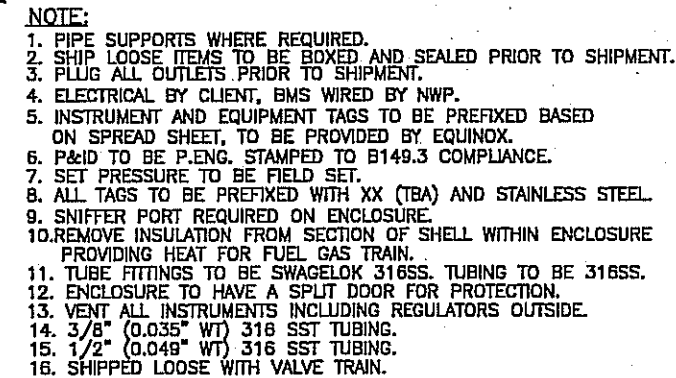


ORIGINAL



XX-PK-2000

LSD: _____
EEL #: _____
QTY: _____
TAG: _____

MURPHY OIL CORPORATION			
1.0 MMBTU/HR LINE HEATER PACKAGE			
c/w 2"-1500# x 3"-300# SPLIT COILS			
PO# 54116050-S201			
PIPING AND INSTRUMENTATION DIAGRAM			
DWN: JHK	CHK: <i>544</i>	APP: <i>Q</i>	
DATE: 11.07.26	DATE: <i>Jul 28/11</i>	DATE: <i>June 12/2010</i>	
SCALE: NTS	DWG: 08122-1	REV: 0	
SHEET: 1 OF 3			

