



Projects & Technology SCiN Design Office (SCiN-DO)

CTR Catalogue

Project	FEED for EPU Phase 2
Originating Company	SCiN Engineering Design Office
Document Title	CTR Catalogue
Document Number	XXXXXX-SEDO-XXXXXX-FA6834-00001
Document Revision	R01
Document Status	Issued for Review
Originator / Author	Abraham Imarhiagbe
Security Classification	Restricted
ECCN	EAR 99
Issue Date	24-Dec-19
<i>Revision History is shown next page</i>	

Rev Status	Date	Description	Originator	Checker	Approver
R01	24-Dec-19	Issued for Review	Abraham Imarhiagbe	Olukayode Akinyemi	Jide Odunlami

Restricted

ECCN: EAR 99 De Minimis

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ADDITIONAL AGREEMENT/APPROVAL RECORD				
Party	Ref Indicator	Name	Sign	Date

Guidelines:

1. Please consider using hyperlink rather than embedding large documents.
2. Fonts must not be altered from the standard styles- (see SEDO Word Document Template).
3. Graphs to be without borders.
4. Use non-breaking spaces between numbers and units Ctrl+Shift+Space
5. Special Characters such as degree (°C) refer to: <http://www.alt-codes.net/>
6. Maps to follow Shell mapping standards.
7. Figures & tables to be incorporated in the text, with attachments if a larger figure will benefit
8. Units are Oil field Metric. If Oil field standard units are used (e.g. ft and psi, then the metric
9. Use m3 rather than bbl/ft3

Revision Philosophy:

- a. All FEED documents for review shall be issued at R01, with subsequent R02, R03, etc as
- b. All documents approved for issue, or approved for design shall be issued at A01 with subsequent A02, A03, etc as required. (Management of Change is required for A02, A03, etc).
- c. All Detailed Design documents for review shall be issued at D01, with subsequent D02, D03, etc as required.
- d. All documents approved for construction shall be issued at C01 with subsequent C02, C03, etc as required. (Management of Change is required for C02, C03, etc).
- e. All approved "As Built" documents shall be issued at Z01, with subsequent Z02, Z03, etc as required. (Use versions Z01.1, Z01.2, Z01.3, etc to review "As Built" document to Z02).

** Note that your document, the document title shall substitute the title of this document which is- "SED0 Excel Document Template/ Cover Page" wherever it exists.*

Revision History

Rev No	Date of issue	Reason for / Change

SORTED BY DISCIPLINE

Discipline	CODE
Business Support	YA
Civil Structural	CX
Electrical	EA
HSE	HX
Instruments	IN
Information Management (inc DCC)	JA
Leadership Team	AA
Materials / Corrosion	RA
Mechanical (Static, Rotating & Piping)	MX
Pipelines	LA
Planning Engineer	FA
Process	PX
Project Engineer	AA
Project Leader	AA
Quality Assurance	QA
User Defined	X

SORTED BY CODE

Discipline	CODE
Change Control Manager	AA
Leadership Team	AA
Project Engineer	AA
Project Leader	AA
Civil Structural	CX
Electrical	EA
Planning Engineer	FA
HSE	HX
Instruments	IN
Pipelines	LA
Mechanical (Static, Rotating & Piping)	MX
Process	PX
Quality Assurance	QA
Materials / Corrosion	RA
User Defined	X
Business Support	YA

FEED for EPU Phase 2						
DISCIPLINES				TOTAL		
	Engineer Hours	Designer Hours	Total Hours	Manhours	Amount (NGR)	Amount (USD)
Process	1800	774	2574	2,574	28,246,877	
Technical Safety	882	72	954	954	10,665,150	
Mechanical	1064	752	1816	1,816	19,740,770	
PACO	1277	90	1367	1,367	15,294,258	
Telecoms	750	364	1114	1,114	12,198,473	5,000
MCI	917	0	917	917	10,314,651	
Electrical	481	86	567	567	6,299,302	
Civil	1741	1552	3293	3,293	35,624,589	
Pipeline	653	260	913	913	10,035,194	
Project Engineering	459	0	459	459	5,164,327	
Planning	482	0	482	482	5,421,660	
QA	297	0	297	297	3,340,732	
DCC	616	0	616	616	5,815,136	
DIRECT TOTAL BUDGET	11,419	3,950	15,369	15,369	168,161,118	5,000
PROJECT SUPPORT SERVICES				1,076	9,178,175	
PROJECT MANAGEMENT				538	4,589,087	
IN, PDMS Administrator, REPRODUCTION, STATIONARIES ETC				538	4,589,087	
DIRECT + SUPPORT CHARGES					177,339,292	
10% OVERHEAD					17,733,929	
3RD PARTY COST					-	5,000
TOTAL COST ESTIMATE					195,073,222	5,000

<u>Discipline Summary</u>					
<u>FEED for EPU Phase 2</u>					
	<u>Engineer Hours</u>	<u>Designer Hours</u>	<u>Total Hours</u>	<u>3rd Party</u>	<u>T&Es</u>
<u>PROCESS</u>	<u>1800</u>	<u>774</u>	<u>2574</u>	<u>\$ -</u>	<u>\$ -</u>
<u>TECHNICAL SAFETY</u>	<u>882</u>	<u>72</u>	<u>954</u>	<u>\$ -</u>	<u>\$ -</u>
<u>MECHANICAL</u>	<u>1064</u>	<u>752</u>	<u>1816</u>	<u>\$ -</u>	<u>\$ -</u>
<u>MATERIALS \$ CORROSSION</u>	<u>917</u>	<u>0</u>	<u>917</u>	<u>\$ -</u>	<u>\$ -</u>
<u>PACO</u>	<u>1277</u>	<u>90</u>	<u>1367</u>	<u>\$ -</u>	<u>\$ -</u>
<u>TELECOMS</u>	<u>750</u>	<u>364</u>	<u>1114</u>	<u>\$ 5,000</u>	<u>\$ -</u>
<u>ELECTRICAL</u>	<u>481</u>	<u>86</u>	<u>567</u>	<u>\$ -</u>	<u>\$ -</u>
<u>CIVIL</u>	<u>1741</u>	<u>1552</u>	<u>3293</u>	<u>\$ -</u>	<u>\$ -</u>
<u>PIPELINE</u>	<u>653</u>	<u>260</u>	<u>913</u>	<u>\$ -</u>	<u>\$ -</u>
<u>PROJECT ENGINEERING</u>	<u>459</u>	<u>0</u>	<u>459</u>	<u>\$ -</u>	<u>\$ -</u>
<u>PLANNING</u>	<u>482</u>	<u>0</u>	<u>482</u>	<u>\$ -</u>	<u>\$ -</u>
<u>DCC</u>	<u>616</u>	<u>0</u>	<u>616</u>	<u>\$ -</u>	<u>\$ -</u>
<u>QA</u>	<u>297</u>	<u>0</u>	<u>297</u>	<u>\$ -</u>	<u>\$ -</u>
	<u>11419</u>	<u>3950</u>	<u>15369</u>	<u>\$ 5,000</u>	<u>\$ -</u>

