



OIL & GAS DEVELOPMENT COMPANY LIMITED  
PROCUREMENT DEPARTMENT (LOCAL), ISLAMABAD  
SCHEDULE OF REQUIREMENT

1/72

Material :PCV FOR ACID GAS INCINERATION PACKAGE AMINE  
MODIFICATON

Due Date:

Tender Enquiry No: PROC-PROJ/17892/19

Bid Bond Value : 100000  
Attachment(if any) : YES

EVALUATION WILL BE CARRIED OUT ON FULL

Sr No	Description	Quantity	Make/Brand offered	Unit	Unit Price (PKR) Inclusive Of All Taxes Except GST	Unit Price (PKR) Inclusive of GST	Total Price (PKR) Inclusive of GST	Delivery Period Offered	deviation from Tender Spec. If Any
1	Pressure Control Valve as per Specifications attached	2		Number					

**Special Note:-** The prospective bidders also download the master set of Tender Document

- The prospective bidders may keep in touch with OGDCL web site for downloading the clarifications/amendments (if any) issued by OGDCL
- BID VALIDITY: 120 DAYS AFTER TECHNICAL BID OPENING DELIVERY LOCATION: KUNNAR PLANT, DELIVERY PERIOD: 5 MONTHS AFTER ISSUANCE OF LPO, PAYMENT TERM: 90% AFTER DELIVERY & 10% AFTER INSTALLATION

Discount (if any) shall only be entertained on Schedule of Requirement of Bidding Document (Financial Proposal). If the discount is mentioned elsewhere in the bid, the same shall not be entertained.



PROCUREMENT DEPARTMENT (LOCAL), ISLAMABAD  
SCHEDULE OF REQUIREMENT

2/12

For the Vendors/Contractors who opt to submit Bank Draft/Call Deposit/Pay order against Bid Bond/Performance Bond, our Accounts Department has finalized an arrangement for online payment to such Vendors/Contractors, which will be processed through (IBFT & LFT) for which following information is required:

i.	IBAN No. (International Bank Account Number 24 Digits)	
ii.	Vendor Name as per Title of their Bank Account	
iii.	Contact No.of Company's CEO/ Owner (Mobile & Landline)	
iv.	Bank Name.	
v.	Bank Branch Name and Code	

Name, Sign and Stamp of the authorized official of the Bidder(s) \_\_\_\_\_



**OIL & GAS DEVELOPMENT COMPANY LIMITED  
PROCUREMENT DEPARTMENT (LOCAL), ISLAMABAD**

**SCHEDULE OF REQUIREMENT**

**Mandatory Checklist**

3/12

Please confirm the compliance of the following mandatory information along with the bid(s) (failing which bids(s) will not be accepted)

Documents	To be Attached with the Technical/Financial Bids	Compliance	
		Yes <input type="checkbox"/>	No <input type="checkbox"/>
Original Bid Bond	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Copy of NTN Certificate	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Copy of GST Certificate	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Confirmation that the Firm is appearing on FBR's Active Taxpayer List	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly signed and stamped <b>Annexure-A (Un-priced)</b>	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly filled, signed and stamped <b>Annexure-B</b>	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly filled, signed and stamped <b>Annexure-D</b>	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly filled, signed and stamped <b>Annexure-L</b> on Company's Letterhead	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly signed and stamped <b>Annexure-M</b> on Company's Letterhead	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly signed and stamped <b>Annexure-N</b> on Non-Judicial Stamp Paper duly attested by Notary Public	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly filled, signed and stamped <b>Annexure-A (Priced)</b>	Financial Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly filled, signed and stamped <b>Annexure-C</b>	Financial Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly filled, signed and stamped <b>Annexure-E</b>	Financial Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>

**OIL & GAS DEVELOPMENT COMPANY LTD.****BILL OF QUANTITIES FOR PRESSURE CONTROL VALVE**

ITEM	MATERIAL DESIGNATION	QTY.	UNIT	SUPPLY		Remarks/ References
				Unit Price Ex-Project Site (In Local Currency i.e. Pak. Rs.)	Total Price Ex-Project Site (In Local Currency i.e. Pak. Rs.)	
<b>1.0</b>	<b>INSTRUMENTS</b>					
	SUPPLY (FACTORY CALIBRATED AND TESTED) FOLLOWING INSTRUMENT(S) AS PER INSTRUMENT DATA SHEET(S) COMPLETE IN ALL RESPECTS. THE PRICES QUOTED SHALL BE INCLUSIVE OF SUPPLY OF ALL REQUIRED MOUNTING AND INSTALLATION ACCESSORIES SUCH AS MOUNTING STANDS / SUPPORTS, STANCHION, CLAMPS, NUTS, BOLTS, BASE ETC.					
<b>1.1</b>	<b>INSTRUMENTS</b>					
a)	CONTROL VALVES WITH I/P POSITIONER	2	NO(S).			165-11-DSI-003, Rev. C 165-11-DSI-004, Rev. A A44-01-PRO-DWG-03 P&IDs, Rev.D A54-01-PRO-DWG-03 P&IDs, Rev.D
	<b>TOTAL PRICE</b>					

**NOTES:-**

- 1 TEST CERTIFICATES AND MTC'S OF ALL ITEMS (WHERE APPLICABLE) SHALL BE PROVIDED INCLUDING OPERATING & MAINTENANCE MANUALS.
- 2 THE CHARGES SHALL BE SUPPORTED BY VERIFIED QUOTATION OF INSPECTION AGENCY.