BILL OF MATERIALS

TAG#	DESCRIPTION	QTY.	PART#	TAG#	DESCRIPTION	QTY.	PART#
01-BMS-2010	BURNER CONTROL SYSTEM - MFR: ZIRCO, MODEL NO.: ACL 5100 24 VDC (2.4 W)	1	566752	PV/PY-2011	CHOKE VALVE - MFR: MASTERFLO, MODEL NO.: P1E 2" 1500 ANSI RTJ x 2" 300 ANSI RF c/w PCV-2016	1	100614
01-P-2010	PUMP - MFR: SANDPIPER, MODEL NO.: G1F81ABTXNSX00 GAS OPERATED	1	100996	SC-2011/2012	SPEED CONTROL VALVE - MFR: SMC, MODEL NO.: AC2000 c/w VALVE TRAIN (SY-2010)	2	423512
01-H-2010	LINEHEATER - MFR: NWP INDUSTRIES INC, SIZE: 42" OD x 192" LG c/w 24" OD x 72" LG EXPANSION TANK	1	101361	SDN/ZSC-2014	MAIN SOLENOID PROOF OF CLOSURE - MFR: ACL, MODEL NO.: ACL-ASSV-1P-24 1" NPT, PNEUMATIC ACTUATOR, 60 PSI SUPPLY SS BODY, 24 VDC c/w VALVE TRAIN (SY-2010)	1	423512
01-PS-2011	COIL A - MFR: NWP INDUSTRIES INC, SIZE: 2" 1500 ANSI RTJ SCH XXH 8 PASS, 3375 PSI DESIGN PRESSURE	1	100212	TCV-2016	TEMPERATURE CONTROL VALVE - MFR: FISHER, MODEL NO.: 119 c/w VALVE TRAIN (SY-2010)	1	423512
01-PS-2012	COIL B - MFR: NWP INDUSTRIES INC, SIZE: 3" 300 ANSI RF SCH XH/80 2 PASS, 675 PSI DESIGN PRESSURE	1	100212	TH-2011	THIEF HATCH - MFR: WENCO, SIZE: 8" c/w GASKET 16 oz PRESSURE, 0.4 oz VACUUM SWEET SERVICE	1	774956
				TI-2012	TEMPERATURE INDICATOR - 5" DIAL x 11" STEM, 0-250°F, ADJUSTABLE HEAD c/w 3/4" x 1/2" x 11", 0.260 BORE THERMOWELL	1	100751 100750
BSL-2011	BURNER - MFR: WENCO, SIZE: 1.0 MMBTU, 24" FLAME CELL, 12" FIRETUBE 1 PIECE ALUMINUM HOUSING c/w 1.0 MMBTU INTERNALS	1	047583 439534	TI-2013	TEMPERATURE INDICATOR - 5" DIAL x 8" STEM, 0-250°F c/w 3/4" x 1/2" x 8", 0.260 BORE THERMOWELL	1	100752 100628
EY-2011/12	PILOT SOLENOID - c/w VALVE TRAIN (SY-2010)	2	423512	TI-2015	TEMPERATURE INDICATOR - MFR: TREND, 5" DIAL x 6" STEM, 0-250°F c/w 1" x 1/2" x 6", 0.260 BORE THERMOWELL	1	880834 608681
LG-2011	LEVEL GAUGE - SITE GLASS RED LINE 5/8" OD c/w LEVEL GAUGE VALVE SET, PENBERTHY N7A 1/2" MNPT	1	086702 552747	TC-2011	TEMPERATURE CONTROL - MFR: KIMRAY, MODEL NO.: HT-12 c/w 1" SS-12SS HCJ, KIMRAY SEPARABLE SOCKET	1	809330
