

Sample ID : W13/007887**Beach W24: Sleaford Bay Visit: 3****Analyses Requested**

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:**Results for: Gas Chromatography Mass Spectrometry****Unique ID:** W13/007887 DISS GC-MS/01**Instrument / Type:** Gas Chromatography Mass Spectrometry Run: 1**for Analysis:** Biomarkers**Preparation:** Dissolved in solvent**Analysis Date:** 18/07/2017**Method ID/s:****Linked Image:** [None available](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			31.3045324685353	ratio	Y
BiomRatio	% C27 abb 20(R+S)			47.1797995924627	ratio	Y
BiomRatio	% C28 aaa 20R			20.5447455794919	ratio	Y
BiomRatio	% C28 abb 20(R+S)			20.3852698359347	ratio	Y
BiomRatio	% C29 aaa 20R			48.1507219519728	ratio	Y
BiomRatio	% C29 abb 20(R+S)			32.4349305716026	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.103627969932081	ratio	Y
BiomRatio	25-Nor/C30H			7.54481308909473E-02	ratio	Y
BiomRatio	C19t/C23t			0.228596668138975	ratio	Y
BiomRatio	C22t/C21t			8.73492511184594E-02	ratio	Y
BiomRatio	C22t/C24t			6.68627104290939E-02	ratio	Y
BiomRatio	C23t/C30H			0.101543895755725	ratio	Y
BiomRatio	C24t/C23t			0.895543906727892	ratio	Y
BiomRatio	C24Tet/C23t			0.190644454259832	ratio	Y
BiomRatio	C24Tet/C26t			0.196104653156397	ratio	Y
BiomRatio	C24Tet/C30H			1.93587805897675E-02	ratio	Y
BiomRatio	C26t/C25t			1.72677077936496	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.717320014574798	ratio	Y
BiomRatio	C27 Dia/Ster			1.17839341974252	ratio	Y
BiomRatio	C28BNH/C30H			3.51624712487074E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.687474954361281	ratio	Y
BiomRatio	C29H/C30H			0.517934544371347	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.327410054628235	ratio	Y
BiomRatio	C30DiaH/C30H			0.149002357648309	ratio	Y
BiomRatio	C30Ts/C30H			0	ratio	U
BiomRatio	C35 Homohopane Index			5.42142197084533E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.757721434673694	ratio	Y
BiomRatio	Gam/C30H			4.45947569828195E-02	ratio	Y
BiomRatio	Gam/C31HR			0.254641307394199	ratio	Y
BiomRatio	Ole/C30H			0.12410572690207	ratio	Y
BiomRatio	Sterane/hopane			8.00609377545494E-02	ratio	Y
BiomRatio	Steranes/Terpanes			6.75284875129565E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.18558760462669	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007887_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

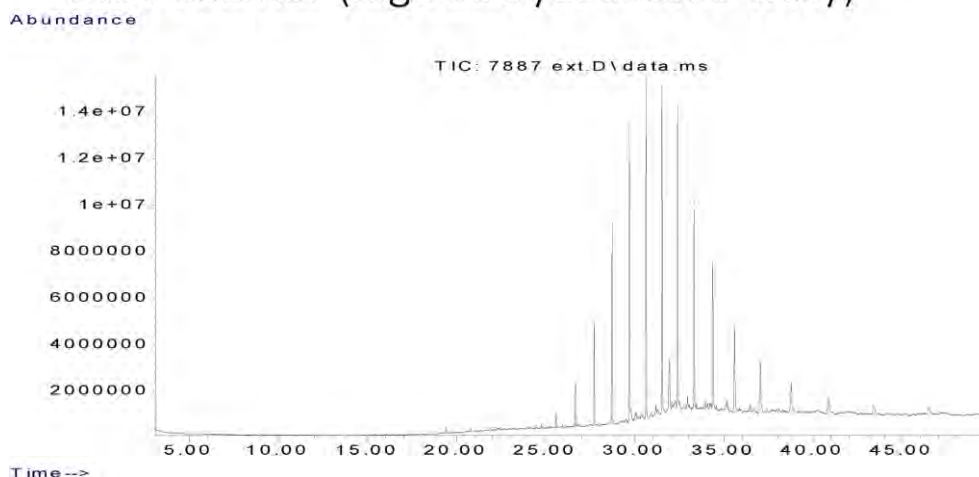
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			85.737482960987	percent	Y
Inorg	Hydrogen			8.04137435387674	percent	Y
Inorg	Nitrogen			0.15	percent	Y
Inorg	Sulphur			1.70138211328946	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007887_DISS_GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007887_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7887 exterior (high botryococcane waxy)



Data Sheet:

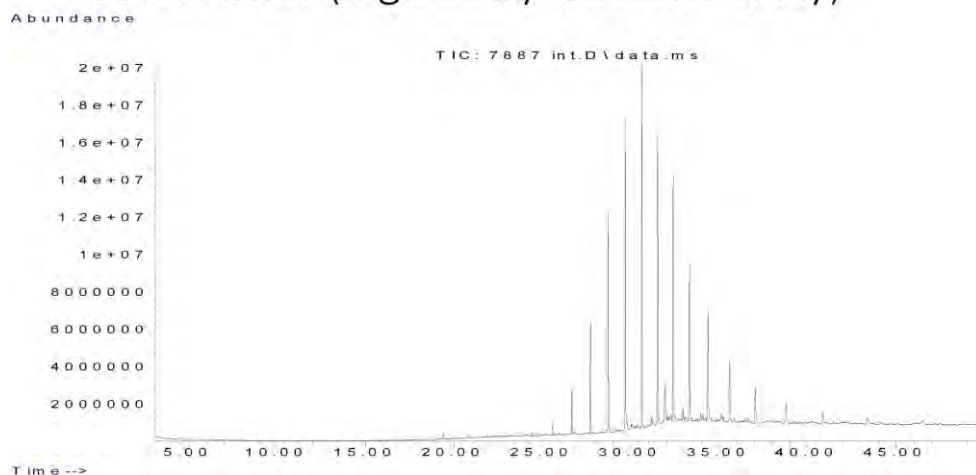
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	17946813			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410	777254			Z
Aliph	nC22	25.5760	2771036			Z
Aliph	nC23	26.6620	9020992			Z
Aliph	nC24	27.7060	21919847			Z
Aliph	nC25	28.7100	41249532			Z
Aliph	nC26	29.6680	52419211			Z
Aliph	nC27	30.6080	67132138			Z
Aliph	nC28	31.5080	62845240			Z
Aliph	nC29	32.3700	59426372			Z
Aliph	nC30	33.2910	47107482			Z
Aliph	nC31	34.3470	40290363			Z
Aliph	nC32	35.5720	28632168			Z
Aliph	nC33	37.0130	20823280			Z
Aliph	nC34	38.7280	13445658			Z
Aliph	nC35	40.8080	8975224			Z
Aliph	nC36	43.3510	6882615			Z
Aliph	nC37	46.4710	4556017			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830	356031			Z
Aliph	Phytane	20.7870	1246670			Z
Aliph	Pristane	19.3870	1791161			Z