FEED for EPU Phase 2 : PROJECT MANAGEMENT

	<i><u>Engineer Hours</u></i>	<i><u>Designer Hours</u></i>	<i><u>3rd Party</u></i>	<i><u>T&E's</u></i>
<i><u>AA001 Project Engineering</u></i>	<i><u>459</u></i>	<i><u>0</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>
<i><u>FA001 Project Planning Control & Reporting</u></i>	<i><u>482</u></i>	<i><u>0</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>
<i><u>JA001 Project IM and DCC Support Services</u></i>	<i><u>616</u></i>	<i><u>0</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>
<i><u>QA001 Project Quality Support Services</u></i>	<i><u>297</u></i>	<i><u>0</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>
	<i><u>1854</u></i>	<i><u>0</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>

SEDO COST - TIME - RESOURCE (CTR) SHEET

Client OU	Shell Petroleum Development Company (SPDC)		CTR No.	AA 001
Project Title	FEED for EPU Phase 2		Project No.	XXX
Sub-Project/Phase	FEED		Discipline	PROJECT MANAGEMENT
CTR Title	Project Engineering			
Schedule Start (Monday)		Schedule Finish (Friday)	Duration Weeks	

INPUTS / DEPENDENCIES

Source / Discipline	Description
	BfD
	Contracting Strategy
	Time Writing Reports
	Document Status Report
	Pre-FEED Deliverables
	PCAP

ACTIVITIES (inc. input to other discipline's deliverables)	MAN-HOURS	COSTS (\$-USD)
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Description	Eng	Design	3rd P	T&E
Project Leadership Scope	80			
Review & Comment on Work Request/BFD	1			
Attend Project Kick-off /Scope Clarifications Meeting	2			
Site Visit	24			
Data Gathering	8			
Input to CTR Catalogue	8			
Challenge Session	2			
Inputs Deliverables Review Matrix	2			
Input to Deliverables Register	8			
Input to Project Schedule	8			
Attend Weekly Project Progress Meeting	40			
Inputs to Weekly Progress Update	20			
General Discipline Administration	8			
Conduct Inter Discipline Checks (IDCs)	16			
Attend Health Checks & Project Internal Audit	8			
Attend HAZID Workshop	8			
Process Design Review - Roundtable	8			
Attend Bow-Tie	8			
Attend HAZOP Workshop	24			
Peer Review	8			
Attend SIL Workshop	16			
Attend SAFOP Workshop	8			
Site Selection workshop	8			
Constructability review workshop	8			
PDMS Model Review Workshop	8			
Attend Independent Design Review	16			
Interfaces with third party and stakeholders	8			
Inputs to Project Handover Documentation & Close-Out Report	4.0			

DELIVERABLES (that are your discipline's responsibility)	MAN-HOURS	COSTS (\$-USD)
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[illegible]

NOTES / ASSUMPTIONS	OVERALL TOTALS	459.0	0.0	\$ -	\$ -
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OVERALL TOTALS	459.0	0.0	\$ -	\$ -
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459.0	0.0	\$	-	\$	-
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RESPONSIBLE PARTIES	
1	2
3	4
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9	10
11	12
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97	98
99	100

Prepared by	Olukayode Akinyemi	Discipline Check	Jide Odunlami	Date :	24 Dec 19	Revision :	R01
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SEDO COST - TIME - RESOURCE (CTR) SHEET

Client OU	Shell Petroleum Development Company (SPDC)		CTR No.		FA 001
Project Title	FEED for EPU Phase 2		Project No.		XXX
Sub-Project/Phase	FEED		Discipline	PROJECT MANAGEMENT	
CTR Title	Project Planning Control & Reporting				
Schedule Start (Monday)		Schedule Finish (Friday)	Duration Weeks		0

INPUTS / DEPENDENCIES

Source / Discipline	Description
	BfD
	Contracting Strategy
	Time Writing Reports
	Document Status Report
	Pre-FEED Deliverables
	Project Plan & Manning Profiles

ACTIVITIES (inc. input to other discipline's deliverables)

[illegible]

DELIVERABLES (that are your discipline's responsibility)

DELIVERABLES (that are your discipline's responsibility)			MAN-HOURS		COSTS (\$-USD)	
Deliverable No.	Description	Eng	Design	3rd P	T&E	
FA001 - 01	CTR Catalogue	40				
FA001 - 02	Project Schedule	72				
FA001 - 03	Project FEED MOMs(Weekly)	24.0				
FA001 - 04	Project FEED Report (Weekly)	48.0				
FA001 - 05	Project FEED Report (Monthly)	24.0				

NOTES / ASSUMPTIONS

OVERALL TOTALS

482	0	\$ -	\$ -
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RESPONSIBLE PARTIES

Prepared by	Abraham Imarhiagbe	Discipline Check	Jide Odunlami	Date :	24 Dec 19	Revision :	R01
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SEDO COST - TIME - RESOURCE (CTR) SHEET

Client OU	Shell Petroleum Development Company (SPDC)			CTR No.	JA 001
Project Title	FEED for EPU Phase 2			Project No.	XXX
Sub-Project/Phase	FEED			Discipline	PROJECT MANAGEMENT
CTR Title	Project IM and DCC Support Services				
Schedule Start (Monday)		Schedule Finish (Friday)		Duration Weeks	0

INPUTS / DEPENDENCIES					
Inputs:	Dependencies:	Outputs:	Resources:	Tools:	Other:

Source /	Description
PMT	Basis for Design
PMT	Contract Information Specification (CIS)
PS15/PG15	Capital Project Information Management Guide & Standard

ACTIVITIES (inc. input to other discipline's deliverables)	MAN-HOURS	COSTS (\$-USD)
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[illegible]

DELIVERABLES (that are your discipline's responsibility)	MAN-HOURS	COSTS (\$-USD)
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[illegible]

NOTES / ASSUMPTIONS	OVERALL TOTALS	616	0.0	\$ -	\$ -
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OVERALL TOTALS	616	0.0	\$ -	\$ -
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616	0.0	\$	-	\$	-
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RESPONSIBLE PARTIES	
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99	100

Prepared by	Irikefe onojaife	Discipline Check	Mfon Usanga	Date :	24 Dec 19	Revision :	R01
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SEDO COST - TIME - RESOURCE (CTR) SHEET

Client OU	Shell Petroleum Development Company (SPDC)		CTR No.	ZA 003
Project Title	FEED for EPU Phase 2		Project No.	XXX
Sub-Project/Phase	FEED		Discipline	PROJECT MANAGEMENT
CTR Title	Project Quality Support Services			
Schedule Start (Monday)		Schedule Finish (Friday)	Duration Weeks	0

INPUTS / DEPENDENCIES

Source / Discipline	Description
SPDC-PMT	Concept work

ACTIVITIES (inc. input to other discipline's deliverables)

Description	Eng	Design	3rd P	T&E
Review & Comment on BfD	1.0			
Attend Project Kick-off /Scope Clarifications Meeting	2.0			
Input to CTR Catalogue	16.0			
Challenge Session	2.0			
Inputs Deliverables Review Matrix	16.0			
Input to Deliverables Register	16.0			
Attend Weekly Project Progress Meeting	24.0			
Inputs to Weekly Progress Update	24.0			
QA support (Waivers, Clarifications, Peer Assistance, etc).	16.0			
Attend & Monitor Project Intergrity Assurance Reviews (IDR, Hazop, etc)	16.0			
Document Review	10.0			
Project Health Checks	16.0			
Audits (Internal/External)	8.0			
Quality Assurance Action Tracking	8.0			
Project IDR Action Tracking	8.0			
Management of Change (MoC)	8.0			
Participate in Inter Discipline Checks (IDCs)	16.0			
Inputs to Project Close-Out Report	2.0			
Lesson Learnt Workshop	8.0			