LSL-2011	LEVEL SWITCH - MFR: SOR, MODEL NO.: 1510B-G2A-C-W9-ES-CS 2" NPT	1	914005	TIT-2011	TEMPERATURE TRANSMITTER - MFR: ROSEMOUNT, MODEL NO.: 644HAK6J6M5F6 c/w ROSEMOUNT TEMPERATURE THIN-FILM PLATINUM RTD SENSOR MODEL NO.: 0068N21C30A075T26E6	1	103291
PCV-2012	PRESSURE REGULATOR - MFR: FISHER, MODEL NO.: 627 c/w VALVE TRAIN (SY-2010)	1	423512	TIT-2014	TEMPERATURE TRANSMITTER - MFR: ROSEMOUNT, MODEL NO.: 644HAK6J6M5F6 c/w ROSEMOUNT TEMPERATURE THIN-FILM PLATINUM RTD SENSOR MODEL NO.: 0068N21C30A070T26E6	1	103290
PCV-2013	PRESSURE REGULATOR - MFR: FISHER, MODEL NO.: 67CFR c/w VALVE TRAIN (SY-2010)	1	423512	TSHH-2011	TEMPERATURE SWITCH - MFR: CCS, MODEL NO.: 6900TE c/w 1" SS-12SS HCJ, KIMRAY SEPARABLE SOCKET	1	271958
PCV-2014	PRESSURE REGULATOR - MFR: FISHER, MODEL NO.: 67CFR-362/SC TAPPED BONNET ADJUSTABLE OUTPUT RANGE, 1/4" NPT, 0-35 PSI	1	973858				
PCV-2015	PRESSURE REGULATOR - MFR: FISHER, MODEL NO.: 67CFR-601/SPEC TAPPED BONNET, STD TRIM, 0-125 PSI, 1/4" NPT	1	019755				
PCV-2016	SUPPLIED WITH CHOKE VALVE (PV-2011)	1	-				
PCV-2017	PRESSURE REGULATOR - MFR: FISHER, MODEL NO.: 67DFR 0-125 PSI, STD TRIM	1	101086				
PI-2011	PRESSURE INDICATOR - MFR: WIKA, MODEL NO.: 233.53 4" FACE, 1/2" MNPT, 0-5000 PSI, SS	1	-				
PI-2013	PRESSURE INDICATOR - MFR: WIKA, MODEL NO.: 233.53 4 1/2" FACE x 1/2" MNPT, 0-800 PSI	1	100690				
PI-2014/15	PRESSURE INDICATOR - MFR: WIKA, MODEL NO.: 233.53 4 1/2" FACE, 0-30 PSI	2	100688				
PI-2016/17/104	PRESSURE INDICATOR - c/w VALVE TRAIN (SY-2010)	3	423512				
PT-2011	PRESSURE TRANSMITTER - MFR: ROSEMOUNT, MODEL NO.: 2088G3S22A1M5C6	1	100613				
PSHH-2011	PRESSURE SWITCH HIGH - FIELD SET AT 14.9 PSI RISING c/w VALVE TRAIN (SY-2010)	1	423512				
PSLL-2011	PRESSURE SWITCH LOW - FIELD SET AT 3 PSI FALLING c/w VALVE TRAIN (SY-2010)	1	423512				
PSV-2010	PRESSURE RELIEF VALVE - MFR: FARRIS, SIZE: 1" 1500 ANSI x 1" 300 ANSI SET @ 2800 PSI, NACE	1	100537				
PSV-2012	PRESSURE RELIEF VALVE - MFR: FARRIS, SIZE: 1 1/2" 300 ANSI x 2" 150 ANSI SET @ 630 PSI, NACE	1	100557				