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007887 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007887_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7887 interior (high botryococcane waxy)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	15577186			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410	821151			Z
Aliph	nC22	25.5760	2974642			Z
Aliph	nC23	26.6620	11556234			Z
Aliph	nC24	27.7060	29873665			Z
Aliph	nC25	28.7100	56547655			Z
Aliph	nC26	29.6680	74581888			Z
Aliph	nC27	30.6080	83061680			Z
Aliph	nC28	31.5080	69951112			Z
Aliph	nC29	32.3700	62249176			Z
Aliph	nC30	33.2910	45566540			Z
Aliph	nC31	34.3470	37157799			Z
Aliph	nC32	35.5720	25837692			Z
Aliph	nC33	37.0130	17737555			Z
Aliph	nC34	38.7280	11325640			Z
Aliph	nC35	40.8080	8001511			Z
Aliph	nC36	43.3510	5686857			Z
Aliph	nC37	46.4710	4204107			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830	335909			Z
Aliph	Phytane	20.7870	1117100			Z
Aliph	Pristane	19.3870	1908685			Z

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007888**

Beach W24: Sleaford Bay Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 12/10/2016 4:52:26 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

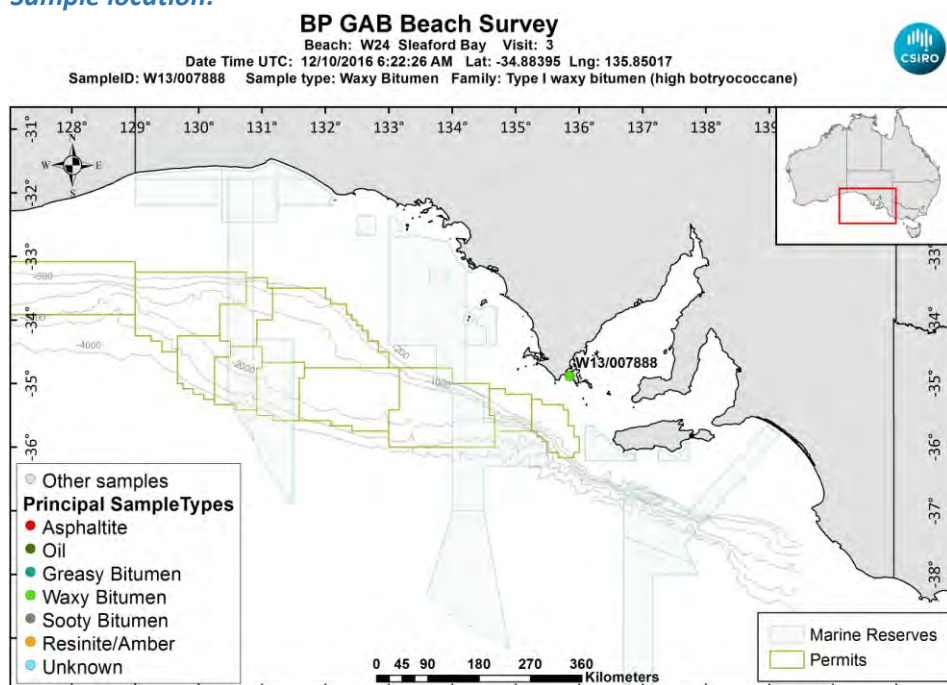
Size (cm): 3

Latitude (Y): -34.883947

Weight (gm): 2.98093

Longitude (X): 135.850172

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007888_Location.jpg](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007888_Photo02.JPG](#)

Sample ID : W13/007888**Beach W24: Sleaford Bay Visit: 3****Analyses Requested**

Split: Analysis: Sent:
1 Bitumen Determination YES

Analyses Completed:

Analysis: Instrument/Type:
Elemental CHNS Elemental Analyser Run: 1
Whole Oils GCMS with Full Scan Run: 3

Sample Analyses Completed:**Results for: Elemental Analyser****Unique ID: W13/007888_SPE_ELEM-AN/01****Instrument / Type:** Elemental Analyser Run: 1**for Analysis:** Elemental CHNS**Analysis Date:** 30/10/2017**Linked Image:** [None available](#)**Preparation:** Solid Phase Extract**Method ID/s:**

Sample Volume: **Volume Units:** **Extract Volume:** **Dilution Factor:**
Comment:

Data Sheet:*(default units ppb)*

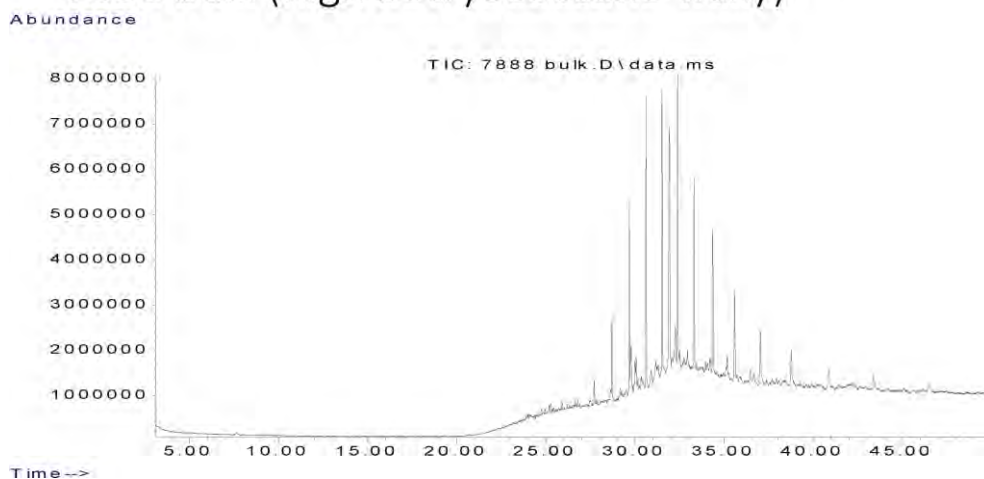
Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			86.2675229743248	percent	Y
Inorg	Hydrogen			7.72314512922465	percent	Y
Inorg	Nitrogen			0.2	percent	Y
Inorg	Sulphur			1.39659969213504	percent	Y

Results for: GCMS with Full Scan**Unique ID: W13/007888_DISS_GCMS-Scan/03****Instrument / Type:** GCMS with Full Scan Run: 3**for Analysis:** Whole Oils**Analysis Date:** 30/10/2017**Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007888_bulk_WholeOil.jpg](#)**Preparation:** Dissolved in solvent**Method ID/s:**

Sample Volume: **Volume Units:** **Extract Volume:** **Dilution Factor:**
Comment: Bulk

Results for: GCMS with Full Scan

7888 bulk (high botryococcane waxy)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	44630754			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620	546878			Z
Aliph	nC24	27.7060	2533439			Z
Aliph	nC25	28.7100	9101384			Z
Aliph	nC26	29.6680	17692958			Z
Aliph	nC27	30.6080	28843254			Z
Aliph	nC28	31.5080	29914040			Z
Aliph	nC29	32.3700	29806046			Z
Aliph	nC30	33.2910	23610703			Z
Aliph	nC31	34.3470	21072158			Z
Aliph	nC32	35.5720	15117918			Z
Aliph	nC33	37.0130	11590261			Z
Aliph	nC34	38.7280	7826881			Z
Aliph	nC35	40.8080	5693109			Z
Aliph	nC36	43.3510	4133415			Z
Aliph	nC37	46.4710	3462240			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007889**