DELIVERABLES (that are your discipline's responsibility)

[illegible]

NOTES / ASSUMPTIONS

VERALL TOTALS

297.0	0.0	\$	-	\$
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RESPONSIBLE PARTIES

Prepared by	Nwachukwu Iwe	Discipline Check	Jide Odunlami	Date :	24 Dec 19	Revision :	R01
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<i>FEED for EPU Phase 2 : Process</i>				
	<u><i>Engineer Hours</i></u>	<u><i>Designer Hours</i></u>	<u><i>3rd Party</i></u>	<u><i>T&E's</i></u>
<i>PX001 Discipline Project Management</i>	<i>302</i>	<i>0</i>	<i>\$ -</i>	<i>\$ -</i>
<i>PX002 Process Reports</i>	<i>360</i>	<i>0</i>	<i>\$ -</i>	<i>\$ -</i>
<i>PX003 Process/Utility Flow Schemes/PSFS (PFS)</i>	<i>178</i>	<i>222</i>	<i>\$ -</i>	<i>\$ -</i>
<i>PX004 Process Engineering Flow Scheme (PEFS)</i>	<i>368</i>	<i>552</i>	<i>\$ -</i>	<i>\$ -</i>
<i>PX005 Process/Utility Flow Schemes/PSFS (PFS)</i>	<i>400</i>	<i>0</i>	<i>\$ -</i>	<i>\$ -</i>
<i>PX006 Inputs to Data Sheets</i>	<i>64</i>	<i>0</i>	<i>\$ -</i>	<i>\$ -</i>
<i>PX007 Process data from PMT</i>	<i>48</i>	<i>0</i>	<i>\$ -</i>	<i>\$ -</i>
<i>PX008 Process Studies - Other</i>	<i>80</i>	<i>0</i>	<i>\$ -</i>	<i>\$ -</i>
	<i>1800</i>	<i>774</i>	<i>\$ -</i>	<i>\$ -</i>

CTR CATALOGUE

Client OU	Shell Petroleum Development Company (SPDC)			CTR No.	PX 003
Project Title	FEED for EPU Phase 2			Project No.	XXX
Sub-Project/Phase	FEED			Discipline	Process
CTR Title	Process/Utility Flow Schemes/PSFS (PFS/UFS/PSFS)				
Schedule Start (Monday)		Schedule Finish (Friday)		Duration Weeks	0

[illegible][illegible][illegible]

Prepared by	Harold Brown	Discipline Check	Chiroma Barka	Date :	24 Dec 19	Revision :	Ro1
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[illegible]

Client OU	Shell Petroleum Development Company (SPDC)			CTR No.	PX 005
Project Title	FEED for EPU Phase 2			Project No.	XXX
Sub-Project/Phase	FEED			Discipline	Process
CTR Title	Process Simulation Studies				
Schedule Start (Monday)		Schedule Finish (Friday)		Duration Weeks	0

INPUTS / DEPENDENCIES

[illegible]

ACTIVITIES (inc. input to other discipline's deliverables)

[illegible]

DELIVERABLES (that are your discipline's responsibility)

[illegible]

NOTES / ASSUMPTIONS	OVERALL TOTALS	400.0	0.0	\$	-	\$	-
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RESPONSIBLE PARTIES

Prepared by	Harold Brown	Discipline Check	Chiroma Barka	Date :	24 Dec 19	Revision :	Ro1
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Client OU	Shell Petroleum Development Company (SPDC)	CTR No.	PX 007
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Sub-Project/Phase	FEED	Discipline	Process
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Schedule Start (Monday)		Schedule Finish (Friday)		Duration Weeks	0
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Source / Discipline	Description
	Process data from PMT

[illegible][illegible][illegible]

DELIVERABLES (that are your discipline's responsibility)	MAN-HOURS	COSTS (\$-USD)
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[illegible]

NOTES / ASSUMPTIONS	OVERALL TOTALS	48.0	0.0	\$ -	\$ -
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[illegible]

Prepared by	Harold Brown	Discipline Check	Chiroma Barka	Date :	24 Dec 19	Revision :	Ro1
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[illegible]

Client OU	Shell Petroleum Development Company (SPDC)	CTR No.	PX 008
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Sub-Project/Phase	FEED	Discipline	Process
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CTR Title		Process Studies - Other			
Schedule Start (Monday)		Schedule Finish (Friday)		Duration Weeks	0

INPUTS / DEPENDENCIES

Source / Discipline	Description
	Process data from PMT

ACTIVITIES (inc. input to other discipline's deliverables)

[illegible]

DELIVERABLES (that are your discipline's responsibility)

[illegible]

NOTES / ASSUMPTIONS	OVERALL TOTALS	80.0	0.0	\$ -	\$ -
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NOTES / ASSUMPTIONS

[illegible]

RESPONSIBLE PARTIES

Prepared by	Harold Brown	Discipline Check	Chiroma Barka	Date :	24 Dec 19	Revision :	Ro1
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<i>FEED for EPU Phase 2 : Technical Safety</i>				
	<i><u>Engineer Hours</u></i>	<i><u>Designer Hours</u></i>	<i><u>3rd Party</u></i>	<i><u>T&E's</u></i>
<i><u>HX001</u></i> <i><u>Discipline Project Management</u></i>	<i><u>262</u></i>	<i><u>0</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>
<i><u>HX002</u></i> <i><u>HEMP Activities & Deliverables</u></i>	<i><u>620</u></i>	<i><u>72</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>
	<i><u>882</u></i>	<i><u>72</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>

Client OU	Shell Petroleum Development Company (SPDC)		CTR No.	XXX HX 002
Project Title	FEED for EPU Phase 2		Project No.	XXX
Sub-Project/Phase	FEED		Discipline	Technical Safety
CTR Title	HEMP Activities & Deliverables			
Schedule Start (Monday)		Schedule Finish (Friday)	Duration Weeks	O

Source / Discipline	Description
SPDC-TEF	PEFS/PEF
SPDC-TEF	C&Es
SPDC-TEF	Project Philosophies
SPDC-TEF	Equipment Datasheets
SPDC-TEF	Plot plans
SPDC-TEF	Heat and Mass balance

[illegible]

Deliverable No.	Description	Eng	Design	3rd P	T&E
XXX HX002 - 01	& SP Activity Plan	24			
XXX HX002 - 02	P Activity Plan Report	24			
XXX HX002 - 03	HSSE & SP Design Premise & Philosophy	24			
XXX HX002 - 04	Performance Standards & Assurance Tasks for Safety Critical Elements Report	24			
XXX HX002 - 05	HAZID ToR	8			
XXX HX002 - 06	HAZID Report	24			
XXX HX002 - 07	HSSE & SP HAZARDS & EFFECTS REGISTER	24			
XXX HX002 - 08	Bow Tie ToR	8			
XXX HX002 - 09	Bow Tie Report	24			
XXX HX002 - 10	HAZOP ToR	8			
XXX HX002 - 11	HAZOP Report	24			
XXX HX002 - 12	HAZOP Actions Close-out Report	24			
XXX HX002 - 13	FHA/ FERA/QRA RISK ASSESSMENT REPORT	80			
XXX HX002 - 14	DESIGN ALARP DEMONSTRATION REPORT (HSSE-SP CASE)	24			
XXX HX002 - 15	Escape Routes Layouts	8	24.0		
XXX HX002 - 16	Fire Fighting and Life Saving Equipment Layouts	8	24.0		
XXX HX002 - 17	Hazardous Area Classification (HAC) SCHEDULE	32			
XXX HX002 - 18	Hazardous Area Classification (HAC) DRAWING	8	24.0		
XXX HX002 - 19	Safety Risk Studies Report	60			
XXX HX002 - 20	HEMP Activities Close Out Tracking Register	40			
XXX HX002 - 21	FirePRAN ToR	8			
XXX HX002 - 22	FirePRAN Report	24			

