JOINT INVESTIGATION REPORT FOR INCIDENT NO: 132880 JIV report S/N: 00825 (Note: As practicable as possible the JIT report is to be signed in the field by all the participating parties) A. GENERAL INFORMATION: 1. Spill incident Number: 132880 2. Type of incident* OIL SPILL 3. Name of Location NEMBE CREEK 3 WELL 33 S WELL HEAD 4. Name of nearest community **EWELESUO** 5. State: **RAYELSA**6. LGA **NEMBE** 7. Type of Production facility/Installation WELLHEAD 8. Asset owner/District SWAMP 2 B. INCIDENT INFORMATION: 9. Details of incident 29TH JANUARY 2015 EEBRUARY, 2015/12:10 HOURS b. Start date/time of investigation: 5 TH Actual investigation duration, days: ONE (1) DAY d. Description of spill point environment Firmed soil Loose soil ☐Recently excavated area Under water Swampy Exposed pipe surface Well Platform (on Water) ☐Drill Rig STAINS WERE OBSERVED Additional observations around the spill point: *CRUDE OIL Additional observations around the spill point:

ON THE WELL HEAD BODY, THOUGH SPILL WAS CONFIRMED

TO HAVE OCCURRED FROM THE WELL 335 ARM OF THE

WELLHEAD, AT THE POSITION OF THE OBSERVED MISSING

CAMERON CONTROL UNIT (C.C.U) WHICH HAD BEEN REMOVED BY

INKNOWN PERSON(S) INTERMITTENT BUBBLING WAS NOTICED INCOMPERSON (C) INTERMITTENT
OM SOME CRUDE OIL CONTAINED IN
Description of leak point (tick as applicable); CREATED ☐Drilled hole ☐Hack saw cut 🗖 Tear (Well head tampering WAS OBSERVED ONTAINMI ☐Inward dent. Complete Rupture □ Failed Weld-on illegal hot tap valve, □ Failed Clamp Third party tampering with Clamp WATER AROUND THE ☐ Crude oil theft (illegal bunkering) point, ☐Third party tampering with valve setting, ☐ Third party tampering with flange, ☐ Corrosión Saver-pit over flow, ☐Surge vessel overflow, ☐Bulging Outward □Flare System/Bund wall failure □Accidental 3rd party equipment ☐ Valve Failure Com unit failure ☐Cold vent ☑Others (specify) CAMERON CONTROL UNIT (C,C,u) Relief valve failure REMOVAL BY UNKNOWN PERSON (S) f. Incident caused by: Third party interference (Sabotage \(\bigcirc\); crude theft□; Line theft□; Accidental 3rd party damage□) Others (including Mystery spills) ☐ Operational

^{*}This can be: a) Oil Spill b) Drilling fluid/Chemical c) Siltation d) construction e) Encroachment f) Fire,

IOINT INVESTIGATION REPORT FOR INCIDENT NO: 1328880 JIV report S/N: 00825
g. Spill point coordinates WINNA MID BELT
Northing: Easting:
51512.98 425473.07
7 32
Jean John
C DIOK 4 DOCTORIENT
C. RISK ASSESSMENT 10. Type of environment:
•
□Land □Swamp □Water □Seasonal swamp □Shoreline/Waterfront
i. Type of environment to which oil has spread:
□Land □Swamp ₩water □River (identify)
ii. Weather condition
Rain Sunny Dry Dwet Dwindy DHot Dcool 11. Distance from the nearest sensitive habitat
☐ Government reserved and designated protected area [,m] ☐ Drinking water source [,m] ☐ Built up area [,m] ☐ Farmlands [,m] ☐ Fish Farm/Pond [,m] ☐ Fishing net [,m] ☐ Others (specify). MANGROVE VEGETATION 15 m
12. Containment measures put in place;
Booms
13. Any pictures or video coverage? [XV [N]
14. Further response/repair initiated as at the time of JIV? [Y] [NV
If yes to item 14, give brief description:
NOT APPLICABLE
15. Was there any disruption to the investigation? [Y] [N]
If yes to item 15 give brief description:
- NOT ADDITION E
INDI MITHLADEL

JOINT INVESTIGATION REPORT FOR INCIDENT NO: 32880 JIV report S/N: 00825

D. TYPE/NUMBERS OF PROPERTIES, IF ANY, FOUND WITHIN THE AREA OF SPREAD OF OIL

16. Structures / Properties

S/N Type of Structures	Description	Size	Number	Comments
NONE W	1 TH 18	1 AR	EA NE	MPACT
17 Crons/Economia Trace		111		- MACI