Beach W24: Sleaford Bay Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 12/10/2016 4:54:09 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

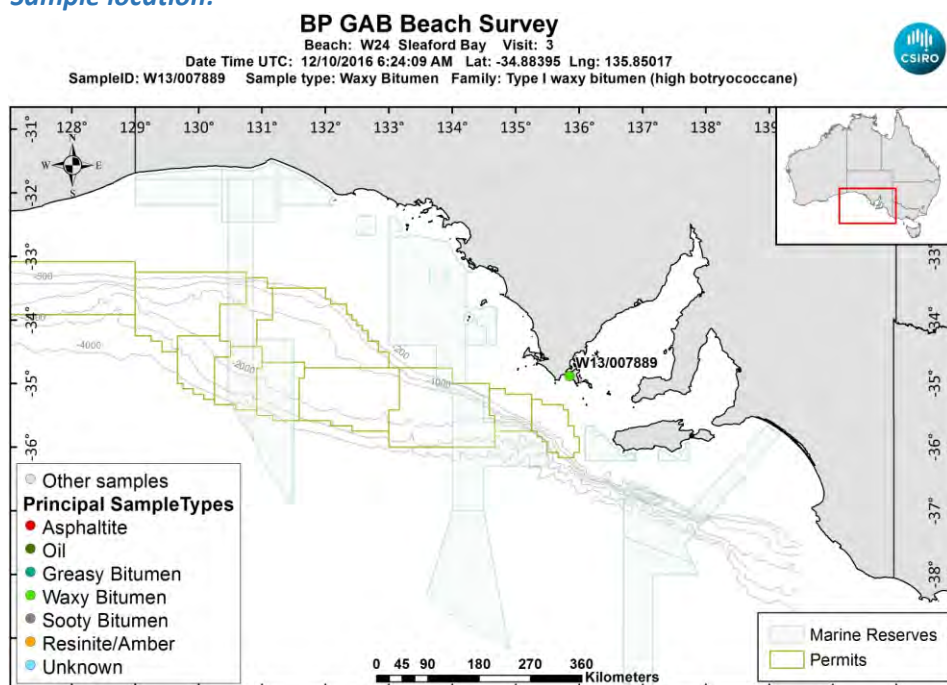
Size (cm): 2.4

Latitude (Y): -34.883947

Weight (gm): 2.10492

Longitude (X): 135.850172

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007889_Location.jpg](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007889_Photo02.JPG](#)

Sample ID : W13/007889**Beach W24: Sleaford Bay Visit: 3****Analyses Requested**

Split: Analysis: Sent:
1 Bitumen Determination YES

Analyses Completed:

Analysis: Instrument/Type:
Elemental CHNS Elemental Analyser Run: 1
Whole Oils GCMS with Full Scan Run: 3

Sample Analyses Completed:**Results for: Elemental Analyser****Unique ID: W13/007889_SPE_ELEM-AN/01****Instrument / Type:** Elemental Analyser Run: 1**for Analysis:** Elemental CHNS**Analysis Date:** 30/10/2017**Linked Image:** [None available](#)**Preparation:** Solid Phase Extract**Method ID/s:**

Sample Volume: **Volume Units:** **Extract Volume:** **Dilution Factor:**
Comment:

Data Sheet:*(default units ppb)*

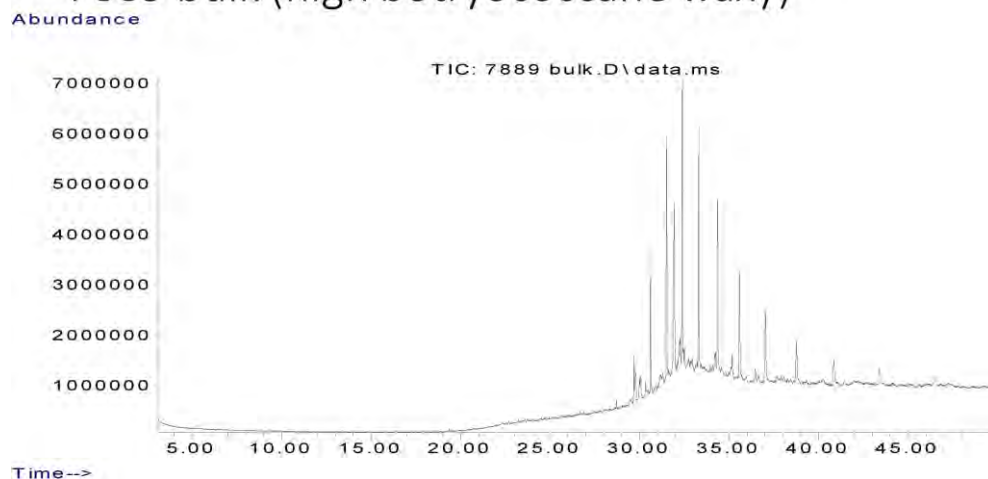
Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			86.1500926975659	percent	Y
Inorg	Hydrogen			10.1857049701789	percent	Y
Inorg	Nitrogen			0.2	percent	Y
Inorg	Sulphur			2.61179790357089	percent	Y

Results for: GCMS with Full Scan**Unique ID: W13/007889_DISS_GCMS-Scan/03****Instrument / Type:** GCMS with Full Scan Run: 3**for Analysis:** Whole Oils**Analysis Date:** 30/10/2017**Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007889_bulk_WholeOil.jpg](#)**Preparation:** Dissolved in solvent**Method ID/s:**

Sample Volume: **Volume Units:** **Extract Volume:** **Dilution Factor:**
Comment: Bulk

Results for: GCMS with Full Scan

7889 bulk (high botryococcane waxy)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	27553165			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100	943218			Z
Aliph	nC26	29.6680	3643835			Z
Aliph	nC27	30.6080	13318735			Z
Aliph	nC28	31.5080	21881096			Z
Aliph	nC29	32.3700	27360077			Z
Aliph	nC30	33.2910	24717360			Z
Aliph	nC31	34.3470	23069722			Z
Aliph	nC32	35.5720	17055208			Z
Aliph	nC33	37.0130	12758537			Z
Aliph	nC34	38.7280	8305819			Z
Aliph	nC35	40.8080	5792336			Z
Aliph	nC36	43.3510	4295452			Z
Aliph	nC37	46.4710	3629490			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007890**

Beach W24: Sleaford Bay Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 12/10/2016 4:57:08 PM