## Zishan Engineers (Pvt.) Ltd.

An ISO 9001-2015 certified company,  
47/F, Block 6, PECHS, Karachi-Pakistan  
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E-mail : [contact@zishanengineers.com](mailto:contact@zishanengineers.com)  
Web : [www.zishanengineers.com](http://www.zishanengineers.com)

Document No. 165-11-DSI-003

Revision C

Date 02-01-2020

Total Pages (inc front cover) 3





## OIL & GAS DEVELOPMENT COMPANY LTD.



### ACID GAS INCINERATOR PACKAGE FOR PC CONTRACTOR AT KPD-TAY GAS PROCESSING FACILITY

### DATA SHEET FOR CONTROL VALVE FOR AMINE TRAIN - 1



C	02-01-2020	Issued for Approval	AK	NAK	MM
B	01-01-2020	Issued for Approval	AK	NAK	MM
A	18-07-2019	Issued for Review	AK	NAK	MM
<b>Rev.</b>	<b>Date</b>	<b>Description</b>	<b>Prepared By</b>	<b>Checked By</b>	<b>Approved By</b>

Consultant				Data Sheet							
 <b>ZISHAN ENGINEERS (PVT.) LTD.</b>				DATA SHEET FOR CONTROL VALVE							
				Document No.		Revision		Date			
Client				165-11-DSI-003		C		02-01-2020			
 <b>OIL &amp; GAS DEVELOPMENT COMPANY LTD.</b>				Prepared By		Checked By		Approved By		Sheet	
				AK		NAK		MM		2 OF 3	
1	SERVICE CONDITIONS	Tag No.	Qty.	PV-4411 B				1			
2		Service	P&ID	V-4406 Split range pressure control (Process Note-1)				A44-01-PRO-DWG-03-09			
3		Fluid & State		Acid Gas & Gas							
4				Units	Max Flow	Nor. Flow	Min. Flow	Shut-off			
5		Flow Rate Gas		MMSCFD	11.41	10.37	5.18	TSO			
6		Flow Rate Liquid		bpd	-	-	-				
7		Inlet Pressure		psig	12 to 9.5						
8		Outlet Pressure		psig	2.8						
9		Inlet Temperature (Max)		°F	130						
10		Density (opr.)	lb/ft <sup>3</sup>	Viscosity	cP	0.16 / 0.0162					
11		MW		Sp. Heat Ratio							
12		Vap. Press. Pv		Compressibility							
13		Crit. Press.		Crit. Temp.		bara / deg C					
14		Calculated Cv		-	1072.362	972.708	442.472				
15		Selected Cv		-							
16		% Travel		-							
17		Predicted SPL		dBA	≤85	≤85	≤85				
18		Area Classification		class 1, division-1, Group C&D							
19											
20	LINE	Line Number		12"-44-WF-253-A6							
21		Line Size & Sch.		In	12" SCH 10S						
22				Out	12" SCH 10S						
23		Pipe Line Insulation		No							
24	Pipe material		150# 316L STAINLESS STEEL								
25	VALVE BODY AND BONNET	Type		Butterfly							
26		Size		10inch							
27		Max Press. / Temp.		50psig / 130 deg °F							
28		Mfr. & Model No.		VTA							
29		Body Material		A351 Gr. CF3M							
30		Bonnet Material		A351 Gr. CF3M							
31		Liner Material		N/A							
32		End Connection		ANSI 150 #, Flanged							
33		Flange Face Finish		RF							
34		End Exten. Material		A351 Gr. CF3M							
35	Flow Direction		N/A								
36	Bonnet Type		N/A								
37	Lube & Iso Valve		N/A								
38	Packing Material		Double PTFE#1								
39	Packing Type		Double Gland								
40	Colour		VTA								
41	TRIM	Type		Butterfly							
42		Size		VTA							
43		Rated Travel		VTA							
44		Characteristics		Eq %							
45		Balanced or Unba		N/A.							
46		Rated Cv		VTA							
47		Plug / Ball / Disk Material		A351 Gr. CF3M							
48		Seat Material		A479 Grade UNS S31600							
49		Cage / Guide Material		N/A							
50		Stem Material		S20910							
51	Leakage Class		Class IV as per ANSI								
52											
53	TESTS	Hydro Test		1.5 times Max. Pressure							
54		Leakage Test		As per ANSI / FCI 70.02							
55		Other Tests		N/A							
56		NACE Requirements		YES (MR-0175)							
57	<b>PROCESS NOTES</b>										
58	1	This valve is to be added to an existing control loop PT-4411 / PV-4411 such that to modify the existing loop to split control loop with the addition of this new control valve (PV-4411 B). Also refer P&ID A44-01-PRO-DWG-03-09 for further understanding.									
59	2	Vendor to select the output pressure as per it's actuator requirements.									
60											
61	ACTUATOR	Type		Pneumatic Diaphragm							
62		Mfr. & Model No.		VTA							
63		Size		VTA							
64		On-Off or Modulating		Modulating							
65		Spring Action		Direct							
66		Press Rating (MAWP)		VTA							
67		Min. Req'd Pressure		VTA							
68		Bench Range		VTA							
69		Actuator Orientation		Vertical Up							
70		Handwheel Type		N/A							
71		Air Failure Position		Fail open							
72		Colour		VTA							
73	POSITIONER	Type		Smart Electro-Pneumatic positioner							
74		Input	Output	4 - 20 mA.DC				VTS (Process Note-2)			
75		Direct or Reverse		Direct							
76		Air Supply	Min.	58psig							
77		Pressure	Max.	145psig							
78		Gauges		Req'd							
79		Cable Entry		M20x1.5(F)							
80		Split Range		YES							
81		Mfr. & Model No.		VTA							
82		Certification		EEx 'ia' IIBT4							
83	Type & Reset		N/A								
84	Body & Trim Material		N/A								
85	Mfr. & Model No.		N/A								
86	Coil rating		N/A								
87	Supply failure		N/A								
88	Cable Entry		N/A				N/A				
89	Electrical Certification	IP Rating	N/A								
90	Material		Aluminium alloy								
91	Filter	Drain	Req'd				Req'd				
92	Range	Conn.	0-60 psig (VTC)				1/4" NPTF				
93	Gauge		Req'd								
94	Mfr. & Model No.		VTA								
95	Qty		VTA								
96	Tubing nominal size		VTA								
97	Tubing and fitting matl		316SS								