620.0	72.0	\$	-	\$
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Prepared by	John Obidi	Discipline Check	Uchechi Nwankwo	Date :	24 Dec 19	Revision :	Ro1
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FEED for EPU Phase 2 : Mechanical

	<u>Engineer</u> <u>Hours</u>	<u>Designer</u> <u>Hours</u>	<u>3rd Party</u>	<u>T&E's</u>
<u>MX001 Discipline Project Management</u>	<u>528</u>	<u>8</u>	<u>\$ -</u>	<u>\$ -</u>
<u>MX002 Specifications/Datasheets/Calculation</u>	<u>280</u>	<u>0</u>	<u>\$ -</u>	<u>\$ -</u>
<u>MX003 Piping</u>	<u>256</u>	<u>744</u>	<u>\$ -</u>	<u>\$ -</u>
	<u>1064</u>	<u>752</u>	<u>\$ -</u>	<u>\$ -</u>

[illegible]

SEDO COST - TIME - RESOURCE (CTR) SHEET

Client OU	Shell Petroleum Development Company (SPDC)			CTR No.	MX 002
Project Title	FEED for EPU Phase 2			Project No.	XXX
Sub-Project/Phase	FEED			Discipline	Mechanical
CTR Title	Specifications/Datasheets/Calculation reports/SDRLs				
Schedule Start (Monday)	00 Jan 1900	Schedule Finish (Friday)		Duration Weeks	0

INPUTS / DEPENDENCIES

Source / Discipline	Description
Client OU	Basis for Design (BfD)
SEDO Drawing Office	As-built drawings
SEDO Process	PEFS/UEFS

ACTIVITIES (inc. input to other discipline's deliverables)

[illegible]

DELIVERABLES (that are your discipline's responsibility)

Deliverable No.	Description	Eng	Design	3rd P	T&E
MX002 - 01	SPECIFICATIONS				
MX002 - 02	Specification for Corrosion Inhibition Package	24.0			
MX002 - 03	Specification for Chemical Storage Package	24.0			
MX002 - 01	Specification for Chemical Storage Systems	24.0			
MX002 - 02	Specification for Piping	24.0			
MX002 - 07	DATASHEETS				
MX002 - 08	Datasheet for Corrosion Inhibition Package	48.0			
MX002 - 09	Datasheet for Chemical storage Tank Package	48.0			
MX002 - 10	SDRLs				
MX002 - 11	SDRL for Corrosion Inhibition Package	12.0			
MX002 - 12	SDRLfor Chemical storage Tank Package	12.0			
MX002 - 13	CALCULATION REPORTS				
MX002 - 14	Calculation Report for Chemical Storage Tank	32.0			
MX002 - 15	Calculation report for Corrosion Inhibition Package	32.0			

NOTES / ASSUMPTIONS

OVERALL TOTALS

280.0	0.0	\$	-	\$	-
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RESPONSIBLE PARTIES

Prepared by	Mohd Jibril	Discipline Check	O. Akinoyemi	Date :	24 Dec 19	Revision :	R01
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SEDO COST - TIME - RESOURCE (CTR) SHEET

Client OU	Shell Petroleum Development Company (SPDC)			CTR No.	MX 003	
Project Title	FEED for EPU Phase 2			Project No.	XXX	
Sub-Project/Phase	FEED			Discipline	Mechanical	
CTR Title	Piping					
Schedule Start (Monday)		Schedule Finish (Friday)		Duration Weeks	0	

INPUTS / DEPENDENCIES

Source / Discipline	Description
Client OU	Basis for Design (BfD)
SEDO Drawing Office	As-built drawings
SEDO Process	PEFS/UEFS

ACTIVITIES (inc. input to other discipline's deliverables)

[illegible]

DELIVERABLES (that are your discipline's responsibility)

[illegible]

NOTES / ASSUMPTIONS

ERALL TOTALS

\$	256.0	744.0	\$	-	\$	-
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[illegible]

RESPONSIBLE PARTIES

Prepared by	Mohd Jibril	Discipline Check	O. Akinyemi	Date :	24 Dec 19	Revision :	R01
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<i>FEED for EPU Phase 2 : Materials & Corrossion</i>				
	<i>Engineer Hours</i>	<i>Designer Hours</i>	<i>3rd Party</i>	<i>T&E's</i>
<i>RA001 Discipline Project Management</i>	<i>293</i>	<i>0</i>	<i>\$ -</i>	<i>\$ -</i>
<i>RA002 Material Assessment and Selection Report</i>	<i>56</i>	<i>0</i>	<i>\$ -</i>	<i>\$ -</i>
<i>RA003 Corrosion Managemet Framework</i>	<i>224</i>	<i>0</i>	<i>\$ -</i>	<i>\$ -</i>
<i>RA004 Specifications</i>	<i>312</i>	<i>0</i>	<i>\$ -</i>	<i>\$ -</i>
<i>RA005 Datasheet</i>	<i>32</i>	<i>0</i>	<i>\$ -</i>	<i>\$ -</i>
	<i>917</i>	<i>0</i>	<i>\$ -</i>	<i>\$ -</i>

CTR CATALOGUE

Client OU	Shell Petroleum Development Company (SPDC)		CTR No.	RA 002
Project Title	FEED for EPU Phase 2		Project No.	XXX
Sub-Project/Phase	FEED		Discipline	Materials & Corrossion
CTR Title	Material Assessment and Selection Report			
Schedule Start (Monday)		Schedule Finish (Friday)	Duration Weeks	0

Source / Discipline	Description
BFD, Work Request	

[illegible][illegible]

Prepared by	Nwosu JTO	Discipline Check	O. K. Ibanichuka	Date :	24 Dec 19	Revision :	R01
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Client OU	Shell Petroleum Development Company (SPDC)			CTR No.	RA 004
Project Title	FEED for EPU Phase 2			Project No.	XXX
Sub-Project/Phase	FEED			Discipline	Materials & Corrossion
CTR Title	Specifications				
Schedule Start (Monday)		Schedule Finish (Friday)		Duration Weeks	0

Source / Discipline	Description

[illegible]

Deliverable No.	Description	Eng	Design	3rd P	T&E
RA004 - 01	Specification for Painting	32.0			
RA004 - 02	Specification for line pipe coating	32.0			
RA004 - 03	Specification for External Field Joint Coating	28.0			
RA004 - 04	Specification for cathodic protection	40.0			
RA004 - 05	Specification for CS line pipe	28.0			
RA004 - 06	Specification for DSS Line pipe	28.0			
RA004 - 07	Specification for Induction Bends	28.0			
RA004 - 08	Specification for Isolation Joint and Isolation Flange	28.0			
RA004 - 09	Specification for Pipe Support	28.0			
RA004 - 10	Specification for corrosion inhibition	40.0			

