

JOINT INVESTIGATION REPORT

INCIDENT NO: 2423961 JIV report S/N: 1030099

(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: 24239.61 2. Type of incident* OIL SPILL AND FIRE
3. Name of Location 24" NKPOKU - BOMU PIPELINE
4. Name of nearest community SIME 5. State: RIVERS 6. LGA TAI
7. Type of Production facility/Installation OIL PIPELINE
8. Asset owner/District THE SHELL PETROLEUM DEVELOPMENTS COMPANY OF NIGERIA LIMITED / PIPELINE

B. INCIDENT INFORMATION:

9. Details of incident
a. Date Reported: 10TH AUGUST 2019
b. Start date/time of investigation: 13TH AUGUST 2019 / 1320 HRS
c. Investigation End date: 14TH AUGUST 2019 Actual investigation duration, days: TWO (2) DAYS
d. Description of spill point environment
 Firm soil Loose soil Recently excavated area
 Under water Swampy Exposed pipe surface
 Well Platform (on Water) Drill Rig

Additional observations around the spill point:
THE SPILL POINT WAS OBSERVED BEING BURNED BY FIRE.

- e. Description of leak point (tick as applicable);
 Drilled hole Hack saw cut Tear (_____)
 Complete Rupture Inward dent, Well head tampering
 Failed Weld-on illegal hot tap valve Failed Clamp, Missing Pipeline/Flowline
 Crude oil theft (illegal bunkering) point, Saver-pit over flow Third party tampering with Clamp
 Third party tampering with valve setting Bulging Outward Third party tampering with flange,
 Flare System/Bund wall failure Cold vent Surge vessel overflow,
 Valve Failure Relief valve failure Accidental 3rd party equipment impact
 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) construction e) Encroachment f) Fire, g) non leaking Theft point removal
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g. Spill point coordinates

h. Measuring unit

Northing:	Easting:
<u>4-77.278 N</u>	<u>7-20914 E</u>

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 Wet Windy Hot Cool

11. Distance to Sensitive habitat within 100m radius

Government reserved and designated protected area [NIL ,m]
 Drinking water source [NIL ,m]
 Built up area [NIL ,m]
 Farmlands [10 ,m]
 Fish Farm/Pond [NIL ,m]
 Fishing net [NIL ,m]
 Others (specify) _____

12. Containment measures put in place;

Booms Trench Dyke Natural depression Pit None
 Others: _____

13. Any pictures or video coverage? [N]

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

If yes to item 14, give brief description:

RECOVERY AND REPAIR ACTIVITIES ARE ONGOING

15. Was there any disruption to the investigation?

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If yes to item 15 give brief description:

NOT APPLICABLE

16. Was JIV delayed? [X] []

If yes to item 16 give brief description: NOT APPLICABLE

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
	<u>NONE WITHIN AREA OF IMPACT</u>				

18. Crops/Economic Trees

S/N	Type of crops	Young	Medium	Matured	Quantity	Comments
	<u>NONE WITHIN AREA OF IMPACT</u>					

19. Fish/Nets/Ponds

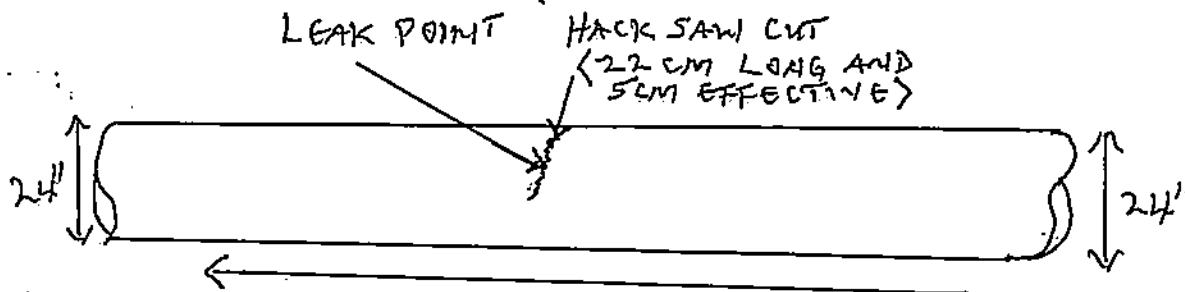
S/N	Fish/Nets/Ponds	Description	Quantity/Size	Comments
	<u>NONE WITHIN AREA OF IMPACT</u>			

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

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

E. GRAPHIC DESCRIPTION OF LEAK POINT (while detail report of the leak point should be contained in the leak report, overview sketch of the site should be added as an appendix 1)

SECTION OF 24" NKPOKU - BOMU PIPELINE AT SITE SHOWING HACK SAW CUT BY UNKNOWN PERSON(S) AT 11 O'CLOCK POSITION.