Type: Waxy Bitumen

Family: Unknown

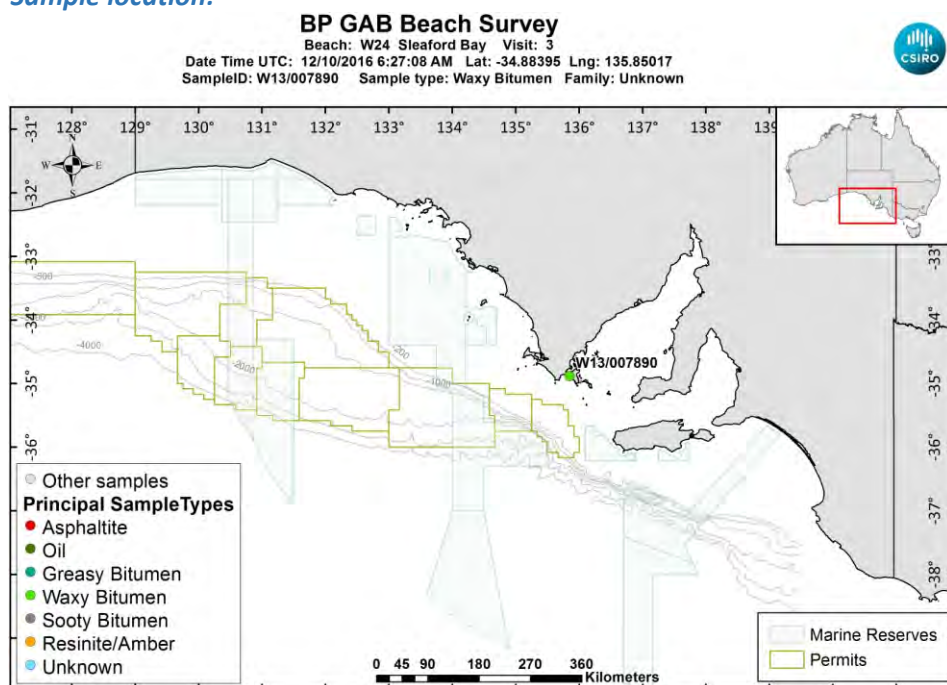
Size (cm): 1.9

Latitude (Y): -34.883947

Weight (gm): 1.29782

Longitude (X): 135.850172

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007890_Location.jpg](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007890_Photo02.JPG](#)

Sample ID : W13/007890**Beach W24: Sleaford Bay Visit: 3****Analyses Requested**

Split: Analysis: Sent:
1 Bitumen Determination YES

Analyses Completed:

Analysis: Instrument/Type:
Elemental CHNS Elemental Analyser Run: 1
Whole Oils GCMS with Full Scan Run: 3

Sample Analyses Completed:**Results for: Elemental Analyser****Unique ID:** W13/007890_SPE_ELEM-AN/01**Instrument / Type:** Elemental Analyser Run: 1**for Analysis:** Elemental CHNS**Analysis Date:** 30/10/2017**Linked Image:** [None available](#)**Preparation:** Solid Phase Extract**Method ID/s:**

Sample Volume: **Volume Units:** **Extract Volume:** **Dilution Factor:**
Comment:

Data Sheet:*(default units ppb)*

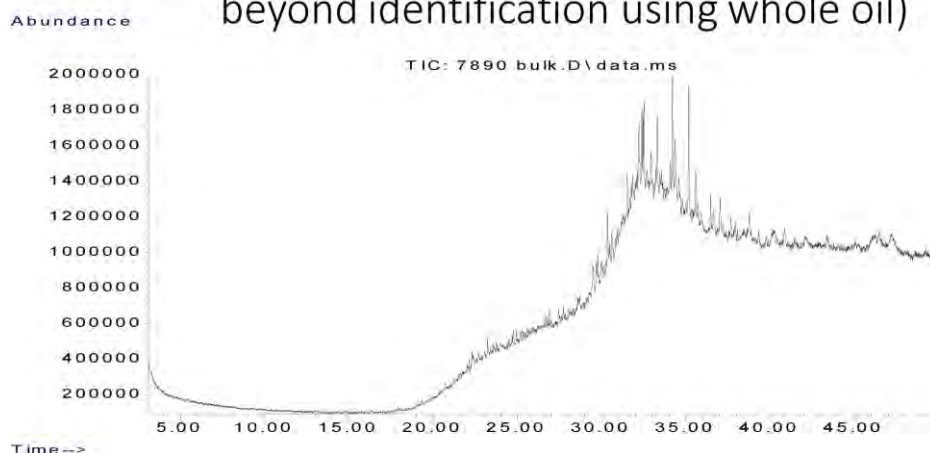
Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			85.33	percent	Y
Inorg	Hydrogen			9.09577514910537	percent	Y
Inorg	Nitrogen			0.17	percent	Y
Inorg	Sulphur			2.43412854329057	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007890_DISS_GCMS-Scan/03**Instrument / Type:** GCMS with Full Scan Run: 3**for Analysis:** Whole Oils**Analysis Date:** 30/10/2017**Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007890_bulk_WholeOil.jpg](#)**Preparation:** Dissolved in solvent**Method ID/s:**

Sample Volume: **Volume Units:** **Extract Volume:** **Dilution Factor:**
Comment: Bulk

Results for: GCMS with Full Scan

7890 – Unknown (highly degraded bitumen
beyond identification using whole oil)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100				U
Aliph	nC26	29.6680				U
Aliph	nC27	30.6080	871127			Z
Aliph	nC28	31.5080	1241771			Z
Aliph	nC29	32.3700	1650535			Z
Aliph	nC30	33.2910	1731362			Z
Aliph	nC31	34.3470	2654764			Z
Aliph	nC32	35.5720	2125264			Z
Aliph	nC33	37.0130	2036693			Z
Aliph	nC34	38.7280	1535499			Z
Aliph	nC35	40.8080	1132479			Z
Aliph	nC36	43.3510	914343			Z
Aliph	nC37	46.4710	1148278			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007891**

Beach W24: Sleaford Bay Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 12/10/2016 4:57:39 PM