Prepared by	Nwosu JTO	Discipline Check	O. K. Ibanichuka	Date :	24 Dec 19	Revision :	R01
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Client OU	Shell Petroleum Development Company (SPDC)		CTR No.	RA 004	
Project Title	FEED for EPU Phase 2		Project No.	XXX	
Sub-Project/Phase	FEED		Discipline	Materials & Corrossion	
CTR Title	Datasheet				
Schedule Start (Monday)		Schedule Finish (Friday)		Duration Weeks	0

[illegible][illegible][illegible]

Prepared by: Nwosu JTO	Discipline Check: O. K. Ibanichuka	Date: 24 Dec 19	Revision: R01
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Client OU	Shell Petroleum Development Company (SPDC)			CTR No.	RA 004
Project Title	FEED for EPU Phase 2			Project No.	XXX
Sub-Project/Phase	FEED			Discipline	Materials & Corrossion
CTR Title	Data Sheets				
Schedule Start (Monday)		Schedule Finish (Friday)		Duration Weeks	0

[illegible][illegible][illegible]

Prepared by	Nwosu JTO	Discipline Check	O. K. Ibanichuka	Date :	24 Dec 19	Revision :	R01
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FEED for EPU Phase 2 : PACO				
	<u>Engineer</u> <u>Hours</u>	<u>Designer</u> <u>Hours</u>	<u>3rd Party</u>	<u>T&E's</u>
IN001 Discipline Project Management	293	0	\$ -	\$ -
IN002 Philosophies	200	0	\$ -	\$ -
IN003 Specifications	350	0	\$ -	\$ -
IN004 Drawing, Report and Others	434	90	\$ -	\$ -
	1277	90	\$ -	\$ -

CTR CATALOGUE

Client OU	Shell Petroleum Development Company (SPDC)		CTR No.		IN 002
Project Title	FEED for EPU Phase 2		Project No.		XXX
Sub-Project/Phase	FEED		Discipline	PACO	
CTR Title	Philosophies				
Schedule Start (Monday)	00 Jan 1900	Schedule Finish (Friday)	Duration Weeks		0

Source / Discipline	Description
PMT	Basis For Design
PMT	Existing Facility Documentations
Technical	TAMAP, EFA
Vendor	Vendor

[illegible][illegible][illegible]

Prepared by	Orodu Mercy	Discipline Check	Asiegbu Nnamdi	Date :	24 Dec 19	Revision :	R01
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[illegible]

CTR CATALOGUE

FEED for EPU Phase 2 : Telecoms & PCD -IT

	<u>Engineer</u> <u>Hours</u>	<u>Designer</u> <u>Hours</u>	<u>3rd Party</u>	<u>T&E's</u>
<u>TA001</u> <u>Discipline Project Management</u>	<u>261</u>	<u>0</u>	<u>\$ -</u>	<u>\$ -</u>
<u>TA002</u> <u>Design Philosophy</u>	<u>30</u>	<u>120</u>	<u>\$ -</u>	<u>\$ -</u>
<u>TA003</u> <u>Systems Specification</u>	<u>281</u>	<u>0</u>	<u>\$ 5,000</u>	<u>\$ -</u>
<u>TA004</u> <u>Drawings</u>	<u>114</u>	<u>124</u>	<u>\$ -</u>	<u>\$ -</u>
<u>TA005</u> <u>MTO/Data Sheet</u>	<u>64</u>	<u>120</u>	<u>\$ -</u>	<u>\$ -</u>
	<u>750</u>	<u>364</u>	<u>\$ 5,000</u>	<u>\$ -</u>

COST - TIME - RESOURCE_(CTR) SHEET

Client OU	Shell Petroleum Development Company (SPDC)		CTR No.	TA 001
Project Title	FEED for EPU Phase 2		Project No.	XXX
Sub-Project/Phase	FEED		Discipline	Telecoms & PCD -IT
CTR Title	Discipline Project Management			
Schedule Start (Monday)		Schedule Finish (Friday)	Duration Weeks	

INPUTS / DEPENDENCIES

Source / Discipline	Description
	BID Contracting Strategy Time Writing Reports Document Status Report Pre-FEED Deliverables PCAP

ACTIVITIES (inc. input to other discipline's deliverables)

ACTIVITIES (inc. input to other discipline's deliverables)	MAN-HOURS		COSTS (\$-USD)	
	Eng	Design	3rd P	T&E
Description	1			
Review and Comment on Work Scope	2			
Attend Project Kick-off	2			
Scope Clarifications Meetings	2			
Site Visit	16			
Data Gathering	4			
CTR Catalogue development	4			
Inputs Deliverables Review Matrix	4			
Input to Deliverables Register	4			
Input to Project Schedule	8			
Inputs to Weekly Progress Update	16			
Attend Weekly Project Progress Meeting	32			
Discipline Meetings, Huddle	8			
Conduct Inter Discipline Checks (IDCs)	20			
General Discipline Administration	12			
Project Internal Audit	4			
Attend Health Checks (@25% and 75% completion)	4			
HAZID Workshop	4			
PEFS Review - Roundtable	4			
Bow-Tie Workshop	4			
HAZOP Workshop	8			
HAZOP Closeout	2			
Peer Review, Assist	4			
SIL Workshop	8			
SAFOP Workshop	8			
PDMS Model Review & constructability	12			
Constructability review workshop	12			
Independent Design Review/PEER review	24			
Interfaces with third party and stakeholders	0			
Risk Based Assessment	0			
Lesson Learnt (Pr- and Post project)	2			
Equipment Criticality Intervention and Assessment	0			
Input to ITT	0			
Technical Bid Evaluation	0			
Basic Design Engineering Package (BDEP)	24			
Inputs to Project Handover Documentation & Close-Out Report	4			

DELIVERABLES (that are your discipline's responsibility)

[illegible]

NOTES / ASSUMPTIONS

OVERALL TOTALS

\$	261.0	0.0	\$	-	\$
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RESPONSIBLE PARTIES

Prepared by koko Bassey	Discipline Check Mfon Usanga	Date : 24 Dec 19	Revision : R01
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Client OU	Shell Petroleum Development Company (SPDC)			CTR No.	TA 002
Project Title	FEED for EPU Phase 2			Project No.	XXX
Sub-Project/Phase	FEED			Discipline	Telecoms & PCD -IT
CTR Title	Design Philosophy				
Schedule Start (Monday)		Schedule Finish (Friday)		Duration Weeks	

Source / Discipline	Description
PMT	Project IT Strategy
	Preliminary Scope document or BEDP
	Telecommunication Systems and PCD-IT Overview Drawing for benisede /tunu
PMT	Telecommunication Sub-Systems Block Diagrams tunu for benisede /tunu
PACO	IC&A philosophy
Civil/Mechanical	Civil and Mechanical Plot plan

[illegible][illegible]

\$	30.0	120.0	\$	-	\$
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Prepared by	koko Bassey	Discipline Check	Mfon Usanga	Date :	24 Dec 19	Revision :	R01
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SEDO COST - TIME - RESOURCE (CTR) SHEET

Client OU	Shell Petroleum Development Company (SPDC)		CTR No.	TA 005
Project Title	FEED for EPU Phase 2		Project No.	XXX
Sub-Project/Phase	FEED		Discipline	Telecoms & PCD -IT
CTR Title	MTO/Data Sheet			
Schedule Start (Monday)		Schedule Finish (Friday)		Duration Weeks

INPUTS / DEPENDENCIES

[illegible]