Consultant	Data Sheet		
 ZISHAN ENGINEERS (PVT.) LTD.	DATA SHEET FOR CONTROL VALVE		
	Document No.	Revision	Date
Client	165-11-DSI-003	C	02-01-2020
 OIL & GAS DEVELOPMENT COMPANY LTD.	Prepared By	Checked By	Approved By
	AK	NAK	MM
			Sheet
			3 OF 3

**NOTES:**

- 1 VTA MEANS "VENDOR TO ADVISE"
- 2 CONTROL VALVE SHALL BE PROVIDED AS COMPLETE ASSEMBLIES, WITH INTEGRAL I/P POSITIONER AND ACTUATOR.
- 3 THE DIRECTION OF FLOW SHALL BE CLEARLY MARKED ON THE VALVE BODY.
- 4 EACH VALVE SHALL BE PROVIDED WITH TAG ATTACHED TO THE INSTRUMENT.
- 5 CONTROL VALVE SIZING CALCULATIONS WILL BE IN ACCORDANCE WITH EITHER ISA S75.01 OR IEC 60534  
NOISE REDUCING TRIMS WILL BE USED TO ENSURE THAT CONTROL VALVE NOISE LEVELS DO NOT EXCEED 85 DB (A) AT 1 METER FROM THE VALVE DURING NORMAL OPERATION OR EXCEED 110 DB (A) AT 1 METER FROM THE VALVE DURING ABNORMAL OPERATION (E.G. FLARING OR BLOWDOWN).
- 6
- 7 THE VALVE CV WILL BE KEPT BASED ON WORST CASE FLOW CONDITIONS (80% VALVE OPENING AT MAXIMUM CONDITIONS).
- 8 IP 56 SHALL BE PROVIDED AS MINIMUM FOR ALL CONTROL VALVES.
- 9 NACE MR-0175 shall be considered for materials
- 10 GAS COMPOSITION:

Component	Mole Fractions
H <sub>2</sub> O	0.0236
CO <sub>2</sub>	0.9727
H <sub>2</sub> S	0.0012
Methane	0.0012
Ethane	0.0002
Propane	0.0001
n-Butane	0.0000
n-Pentane	0.0010



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Document No.	165-11-DSI-004
Revision	A
Date	02-01-2020
Total Pages (inc front cover)	3