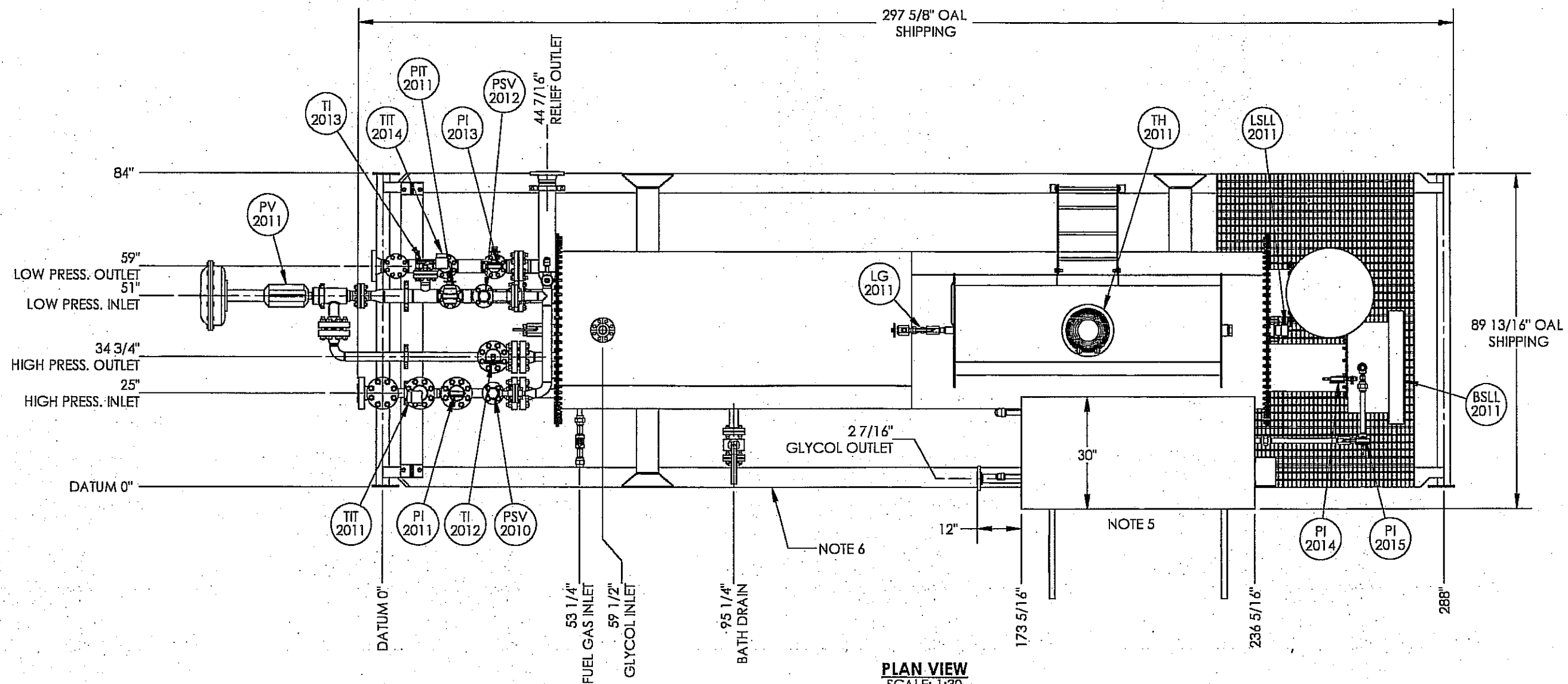
ORIGINAL AS BUILT

08122-6		BATH ASSEMBLY								ISSUED FOR CONSTRUCTION SIGNED: _____ DATE: _____ W.O.: 08122-001 S.O.: to 006 ALL DIMENSIONS IN INCHES	 NWP INDUSTRIES INC. Total oilfield supply. P.O. BOX 6280, INNISFAIL, AB T4G 1S9 PH: (403) 227-4100 FAX: (403) 227-4102	MURPHY OIL CORPORATION 1.0 MMBTU/HR LINE HEATER PACKAGE c/w 2"1500# x 3"300# SPLIT COILS PO# 54116050-S201 PIPING AND INSTRUMENTATION DIAGRAM		
08122-4		COIL ASSEMBLY												
08122-3		SKID ASSEMBLY												
08122-2		PIPING ASSEMBLY												
08122		GENERAL ARRANGEMENT		0	2011.07.26	JHK	BA	D	ISSUED FOR CONSTRUCTION			DWN: JHK	CHK: BA	APP: D
DOCUMENT NO		DESCRIPTION		REV	DATE	BY	CHK	APP				DATE: 11.07.26	DATE: July 28/11	DATE: July 28/2011
REFERENCE DRAWINGS				DRAWING REVISIONS										

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ORIGINAL AS BUILT

							ISSUED FOR CONSTRUCTION		 NWP INDUSTRIES INC. Total oilfield supply. P.O. BOX 6280, INNISFAIR, AB T4G 1S9 PH: (403) 227-4100 FAX: (403) 227-4102		MURPHY OIL CORPORATION 1.0 MMBTU/HR LINE HEATER PACKAGE c/w 2"1500# x 3"300# SPLIT COILS PO# 54116050-S201 PIPING AND INSTRUMENTATION DIAGRAM				
							SIGNED: _____								
							DATE: _____		THIS DRAWING IS PROPERTY OF NWP INDUSTRIES INC. AND MAY NOT BE REPRODUCED WITHOUT PERMISSION. THIS DRAWING MUST BE RETURNED UPON REQUEST.		DWN: JHK		CHK: 	APP: 	
							W.O.: 08122-001				DATE: 11.07.26		DATE: 	DATE: 	
							S.O.: to 006				SCALE: NTS		DWG: 08122-1		REV: 0
DOCUMENT NO	DESCRIPTION		REV	DATE	BY	CHK	APP					SHEET: 3 OF 3			
REFERENCE DRAWINGS			DRAWING REVISIONS					ALL DIMENSIONS IN INCHES							
08122-6	BATH ASSEMBLY														
08122-4	COIL ASSEMBLY														
08122-3	SKID ASSEMBLY														
08122-2	PIPING ASSEMBLY														
08122	GENERAL ARRANGEMENT		0	2011.07.26	JHK			ISSUED FOR CONSTRUCTION							



PLAN VIEW
SCALE: 1:30

AS BUILT
ORIGINAL

NOTES

1. 24 oz. PNEUMATIC TEST REQUIRED ON SHELL & FIRETUBE.
2. PIPE SUPPORTS WHERE REQUIRED.
3. SHIP LOOSE ITEMS TO BE BOXED AND SEALED PRIOR TO SHIPMENT.
4. PLUG ALL OUTLETS PRIOR TO SHIPMENT.
5. ENCLOSURE - MURPHY COLORS EXT.: TAN QC 8315
INT.: WHITE QC 8317
TO HAVE A SPLIT DOOR DESIGN FOR PROTECTION AGAINST HOT GLYCOL DURING OPERATION. SNIFFER PORT IN DOOR PANEL.
6. SKID - GLOSS BLACK
7. PIPING - TAN QC 8315
8. INSULATION REMOVED FOR ENCLOSURE HEAT.