Crops/Economic Trees

S/N Type of crops	Young	Medium	Matured	Quantity	Comments
NONE '	WITHIN	ARE	A OF	IMPA	сТ

18. Fish/Nets/Ponds

S/N	Fish/Nets/Ponds	Description	Quantity/Size	Comments
N	ONE W	ITHIN AR	EA O	FIMPACT

19. Others (Specify) i.e. Animal Traps

S/N Others	Description	Quantity/Size	Comments
NONE Y	WITHIN A	REA O	MPACT
E. GRAPHIC DESCRIP leak report, overview sketc	POSITION OF LEAK POINT (w. h of the site should be added a POSITION O CAMEROIN	as an appendix 1) FMISSING	SECTION OF

BEAN Box AK POINT BEAN BOLTS BOX CAP. POSITION
OF OBSERVED Page 3 of 8 CRUDE
OBSERVED CRUDE OIL

3 WELL 33 S WELL HEAD AT EWELESUO SHOWING POSITION OF MISSIN G CAMERON

CONTROL UNIT (C.C.U.) REMOVED

UNKNOWN PERSON(S).

KEROTEST VALVE

MISSING BOLT.

WITHIN YOID (OPENING) AT THE POSITION OF

MISSING OCH.

JOINT INVESTIGATION REPORT FOR INCIDENT NO: 132880 JIV report S/N: 93825

F: TABLE SHOWING SOME OF COORDINATES TAKEN DURING JIV FOR AREA CALCULATION 20. Impacted area boundary Coordinates (Angle, Print and attack as an appendix)....

Northing (m) 5 5 4 · 5 7	Easting (W)
51514.57	· · · · · · · · · · · · · · · · · · ·
	425472.12
51514.60	425 473.60
51510 - 60	425473.68
51510.15	425472.14
51510.65	723472 74
	
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1	05/02/2015
 	
 	
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	51510.60

JOINT INVESTIGATION REPORT FOR INCIDENT NO: 1328880 JIV report S/N: 00825 G. INCIDENT INFORMATION:

- 20. Impacted Area Details
 - Total calculated area of impact 0.0006hq
- 21. Volume of oil recovered before completion of JIV (V_{recl}):

o Recovered oil V_{recs}: N1L Barrels

Controlled recovery/evacuation from source with no impact to environment:

NIL Barrels

22. Net Estimated Spilled Volume $V_{Ent}(bbls)^* = 0.05$

Estimated Reported Volume** V_{rep}(bbls)=

O. ! BARREL

*Notes:

Volume estimation was done using an excel based tool (see attached for details on the calculation)
 Reported spilled volume is an estimate

Write other relevant notes taken into consideration for estimating the spilled in the box below:

SINCE THE SPILL IMPACT WAS WITHIN THE BOUNDARIES OF THE DEPLOYED BOOM, SPILLED VOLUME ESTIMATION WAS DONE CONSIDERING THE SPILL AS WITHIN A CONFINED WATER BODY.

Calculation of the respective estimated volume is to be done on site as far as practicable using the new spill volume estimation software on site; Conversion of m³ to barrels is Volume (m3) x 6.29; **Round up estimated volume to next whole number using the following rules:

Any spill volume in excess of -1 bbl - is rounded up to the next whole number.

Any spill volume in less than 1 bhl is rounded up to the next 0.1 bbl.

Examples: Calculated volume = 15.3 hbt ------ Reported volume = 16 bbt Calculated volume = 0.35 bbt ------ Reported volume = 0.4 bbt Calculated volume = 0.01 bbt ------ Reported volume = 0.1 bbt.

Wherever this estimation tool is not applicable please refer to paragraph 6c (Deviations) of the JIV procedure to use appropriate steps for column estimation; record the calculation in a plain sheet of paper and attach to the JIV report.

