEPARATORS, FILTERS & DEHYDRATION EQUIP.
60000	AMINE SYSTEM	CONTACTOR, REGEN SYSTEM & FILTERS
70000	OUTLET AREA	GAS METERS, LACTS, PUMPS & STORAGE
80000	SWD	TANKS & PUMPS
90000	FLARE & UTILITIES	

PRODUCTION FACILITIES

AREA NUMBERS	AREA REFERENCED	TYPICAL EQUIPMENT
10000	WELL HEADS	WELL HEADS & METHANOL TANKS
20000	INLET AREA	SEPARATORS, BURNER UNITS, BURNER MANAGEMENT, FUEL SCRUBBERS
30000	OIL SYSTEM	BULK SEPARATORS, VAPOR RECOVERY TOWERS & LACTS
40000	GAS SYSTEM	GAS SCRUBBERS, DEHYD. AMINE & GAS METERS
50000	FLARE SYSTEMS	FLARES, VENT & PURGE SYSTEMS, ECDs
60000	STORAGE AREA	OIL TANKS, WATER TANKS, RECIRC PUMPS
70000	UTILITIES	AIR COMPRESSORS, GENERATORS
80000	GAS COMPRESSORS	VRUs & GAS COMPRESSORS
90000	WATER TRAIN	SWD PUMPS & WATER METERS

P&ID NUMBERING STANDARD

FUNCTIONAL LOCATION NUMBER
 DRAWING TYPE
 P&ID DRAWING NUMBERS(*)

X#####-PID-XXXXX

*P&ID DRAWING NUMBERS ARE BASED OFF OF THE SITE/EQUIPMENT AREA NUMBERS. (SEE EQUIPMENT IDENTIFICATION CODE AND NUMBERING SYSTEM)

PIPE LINE NUMBERING STANDARD

INSULATION THICKNESS
 PIPE SIZE
 TRACING TYPE
 INSULATION TYPE
 PIPE SPECIFICATION

SERVICE IDENTIFICATION CODE
 XX-XX-XXXX-XXXX-XXXX

AD = ACID DRAIN
 AF = ACID FLARE
 AG = ACID GAS
 AO = ABSORPTION OIL
 AV = ATMOSPHERE VENT
 B = BLOWDOWN
 BD = BUILDING DRAIN
 BC = BLANKET GAS
 BW = BLOWDOWN VENT
 CA = COMBUSTION AIR
 CD = CLOSED DRAIN
 CW = COLD WATER
 DA = DRAIN ATMOSPHERIC
 DF = DIESEL FUEL
 DP = DRAIN PRESSURED
 DW = DECHILLED WATER
 E = ETHANE
 FG = FUEL GAS
 FW = FIRE WATER
 G = GLYCOL
 GH = GAS HYDROCARBON
 HD = HIGH PRESSURE CONDENSATE
 HDH = HIGH PRESSURE DRAIN
 HE = HIGH PRESSURE FLARE
 HO = HOT OIL
 HW = HOT WATER
 IA = INSTRUMENT AIR
 IB = ISOBUTANE
 IG = INSTRUMENT GAS
 JW = JACKET WATER
 LA = LEAN AMINE
 LC = LOW PRESSURE CONDENSATE
 LD = LOW PRESSURE DRAIN
 LE = LOW PRESSURE FLARE
 LG = LEAN GLYCOL
 LH = LIQUID HYDROCARBON
 LO = LUBE OIL
 LS = LOW PRESSURE STEAM
 M = METHANE
 MC = MEDIUM PRESSURE CONDENSATE
 MD = MEDIUM PRESSURE DRAIN
 MF = MEDIUM PRESSURE FLARE
 MS = MEDIUM PRESSURE STEAM
 N = NITROGEN
 NG = NATURAL GAS
 O = OIL
 OD = OPEN DRAIN
 OT = HOT OIL TRACE
 OV = OIL VENT
 P = PROPANE
 PA = PROCESS AIR
 PC = PROCESS CONDENSATE
 PD = PROCESS DRAIN
 PG = POWER GAS
 PGV = PROCESS VENT
 PW = PROVED WATER
 RA = RICH AMINE
 RC = RICH GLYCOL
 RW = RAW WATER
 SA = STARTING AIR
 SD = SOLVENT DRAIN
 SG = STARTING GAS
 SO = SEAL OIL
 ST = STEAM TRACE
 SW = SOUR (PROQUED) WATER
 TG = TREATED GAS
 TW = TREATED WATER
 UA = UTILITY AIR
 UV = UTILITY VENT
 LW = LOW PRESSURE WATER
 V = VENT GAS
 WF = WELL FLUID
 WW = WASTE WATER

PIPE SPECIFICATIONS NAMING CONVENTION

FLANGE CLASS
 MATERIAL

XXXX
 SERVICE CODE
 GOVERNING CODE

FLANGE CLASS	MATERIAL
A - CL 150	C - CARBON STEEL
B - CL 300	L - LOW TEMP. CARBON STEEL
D - CL 600	S - STAINLESS STEEL
E - CL 900	P - HDPE/PVC
F - CL 1500	
G - CL 2500	

GOVERNING CODE	SERVICE
1 - ASME B31.1	A - GENERAL SERVICE
3 - ASME B31.3	B - SOUR SERVICE
4 - ASME B31.4	C-Z - OTHER SERVICE FLUIDS
8 - ASME B31.8	L - DRAINS, GLYCOL, CRUDE OIL