ACTIVITIES (inc. input to other discipline's deliverables)

[illegible]

DELIVERABLES (that are your discipline's responsibility)

[illegible]

NOTES / ASSUMPTIONS

OVERALL TOTALS

64.0	120.0	\$	-	\$
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RESPONSIBLE PARTIES

Prepared by	koko Bassey	Discipline Check	Mfon Usanga	Date :	24 Dec 19	Revision :	R01
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FEED for EPU Phase 2 : Electrical

	<u>Engineer Hours</u>	<u>Designer Hours</u>	<u>3rd Party</u>	<u>T&E's</u>
<i>EA001 Discipline Project Management</i>	<i><u>285</u></i>	<i><u>0</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>
<i>EA002 Equipment Layout and Details</i>	<i><u>20</u></i>	<i><u>40</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>
<i>EA003 System Description including Power Generat</i>	<i><u>88</u></i>	<i><u>40</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>
<i>EA005 Equipment Specifications</i>	<i><u>24</u></i>	<i><u>0</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>
<i>EA006 Equipment Datasheet</i>	<i><u>8</u></i>	<i><u>0</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>
<i>EA007 SAFOP/PEER Review</i>	<i><u>40</u></i>	<i><u>6</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>
<i>EA008 Electrical Material Take-off (MTO)</i>	<i><u>16</u></i>	<i><u>0</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>
	<i><u>481</u></i>	<i><u>86</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>

COST - TIME - RESOURCE (CTR) SHEET

INPUTS / DEPENDENCIES

ACTIVITIES (inc. input to other discipline's deliverables)

DELIVERABLES (that are your discipline's responsibility)

NOTES / ASSUMPTIONS

[illegible]

CTR CATALOGUE

Client OU	Shell Petroleum Development Company (SPDC)			CTR No.	EA 002
Project Title	FEED for EPU Phase 2			Project No.	XXX
Sub-Project/Phase	FEED			Discipline	Electrical
CTR Title	Equipment Layout and Details				
Schedule Start (Monday)		Schedule Finish (Friday)		Duration Weeks	

[illegible][illegible][illegible][illegible]

Prepared by	Dele Kolajo	Discipline Check	Seun Durojaiye	Date :	24 Dec 19	Revision :	Ro1
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SEDO	COST - TIME - RESOURCE <small>(CTR)</small> SHEET
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Client OU	Shell Petroleum Development Company (SPDC)	CTR No.	EA 003
Project Title	FEED for EPU Phase 2	Project No.	XXX
Sub-Project/Phase	FEED	Discipline	Electrical
CTR Title	System Description including Power Generation and Distribution		
Schedule Start (Monday)		Schedule Finish (Friday)	
		Duration Weeks	

INPUTS / DEPENDENCIES

Source / Discipline	Description
PMT	Work Request
PMT	Basis for Design

ACTIVITIES (inc. input to other discipline's deliverables)

Description	MAN-HOURS		COSTS (\$-USD)	
	Eng	Design	3rd P	T&E

DELIVERABLES (that are your discipline's responsibility)

Deliverable No.	Description	MAN-HOURS		COSTS (\$-USD)	
		Eng	Design	3rd P	T&E
EA003 - 01	Utility Datasheet	16			
EA003 - 02	Single Line Diagrams	16	24		
EA003 - 03	Update Key Single Line Diagram	8	16		
EA003 - 04	Power Transmission and Distribution Study Reports	16			
EA003 - 05	Equipment Sizing calculation report	16			
EA003 - 06	Short Circuit & Load Flow Study Report	16			

NOTES / ASSUMPTIONS	OVERALL TOTALS					
	88.0	40.0	\$	-	\$	-

RESPONSIBLE PARTIES

Prepared by: Dele Kolajo	Discipline Check: Seun Durojaiye	Date : 24 Dec 19	Revision : R01
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Client OU	Shell Petroleum Development Company (SPDC)			CTR No.	XXX EA 004
Project Title	FEED for EPU Phase 2			Project No.	XXX
Sub-Project/Phase	FEED			Discipline	Electrical
CTR Title	Equipment Specifications				
Schedule Start (Monday)		Schedule Finish (Friday)		Duration Weeks	

[illegible][illegible][illegible]

Prepared by	Dele Kolajo	Discipline Check	Seun Durojaiye	Date :	24 Dec 19	Revision :	R01
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Client OU	Shell Petroleum Development Company (SPDC)			CTR No.	EA 005
Project Title	FEED for EPU Phase 2			Project No.	XXX
Sub-Project/Phase	FEED			Discipline	Electrical
CTR Title	Equipment Datasheet				
Schedule Start (Monday)		Schedule Finish (Friday)		Duration Weeks	

[illegible][illegible][illegible]

Prepared by	Dele Kolajo	Discipline Check	Seun Durojaiye	Date :	24 Dec 19	Revision :	R01
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Client OU	Shell Petroleum Development Company (SPDC)			CTR No.	EA 006
Project Title	FEED for EPU Phase 2			Project No.	XXX
Sub-Project/Phase	FEED			Discipline	Electrical
CTR Title	SAFOP/PEER Review				
Schedule Start (Monday)		Schedule Finish (Friday)		Duration Weeks	

[illegible][illegible][illegible]

Prepared by	Dele Kolajo	Discipline Check	Seun Durojaiye	Date :	24 Dec 19	Revision :	R01
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Client OU	Shell Petroleum Development Company (SPDC)			CTR No.	EA 007
Project Title	FEED for EPU Phase 2			Project No.	XXX
Sub-Project/Phase	FEED			Discipline	Electrical
CTR Title	Electrical Material Take-off (MTO)				
Schedule Start (Monday)		Schedule Finish (Friday)		Duration Weeks	

[illegible][illegible][illegible][illegible]

Prepared by	Dele Kolajo	Discipline Check	Seun Durojaiye	Date :	24 Dec 19	Revision :	Ro1
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Client OU	Shell Petroleum Development Company (SPDC)			CTR No.	EA 008
Project Title	FEED for EPU Phase 2			Project No.	XXX
Sub-Project/Phase	FEED			Discipline	Electrical
CTR Title	Electrical Material Take-off (MTO)				
Schedule Start (Monday)		Schedule Finish (Friday)		Duration Weeks	

[illegible][illegible][illegible]

Prepared by	Dele Kolajo	Discipline Check	Seun Durojaiye	Date :	24 Dec 19	Revision :	Ro1
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FEED for EPU Phase 2 : Civil/Structural

	<u>Engineer Hours</u>	<u>Designer Hours</u>	<u>3rd Party</u>	<u>T&E's</u>
<i><u>CX001</u></i> <i><u>Discipline Project Management</u></i>	<i><u>261</u></i>	<i><u>0</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>
<i><u>CX002</u></i> <i><u>Civil/Structural Engineering Design Philosophy & Specifications</u></i>	<i><u>112</u></i>	<i><u>0</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>
<i><u>CX003</u></i> <i><u>Civil Engineering Design</u></i>	<i><u>84</u></i>	<i><u>232</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>
<i><u>CX004</u></i> <i><u>Structural Engineering Design/1</u></i>	<i><u>948</u></i>	<i><u>640</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>
<i><u>CX005</u></i> <i><u>Structural Engineering Design/2</u></i>	<i><u>336</u></i>	<i><u>680</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>
	<i><u>1741</u></i>	<i><u>1552</u></i>	<i><u>\$ -</u></i>	<i><u>\$ -</u></i>