SHIPPING DATA

OVERALL HEIGHT	9'-11 5/16"
OVERALL LENGTH	24'-9 1/4"
OVERALL WIDTH	7'-6 1/16"
APPROX. WEIGHT	11,000 LBS

LINEHEATER DESIGN DATA

HEAT MEDIUM REQUIREMENT:	-
PAINT:	UNINSULATED - (2) COAT CLOVERDALE CLOVACOAT INSULATED - (1) COATS CLOVERDALE CLOVACOAT 300 EPOXY ENAMEL, TAN QC 8315 STACK - HIGH HEAT BLACK
SURFACE PREPARATION:	SSPC-SP7-63 (BRUSH BLAST)
INSULATION:	1 1/2" MICROFLEX w/ 0.020 STUCCO EMBOSSED ALUMINUM TACKER c/w SS BANDING TO SHELL & EXP. TANK

DOCUMENT NO.	DESCRIPTION	REV	DATE	BY	CHK	APP	
08122-6	BATH ASSEMBLY						
08122-4	COIL ASSEMBLY						
08122-3	SKID ASSEMBLY						
08122-2	PIPING ASSEMBLY						
08122-1	PIPING AND INSTRUMENTATION DIAGRAM	0	2011.07.26	JHK	SL	APP	ISSUED FOR CONSTRUCTION
REFERENCE DRAWINGS		DRAWING REVISIONS					

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SIGNED: [Signature]
DATE: 08/22/2011
W.O.: 10-0006
S.O.: 10-0006
ALL DIMENSIONS IN INCHES