INSULATION AND TRACE CODE

INSULATION TYPE	TRACE TYPE
C=COLD	ST=STEAM
H=HOT	ET=ELECTRIC
P=PERSONNEL	MT=MEDIA TRACE I.e., GLYCOL, HOT OIL
S=SWEAT	

MANUAL VALVE NUMBERING SYSTEM

REPRESENTS PID
 DRAWING NUMBER

*-###
 UNIQUE 3 DIGIT NUMBER

NUMBER SHALL COMMENCE ON EACH SHEET WITH 001 AND CONTINUE SEQUENTIALLY

ABBREVIATIONS

ATM = ATMOSPHERE	M = THOUSAND
AG = ABOVE GRADE	MM = MILLION
AV = AIR VENT (AUTOMATIC)	MW = MANWAY
BE = BURNER ELEMENT	N2 = NITROGEN
BF = BLIND FLANGE	NC = NORMALLY CLOSED
BG = BELOW GRADE	NLL = NORMAL LIQUID LEVEL
CB = CONTINUOUS BLOWDOWN	NO = NORMALLY OPEN
CD = CLOSED DRAIN	OD = OPEN DRAIN
CH = CHOKE	OD = OVERALL DIAMETER (SIZE)
CHO = CHAIN OPERATED	OPB = PUSH BUTTON
CO = CLEAN OUT	PC = PURGE CONNECTION
CP = CORROSION PROBE	QD = QUICK DISCONNECT
CSC = CAR SEAL CLOSED	R = RESET
CSO = CAR SEAL OPEN	ROC = RATE OF CHANGE
DC = DRAIN CONNECTION	ROV = REMOTE OPERATED VALVE
FC = FAIL CLOSED	RTD = RESISTANCE TEMP. DETECTOR
FL = FAIL LAST	SC = SAMPLE CONNECTION
FO = FAIL OPEN	SCD = STD. CU. FT. PER DAY
GPH = GALLONS PER HOUR	SCFH = STD. CU. FT. PER HOUR
GPM = GALLONS PER MINUTE	SCFM = STD. CU. FT. PER MINUTE
HC = HOSE CONNECTION	SHUTDOWN
HLL = HIGH HIGH LIQUID LEVEL	SIS = SAFETY INSTRUMENT SYSTEM
HLL = HIGH LIQUID LEVEL	SOC = STEAM OUT CONNECTION
HP = HIGH PRESSURE	SCOW = SCOPE OF WORK
HSD = HAND SHUTDOWN	SR = STRESS RELIEF
IA = INSTRUMENT AIR	SSS = SELECTOR SWITCH
IGN = IGNITION	ST = START UP
LC = LOCK CLOSED	TSD = TEMPORARY STRAINER
LD = LIQUID DRAIN	TST = TIGHT SHUT OFF
LLL = LOW LIQUID LEVEL	TYP = TYPICAL
LLL = LOW LOW LIQUID LEVEL	(V) = VENDOR SUPPLIED
LO = LOCK OPEN	VB = VACUUM BREAKER
LP = LOW PRESSURE	WC = WATER COLUMN
MIN = MINIMUM DISTANCE	

FLOW SHEET LINE TYPES

MAJOR
 MAJOR SECONDARY
 MINOR
 MINOR SECONDARY
 SKID LIMITS

VALVE CONNECTIONS

THREADED/SOCKET WELD VALVE
 FLANGED VALVE

REDUCERS

CONCENTRIC
 ECCENTRIC (FOB) OR (FSO)
 ECCENTRIC (FOT) OR (FSU)
 SWAGE

CONTROL ACTUATORS

DIAPHRAGM OPERATOR
 COUNTERWEIGHT ACTUATOR VALVE
 PRESSURE REGULATOR SELF-CONTAINED
 DIAPHRAGM w/ HANDWHEEL
 PISTON OPERATOR
 PRESSURE REGULATOR w/ EXTERNAL PRESSURE TAP
 PRESSURE REGULATOR SELF-CONTAINED w/ ADJUSTING KNOB
 VALVE ACTUATOR AND POSITIONER

MISCELLANEOUS ACTUATORS

HANDWHEEL ACTUATOR
 ELECTROHYDRAULIC ACTUATOR
 ELECTRIC MOTOR ACTUATOR
 SOLENOID NON-LATCHING
 SOLENOID LATCHING
 R=LOCAL RESET
 E=ELECTRIC RESET

VALVES

BALL VALVE
 GATE VALVE
 GLOBE VALVE
 PLUG VALVE
 CHECK VALVE
 CHECK VALVE - PISTON
 NEEDLE VALVE
 BUTTERFLY VALVE
 INLINE CHOKE VALVE
 ANGLE CHOKE
 DIAPHRAGM VALVE
 GAUGE VALVE
 BLOCK & BLEED VALVE
 EXCESS FLOW VALVE
 ANGLE VALVE
 CONVENTIONAL PRESSURE RELIEF VALVE
 PILOT RELIEF VALVE
 ANGLE VALVE w/ HANDLE
 DIAPHRAGM GATE VALVE
 DIAPHRAGM BALL VALVE
 PRESSURE REGULATOR GATE VALVE
 PRESSURE REGULATOR BALL VALVE
 PISTON OPERATED GATE VALVE
 PISTON OPERATED BALL VALVE
 SOLENOID GATE VALVE
 SOLENOID BALL VALVE
 ANGLE DIAPHRAGM VALVE
 3-WAY DIAPHRAGM VALVE
 3-WAY SOLENOID VALVE
 3-WAY SPRING OPPOSED VALVE
 3-WAY THERMOSTATIC VALVE
 3-WAY VALVE
 3-WAY VALVE w/ HANDLE
 3-WAY RELIEF VALVE

FLANGES

BLIND FLANGE OR LINE TERMINATION
 UNION
 SENIOR/JUNIOR ORIFICE METER
 ORIFICE
 ORIFICE CLOSED
 ORIFICE PADDLE
 FLOW TRANSMITTER WITH GATE VALVE
 FLOW TRANSMITTER WITH BALL VALVE
 FLOW TRANSMITTER WITH NEEDLE VALVE
 BLEED RING WITH GATE VALVE
 BLEED RING WITH BALL VALVE
 SPECTACLE BLIND OPEN POSITION
 SPECTACLE BLIND CLOSED POSITION
 PADDLE BLIND CLOSED POSITION
 PADDLE BLIND OPEN POSITION
 NOZZLES
 COUPLING
 FRONT VIEW CONNECTION
 NOZZLE BLINDED
 NOZZLE FLANGED
 MANWAY SINGLE LINE (SIDE VIEW)
 MANWAY (SIDE VIEW)
 MANWAY (FRONT VIEW)
 TANK CLEANOUT
 EQUIPMENT NOZZLE CALLOUT