From Nkpoku To Bomu

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

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

S/N	Northing	Easting
1	4.77259	7.20950
2	4.77276	7.20920
3	4.77277	7.20921
4	4.77268	7.20919
5	4.77272	7.20910
6	4.77283	7.20916
7	4.77262	7.20950
<i>Handwritten signature/initials</i>		

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G. INCIDENT INFORMATION:

a. Impacted Area Details

- Total calculated area of impact 0.02202 HA
- Impact within SPDC R.O.W YES
- Impact outside SPDC R.O.W NO

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

Recovered oil V_{rec} :	<u>31</u>	Barrels
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Controlled recovery/evacuation from source with no impact to environment:

<u>NIL</u>	Barrels
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c. Net Estimated Spilled Volume V_{est} (bbls)* =	<u>39.83 BARRELS</u>
Estimated Reported Volume** V_{rep} (bbls) =	<u>40 BARRELS</u>

***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) \times 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 = 0.05 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.

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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

ii. Investigation of the incident site showed that there is residual impact on site requiring further works

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]:
- Shell Petroleum Development Company [SPDC]:
- *Separate DPR form has been filled out with same findings*

Tick as applicable

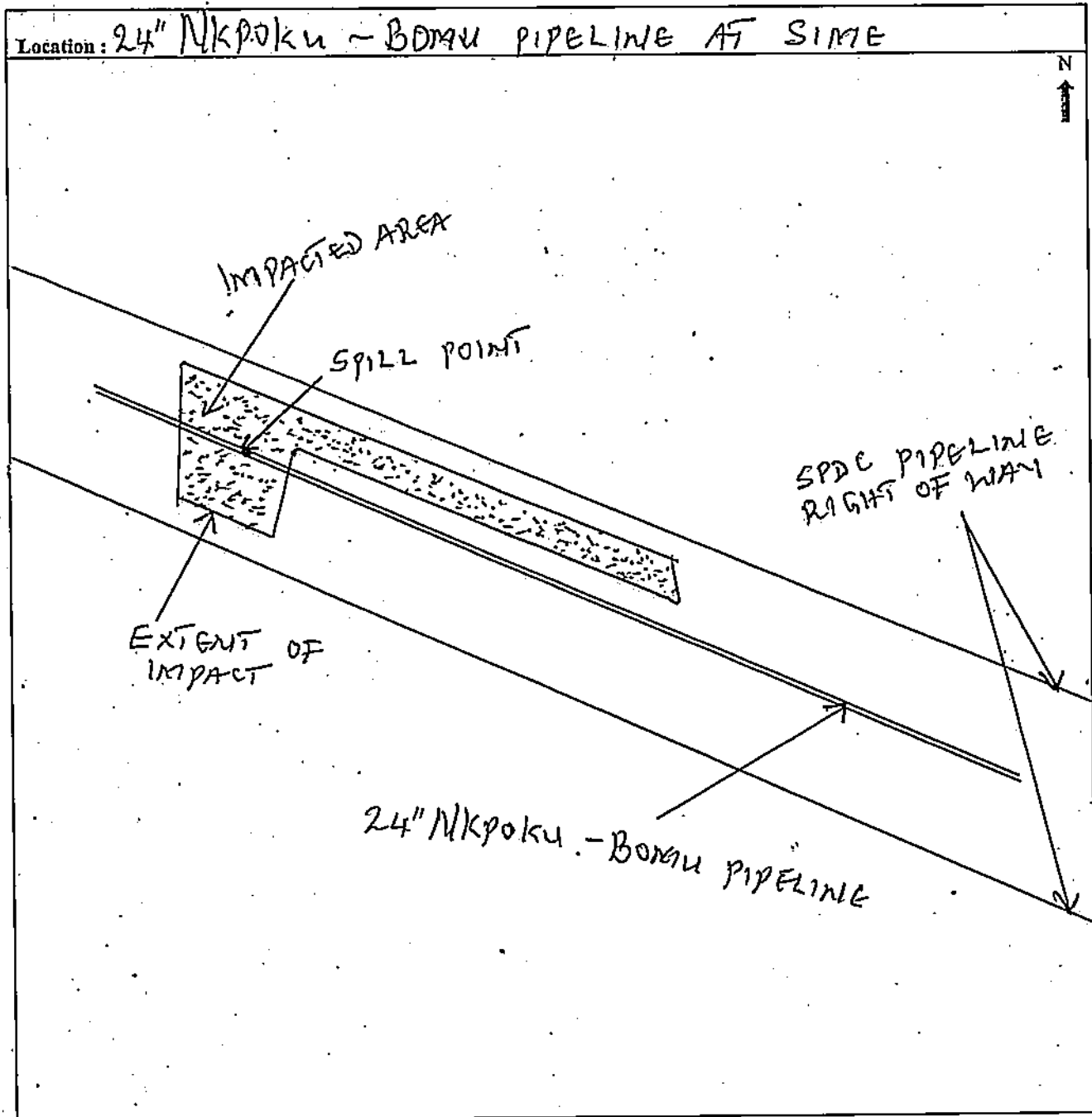
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f. Appendix 1: Overview sketch of the site



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