

JOINT INVESTIGATION REPORT

INCIDENT NO: 2904701 JIV report S/N: 0000833

(Note: As practicable as possible the JIV report is to be signed in the field by all the participating parties)

A. GENERAL INFORMATION:

1. Fountain Incident Number: 2904701 2. Type of incident* OIL SPILL
3. Name of Location 16" NUN RIVER - KOLOCREEK BVS RIVER
4. Name of nearest community AGBURA/OIUKPOTI 5. State: BAYELSA 6. LGA YENAGOA/OGBIA
7. Production Facility/Installation PIPELINE
8. Asset Owner/Hub THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED (SPDC)/ PIPELINE

B. INCIDENT INFORMATION:

9. Details of incident
- a. Date Reported: 31ST MARCH, 2021
- b. Start date/time of Investigation: 1ST APRIL, 2021. 1530HRS
- c. Investigation End date: 13TH APRIL, 2021 Day(s) on site: THIRTEEN (13) DAYS
- d. Description of spill point environment
- | | | |
|---|--|--|
| <input type="checkbox"/> Firm soil | <input checked="" type="checkbox"/> Loose soil | <input type="checkbox"/> Recently excavated area |
| <input type="checkbox"/> Under water | <input type="checkbox"/> Swampy | <input type="checkbox"/> Exposed pipe surface |
| <input type="checkbox"/> Well Platform (on water) | <input type="checkbox"/> Drill Rig | <input type="checkbox"/> Sand bag(s) |

Additional observations around the spill point:

e. Description of leak point (tick as applicable);

- | | | |
|---|--|--|
| <input type="checkbox"/> Smooth round-edge hole | <input type="checkbox"/> Rough-edge hole | <input checked="" type="checkbox"/> Hack saw cut |
| <input type="checkbox"/> Complete Rupture | <input checked="" type="checkbox"/> Inward dent, | <input type="checkbox"/> Well head tampering |
| <input type="checkbox"/> Failed Weld-on illegal hot tap valve | <input type="checkbox"/> Failed Clamp, | <input type="checkbox"/> Missing Pipeline/Flowline |
| <input type="checkbox"/> Crude oil theft (illegal bunkering) point, | <input type="checkbox"/> Saver-pit over flow | <input type="checkbox"/> Third party tampering with Clamp |
| <input type="checkbox"/> Third party tampering with valve setting | <input type="checkbox"/> Bulging Outward | <input type="checkbox"/> Third party tampering with flange, |
| <input type="checkbox"/> Flare System/Bund wall failure | <input type="checkbox"/> Cold vent | <input type="checkbox"/> Surge vessel overflow, |
| <input type="checkbox"/> Valve Failure | <input type="checkbox"/> Relief valve failure | <input type="checkbox"/> Accidental 3 rd party equipment impact |
| <input type="checkbox"/> Tear () | | |
| <input type="checkbox"/> Others (specify) _____ | | |

f. Incident caused by:

- ☒ Third party interference (Sabotage ☒; crude theft ☐; Line theft ☐; Accidental 3rd party damage ☐)
- ☐ Operational ☐ Others (including Mystery spills) _____

*This can be: (a) Oil Spill (b) Drilling fluid/Chemical (c) Siltation (d) Water Leak (e) Fire (f) Non-leaking theft point removal

Version 2020/01

Distribution of copies: White (Asset Owner); Pink (DPR); Green (NOSDRA); Yellow (State Ministry of Environment); Blue (Host Community)

JOINT INVESTIGATION REPORT

000833

INCIDENT NO: 2904701 JIV report S/N:

g. Spill Point Coordinates (*Incidents $\leq 100\text{m}$ apart to be aggregated into one Joint Investigation Report)

h. Measuring unit WGS 84

Northing: <u>LATITUDE</u>	Easting: <u>LONGITUDE</u>
<u>4.86285442</u>	<u>6.26242786</u>
/	/
/	/

C. RISK ASSESSMENT

10. Details of Environment

i. Type of environment where spill occurred (select one):

☒ Land ☐ Swamp ☐ Water ☐ Seasonal swamp ☒ Shoreline/Waterfront

ii. Type of environment to which oil has spread:

☒ Land ☐ Swamp ☒ Waterbody (specify) _____

iii. Weather condition

☐ Dry ☒ Wet ☐ Windy ☐ Hot

11. Distance to Sensitive habitat within 100m radius

☐ Government reserved and designated protected area [,m]
☐ Drinking water source [,m]
☐ Surface water ☐ Borehole
☐ Built up Area [,m]
☐ Residential Area ☐ Commercial/Industrial Area
☐ Farmlands [15 ,m]
☐ Fish Farm/Pond [,m]
☐ Fishing net [,m]
☐ Others (specify) _____ [,m]

12. Containment measures put in place:

☒ Booms ☐ Trench ☒ Dyke ☐ Pit ☒ Natural depression ☐ None

☐ Others: _____

13. Any pictures or video coverage?

☒ [Y] ☐ [N]

14. Further response/repair initiated as at the time of JIV?

☒ [Y] ☐ [N]

If yes to item 14, give brief description:

REPAIR ONGOING BY CLAMPING/SECTIONAL
REPLACEMENT.

JOINT INVESTIGATION REPORT

INCIDENT NO: 2904701 JIV report S/N: 0000833

15. Was there any disruption to the investigation? ☒ [Y] ☐ [N]

If yes to item 15 give brief description:

THE HOST COMMUNITIES CHASED THE TEAM OUT OF SITE DUE TO ARGUMENT ON THE CAUSE OF SPILL

16. Was JIV delayed? ☒ [Y] ☐ [N]

Reason(s):

- ☒ Delayed Community Access Approval ☐ Security Challenges ☐ Access constraint due to terrain
☐ Others (specify) _____

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

17. Structures / Properties

S/N	Type of Structures	Description	Size	Number	Comments
NONE WITHIN AREA OF IMPACT					

18. Crops/Economic Trees

S/N	Type of crops	Young	Medium	Matured	Quantity	Comments
1.	WALNUT	—	15	20	35	IMPACTED
2.	CASAVA	10	20	10	40	IMPACTED
3.	CORN	20	10	—	30	IMPACTED

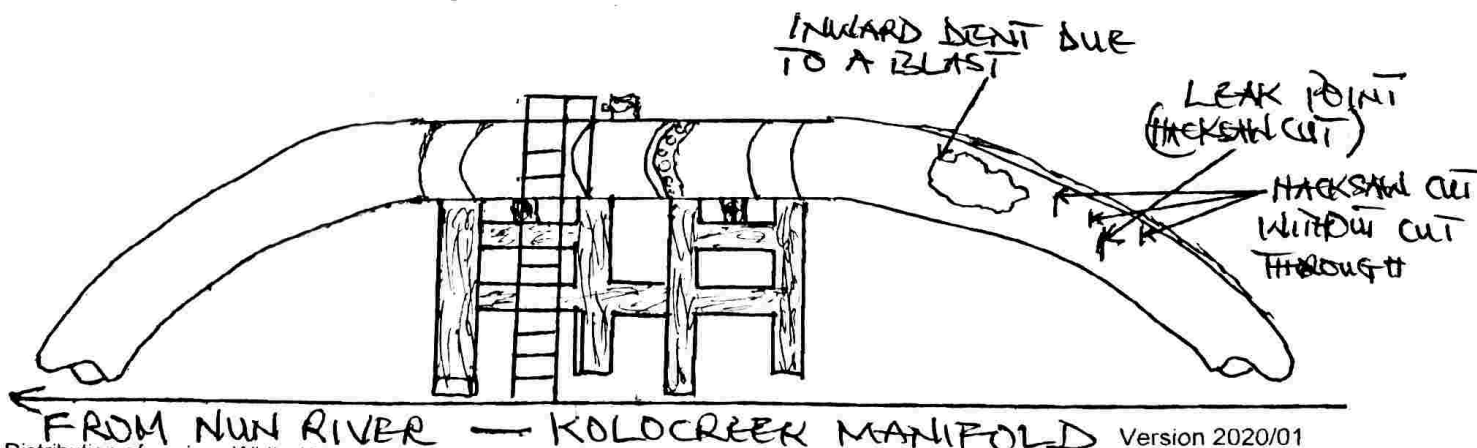
19. Fish/Nets/Ponds

S/N	Fish/Nets/Ponds	Description	Quantity/Size	Comments
NONE WITHIN AREA OF IMPACT				