INLINES

Y TYPE STRAINER
 Y TYPE STRAINER WITH GATE VALVE
 Y TYPE STRAINER WITH BALL VALVE
 INSULATION (SEE TABLE)
 INSULATION WITH HEAT TRACE (SEE TABLE)
 INSULATION WITH GLYCOL HEAT TRACE
 EQUIPMENT INSULATION
 TURBINE METER
 POSITIVE DISPLACEMENT METER
 MAGNETIC FLOW METER
 ULTRASONIC METER
 INLINE MIXER
 BASKET STRAINER
 FILTER
 INLINE STRAINER
 CONE STRAINER
 START UP STRAINER (WITCH HAT)
 EXPANSION JOINT
 ROTAMETER FLOW INDICATOR
 V-CONE METER
 VENTURI TUBE OR FLOW NOZZLE
 VENTURI TUBE WITH TAPS
 STRAIGHTENING VANES
 FLOW CONDITIONER
 VORTEX SENSOR
 ANNUBAR
 MASS FLOW CORIOLIS METER
 CORIOLIS METER
 RUPTURE DISK
 RUPTURE DISK (PRESSURE)
 RUPTURE DISK (VACUUM)
 EXCESS FLOW PREVENTER/MIXER
 DIAPHRAGM SEAL
 CHEMICAL SEAL
 PITOT TUBE OR PITOT VENTURI TUBE
 FLOW CONDITIONER

MISCELLANEOUS

DRESSER COUPLING
 MATERIAL, AG/BG, INSULATION, PIPING SPEC OR SOW CHANGE
 FLEXIBLE HOSE FLANGED
 FLEXIBLE HOSE
 TRUCK CONNECTION/BOW & CAP
 AGITATOR
 TRUCK (BACK VIEW)
 TRUCK (SIDE VIEW)
 RAILCAR
 Y-TRAP
 OPEN DRAIN
 LIQUID SEAL X"=HEIGHT
 VENT
 TIE IN TO EXISTING PIPING OR PIPING BY OTHERS
 SPECIALITY ITEM
 INSULATING FLANGE KIT
 CORROSION COUPON
 PROCESS STREAM FLOW
 FLAME ARRESTOR
 MIST PAD OR MIST ELIMINATOR
 VORTEX BREAKER
 EJECTOR OR EDUCTOR
 SLOPE POINTED IN DOWNHILL SIDE
 PLUG
 BULL PLUG
 CAP WELDED/PIPE/LINE OR TERMINATION
 CAP THREADED
 INSTRUMENT BREAK
 VENT TO ATMOS
 VENT WITH BUG SCREEN
 PIG PASSAGE INDICATOR (PIG SIG)

NOTES:

DWG. NO.	TITLE

NO.	DESCRIPTION	DATE	CHK.	DATE	APPR.	DATE
1	INITIAL RELEASE FOR ENGINEERING STANDARD	05/24/19	MJ	06/24/19	LFM	05/24/19
2	ISSUED FOR REVIEW	04/23/19				
3	ISSUED FOR REVIEW	01/10/19				
4	ISSUED FOR REVIEW	09/11/18				
5	ISSUED FOR REVIEW	07/02/18				
6	ISSUED FOR REVIEW	06/28/18				

DATE	CHK.	DATE	APPR.	DATE


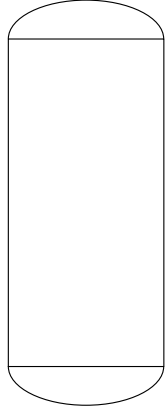
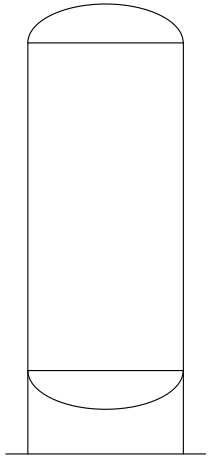
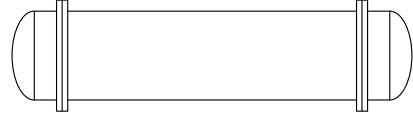


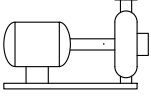
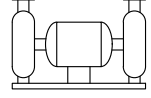

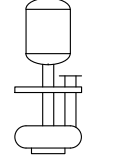
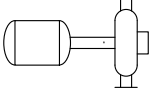
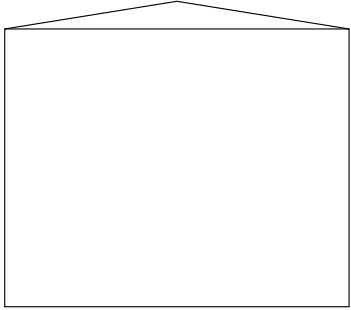
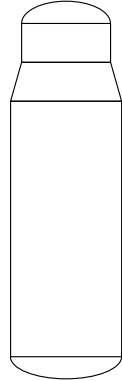
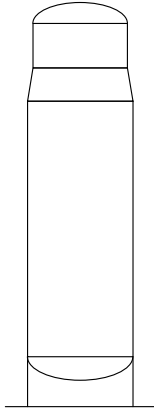
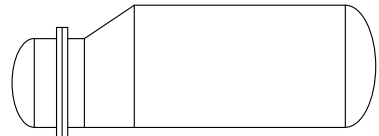


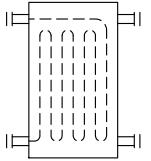
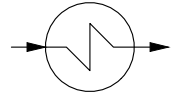
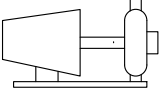
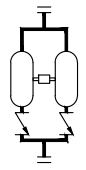
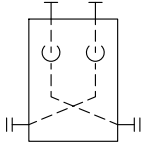
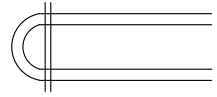
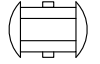