## OIL & GAS DEVELOPMENT COMPANY LTD.



### ACID GAS INCINERATOR PACKAGE FOR PC CONTRACTOR AT KPD-TAY GAS PROCESSING FACILITY



### DATA SHEET FOR CONTROL VALVE FOR AMINE TRAIN - 2



A	02-01-2022	Issued for Approval	AK	NAK	MM
<b>Rev.</b>	<b>Date</b>	<b>Description</b>	<b>Prepared By</b>	<b>Checked By</b>	<b>Approved By</b>



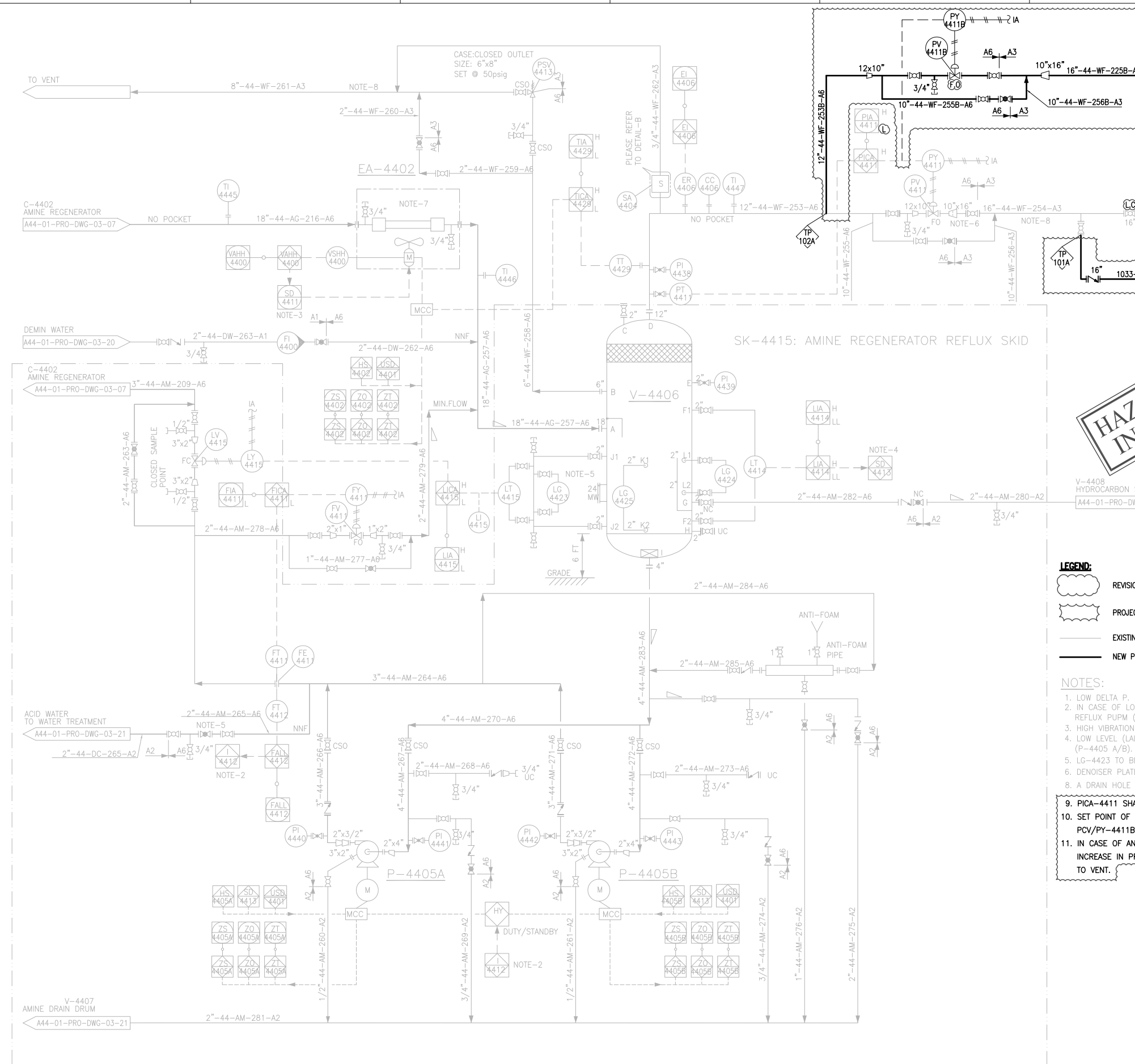
Consultant				Data Sheet					
 <b>ZISHAN ENGINEERS (PVT.) LTD.</b>				<b>CONTROL VALVE FOR AMINE TRAIN - 2</b>					
				<b>Document No.</b>		<b>Revision</b>		<b>Date</b>	
 <b>OIL &amp; GAS DEVELOPMENT COMPANY LTD.</b>				165-11-DSI-004		A		02-01-2020	
				<b>Prepared By</b>		<b>Checked By</b>		<b>Approved By</b>	
AK		NAK		MM		2 OF 3			
1	Tag No.	Qty.	<b>PV-5411 B</b>				<b>1</b>		
2	Service	P&ID	V-5406 Split range pressure control (Process Note-1)				A54-01-PRO-DWG-03-09		
3	Fluid & State		Acid Gas & Gas						
4			<b>Units</b>	<b>Max Flow</b>	<b>Nor. Flow</b>	<b>Min. Flow</b>	<b>Shut-off</b>		
5	Flow Rate Gas		MMSCFD	11.41	10.37	5.18	TSO		
6	Flow Rate Liquid		bpd	-	-	-			
7	Inlet Pressure		psig	12 to 9.5					
8	Outlet Pressure		psig	2.8					
9	Inlet Temperature (Max)		°F	130					
10	Density (opr.)	lb/ft <sup>3</sup>	Viscosity	cP		0.16/ 0.0162			
11	MW		Sp. Heat Ratio		-				
12	Vap. Press. Pv		Compressibility		1.67				
13	Crit. Press.		Crit. Temp.		- / -				
14	Calculated Cv		-	1072.362	972.708	442.472			
15	Selected Cv		-						
16	% Travel		-						
17	Predicted SPL		dBA	≤85	≤85	≤85			
18	Area Classification		class 1, division-1, Group C&D						
19									
20	Line Number		12" -54-WF-253-A6		61	Type	Pneumatic Diaphragm		
21	Line Size & Sch.		In	12" SCH 10S	62	Mfr. & Model No.	VTA		
22			Out	12" SCH 10S	63	Size	VTA		
23	Pipe Line Insulation		No		64	On-Off or Modulating	Modulating		
24	Pipe material		150# 316L STAINLESS STEEL		65	Spring Action	Direct		
25	Type		Butterfly		66	Press Rating (MAWP)	VTA		
26	Size		10inch		67	Min. Req'd Pressure	VTA		
27	Max Press. / Temp.		50psig / 130 deg °F		68	Bench Range	VTA		