Type: Waxy Bitumen

Family: Type IV waxy bitumen (no botryococcane, hig

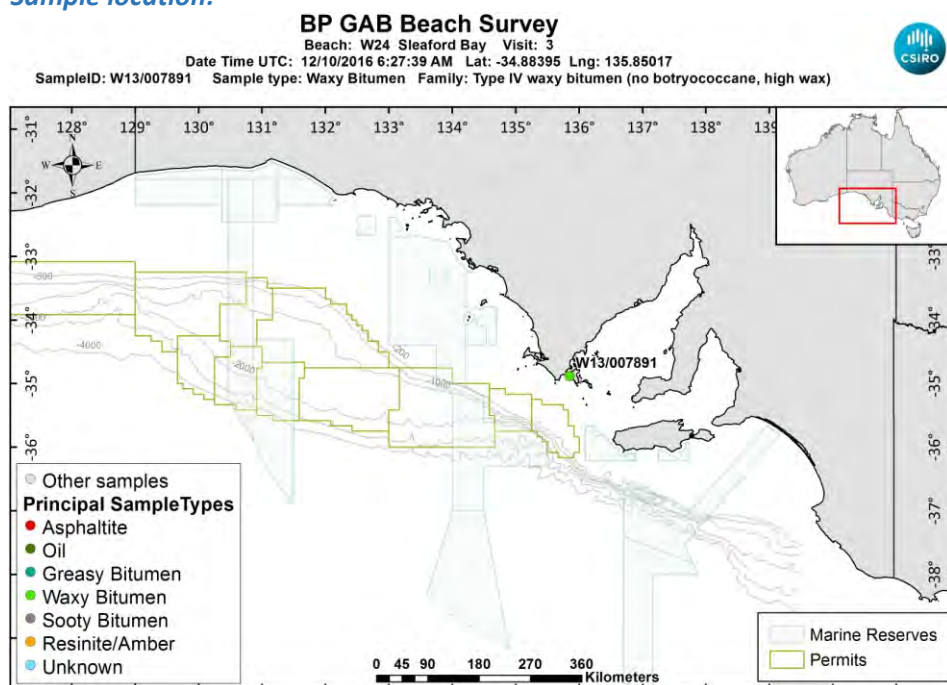
Size (cm): 3

Latitude (Y): -34.883947

Weight (gm): 3.65363

Longitude (X): 135.850172

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007891_Location.jpg](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007891_Photo02.JPG](#)

Sample ID : W13/007891

Beach W24: Sleaford Bay Visit: 3

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 3

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007891_DISS_GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Bulk Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			15.298924183949	ratio	Y
BiomRatio	% C27 abb 20(R+S)			9.96124520550677	ratio	Y
BiomRatio	% C28 aaa 20R			25.5842062852538	ratio	Y
BiomRatio	% C28 abb 20(R+S)			21.2998477727626	ratio	Y
BiomRatio	% C29 aaa 20R			59.1168695307972	ratio	Y
BiomRatio	% C29 abb 20(R+S)			68.7389070217306	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			7.95664013656349E-03	ratio	Y
BiomRatio	25-Nor/C30H			0.225298157482787	ratio	Y
BiomRatio	C19t/C23t			1.03337708606788	ratio	Y
BiomRatio	C22t/C21t			0.185838680109991	ratio	Y
BiomRatio	C22t/C24t			0.178870754300838	ratio	Y
BiomRatio	C23t/C30H			1.7330977472979E-03	ratio	Y
BiomRatio	C24t/C23t			0.850178136133508	ratio	Y
BiomRatio	C24Tet/C23t			6.09619351209451	ratio	Y
BiomRatio	C24Tet/C26t			2.81895430503772	ratio	Y
BiomRatio	C24Tet/C30H			1.05652992429031E-02	ratio	Y
BiomRatio	C26t/C25t			1.1120431973773	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.226486258374215	ratio	Y
BiomRatio	C27 Dia/Ster			0.160372777528761	ratio	Y
BiomRatio	C28BNH/C30H			4.14542812194015E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			6.90063396730063	ratio	Y
BiomRatio	C29H/C30H			0.436687011256199	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.198537656624264	ratio	Y
BiomRatio	C30DiaH/C30H			7.77534659517625E-02	ratio	Y
BiomRatio	C30Ts/C30H			4.72482807949826E-03	ratio	Y
BiomRatio	C35 Homohopane Index			5.12300334807311E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.61213728603584	ratio	Y
BiomRatio	Gam/C30H			5.04258974784776E-02	ratio	Y
BiomRatio	Gam/C31HR			0.203034101585092	ratio	Y
BiomRatio	Ole/C30H			0.839069541318929	ratio	Y
BiomRatio	Sterane/hopane			3.04418327350416E-02	ratio	Y
BiomRatio	Steranes/Terpanes			3.01928607552695E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			8.24605464815708E-03	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007891_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

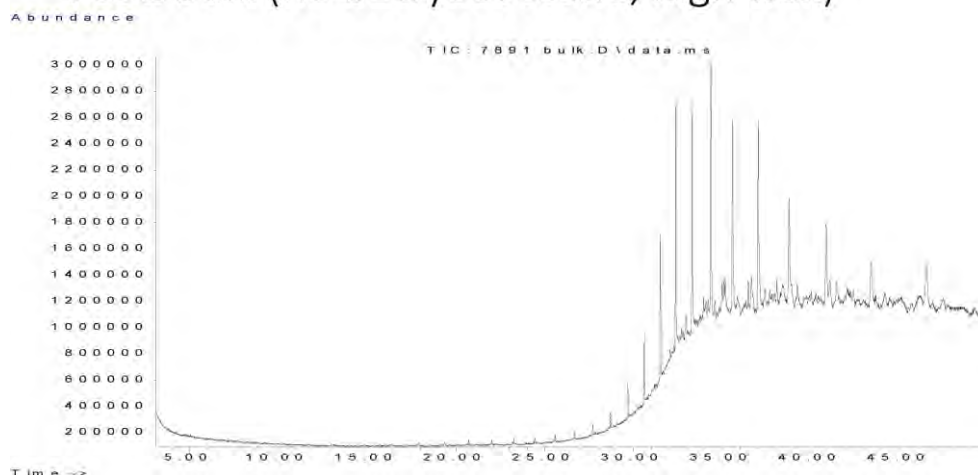
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			88.6	percent	Y
Inorg	Hydrogen			9.20918290258449	percent	Y
Inorg	Nitrogen			0.25	percent	Y
Inorg	Sulphur			2.623509356275	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007891_DISS_GCMS-Scan/03**Instrument / Type:** GCMS with Full Scan Run: 3**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007891_bulk_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Bulk

Results for: GCMS with Full Scan

7891 bulk (no botryococcane, high wax)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170	190752			Z
Aliph	nC20	23.2570	187018			Z
Aliph	nC21	24.4410	222921			Z
Aliph	nC22	25.5760	303809			Z
Aliph	nC23	26.6620	365625			Z
Aliph	nC24	27.7060	416117			Z
Aliph	nC25	28.7100	716989			Z
Aliph	nC26	29.6680	1289920			Z
Aliph	nC27	30.6080	2802652			Z
Aliph	nC28	31.5080	5144468			Z
Aliph	nC29	32.3700	9066652			Z
Aliph	nC30	33.2910	9921421			Z
Aliph	nC31	34.3470	13472454			Z
Aliph	nC32	35.5720	11968409			Z
Aliph	nC33	37.0130	12306249			Z
Aliph	nC34	38.7280	8562923			Z
Aliph	nC35	40.8080	7238921			Z
Aliph	nC36	43.3510	5674256			Z
Aliph	nC37	46.4710	5841156			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007892**

Beach W24: Sleaford Bay Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 12/10/2016 4:58:20 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