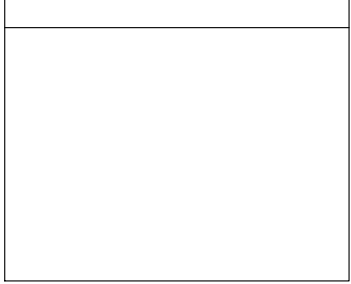
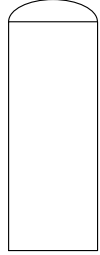

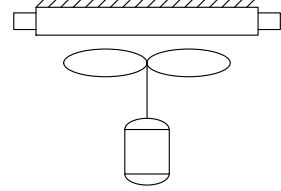

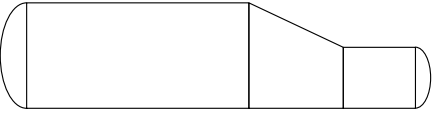


OXY Rockies

OXY STANDARD

PIPING & INSTRUMENTATION DIAGRAM
MECHANICAL LEGEND

DRAWN BY: MJ	CREATION DATE: --	AFE No.:
APPROVED: --	APPR. DATE: --	
DWG. No.:	OXY-PID-STD-00010	
SCALE: NONE	SHEET No. 1 OF 4	

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TANKS	VESSELS		EXCHANGERS		PUMPS			
FLAT ROOF 	VERTICAL VESSEL 	VERTICAL VESSEL WITH SKIRT 	EXCHANGER - DOUBLE END 		PUMP - VERTICAL (Y AXIS) 			
			EXCHANGER - SINGLE END 		PUMP - CENTRIFUGAL (Y AXIS) 	PUMP - DUAL 		
			EXCHANGER - DOUBLE END KETTLE 		PUMP - SUMP (Y AXIS) 	PUMP - INLINE (Y AXIS) 		
SLOPING ROOF 	VERTICAL VESSEL WITH CONE 	VERTICAL VESSEL WITH SKIRT & CONE 	EXCHANGER - SINGLE END KETTLE 		PUMP - ROTARY 	PUMP - VACUUM 		
			EXCHANGER - SUPER 		EXCHANGER - PROCESS FLOW 		PUMP - WITH STEAM TURBINE 	PUMP - AIR OPERATED PUMP 
			LEAN/RICH AMINE EXCHANGER 		FUEL GAS HEATER 		PUMP - DIAPHRAM 	PULSATION DAMPENER 
FLOATING ROOF 	VERTICAL FLAT BOTTOM VESSEL 	HORIZONTAL VESSEL 	AFTER COOLER WITH MOTOR 		MOTOR 	EQUIPMENT TAG TAG DESC --- TAG		
	HORIZONTAL VESSEL WITH ECCENTRIC 	CENTRIFUGAL COMPRESSOR 	<p>* PFD ONLY</p>		MOTOR 			

NOTES:

REFERENCE DRAWINGS		REVISIONS							
DWG. NO.	TITLE	NO.	DESCRIPTION	BY	DATE	CHK.	DATE	APPR.	DATE



OXY STANDARD

PIPING & INSTRUMENTATION DIAGRAM
EQUIPMENT LEGEND

DRAWN BY: MJ	CREATION DATE: --	AFE No.:
APPROVED: --	APPR. DATE: --	
SCALE: NONE	DWG. No.: OXY-PID-STD-00011	SHEET No. 2 OF 4