28	Mfr. & Model No.		VTA		69	Actuator Orientation	Vertical Up		
29	Body Material		A351 Gr. CF3M		70	Handwheel Type	N/A		
30	Bonnet Material		A351 Gr. CF3M		71	Air Failure Position	Fail open		
31	Liner Material		N/A		72	Colour	VTA		
32	End Connection		ANSI 150 # , Flanged		73	Type	Smart Electro-Pneumatic positioner		
33	Flange Face Finish		RF		74	Input	Output	4 - 20 mA.DC VTS (Process Note-2)	
34	End Exten. Material		A351 Gr. CF3M		75	Direct or Reverse	Direct		
35	Flow Direction		N/A		76	Air Supply	Min.	58psig	
36	Bonnet Type		N/A		77	Pressure	Max.	145psig	
37	Lube & Iso Valve		N/A		78	Gauges	Req'd		
38	Packing Material		Double PTFE#1		79	Cable Entry	M20x1.5(F)		
39	Packing Type		Double Gland		80	Split Range	YES		
40	Colour		VTA		81	Mfr. & Model No.	VTA		
41	Type		Butterfly		82	Certification	EEx 'ia' IIBT4		
42	Size		VTA		83	Type & Reset	N/A		
43	Rated Travel		VTA		84	Body & Trim Material	N/A		
44	Characteristics		Eq %		85	Mfr. & Model No.	N/A		
45	Balanced or Unba		N/A.		86	Coil rating	N/A		
46	Rated Cv		VTA		87	Supply failure	N/A		
47	Plug / Ball / Disk Material		A351 Gr. CF3M		88	Cable Entry	N/A	N/A	
48	Seat Material		A479 Grade UNS S31600		89	Electrical Certification	IP Rating	N/A	
49	Cage / Guide Material		N/A		90	Material	Aluminium alloy		
50	Stem Material		S20910		91	Filter	Drain	Req'd Req'd	
51	Leakage Class		Class IV as per ANSI		92	Range	Conn.	0-60 psig (VTC) 1/4" NPTF	
52					93	Gauge	Req'd		
53	Hydro Test		1.5 times Max. Pressure		94	Mfr. & Model No.	VTA		
54	Leakage Test		As per ANSI / FCI 70.02		95	Qty	VTA		
55	Other Tests		N/A		96	Tubing nominal size	VTA		
56	NACE Requirements		YES (MR-0175)		97	Tubing and fitting matl	316SS		
57	<b>PROCESS NOTES</b>								
58	1	This valve is to be added to an existing control loop PT-5411 / PV-5411 such that to modify the existing loop to split control loop with the addition of this new control valve (PV-5411 B). Also refer P&ID A54-01-PRO-DWG-03-09 for further understanding.							
59	2	Vendor to select the output pressure as per it's actuator requirements.							
60									

