

JOINT INVESTIGATION REPORT

INCIDENT NO: 2130768 JIV report S/N: 0018

(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: 2130768 2. Type of incident* OIL SPILL
3. Name of Location 16" NUN RIVER - KOLOCREEK PIPELINE
4. Name of nearest community OTUEGWE IS. State: BAYELSA. LGA OGBIA
7. Type of Production facility/Installation OIL PIPELINE
8. Asset owner/District THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LTD (SPDC) / PIPELINE

B. INCIDENT INFORMATION:

9. Details of incident

- a. Date of incident: 21ST JULY 2018
b. Start date/time of investigation: 21ST JULY 2018 / 1120HRS
c. Investigation End date: 2ND AUGUST 2018 Actual investigation duration, days: TWO (2) DAYS
d. Description of spill point environment

- | | | |
|---|--|---|
| <input type="checkbox"/> Firm soil | <input checked="" type="checkbox"/> Loose soil | <input checked="" 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 | |

Additional observations around the spill point: THE JOINT INVESTIGATION TEAM SAW 3" VALVE CRUDE THEFT POINT INSTALLED AT 12 O'CLOCK POSITION.

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

- | | | |
|---|--|--|
| <input type="checkbox"/> Drilled hole | <input type="checkbox"/> Hack saw cut | <input type="checkbox"/> Tear (_____) |
| <input type="checkbox"/> Complete Rupture | <input 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 checked="" 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"/> Corrosion | <input type="checkbox"/> Others(specify) _____ | |

f. Incident caused by:

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

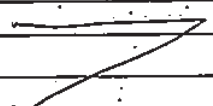
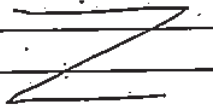
*This can be: a) Oil Spill b) Drilling fluid/Chemical c) Siltation d) construction e) Encroachment f) Fire. Version 2018/01
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g. Spill point coordinates

Measuring unit

Northing:	Easting:
4.844698	6.237964
	

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 from the nearest sensitive habitat

- Government reserved and designated-protected area
- Drinking water source
- Built up area
- Farmlands
- Fish Farm/Pond
- Fishing net
- Others (specify): _____

}

[,m]
[,m]
[,m]
[,m]
[,m]
[,m]
[,m]

NONE SEEN
WITHIN
VICINITY

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:

SPILL RESPONSE AND LEAK REPAIR

15. Was there any disruption to the investigation?

[Y]

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If yes to item 15 give brief description:

NOT APPLICABLE

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

17. Crops/Economic Trees

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

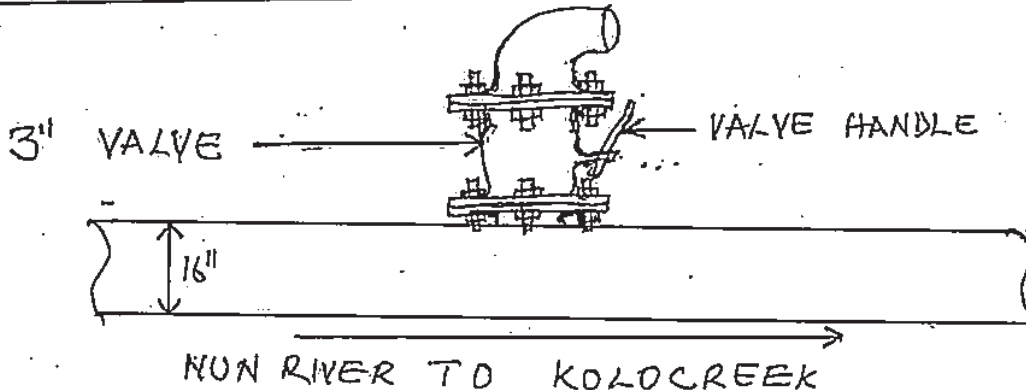
18. Fishing Nets/Fish Ponds

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

19. 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 detailed report of the leak point should be contained in the leak report, overview sketch of the site should be added as an appendix 1) A SECTION OF 16" NUN RIVER - KOLOCREEK PIPELINE AT OTUEGWEI SHOWING 3" VALVE CRUDE THEFT POINT INSTALLED AT 12 O'CLOCK POSITION BY UNKNOWN PERSONS



16" NUN RIVER-KOLO CREEK PIPELINE AT OTUEGWE		
JIV 2130768 OTUEGWE		
POINT	EASTING(m)	NORTHING(m)
sp	6.237964	4.844698
370	6.2379	4.84468
371	6.23782	4.8446
372	6.23788	4.84452
373	6.23778	4.84433
374	6.23792	4.8443
375	6.23803	4.84417
376	6.23821	4.84393
377	6.23862	4.84384
378	6.23891	4.84378
379	6.23909	4.84388
380	6.23926	4.84364
381	6.23942	4.84348
382	6.23939	4.84325
383	6.2393	4.84301
384	6.23944	4.8427
385	6.23942	4.84243
386	6.23936	4.84219
387	6.23938	4.84195
388	6.23931	4.84169
389	6.23922	4.84158
390	6.2391	4.84133
391	6.2391	4.84104
392	6.23905	4.84082
393	6.23911	4.84051
394	6.2392	4.84036
395	6.23926	4.83956
396	6.23915	4.83909
397	6.23874	4.83915
398	6.23802	4.84474
399	6.2381	4.84469
400	6.23807	4.84448
401	6.23833	4.84429
402	6.23859	4.84423
403	6.239446	4.844314
404	6.240031	4.843406
405	6.239819	4.842442
406	6.239776	4.84192
407	6.239384	4.841348
408	6.239465	4.840409
409	6.23954	4.839601
410	6.239266	4.838967
411	6.23897	4.83897
412	6.23882	4.83891

413	6.23869	4.83891
414	6.23856	4.83883
415	6.23844	4.8388
416	6.23831	4.83875
417	6.23804	4.83866
418	6.23796	4.83866
419	6.23776	4.83872
420	6.23765	4.83881
421	6.23754	4.83886
422	6.2374	4.83895
423	6.23725	4.83903
424	6.23716	4.83905
425	6.23695	4.83905
426	6.23686	4.83909
427	6.23678	4.83918
428	6.23675	4.8393
429	6.23671	4.83935
430	6.23661	4.83943
431	6.23645	4.83959
432	6.23638	4.83961
433	6.23619	4.83974
434	6.2363	4.83984
435	6.23864	4.83909
436	6.23849	4.839
437	6.23839	4.83897
438	6.23825	4.83892
439	6.23799	4.83884
440	6.23785	4.83889
441	6.23774	4.83897
442	6.23763	4.83902
443	6.23749	4.83911
444	6.23731	4.8392
445	6.23718	4.83923
446	6.23699	4.83923
447	6.23694	4.83927
448	6.23692	4.83937
449	6.23684	4.83948
450	6.23673	4.83957
451	6.23655	4.83975
452	6.23646	4.83978

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G. INCIDENT INFORMATION:

a. Impacted Area Details

- Total calculated area of impact 3.96 Ha
- Impact within R.O.W YES
- Impact outside R.O.W YES

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

Recovered oil (V_{rec}):	<u>NIL</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>16669 BARRELS</u>
Estimated Reported Volume** V_{rep} (bbls)=	<u>167 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 estimating the spilled volume in the box below:

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 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 6(c (Deviations) of the JIV procedure to use appropriate steps for volume 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):
- Asset Owner:
- Signatories agree with reported findings:
- 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