FILE LOCATION: L:\ShareData\Denver\Rockies\DWGS\LEGENDS\OXY-PID-STD-00011.dwg

PLOT STYLE: ----

LAST SAVED: 1/8/2020 BY: Max Palchewski

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INSTRUMENT IDENTIFICATION

AH	ANALYZER ALARM HIGH	PI	PRESSURE INDICATOR
AE	ANALYZER ELEMENT	PIT	PRESSURE INDICATING TRANSMITTER
AI	ANALYZER INDICATOR	PIC	PRESSURE INDICATING CONTROLLER
ASH	COMBUSTIBLE GAS DETECTOR	PR	PRESSURE RECORDER
AT	ANALYZER TRANSMITTER	PRC	PRESSURE RECORDING CONTROLLER
BOV	BLOWDOWN VALVE	PS	PRESSURE SWITCH
BOY	BLOWDOWN SOLENOID VALVE	PSE	PRESSURE SAFETY ELEMENT
BSLL	BURNER FLAME LOW LOW	PSH	PRESSURE SWITCH HIGH
BS&W	BS&W MONITOR	PSHH	PRESSURE SWITCH HIGH HIGH
ESD	EMERGENCY SHUTDOWN	PSL	PRESSURE SWITCH LOW
FA	FLAME ARRESTOR	PSLL	PRESSURE SWITCH LOW LOW
FAH	FLOW ALARM HIGH	PSV	PRESSURE SAFETY VALVE
FAHH	FLOW ALARM HIGH HIGH	PT	PRESSURE TRANSMITTER
FAL	FLOW ALARM LOW	PV	PRESSURE CONTROL VALVE
FALL	FLOW ALARM LOW LOW	PY	PRESSURE TRANSDUCER/RELAY
FC	FLOW CONTROLLER	RO	RESTRICTING ORIFICE
FE	FLOW ELEMENT	SA	SPARK ARRESTOR
FI	FLOW INDICATOR	SAH	SPEED ALARM HIGH
FIT	FLOW INDICATING TRANSMITTER	SAHH	SPEED ALARM HIGH HIGH
FIC	FLOW INDICATOR CONTROLLER	SSH	SPEED SWITCH HIGH
FOI	FLOW QUOTIENT INDICATOR	SSHH	SPEED SWITCH HIGH HIGH
FR	FLOW RECORDER	SDV	SHUTDOWN VALVE
FRG	FLOW RECORDING CONTROLLER	SDY	SPEED SOLENOID VALVE
FS	FLOW SWITCH	SI	SPEED INDICATOR
FSH	FLOW SWITCH HIGH	SI	SPECIALTY ITEM
FSHH	FLOW SWITCH HIGH HIGH	SP	SOLENOID VALVE
FSL	FLOW SWITCH LOW	SV	SOLENOID VALVE
FSSL	FLOW SWITCH LOW LOW	TAH	TEMPERATURE ALARM HIGH
FSV	FLOW SAFETY (CHECK) VALVE	TAHH	TEMPERATURE ALARM HIGH HIGH
FT	FLOW TRANSMITTER	TAL	TEMPERATURE ALARM LOW
FV	FLOW VALVE	TALL	TEMPERATURE ALARM LOW LOW
FY	FLOW TRANSDUCER/RELAY	TC	TEMPERATURE CONTROLLER
FX	FLOW STRAIGHTENING VANES	TE	TEMPERATURE ELEMENT
HCV	HAND CONTROL VALVE	TH	THIEF HATCH
HIC	HAND INDICATING CONTROLLER	TI	TEMPERATURE INDICATOR
HOA	HAND OFF AUTO	TIC	TEMPERATURE INDICATING CONTROLLER
HS	HAND SWITCH	TIT	TEMPERATURE INDICATING TRANSMITTER
HV	HAND VALVE	TR	TEMPERATURE RECORDER
HY	HAND RELAY	TSE	TEMPERATURE SAFETY ELEMENT
I	CURRENT INDICATOR	TSH	TEMPERATURE SWITCH HIGH
JOA	JOG OFF AUTO	TSHH	TEMPERATURE SWITCH HIGH HIGH
KK	TIMER	TSL	TEMPERATURE SWITCH LOW
LAH	LEVEL ALARM HIGH	TSLH	TEMPERATURE SWITCH LOW HIGH
LAHH	LEVEL ALARM HIGH HIGH	TT	TEMPERATURE TRANSMITTER
LAL	LEVEL ALARM LOW	TV	TEMPERATURE CONTROL VALVE
LALL	LEVEL ALARM LOW LOW	TY	TEMPERATURE TRANSDUCER/RELAY
LC	LEVEL CONTROLLER	TW	THERMOWELL
LG	LEVEL GAUGE	UA	UNIT TROUBLE ALARM
LI	LEVEL INDICATOR	VAH	VIBRATION ALARM HIGH
LIC	LEVEL INDICATING CONTROLLER	VAHH	VIBRATION ALARM HIGH HIGH
LIT	LEVEL INDICATING TRANSMITTER	VSH	VIBRATION SWITCH HIGH
LS	LEVEL SWITCH	VSHH	VIBRATION SWITCH HIGH HIGH
LSH	LEVEL SWITCH HIGH	XA	UNCLASSIFIED ALARM
LSHH	LEVEL SWITCH HIGH HIGH	XC	FIXED CHOKE
LSL	LEVEL SWITCH LOW	XCP	CORROSION COUPON
LSLL	LEVEL SWITCH LOW LOW	XCV	ADJUSTABLE CHOKE VALVE
LT	LEVEL TRANSMITTER	XDV	DELUGE VALVE
LV	LEVEL VALVE	XI	UNCLASSIFIED INDICATOR
LY	LEVEL TRANSDUCER/RELAY	XPI	PIG PASSAGE INDICATOR (PIG SIG)
NP	SAND PROBE	XV	SOLENOID ACTUATED ON/OFF VALVE
PAH	PRESSURE ALARM HIGH	YV	DIVERTER VALVE
PAHH	PRESSURE ALARM HIGH HIGH	YY	DIVERTER VALVE TRANSDUCER
PAL	PRESSURE ALARM LOW	ZC	POSITION/LIMIT CLOSED
PALL	PRESSURE ALARM LOW LOW	ZIC	POSITION INDICATOR CLOSED
PC	PRESSURE CONTROLLER	ZIO	POSITION INDICATOR OPEN
PCV	REGULATOR	ZIT	POSITION INDICATING TRANSMITTER
PDA	PRESSURE DIFFERENTIAL ALARM	ZSC	POSITION/LIMIT SWITCH CLOSED
PDH	PRESSURE DIFFERENTIAL ALARM HIGH	ZSO	POSITION/LIMIT SWITCH OPEN
PDHH	PRESSURE DIFFERENTIAL ALARM HIGH HIGH		
PDAL	PRESSURE DIFFERENTIAL ALARM LOW		
PDALL	PRESSURE DIFFERENTIAL ALARM LOW LOW		
PDI	PRESSURE DIFFERENTIAL INDICATOR		
PDIC	PRESSURE DIFFERENTIAL INDICATING CONTROLLER		
PDI	PRESSURE DIFFERENTIAL INDICATING TRANSMITTER		
PDR	PRESSURE DIFFERENTIAL RECORDER		
PDRG	PRESSURE DIFFERENTIAL RATIO CONTROLLER		
PDS	PRESSURE DIFFERENTIAL SWITCH		
PDT	PRESSURE DIFFERENTIAL TRANSMITTER		

INSTRUMENTATION

	LOCALLY MOUNTED INSTRUMENT
	FRONT PANEL MOUNTED INSTRUMENT
	BACK PANEL MOUNTED INSTRUMENT
	LOCAL FRONT PANEL MOUNTED INSTRUMENT
	LOCAL BACK PANEL MOUNTED INSTRUMENT
	STATION CONTROL PANEL SOFTWARE FUNCTION OPERATOR VISIBLE
	SAFETY OR ALTERNATE LOGIC CONTROL SYSTEM
	UNIT CONTROL PANEL SOFTWARE FUNCTION OPERATOR VISIBLE
	UNIT CONTROL PANEL DESIGNATION BMS = BURNER MANAGEMENT SYSTEM COMP = HP/IP/LP COMPRESSOR PANEL FLCP = FLARE CONTROL PANEL IACP = INST. AIR COMPRESSOR PANEL LUCP = LACT UNIT CONTROL PANEL SGMP = SALES GAS METER PANEL VRUP = VAPOR RECOVERY UNIT PANEL
	PILOT LAMP
	NORMALLY INACCESSIBLE OR BEHIND-THE-PANEL DEVICES OR FUNCTIONS MAY BE DEPICTED BY USING THE SAME SYMBOLS BUT WITH DASHED HORIZONTAL BARS.
	COMBINATION INSTRUMENT
	SDVS AND BOVS NEED TO BE CALLED OUT AS SHOWN
	LOGIC/ELECTRICAL INTERLOCK (REFER TO CAUSE & EFFECTS)
	FUNCTION TAG