COST - TIME - RESOURCE (CTR) SHEET

Client OU	Shell Petroleum Development Company (SPDC)		CTR No.	CX 001
Project Title	FEED for EPU Phase 2		Project No.	XXX
Sub-Project/Phase	FEED		Discipline	Civil/Structural
CTR Title	Discipline Project Management			
Schedule Start (Monday)	00 Jan 1900	Schedule Finish (Friday)	Duration Weeks	0

INPUTS / DEPENDENCIES

Source / Discipline	Description
	BfD
	Contracting Strategy
	Time Writing Reports
	Document Status Report
	FEED Deliverables
	Project Plan & Manning Profiles

ACTIVITIES (inc. input to other discipline's deliverables)

ACTIVITIES (inc. input to other discipline's deliverables)	MAN-HOURS		COSTS (\$-USD)	
Description	Eng	Design	3rd P	T&E
Review and Comment on Work Scope	1			
Attend Project Kick-off	2			
Scope Clarifications Meetings	2			
Site Visit	16			
Data Gathering	4			
CTR Catalogue development	4			
Inputs Deliverables Review Matrix	4			
Input to Deliverables Register	4			
Input to Project Schedule	8			
Inputs to Weekly Progress Update	16			
Attend Weekly Project Progress Meeting	32			
Discipline Meetings, Huddle	8			
Conduct Inter Discipline Checks (IDCs)	20			
General Discipline Administration	12			
Project Internal Audit	4			
Attend Health Checks (@25% and 75% completion)	4			
HAZID Workshop	4			
PEFS Review - Roundtable	4			
Bow-Tie Workshop	4			
HAZOP Workshop	8			
HAZOP Closeout	2			
Peer Review, Assist	4			
SIL Workshop	8			
SAFOP Workshop	8			
PDMS Model Review & constructability	12			
Constructability review workshop	12			
Independent Design Review/PEER Review	24			
Interfaces with third party and stakeholders	0			
Risk Based Assessment	0			
Lesson Learnt (Pr- and Post project)	2			
Equipment Criticality Intervention and Assessment	0			
Input to ITT	0			
Technical Bid Evaluation	0			
Basic Design Engineering Package (BDEP)	24			
Inputs to Project Handover Documentation & Close-Out Report	4			

DELIVERABLES (that are your discipline's responsibility)[illegible]

NOTES / ASSUMPTIONS

[illegible]

RESPONSIBLE PARTIES

Prepared by	Oludare Sunday	Discipline Check	Freedom Imala	Date :	#VALUE!	Revision :	#VALUE!
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SEDO COST - TIME - RESOURCE (CTR) SHEET

Client OU	Shell Petroleum Development Company (SPDC)			CTR No.	CX 002
Project Title	FEED for EPU Phase 2			Project No.	XXX
Sub-Project/Phase	FEED			Discipline	Civil/Structural
CTR Title	Civil/Structural Engineering Design Philosophy & Specifications				
Schedule Start (Monday)		Schedule Finish (Friday)		Duration Weeks	

INPUTS / DEPENDENCIES

Source / Discipline	Description
	Basis for Design (BfD)

ACTIVITIES (inc. input to other discipline's deliverables)

[illegible]

DELIVERABLES (that are your discipline's responsibility)

[illegible]

NOTES / ASSUMPTIONS

OVERALL TOTAL	112.0	0.0	\$ -	\$ -
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RESPONSIBLE PARTIES

Prepared by	Oludare Sunday	Discipline Check	Freedom Imala	Date :	#VALUE!	Revision :	#VALUE!
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Client OU	Shell Petroleum Development Company (SPDC)			CTR No.	CX 003
Project Title	FEED for EPU Phase 2			Project No.	XXX
Sub-Project/Phase	FEED			Discipline	Civil/Structural
CTR Title	Civil Engineering Design				
Schedule Start (Monday)	00 Jan 1900	Schedule Finish (Friday)		Duration Weeks	0

Source / Discipline	Description
	Site Topographical Map
	Civil Scope of Work
	Geotechnical / Soil Survey Report
	Site Selection Studies
	Existing As-built Documentation Wellhead and Manifold Locations
	Geomatic

[illegible][illegible][illegible]

Prepared by	Oludare Sunday	Discipline Check	Freedom Imala	Date :	#VALUE!	Revision :	#VALUE!
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SEDOCOST - TIME - RESOURCE (CTR) SHEET					
Client OU		Shell Petroleum Development Company (SPDC)		CTR No. CX 005	
Project Title		FEED for EPU Phase 2		Project No. XXX	
Sub-Project/Phase		FEED		Discipline Civil/Structural	
CTR Title Structural Engineering Design/2					
Schedule Start (Monday)		Schedule Finish (Friday)		Duration Weeks	
INPUTS / DEPENDENCIES					
Source / Discipline		Description			
Mechanical		Equipment Data Sheet			
Process		Equipment List			
ACTIVITIES (inc. input to other discipline's deliverables)					
Description		MAN-HOURS		COSTS (\$-USD)	
		Eng Design		3rd P T&E	
DELIVERABLES (that are your discipline's responsibility)					
Deliverable No.		Description		MAN-HOURS	
		Eng Design		3rd P T&E	
		EPU 3 NAG Manifold Location			
CX005	- 01	Pig launcher and pig receiver foundation design, plan,sections and		8	16
CX005	- 02	Pig launcher and pig receiver foundation reinforcement drawings		8	24
CX005	- 03	Mono rail lifting system steel framing design, plan,sections and elev		8	16
CX005	- 04	Mono rail lifting system foundation reinforcement drawings		8	24
CX005	- 05	Manifold skid foundation & associated pipe support design, plan,se		16	16
CX005	- 06	Manifold skid foundation & associated pipe support reinforcement d		8	24
CX005	- 07	Fencing & gate foundation design, plan,sections and elevations dra		8	16
CX005	- 08	Fencing foundation reinforcement drawings		8	16
CX005	- 09	Valves Access platform steel framing design, plan,sections and ele		8	16
CX005	- 10	Valves Access platform foundation reinforcement drawings		8	24
CX005	- 11	Equipment support platform & foundation design, plan,sections and		8	32
CX005	- 12	Equipment support platform details & foundation reinforcement dra		8	24
CX005	- 13	Metering skid support & foundation design, plan,sections and eleva		0	0
CX005	- 14	Metering skid support & foundationreinforcement drawings		0	0
CX005	- 15	Metering shed/foundation design, plan,sections and elevations dra		0	0
CX005	- 16	Metering shed foundation reinforcement drawings		0	0
CX005	- 17	Cable duct/cable trench layout and sections (drawings)		8	16
CX005	- 18	Cable duct/cable trench reinforcement drawings		8	16
CX005	- 19	FAR drawings and foundation (architectural, structural & foundation		0	0
CX005	- 20	FAR building str and foundation reinforcement drawings		0	0
CX005	- 21	In-plot road network & hard stand areas layout and sections drawin		8	32
CX005	- 22	In-plot drainage system design, layout and sections drawings		8	16
CX005	- 23	In-plot drainage system reinforcement drawings		8	24
CX005	- 24	Chemical storage shed and foundation structure design, plan,sectio		8	40
CX005	- 25	Chemical storage shed dtails and foundation reinforcement drawing		8	24
CX005	- 26	Corrosion inhibition skid foundation & shed structure design, plan,s		8	40
CX005	- 27	Corrosion inhibition skid foundation reinforcement drawings		8	24
CX005	- 28	Gate house and foundation design, plan,sections and elevations dr		0	0
CX005	- 29	Gate house and foundation reinforcement drawings		0	0
CX005	- 30	Overhead water storage tank support structure and foundation des		0	0
CX005	- 31	Overhead water storage tank support structure foundation reinforc		0	0
CX005	- 32	Open drain pit design, plan,sections and elevations drawings		8	16
CX005	- 33	Open drain pit reinforcement drawings		8	16
CX005	- 34	Close drain pit design, plan,sections and elevations drawings		8	16
CX005	- 35	Close drain pit reinforcement drawings		8	16
CX005	- 36	Vent stack foundation design, plan,sections and elevations drawing		0	0
CX005	- 37	Vent stack foundation reinforcement drawings		0	0
CX005	- 38	Miscellaneous piping supports and foundation design, plan,section		8	32
CX005	- 39	Miscellaneous piping supports and foundation reinforcement drawi		8	40
CX005	- 40	Shelter & foundation design, plan,sections and elevations drawings		8	40
CX005	- 41	Shelter foundation reinforcement drawings		8	24
CX005	- 42	Compilation of All Equipment/Str Design Report		96	
OVERALL TOTALS				336.0	680.0
NOTES / ASSUMPTIONS				\$	- \$
RESPONSIBLE PARTIES					
Prepared by Oludare Sunday		Discipline Check Freedom Imala		Date : #VALUE!	Revision : #VALUE!