Consultant	Data Sheet		
 ZISHAN ENGINEERS (PVT.) LTD.	CONTROL VALVE FOR AMINE TRAIN - 2		
	Document No.	Revision	Date
Client	165-11-DSI-004	A	02-01-2020
 OIL & GAS DEVELOPMENT COMPANY LTD.	Prepared By	Checked By	Approved By
	AK	NAK	MM
			3 OF 3

**NOTES:**

- 1 VTA MEANS "VENDOR TO ADVISE"
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- 3 THE DIRECTION OF FLOW SHALL BE CLEARLY MARKED ON THE VALVE BODY.
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NOISE REDUCING TRIMS WILL BE USED TO ENSURE THAT CONTROL VALVE NOISE LEVELS DO NOT EXCEED 85 DB (A) AT 1 METER FROM THE VALVE DURING NORMAL OPERATION OR EXCEED 110 DB (A) AT 1 METER FROM THE VALVE DURING ABNORMAL OPERATION (E.G. FLARING OR BLOWDOWN).
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- 7 THE VALVE CV WILL BE KEPT BASED ON WORST CASE FLOW CONDITIONS (80% VALVE OPENING AT MAXIMUM CONDITIONS).
- 8 IP 56 SHALL BE PROVIDED AS MINIMUM FOR ALL CONTROL VALVES.
- 9 NACE MR-0175 shall be considered for materials
- 10 GAS COMPOSITION:

Component	Mole Fractions
H <sub>2</sub> O	0.0236
CO <sub>2</sub>	0.9727
H <sub>2</sub> S	0.0012
Methane	0.0012
Ethane	0.0002
Propane	0.0001
n-Butane	0.0000
n-Pentane	0.0010



HAZOP COMMENTS INCORPORATED

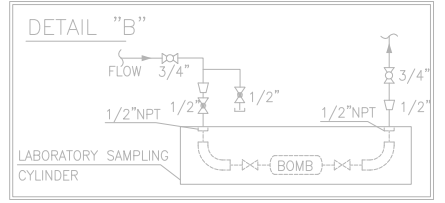
EA-4402 REFLUX CONDENSER		
PRESSURE psig	DESIGN	50
	OPERATING	12.5
TEMPERATURE ° F	DESIGN	250
	OPERATING IN/OUT	210/130
DUTY.	MMBTU/HR	19.56

P-4405 A/B AMINE REGENERATOR REFLUX PUMPS	
FLOW, GPM	36
DIFFERENTIAL PRESSURE, PSI	68
MOTOR POWER, KW	5.5

V-4406 AMINE REGENERATOR REFLUX DRUM		
PRESSURE psig	DESIGN	50
	OPERATING	12
TEMPERATURE ° F	DESIGN	250
	OPERATING	130
INTERNAL DIAMETER, ft	6.5	
LENGTH(TL/TL), ft	12	
INSULATION	NO	

- LEGEND:**
- REVISION
  - PROJECT SCOPE
  - EXISTING
  - NEW PROPOSED

- NOTES:**
1. LOW DELTA P.
  2. IN CASE OF LOW FLOW FALL-4412, SPARE AMINE REGENERATOR REFLUX PUMP (P-4405 A/B) SHALL START AUTOMATICALLY.
  3. HIGH VIBRATION VAHH-4400 SHALL STOP REFLUX CONDENSER (EA-4402).
  4. LOW LEVEL (LALL-4414) SHALL TRIP AMINE REGENERATOR REFLUX PUMPS (P-4405 A/B).
  5. LG-4423 TO BE READABLE FROM GLOBE VALVE.
  6. DENOISER PLATE.
  7. A DRAIN HOLE OF 1/2" SHOULD BE PROVIDED AT THE LOW POINT.
  8. PICA-4411 SHALL BE CONFIGURED AS SPLIT RANGE CONTROLLER.
  9. SET POINT OF PY-4411 IS 12 PSIG. PCV/PY-4411 SHALL MODULATE TO MAINTAIN THE SET PRESSURE OF 12 PSIG. WHILE PCV/PY-4411B SHALL REMAIN CLOSE.
  10. IN CASE OF ANY INADVERTENT CLOSURE OF MANUAL VALVE, SHUTDOWN VALVE AT DOWNSTREAM OF PCV-4411 WHICH MAY CAUSES INCREASE IN PRESSURE. IF PRESSURE INCREASES ABOVE 12 PSIG, PCV/PY-4411B SHALL OPEN TO RELIEF THE EXCESSIVE PRESSURE TO VENT.