20. Others (Specify) e.g. Animal Traps

S/N	Others	Description	Quantity/Size	Comments
NONE WITHIN AREA OF IMPACT				

E. GRAPHIC DESCRIPTION OF LEAK POINT (while detailed description of the leak point should be contained in the leak report, overview sketch of the site should be added as appendix 1) A SECTION OF 16" NUN RIVER — KOLOCREEK BVS RISER AT XGBURA/OTUDKPOI SHOWING AN INWARD DENT AND HACKSAW CUT AT 11 O' CLOCK POSITION



JOINT INVESTIGATION REPORT

INCIDENT NO: 2904701 JIV report S/N: 0000833

F: TABLE SHOWING SOME OF COORDINATES TAKEN DURING JIV FOR AREA CALCULATION

21. Impacted area boundary Coordinates (If more, Print and attach as Appendix)

[illegible]

16" NUN RIVER - KOLOCREEK BVS RISER AT (EKOLI) AGBURA/OTUOKPOTI		
PT_ID	LAT_Y	LONG_X
SP	4.86285442	6.26242786
light	4.86273619	6.26228851
light	4.86279507	6.2622552
7	4.86239707	6.26184384
6	4.86254479	6.26176706
superficial	4.86261971	6.26182218
8	4.86275225	6.26162123
9	4.86283262	6.26145962
4	4.86293049	6.26124698
5	4.86303712	6.26120493
10	4.86271529	6.2633606
light	4.86282415	6.26317937
boom	4.8628957	6.26319678
boom	4.86294266	6.26327136
boom	4.8630368	6.26327322
11	4.86312242	6.26334307
boom	4.86311794	6.26318873
14	4.86421427	6.26225946
15	4.863279	6.261494
16	4.8627	6.261918
boom	4.86303	6.263201
18	4.863714	6.262691


 06/04/2021

JOINT INVESTIGATION REPORT

INCIDENT NO: 2904701 JIV report S/N: 0000833

G. INCIDENT INFORMATION:

a. Impacted Area Details *

- Total calculated area of impact (Ha) 2.55 Ha
- Impact within SPDC R.O.W YES
- Impact outside SPDC R.O.W YES

* Round off to 2 decimal places if area is $\geq 100 \text{ m}^2$ or to 4 decimal places if area is $< 100 \text{ m}^2$ (e.g. 14.55, 0.0051, 0.0009)

* Express in Hectares (Ha)

b. Volume of oil recovered before completion of JIV (V_{recJ}):

Recovered oil V_{recJ} :	<u>NIL</u>	Barrels
-----------------------------------	------------	---------

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

<u>NIL</u>	Barrels
------------	---------

c. Net Estimated Spilled Volume $V_{\text{Est}}(\text{bbls})^*$ = 149.17 BARRELS

Estimated Reported Volume** $V_{\text{rep}}(\text{bbls})$ = 150 BARRELS

*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 volume estimation or cause of spill:

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 m^3 to barrels is Volume (m^3) 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 bbl is rounded up to the next 0.1 bbl.

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

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.

JOINT INVESTIGATION REPORT

INCIDENT NO: 2904701 JIV report S/N: 000833

d. General Status of the site

- | | |
|---|-------------------------------------|
| i. 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 | <input type="checkbox"/> |
| ii. Investigation of the incident site showed that there is residual impact on site requiring further works | <input checked="" type="checkbox"/> |

e. Representatives

This report was filled, agreed and signed by the following joint investigation team representatives:

- Host Community: ☒
- Department of Petroleum Resources [DPR]: ☒
- National Oil Spill Detection and Response Agency [NOSDRA]: ☒
- State Ministry of Environment [SME]: ☒
- The Shell Petroleum Development Company [SPDC]: ☒
- *Separate DPR form has been filled out with same findings* ☒
- *Separate NOSDRA form has been filled out with same findings* ☒
- *Separate SME form has been filled out with same findings* ☐

Tick as applicable

JOINT INVESTIGATION REPORT

INCIDENT NO: 2904701 JIV report S/N: 0000833

f. Appendix 1: Overview sketch of the site