ESTIMATION OF OIL SPILL VOLUME

	SPILLED ONSHORE/	OFFSHORE (Leak stopped a	t source)		
	Total Calculated Area of It	npact			6.00 m²
İ	Impact within SPDC R.O.W				6.00 m²
il	Impact outside SPDC R.O.V	V			0.00 m ²
Volu	me of oil recovered before	completion of JIV (V)			
ĵ	Estimated Recovered oil (No	et)			bbls
	Estimated Recovered oil (Net) V _{rec.} ;			0.00 bbls
۲.,	mutation of autimated scale	luci velvas es eita			
s 구인	putation of estimated resid	i <u>ual volume on site</u> free phase oil (on land or confine)	l water body)		
	Total area occupied by pool	•	, maker body/		6.00 m ²
	Average depth of pool of fre	•			0.001 m
		applicable, else 0%) ^			%
	Estimated Volume of pool	of free phase oil V			0.01 m³
	Estimated Volume of pool				0.04 bbis
			··		
ь	=	valume of infiltrated oil in the soil	(V _{int})		
	Volume of infiltrated oil at				
	Total area covered by the of				m²
		above leaking facility i.e. pipeline/flov	vline		[<u>]m_</u>
	Soil type				- Select - ▼
iv	P _e (effective porosity of the	soil)			0%
v	Cause of spill				Third party interference T
vi	Calculation of days for it	nfiltration below the leeking point on p	ringling of Heuris	I	
•	Incident Date	JIV Date	Days on Site		
	1/29/2015 15:00	2/5/2015 12:10	7		
	If 'cause of spill' is opera	tional, use 1 week as worst case are 'days on site' exceeds 7.	7		
		Infiltration of oil types in various soil (hann im time	<u>.</u>	٦
	Sail type	Approximate time to reach		ad level	-1
	Oil type	Sand	Loam	Clay	┥
	Bonny Medium	3 weeks	3 years	> 10 years	┥
	Bonny Light	2 days	2 months	> 10 years	
vii	Oil type				
		below leaking facility i.e. pipeline/flow	fine		Bonny Light 0.000 m
ΙX	Total depth below ground su	rface of infiltration of oil			0.000 m
				_	0.00 m³
	Estimated Volume of Infilts		0.00 bbls		
ı	Estimated Volume of Inflitrated oil, V _{lot a} Estimated Volume of Inflitrated oil, V _{lot a} 2 Volume of Inflitrated oil at second spill point [if applicable] (V _{lot b})				0.00 m³
ŧ	Total area covered by the oil	(infiltration)			m²
Ü	Average depth of infiltration		m		
îiê	Soil type P _e (effective porosity of the s		- Select - ♥		
	- # 1				O%
٧	Average depth of infiltration I	below leaking facility i.e. pipeline/flow	tine		0.000 m
νí	Total depth below ground su	rface of infiltration of oil			0.000 m
	Estimated Volume of Infiltr		0.00 m³		
	Estimated Volume of Infilty				0.00 hblo