INSTRUMENTATION LINE TYPES

	PNEUMATIC SIGNAL
	ELECTRICAL ANALOG OR DISCRETE SIGNAL
	HYDRAULIC SIGNAL
	CAPILLARY TUBE
	UNDEFINED (FOR PFD'S)
	HEAT TRACE
	GUIDED ELECTROMAGNETIC, SONIC SIGNAL OR FIBER OPTIC CABLE
	WIRELESS INSTRUMENTATION SYMBOL
	DIGITAL COMMUNICATION LINK BETWEEN SHARED SYSTEM DEVICES
	ELECTRICAL SIGNAL WITH DIAGNOSTIC/CONFIGURATION DATA (HART)
	MECH LINK

RELAY FUNCTION DESIGNATIONS

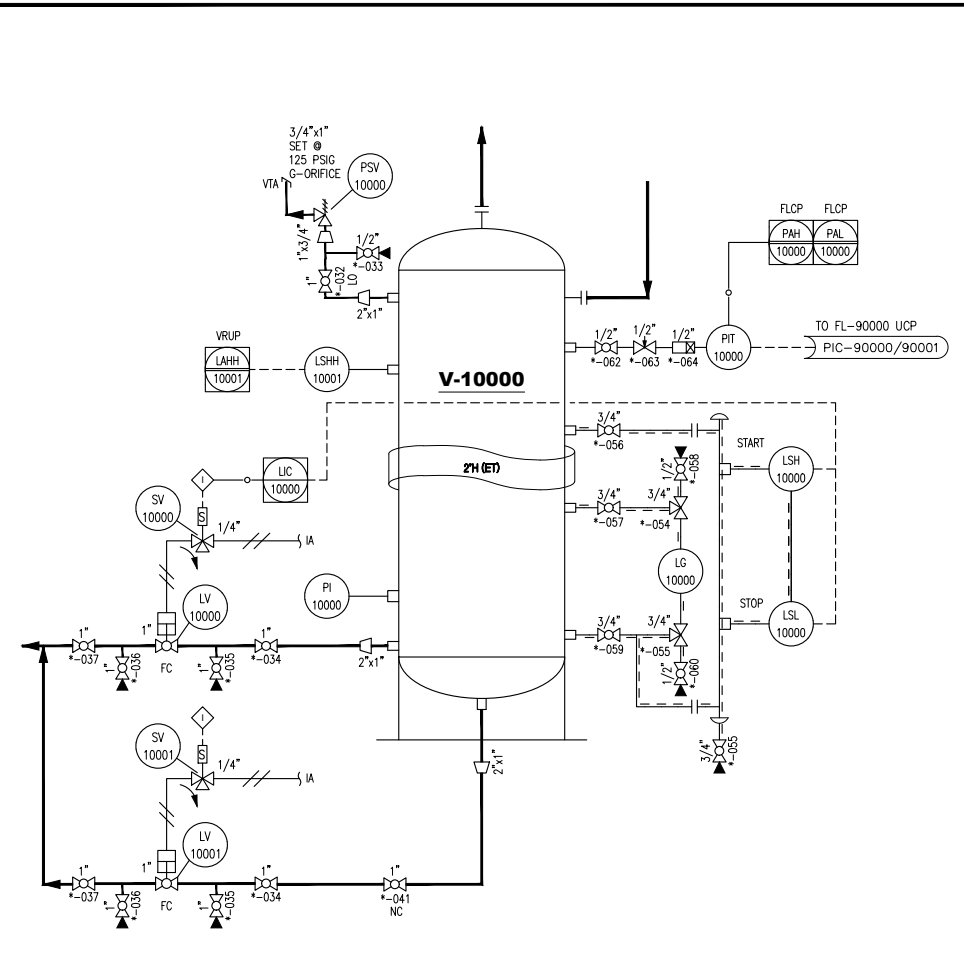
(ADJACENT TO INSTRUMENTATION) SEE TABLE 2

TABLE 2
 A=ANALOG
 B=BINARY
 D=DIGITAL
 E=VOLTAGE
 F=FREQUENCY
 H=HYDRAULIC
 I=CURRENT
 O=ELECTROMAGNETIC
 P=PNEUMATIC
 R=RESISTANCE

EXAMPLE
 1. XX REFER TO INSTRUMENT TAG IDENTIFICATION FROM LIST.
 2. ### REFER TO PROJECT SPECIFICATION SEQUENTIAL NUMBERING SYSTEM.

AUTO/MANUAL LOADING STATION
 MIDDLE SIGNAL SELECTOR
 HIGH LIMIT
 LOW LIMIT
 HIGH SELECTOR SIGNAL

INSTRUMENT TAGGING EXAMPLE



NOTES:
 IN INSTANCES OF ONE INSTRUMENT PER VESSEL, SUCH AS THE LC ABOVE, THE INSTRUMENT IS CALLED-OUT PER THE NUMERICAL PORTION OF THE VESSEL TAG NUMBER.
 WHERE THERE IS MORE THAN ONE OF THE SAME INSTRUMENT PER VESSEL, SUCH AS THE LVs ABOVE, THE FIRST INSTRUMENT IS CALLED-OUT PER THE NUMERICAL PORTION OF THE VESSEL TAG NUMBER, THE SECOND INSTRUMENT IS CALLED-OUT IN NUMERICAL SEQUENCE.
 ALPHAS ONLY AS APPROVED BY APC ENGINEERING.