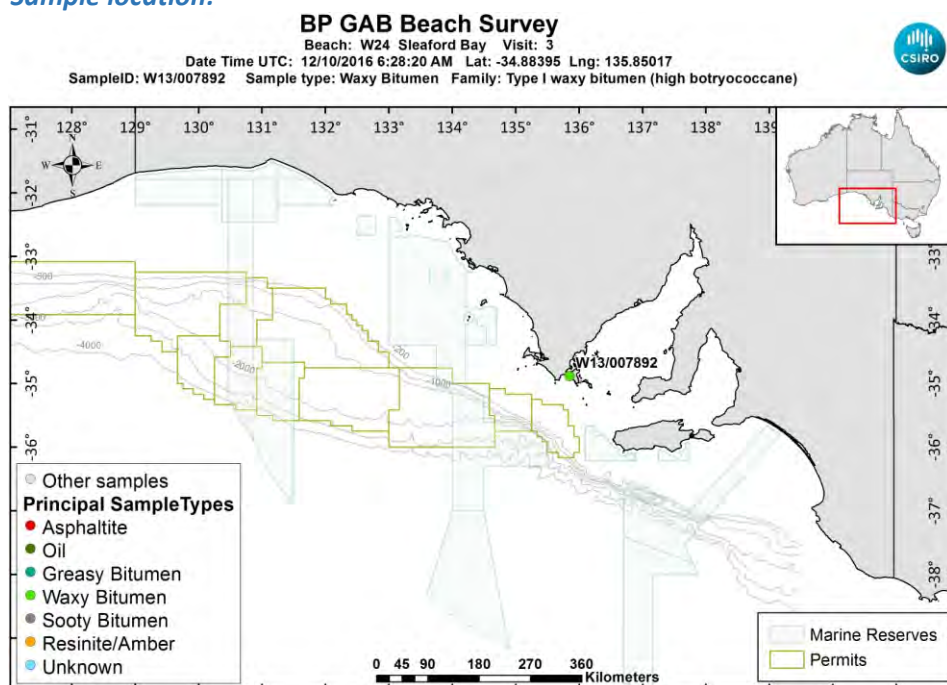
Size (cm): 2.1

Latitude (Y): -34.883947

Weight (gm): 1.32991

Longitude (X): 135.850172

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007892_Location.jpg](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007892_Photo02.JPG](#)

Sample ID : W13/007892**Beach W24: Sleaford Bay Visit: 3****Analyses Requested**

Split: Analysis: Sent:
1 Bitumen Determination YES

Analyses Completed:

Analysis: Instrument/Type:
Elemental CHNS Elemental Analyser Run: 1
Whole Oils GCMS with Full Scan Run: 3

Sample Analyses Completed:**Results for: Elemental Analyser****Unique ID: W13/007892_SPE_ELEM-AN/01****Instrument / Type:** Elemental Analyser Run: 1**for Analysis:** Elemental CHNS**Analysis Date:** 30/10/2017**Linked Image:** [None available](#)**Preparation:** Solid Phase Extract**Method ID/s:**

Sample Volume: **Volume Units:** **Extract Volume:** **Dilution Factor:**
Comment:

Data Sheet:*(default units ppb)*

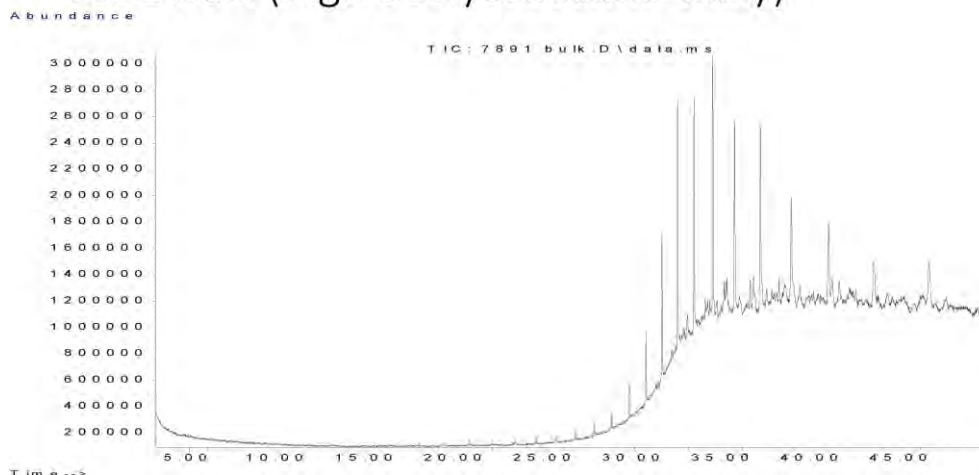
Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			88.2	percent	Y
Inorg	Hydrogen			8.43871988071571	percent	Y
Inorg	Nitrogen			0.22	percent	Y
Inorg	Sulphur			2.0089829933487	percent	Y

Results for: GCMS with Full Scan**Unique ID: W13/007892_DISS_GCMS-Scan/03****Instrument / Type:** GCMS with Full Scan Run: 3**for Analysis:** Whole Oils**Analysis Date:** 30/10/2017**Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007892_bulk_WholeOil.jpg](#)**Preparation:** Dissolved in solvent**Method ID/s:**

Sample Volume: **Volume Units:** **Extract Volume:** **Dilution Factor:**
Comment: Bulk

Results for: GCMS with Full Scan

7892 bulk (high botryococcane waxy)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	13362872			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410	147529			Z
Aliph	nC22	25.5760	205331			Z
Aliph	nC23	26.6620	262576			Z
Aliph	nC24	27.7060	239534			Z
Aliph	nC25	28.7100	257919			Z
Aliph	nC26	29.6680	604089			Z
Aliph	nC27	30.6080	2450027			Z
Aliph	nC28	31.5080	5157618			Z
Aliph	nC29	32.3700	6769449			Z
Aliph	nC30	33.2910	6485623			Z
Aliph	nC31	34.3470	6714494			Z
Aliph	nC32	35.5720	4247368			Z
Aliph	nC33	37.0130	2685592			Z
Aliph	nC34	38.7280	2219309			Z
Aliph	nC35	40.8080	1580544			Z
Aliph	nC36	43.3510	1102984			Z
Aliph	nC37	46.4710	1193916			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007893**

Beach W24: Sleaford Bay Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 12/10/2016 4:59:08 PM

Type: Waxy Bitumen

Family: Unknown

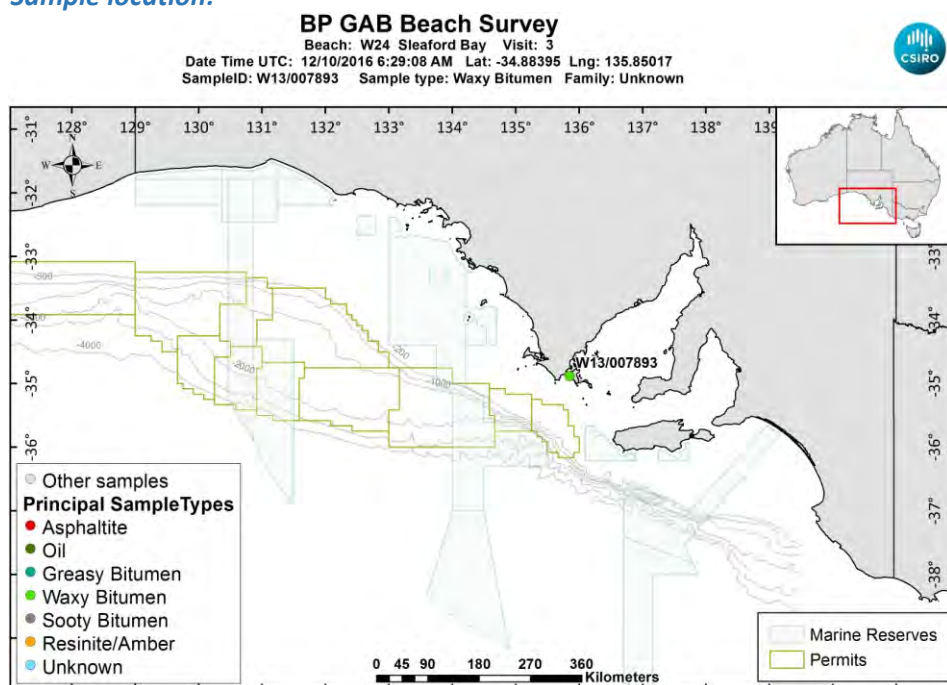
Size (cm): 2

Latitude (Y): -34.883947

Weight (gm): 1.33209

Longitude (X): 135.850172

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007893_Location.jpg](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007893_Photo02.JPG](#)