REV.	DATE	DESCRIPTION OF REVISION	DRAWN	CHECKED	APPR.
D	02-01-2020	HAZOP COMMENTS INCORPORATED	UHS	RA	MM
C	19-07-2019	ISSUED FOR APPROVAL	UHS	RA	MM
B	17-05-2019	ISSUED FOR APPROVAL	UHS	RA	MM
A	06-05-2019	ISSUED FOR REVIEW	UHS	RA	MM

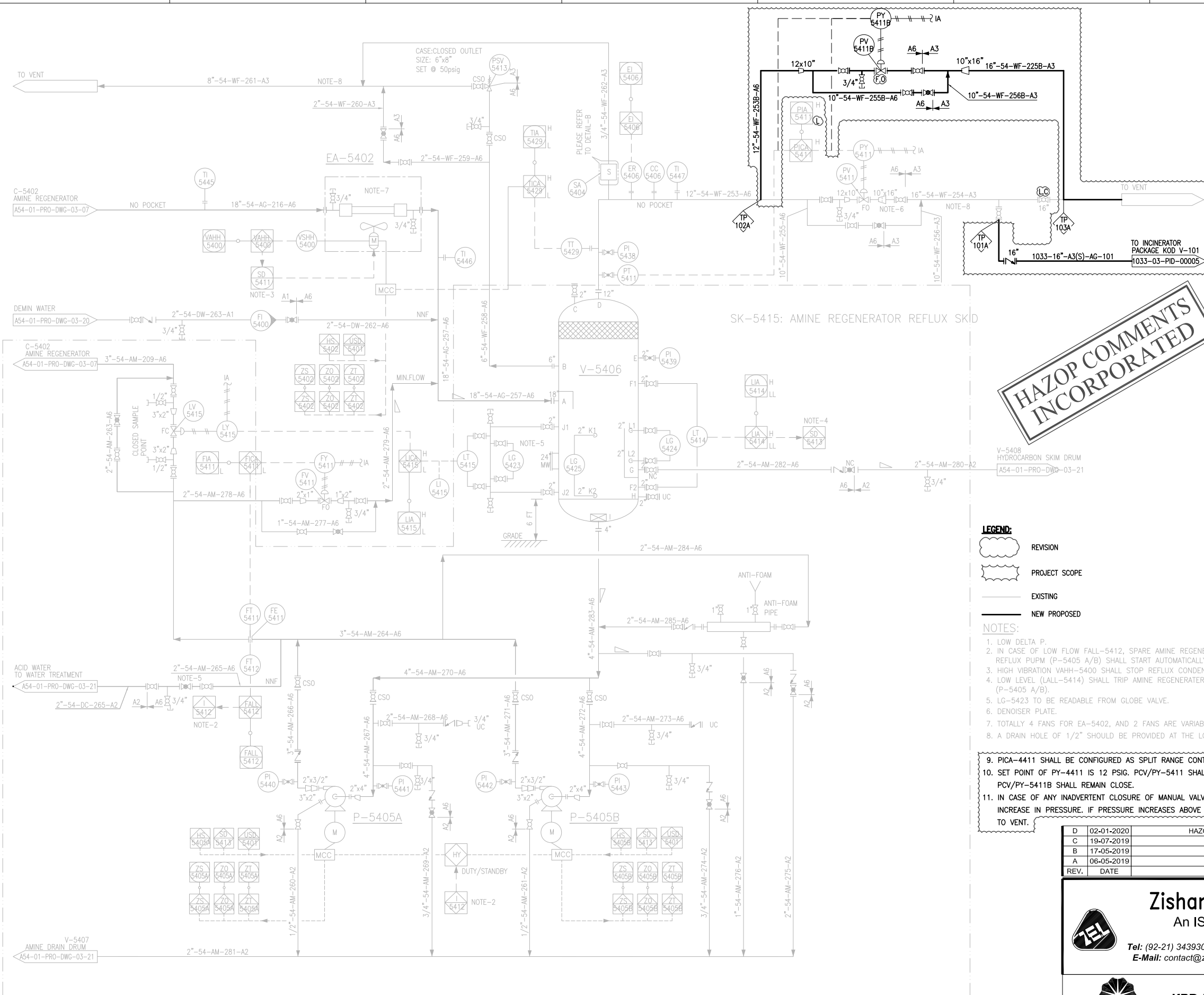
**Zishan Engineers (Pvt.) Ltd.**  
An ISO 9001-2015 certified company  
47/F Block 6, PECHS, Karachi-Pakistan  
Tel: (92-21) 34393045-48, & 34310151-54, Fax: (92-21) 34533430 & 34510156  
E-Mail: contact@zishanengineers.com Website: www.zishanengineers.com

**KPD-TAY Integrated Development Project Phase-II**  
Xinjiang Petroleum Investigation Design and Research Institute (Co.,Ltd.)  
**PROC-FC/CB/PROJ-667/767321/2013**