FEED for EPU Phase 2 : Pipeline

	<u>Engineer</u> <u>Hours</u>	<u>Designer</u> <u>Hours</u>	<u>3rd Party</u>	<u>T&E's</u>
<u>LA001</u> <i>Discipline Project Management</i>	<u>285</u>	<u>0</u>	\$ -	\$ -
<u>LA002</u> <i>Pipeline Studies & Philosophy reports</i>	<u>160</u>	<u>0</u>	\$ -	\$ -
<u>LA003</u> <i>Pipeline Mechanical Design</i>	<u>160</u>	<u>0</u>	\$ -	\$ -
<u>LA004</u> <i>Pipeline Route & Layout Drawings</i>	<u>48</u>	<u>260</u>	\$ -	\$ -
	<u>653</u>	<u>260</u>	<u>\$ -</u>	<u>\$ -</u>

Client OU	Shell Petroleum Development Company (SPDC)		CTR No.	LA 001
Project Title	FEED for EPU Phase 2		Project No.	XXX
Sub-Project/Phase	FEED		Discipline	Pipeline
CTR Title	Discipline Project Management			
Schedule Start (Monday)		Schedule Finish (Friday)	Duration Weeks	

Source / Discipline	Description
	BID
	Contracting Strategy
	Time Writing Reports
	Document Status Report
	FEED Deliverables
	Project Plan & Manning Profiles

Inputs to other discipline's deliverables		Design	3rd P	T&E
Description				
Review and Comment on Work Scope	1			
Attend Project Kick-off	2			
Scope Clarifications Meetings	2			
Site Visit	40			
Data Gathering	4			
CTR Catalogue development	4			
Inputs Deliverables Review Matrix	4			
Input to Deliverables Register	4			
Input to Project Schedule	8			
Inputs to Weekly Progress Update	16			
Attend Weekly Project Progress Meeting	32			
Discipline Meetings, Huddle	8			
Conduct Inter Discipline Checks (IDCs)	20			
General Discipline Administration	12			
Project Internal Audit	4			
Attend Health Checks (@25% and 75% completion)	4			
HAZID Workshop	4			
PEFS Review - Roundtable	4			
Bow-Tie Workshop	4			
HAZOP Workshop	8			
HAZOP Closeout	2			
Peer Review, Assist	4			
SIL Workshop	8			
SAFOP Workshop	8			
PDMS Model Review & constructability	12			
Constructability review workshop	12			
Independent Design Review/PEER Review	24			
Interfaces with third party and stakeholders	0			
Risk Based Assessment	0			
Lesson Learnt (Pr- and Post project)	2			
Equipment Criticality Intervention and Assessment	0			
Input to ITT	0			
Technical Bid Evaluation	0			
Basic Design Engineering Package (BDEP)	24			
Inputs to Project Handover Documentation & Close-Out Report	4			

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285.0	0.0	\$	-	\$
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Prepared by	Aghadiuno, Unyimeabasi	Discipline Check	Aghadiuno, Unyimeabasi	Date :	24 Dec 19	Revision :	R01
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SEDO COST - TIME - RESOURCE (CTR) SHEET

Client OU	Shell Petroleum Development Company (SPDC)		CTR No.	LA 002
Project Title	FEED for EPU Phase 2		Project No.	XXX
Sub-Project/Phase	FEED		Discipline	Pipeline
CTR Title	Pipeline Studies & Philosophy reports			
Schedule Start (Monday)		Schedule Finish (Friday)	Duration Weeks	0

INPUTS / DEPENDENCIES

Source / Discipline	Description
	Basis for Design (BfD)
	National Regulations, SPDC, Shell and international standards
	DG3 Deliverables

ACTIVITIES (inc. input to other discipline's deliverables)

[illegible]

DELIVERABLES (that are your discipline's responsibility)

[illegible]

NOTES / ASSUMPTIONS

OVERALL TOTAL	160.0	0.0	\$ -	\$ -
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RESPONSIBLE PARTIES

Prepared by	Aghadiuno, Unyimeabasi	Discipline Check	Aghadiuno, Unyimeabasi	Date :	24 Dec 19	Revision :	R01
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SEDO COST - TIME - RESOURCE (CTR) SHEET

Client OU	Shell Petroleum Development Company (SPDC)		CTR No.	LA 003
Project Title	FEED for EPU Phase 2		Project No.	XXX
Sub-Project/Phase	FEED		Discipline	Pipeline
CTR Title	Pipeline Mechanical Design			
Schedule Start (Monday)		Schedule Finish (Friday)	Duration Weeks	0

INPUTS / DEPENDENCIES	
1. Inputs	<ul style="list-style-type: none"> • Inputs: A list of input variables (e.g., x_1, x_2, \dots, x_n). • Parameters: A list of model parameters (e.g., $\theta_1, \theta_2, \dots, \theta_m$).
2. Dependencies	<ul style="list-style-type: none"> • Dependencies: A list of dependencies (e.g., y_1, y_2, \dots, y_k). • Outputs: A list of output variables (e.g., z_1, z_2, \dots, z_l).

Source / Discipline	Description
	Basis for Design (BfD)
	National Regulations, SPDC, Shell and international standards

ACTIVITIES (inc. input to other discipline's deliverables)	MAN-HOURS	COSTS (\$-USD)
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[illegible]

DELIVERABLES (that are your discipline's responsibility)	MAN-HOURS	COSTS (\$-USD)
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[illegible]

NOTES / ASSUMPTIONS	OVERALL TOTALS	160.0	0.0	\$ -	\$ -
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OVERALL TOTALS	160.0	0.0	\$	-	\$	-
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160.0	0.0	\$	-	\$	-
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RESPONSIBLE PARTIES					
Prepared by	Aghadiuno, Unyimeabasi	Discipline Check	Aghadiuno, Unyimeabasi	Date : 24 Dec 19	Revision : R01

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