Sample ID : W13/007893**Beach W24: Sleaford Bay Visit: 3****Analyses Requested**

Split: Analysis: Sent:
1 Bitumen Determination YES

Analyses Completed:

Analysis: Instrument/Type:
Elemental CHNS Elemental Analyser Run: 1
Whole Oils GCMS with Full Scan Run: 3

Sample Analyses Completed:**Results for: Elemental Analyser****Unique ID: W13/007893_SPE_ELEM-AN/01****Instrument / Type:** Elemental Analyser Run: 1**for Analysis:** Elemental CHNS**Analysis Date:** 30/10/2017**Linked Image:** [None available](#)**Preparation:** Solid Phase Extract**Method ID/s:**

Sample Volume: **Volume Units:** **Extract Volume:** **Dilution Factor:**
Comment:

Data Sheet:*(default units ppb)*

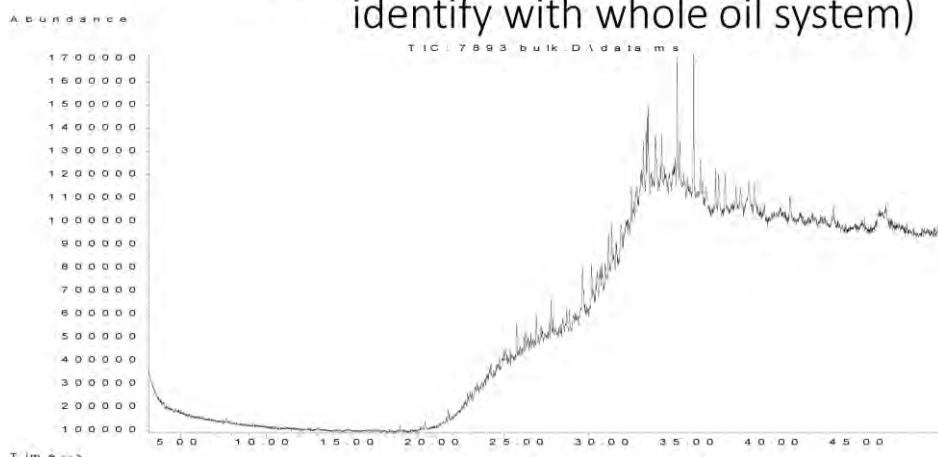
Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			87.41	percent	Y
Inorg	Hydrogen		5.69174552683897		percent	Y
Inorg	Nitrogen		0.2		percent	Y
Inorg	Sulphur		1.03326191044013		percent	Y

Results for: GCMS with Full Scan**Unique ID: W13/007893_DISS_GCMS-Scan/03****Instrument / Type:** GCMS with Full Scan Run: 3**for Analysis:** Whole Oils**Analysis Date:** 30/10/2017**Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007893_bulk_WholeOil.jpg](#)**Preparation:** Dissolved in solvent**Method ID/s:**

Sample Volume: **Volume Units:** **Extract Volume:** **Dilution Factor:**
Comment: Bulk

Results for: GCMS with Full Scan

7893 bulk – Unknown (too degraded to identify with whole oil system)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100				U
Aliph	nC26	29.6680	513160			Z
Aliph	nC27	30.6080	633181			Z
Aliph	nC28	31.5080	774781			Z
Aliph	nC29	32.3700	895145			Z
Aliph	nC30	33.2910	932855			Z
Aliph	nC31	34.3470	1387243			Z
Aliph	nC32	35.5720	1528685			Z
Aliph	nC33	37.0130	1558909			Z
Aliph	nC34	38.7280	1461675			Z
Aliph	nC35	40.8080	1355786			Z
Aliph	nC36	43.3510	1202127			Z
Aliph	nC37	46.4710	706960			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007828**

Beach W13b: St Mary Bav Visit: 3

Comments:

Location: Shore Upper

Local Date Time: 9/10/2016 8:56:08 AM

Type: Resinite/Amber

Family: Resin/Amber

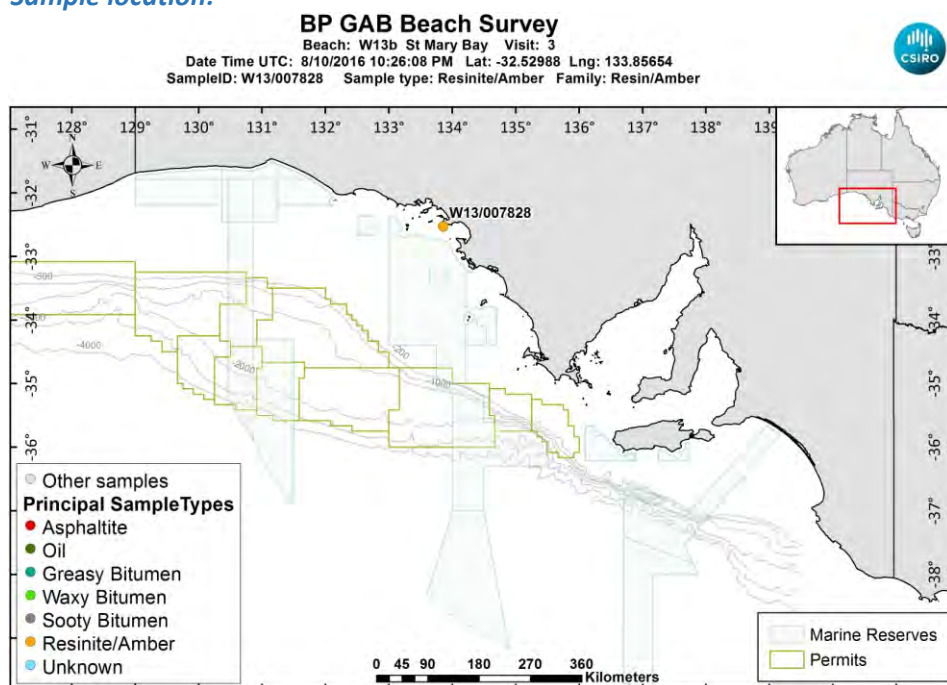
Size (cm): 4.7

Latitude (Y): -32.529882

Weight (gm): 37.52852

Longitude (X): 133.856537

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007828_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007828_146A6554.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007828_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES