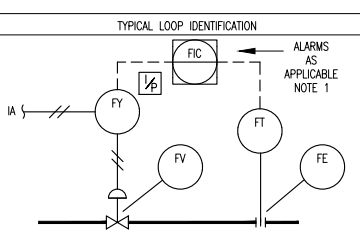
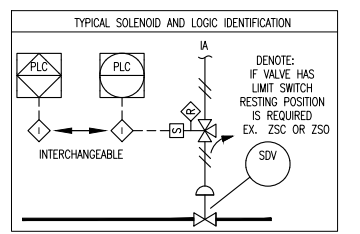
INSTRUMENT TAGGING

- (1) F(RATIO), M(MOMENTARY), K(TIME RATE OF CHANGE), Q(INTEGRATE AND TOTALIZE), OR ANY COMBINATION OF THESE IS INTENDED TO REPRESENT A NEW AND SEPARATE MEASURED VARIABLE, AND THE COMBINATION IS TREATED AS A FIRST LETTER ENTITY. THUS, INSTRUMENTS TD AND TI INDICATE TWO DIFFERENT VARIABLES, NAMELY, DIFFERENTIAL-TEMPERATURE AND TEMPERATURE. MODIFYING LETTERS ARE USED WHEN APPLICABLE.
- (2) LEVEL GAUGE NOMENCLATURE:
 NUMBER OF SECTIONS → (2)
 ILLUMINATOR → I
 (2) LG
 I
- (3) IDENTIFY RELAYS WITH FUNCTIONAL SUPERSCRIPT SEE TABLE
 FY
- (4) IDENTIFY ANALYZERS AND EQUIPMENT WITH SUPERSCRIPT OUTSIDE OF CIRCLE SEE TABLE BELOW
 AE XX (SEE TABLE 3)

ANALYZER SUPERSCRIPT TABLE 3

CO2	= CARBON DIOXIDE
GC	= GAS CHROMATOGRAPH
H2O	= MOISTURE
H2S	= HYDROGEN SULFIDE
LEL	= LOWER EXPLOSIVE LIMIT
O2	= OXYGEN
PH	= PH VALUE

- AS = AIR SUPPLY
 ES = ELECTRIC SUPPLY
 GS = GAS SUPPLY
 HS = HYDRAULIC SUPPLY
 IA = INSTRUMENT AIR
- NS = NITROGEN SUPPLY
 SS = STEAM SUPPLY
 UA = UTILITY AIR
 WS = WATER SUPPLY
- (6) ELECTRICAL RELAYS, SWITCHES, AND MISC. ITEMS IDENTIFIED WITH AN INSTRUMENT TAG BALLON AND AN (E) SHOWN IN PLACE OF THE INSTRUMENT TAG NUMBER ARE TO BE SPECIFIED AND FURNISHED BY ELEC.
 HOA SPECIFIED & FURN. BY ELECTRICAL
 HOA SPECIFIED & FURN. BY INSTRUMENTS
 - (7) INDICATING AND BLIND SWITCHES ARE IDENTIFIED HIGH, LOW, HIGH HIGH OR LOW LOW THUS:
 LSH LSL LSHH LSLH LSLL



NOTES:

DWG. NO.	TITLE	NO.	DESCRIPTION	BY	DATE	CHK	DATE	APPR.	DATE
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REFERENCE DRAWINGS

NO.	DESCRIPTION
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REVISIONS

NO.	DESCRIPTION	BY	DATE	CHK	DATE	APPR.	DATE
1	INITIAL RELEASE FOR ENGINEERING STANDARD	JRF	05/24/19	MJ	05/24/19	FW	05/24/19
2	ISSUED FOR REVIEW	JRF	04/23/19				
3	ISSUED FOR REVIEW	MJ	09/11/18				
4	ISSUED FOR REVIEW	BC	07/02/18				
5	ISSUED FOR REVIEW	JRF	07/02/18				
6	ISSUED FOR REVIEW	JRF	06/26/18				

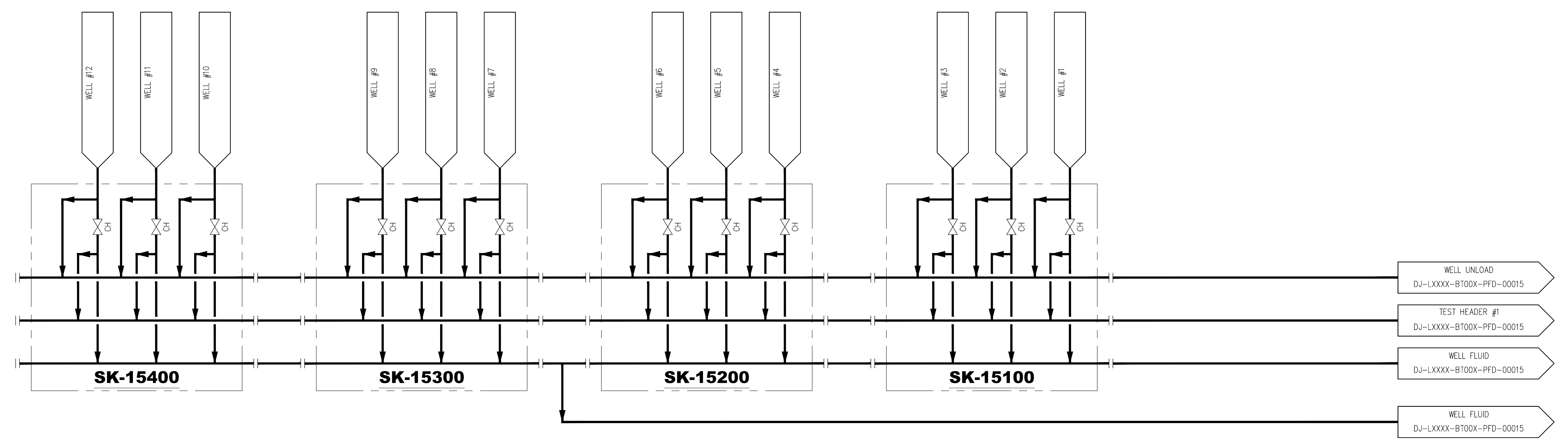


PIPING & INSTRUMENTATION DIAGRAM
INSTRUMENT IDENTIFICATION LEGEND

DRAWN BY: MJ	CREATION DATE: --	AFE No.:
APPROVED: --	APPR. DATE: --	
	DWG. No.:	SHEET No. 4 OF 4
SCALE: NONE	OXY-PID-STD-00013	