JOINT INVESTIGATION REPORT SPILL VOLUME ESTIMATE FOR INCIDENT NO: 132880

Total Area of the pool of free phase oil in touch with soil Soilt Note Soilt		outside immediate spill point(s) regio	on (V _{infe})		
Solit Non					
P₂ (effective porosity of the soil) Average depth below ground surface of infiltration of oil Estimated Volume of Infiltrated oil, V _{Mr} . Estimated Volume of Infiltrated oil, V _{Mr} . Estimated Volume of Infiltrated oil, V _{Mr} . Sould Area covered by the oil (infiltration) Total Area covered by the oil (infiltration) Total Area covered by the oil (infiltration) Total Area covered by the oil (infiltration) Average depth below ground surface of infiltration of oil O.002 m Estimated Volume of Infiltrated oil, V _{Mr} . O.00 m² Estimated Volume of Infiltrated oil, V _{Mr} . O.00 bbls Estimated Total Volume of Infiltrated oil, V _{Mr} . O.00 bbls Estimated Total Volume of Infiltrated oil, V _{Mr} . O.00 bbls Estimated Total Volume of Infiltrated oil, V _{Mr} . O.00 bbls Estimated Total Volume of Infiltrated oil, V _{Mr} . O.00 bbls Estimated Total Volume of Infiltrated oil, V _{Mr} . O.00 bbls Estimated Total Volume of Infiltrated oil, V _{Mr} . O.00 bbls Barety Visible Thickness (mm) Percentiage Severage Factors (\$3,000 m) Percentiage Severage Volume (ms) Barety Visible O.0000 Silight Color O.0000 Daris O.0000 Daris O.0000 Daris O.0000 Percentiage Order Ord	•	se priase on in touch with son			
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Total Area of the pool of free phase oil in touch with soil			, , , , , , , , , , , , , , , , , , ,		m²
Estimated Volume of Infiltrated oil, V _{int d}					
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Computation of volume of oil on open water based on standard coloration					
Computation of volume of oil on open water based on standard coloration			- •		
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Thickness (mm)	Table of average depth of	oil on water based on coloration		I	<u>. </u>
Thickness (mm) (%) Volume (m3)	Spill Factors from USCG FOG	(2000 Edition)		,	1
Silvary 0.00008 0.00000		Thickness (mm)		Volume (m3)	
Slight Color	Barety Visible	0.00004			
Bright Color	Silvery	0.00008		0.0000	
Dull	Slight Color	0.00015		0.0000	
Dark 0.002 0.0000 Black oil 0.1 0.0000 Emulsion (30% Oil) 1 0.0000 Percent Total: 0% 0.0000 Percent Total: 0% 0.0000 Estimated Volume of oil on open water, V _{wet} 0.00 m³ Eatimated Volume of oil on open water, V _{wet} 0.00 bbte Settimated Volume of oil on open water, V _{wet} 0.00 bbte Settimated Volume of oil on open water, V _{wet} 0.00 bbte Settimated Volume of oil on open water, V _{wet} 0.00 bbte Settimated Volume of spilled oil (days on site) Oil type Bonny Light Bonny Medium C1 day 10% 5% 1-7 days 25% 15% > 7 days 25% 15% > 7 days 40% 25% Was oil recovery before JIV completion done before JIV date? Estimated volume available for evaporation 0.04 bbts E-factor 25 % Settimated volume available for evaporation 0.04 bbts Settimated volume available for evaporat		0.0003		0.0000	
Black oi				· —	1
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Estimated Volume of oil on open water, V _{rest} Q.00 bbts Composition		, <u> </u>			
Evaporation Factors (E-Factor) for SPDC Crude oil Residence time of spilled oil (days on site) Coll type Bonny Light Bonny Medium Coll type Bonny Medium Coll type Bonny Light Bonny Medium Coll type Bonny Medium Coll typ					0.00 m ³
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Residence time of spilled oil (days on site) Oil type	ulation of evaporated volu	im ę			
Bonny Light Bonny Medium <1 day 10% 5% 1-7 days >7 days 25% 15% >7 days Was oil recovery before JIV completion done before JIV date? Estimated volume available for evaporation E-factor Bonny Medium 10% 5% 15% 25% No E-factor 25% South Pedium 10% 10% 10% 10% 10% 10% 10% 10		Evaporation Factors (E-Factor) for S			
Bonny Light Bonny Medium	Residence time	of spilled oil (days on site)		·	
1-7 days 25% 15% > 7 days 40% 25% Was oil recovery before JIV completion done before JIV date? Estimated volume available for evaporation E-factor 15% No ▼ 0.04 bbls		<u> </u>			
> 7 days 40% 25% Was oil recovery before JIV completion done before JIV date? Estimated volume available for evaporation 0.04 bbls E-factor 25 %					
Was oil recovery before JIV completion done before JIV date? Estimated volume available for evaporation Doubles E-factor					
Estimated volume available for evaporation 0.04 bbls E-factor 25 %		•			.
E-factor 25 %		•			No 💌
	Estimated volume available	e for evaporation			0.04 bbls
Estimated Volume of evaporated oil, V _{evep} 0.01 bbis	E-factor				25 %
0.01 title	Estimated Volume of eva	porated oil, V			0.01 hhis
				`	DDIO

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23. GENERAL STATUS OF THE SITE

A.	Joint investigation of the incident site found that there is no residual impact after the initial response and JIT therefore recommend that the site be closed out
В.	Investigation of the incident site showed that there is residual impact on site requiring further works

24. REPRESENTATIVES

This report was filled, agreed and signed by the following joint investigation representatives:					
ALT	HOUGH THE	HOST COMMUNITY			
Host Community: □ R □ P	RESENTATIVE	WAS IN ATTENDANCE AT			
Department of Petroleum Re	esources [DPR]: 5	THE JIV AND AGREED WITH HE JIV FINDINGS AND			
National Oil Spill Detection s	and Response Agency	NOSDRAJ: OF CONCLUSION, HE DID NOT SIGH THE			
State Ministry of Environme		JIV REPORT, STATING THAT HE, BEING A			
Nigeria Police Force [NPF]:	0	DEPRECENTATIVE ME			
Shell Petroleum Developmen	nt Company [SPDC]: [THE NEMBE OIL AND GAS CHAIRMAN, WAS ONLY			
Signatories agree with reporte	ed findings: 📭	THE TIN RUT INCOMEN			
Separate DPR form has been j	fill <mark>ed</mark> out with same find	Ings NOT TO SIGN ANY REPORT (S).			
		Tick as applicable			

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25. Appendix 1: Overview sketch of the site