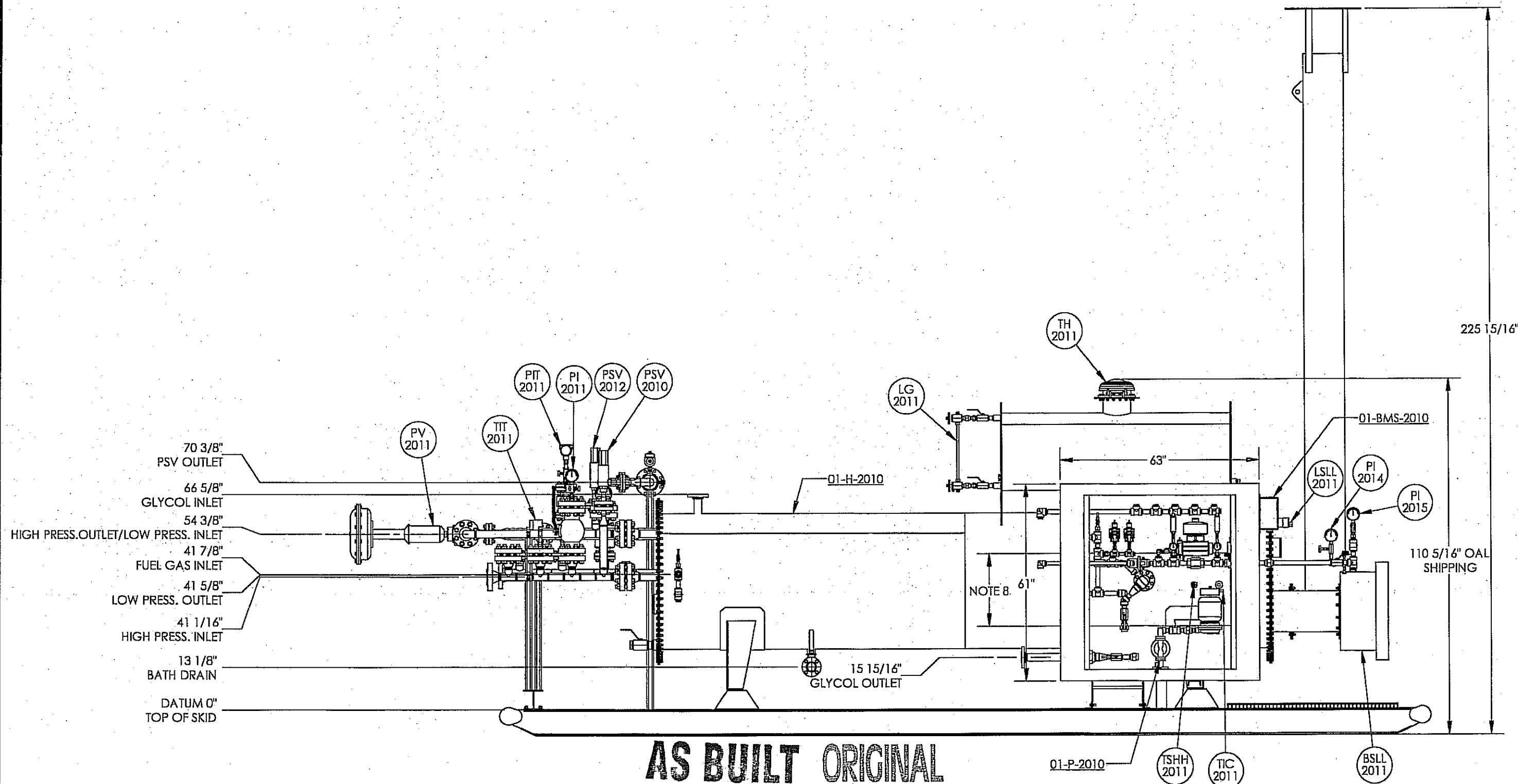


P.O. BOX 6280, INNISFAIL, AB T4G 1S9
PH: (403) 227-4100 FAX: (403) 227-4102

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MURPHY OIL CORPORATION
1.0 MMBTU/HR LINE HEATER PACKAGE
c/w 2" 1500# x 3" 300# SPLIT COIL
PO# 54116050-S201
GENERAL ARRANGEMENT

DWN: JHK	CHK: <u>SL</u>	APP: <u>APP</u>
DATE: 2011.07.26	DATE: <u>July 26/11</u>	DATE: <u>July 28/2011</u>
SCALE: 1:30	DWG: 08122	REV: 0
SHEET: 1 OF 3		



DOCUMENT NO.	DESCRIPTION	REV	DATE	BY	CHK	APP
08122-6	BATH ASSEMBLY					
08122-4	COIL ASSEMBLY					
08122-3	SKID ASSEMBLY					
08122-2	PIPING ASSEMBLY					
08122-1	PIPING AND INSTRUMENTATION DIAGRAM	0	2011.07.26	JHK	<i>[Signature]</i>	<i>[Signature]</i>
REFERENCE DRAWINGS		DRAWING REVISIONS				