FILE LOCATION: L:\SharedData\Denver\RockiesFC\DWGS\LEGENDS\OXY-PID-STD-00013.dwg

SK-15100-15400
WELLHEAD MANIFOLD
 (3 PACK)



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PLOT STYLE: WCL_Standard.ctb
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NOTES:

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DWG. NO.	TITLE

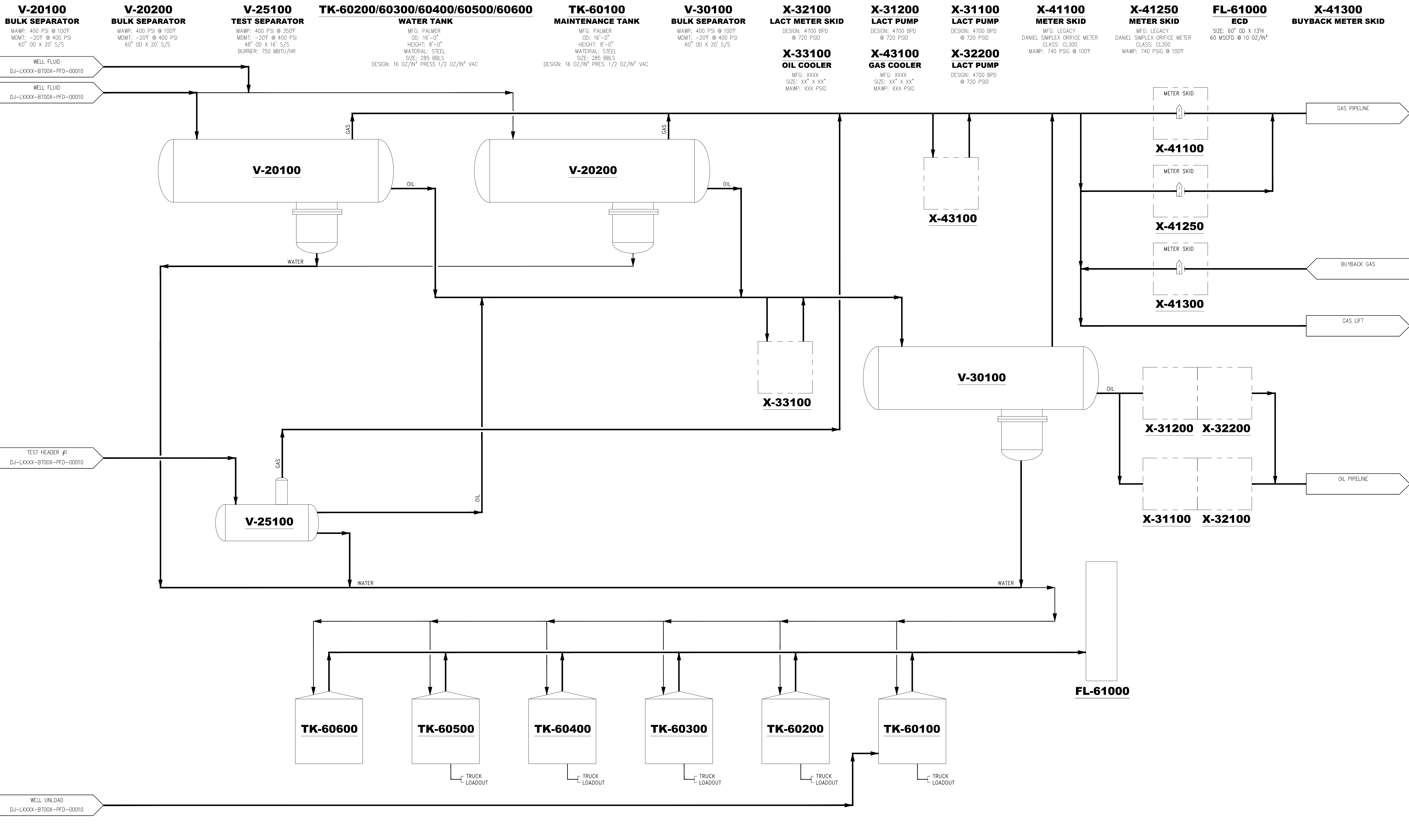
REVISIONS				
NO.	DESCRIPTION	BY	DATE	DATE

Kerr-McGee Oil & Gas Onshore LP

FERN FACILITY

PROCESS FLOW DIAGRAM PRODUCTION FACILITY		
DRAWN BY: BSY	CREATION DATE: 04/09/24	AFE No.: -
APPROVED: JJB	APPR. DATE: XX/XX/XX	
	DWG. No.: DJ-LXXX-BT00X-PFD-0010	SHEET No. - OF -
SCALE: -		

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NOTES:

WELL UNLOAD
DJ-LXXXX-BT00X-PFD-00010

TEST HEADER #1
DJ-LXXXX-BT00X-PFD-00010

WELL FLUID
DJ-LXXXX-BT00X-PFD-00010

WELL FLUID
DJ-LXXXX-BT00X-PFD-00010

REFERENCE DRAWINGS	
DWG. NO.	TITLE

REVISIONS					
NO.	DESCRIPTION	BY	DATE	CHK	DATE

Kerr-McGee Oil & Gas Onshore LP

FERN FACILITY

**PROCESS FLOW DIAGRAM
PRODUCTION FACILITY**

DRAWN BY: BSY	CREATION DATE: 04/09/24	AFE No.: -
APPROVED: JJB	APPR. DATE: xx/xx/xx	
	DWG. No.: DJ-LXXXX-BT00X-PFD-00015	SHEET No.: - 0F -
SCALE: -		

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LAST SAVED: 4/4/2024 BY: Briana Ibarra
PLOT STYLE: APC-Standard.ctb