REV.	DATE	DESCRIPTION OF REVISION	DRAWN	CHECKED	REVIEWED	APPROVED
F0	25-08-2015	AS-BUILT	WJH	ZY	SQ	GJF
Z0	03-08-2015	REVISED FOR REVIEW	WJH	ZY	SQ	GJF
C0	06-05-2014	FOR CONSTRUCTION	WJH	ZY	SQ	GJF

PIPNG & INSTRUMENT DIAGRAM		DWG NO. A44-01-PRO-DWG-03-09	
AMINE REGENERATOR REFLUX PUMPS		SCALE	SIZE PROJECT NO. SHEET
(TRAIN-1/UNIT-44)		-	A3 FPA13013D 1/1

MAJOR SIGNATURE DATE



**HAZOP COMMENTS INCORPORATED**

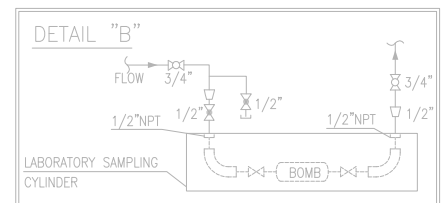
EA-5402 REFLUX CONDENSER		
PRESSURE psig	DESIGN	50
	OPERATING	12.5
TEMPERATURE ° F	DESIGN	250
	OPERATING IN/OUT	210/130
DUTY	MMBTU/HR	19.56

P-5405 A/B AMINE REGENERATOR REFLUX PUMPS	
FLOW, GPM	36
DIFFERENTIAL PRESSURE, PSI	68
MOTOR POWER, KW	5.5

V-5406 AMINE REGENERATOR REFLUX DRUM		
PRESSURE psig	DESIGN	50
	OPERATING	12
TEMPERATURE ° F	DESIGN	250
	OPERATING	130
INTERNAL DIAMETER, ft		6.5
LENGTH(TL/TL), ft		12
INSULATION		NO

- LEGEND:**
- REVISION
  - PROJECT SCOPE
  - EXISTING
  - NEW PROPOSED

- NOTES:**
1. LOW DELTA P.
  2. IN CASE OF LOW FLOW FALL-5412, SPARE AMINE REGENERATOR REFLUX PUMP (P-5405 A/B) SHALL START AUTOMATICALLY.
  3. HIGH VIBRATION VAHH-5400 SHALL STOP REFLUX CONDENSER (EA-5402).
  4. LOW LEVEL (LALL-5414) SHALL TRIP AMINE REGENERATOR REFLUX PUMPS (P-5405 A/B).
  5. LG-5423 TO BE READABLE FROM GLOBE VALVE.
  6. DENOISER PLATE.
  7. TOTALLY 4 FANS FOR EA-5402, AND 2 FANS ARE VARIABLE SPEED CONTROLLED BY THE OUTLET TEMPERATURE.
  8. A DRAIN HOLE OF 1/2" SHOULD BE PROVIDED AT THE LOW POINT.
  9. PICA-4411 SHALL BE CONFIGURED AS SPLIT RANGE CONTROLLER.
  10. SET POINT OF PY-4411 IS 12 PSIG. PCV/PY-5411 SHALL MODULATE TO MAINTAIN THE SET PRESSURE OF 12 PSIG. WHILE PCV/PY-5411B SHALL REMAIN CLOSE.
  11. IN CASE OF ANY INADVERTENT CLOSURE OF MANUAL VALVE, SHUTDOWN VALVE AT DOWNSTREAM OF PCV-5411 WHICH MAY CAUSES INCREASE IN PRESSURE. IF PRESSURE INCREASES ABOVE 12 PSIG, PCV/PY-5411B SHALL OPEN TO RELIEF THE EXCESSIVE PRESSURE TO VENT.



REV.	DATE	DESCRIPTION OF REVISION	DRAWN	CHECKED	APPR.
D	02-01-2020	HAZOP COMMENTS INCORPORATED	UHS	RA	MM
C	19-07-2019	ISSUED FOR APPROVAL	UHS	RA	MM
B	17-05-2019	ISSUED FOR APPROVAL	UHS	RA	MM
A	06-05-2019	ISSUED FOR REVIEW	UHS	RA	MM

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**PROC-FC/CB/PROJ-667/767321/2013**

REV.	DATE	DESCRIPTION OF REVISION	DRAWN	CHECKED	REVIEWED	APPROVED
FO	25-08-2015	AS-BUILT	WJH	ZY	SQ	GJF
CO	06-05-2014	FOR CONSTRUCTION	WJH	ZY	SQ	GJF
O	04-11-2013	ISSUED FOR HAZOP	WJH	ZY	SQ	GJF

PIPNG & INSTRUMENT DIAGRAM		DWG NO.	A54-01-PRO-DWG-03-09		
AMINE REGENERATOR REFLUX PUMPS		SCALE	SIZE	PROJECT NO.	SHEET
(TRAIN-2/UNIT-54)		-	A3	FPA13013D	1/1