**ISSUED FOR
CONSTRUCTION**

SIGNED: _____

DATE: _____

w.o. *08122-001*

s.o. *to 006*

ALL DIMENSIONS IN INCHES

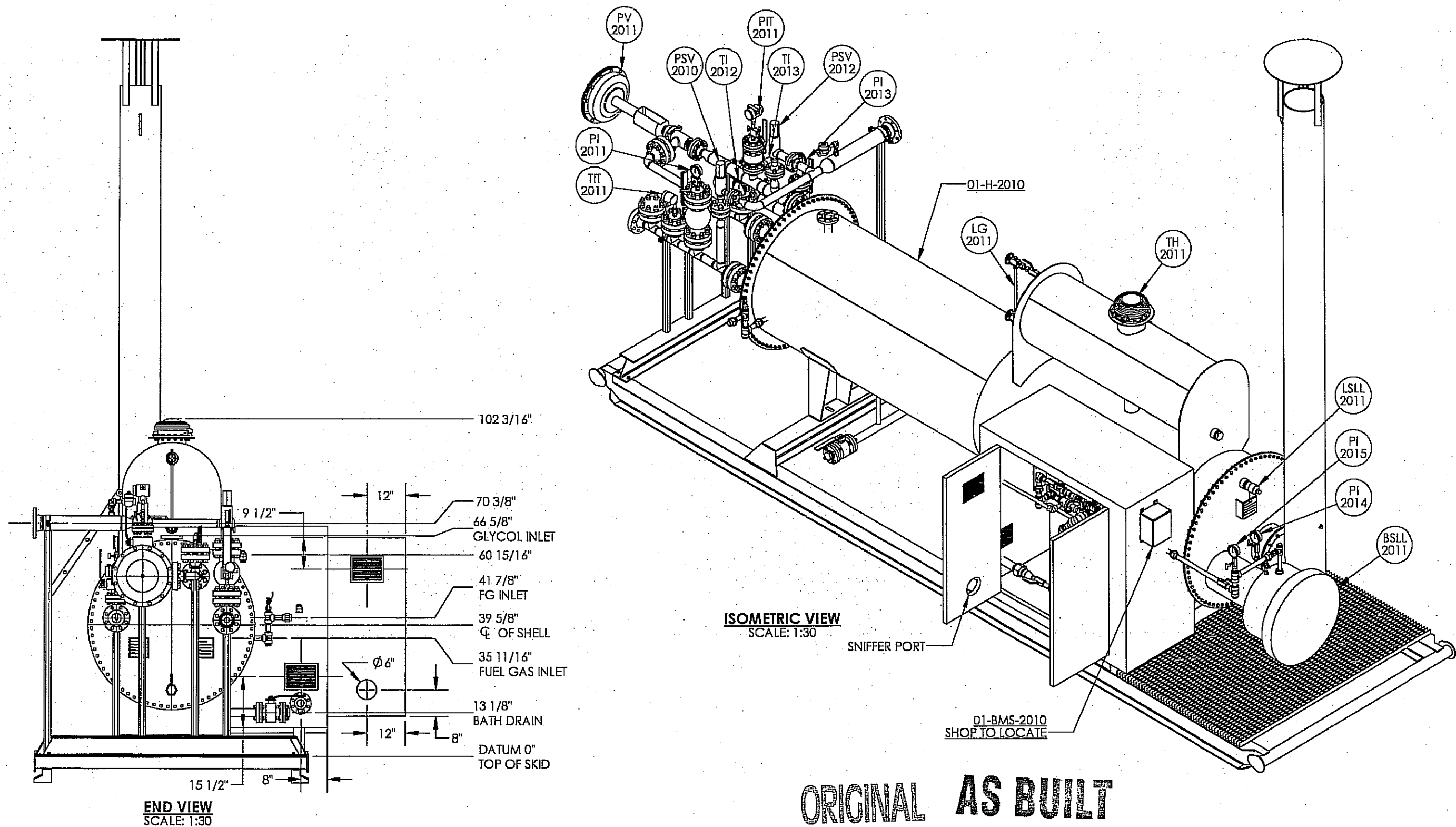


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PH: (403) 227-4100 FAX: (403) 227-4102

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MURPHY OIL CORPORATION
1.0 MMBTU/HR LINE HEATER PACKAGE
c/w 2" 1500# x 3" 300# SPLIT COIL
PO# 54116050-S201
GENERAL ARRANGEMENT

DWN: JHK	CHK: <i>[Signature]</i>	APP: <i>[Signature]</i>
DATE: 2011.07.26	DATE: <i>7/26/11</i>	DATE: <i>July 28/2011</i>
SCALE: 1:30	DWG: 08122	REV: 0
SHEET: 2 OF 3		



							ISSUED FOR CONSTRUCTION		 NWP INDUSTRIES INC. Total oilfield supply. P.O. BOX 6280, INNISFAIR, AB T4G 1S9 PH: (403) 227-4100 FAX: (403) 227-4102 THIS DRAWING IS PROPERTY OF NWP INDUSTRIES INC. AND MAY NOT BE REPRODUCED WITHOUT PERMISSION. THIS DRAWING MUST BE RETURNED UPON REQUEST.	MURPHY OIL CORPORATION 1.0 MMBTU/HR LINE HEATER PACKAGE c/w 2" 1500# x 3" 300# SPLIT COIL PO# 54116050-S201 GENERAL ARRANGEMENT		
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08122-4	COIL ASSEMBLY						DATE: _____			DATE: 2011.07.26	DATE: <i>Jul 28/11</i>	DATE: <i>July 28/2011</i>
08122-3	SKID ASSEMBLY						w.o. <i>08122-001</i>			SCALE: 1:30	DWG: 08122	REV: 0
08122-2	PIPING ASSEMBLY						s.o. <i>to 006</i>			SHEET: 3 OF 3		
08122-1	PIPING AND INSTRUMENTATION DIAGRAM	0	2011.07.26	JHK	<i>[Signature]</i>	<i>[Signature]</i>	ISSUED FOR CONSTRUCTION					
DOCUMENT NO.	DESCRIPTION	REV	DATE	BY	CHK	APP						
REFERENCE DRAWINGS							DRAWING REVISIONS					