Analyses Completed:

Analysis:	Instrument/Type:
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:**Results for: GCMS with Full Scan**

Unique ID: W13/007828 DISS GCMS-Scan/01

Instrument / Type: GCMS with Full Scan Run: 1

for Analysis: Whole Oils

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: GCMS with Full Scan

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100				U
Aliph	nC26	29.6680				U
Aliph	nC27	30.6080				U
Aliph	nC28	31.5080				U
Aliph	nC29	32.3700				U
Aliph	nC30	33.2910				U
Aliph	nC31	34.3470				U
Aliph	nC32	35.5720				U
Aliph	nC33	37.0130				U
Aliph	nC34	38.7280				U
Aliph	nC35	40.8080				U
Aliph	nC36	43.3510				U
Aliph	nC37	46.4710				U
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007669**

Beach W13c: St Mary Bav Sth Visit: 2

Comments:

Location: Shore Upper

Local Date Time: 22/09/2015 2:44:21 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

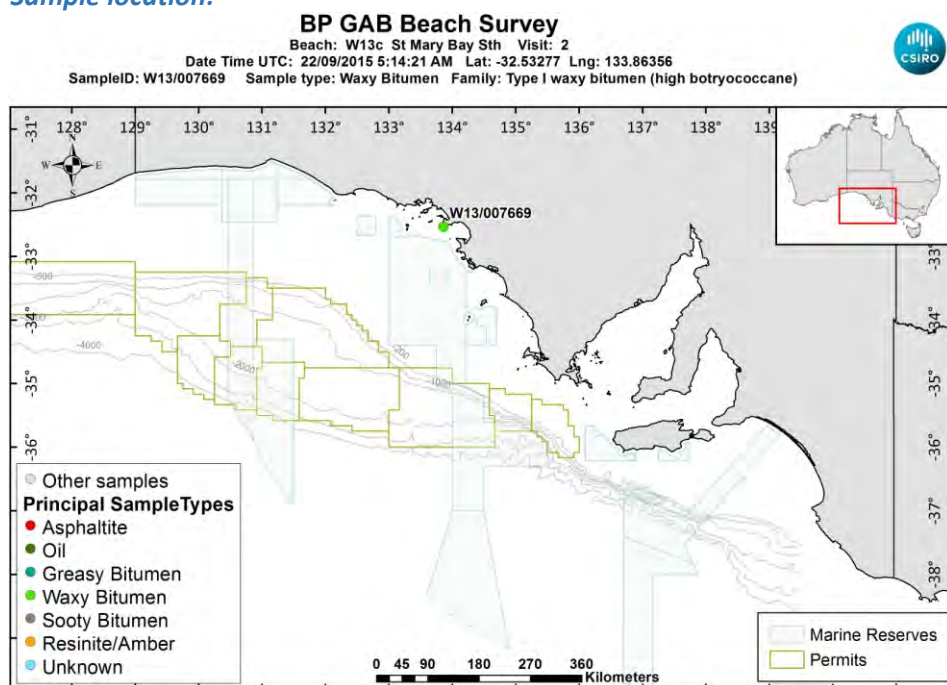
Size (cm): 4

Latitude (Y): -32.532770

Weight (gm): 24

Longitude (X): 133.863557

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007669_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007669_146A1788.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007669_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007669_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			83.39	percent	Y
Inorg	Hydrogen			7.99026023856859	percent	Y
Inorg	Nitrogen			0.252248928877464	percent	Y
Inorg	Sulphur			1.69293248638816	percent	Y

Results for: GCMS with Full Scan

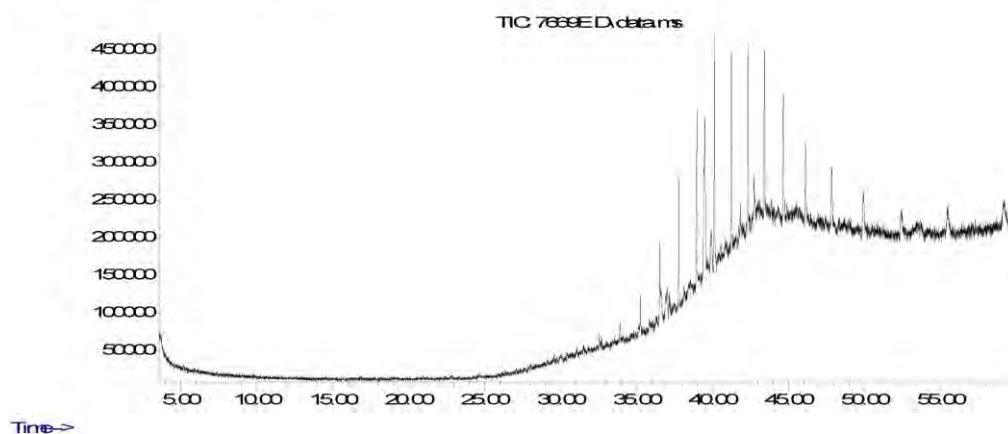
Unique ID: W13/007669_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB BCH1\GCMS\W13_007669_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7669 Exterior

Abundance



Time-->

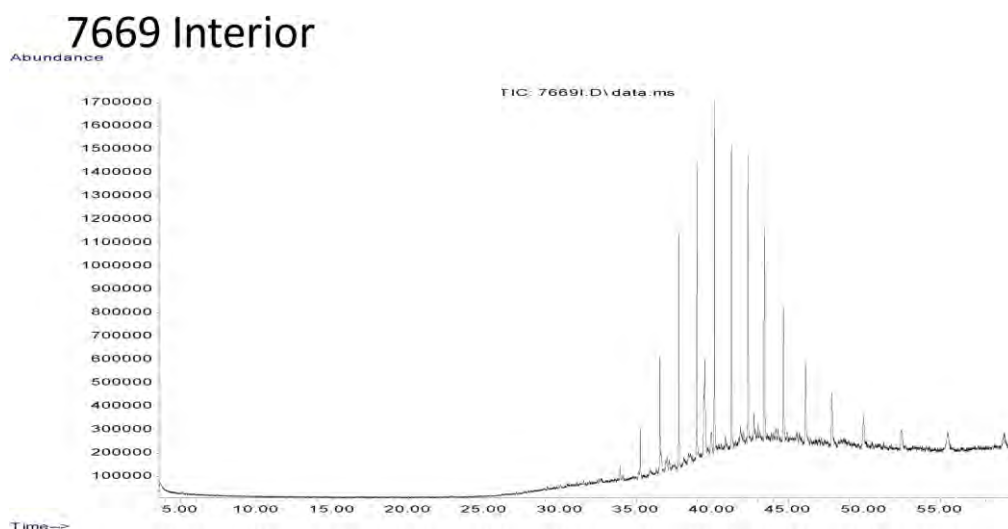
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	2059887		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960	78688		ug/L	Z
Aliph	nC24	33.8800	114167		ug/L	Z
Aliph	nC25	35.2120	234467		ug/L	Z
Aliph	nC26	36.4960	592115		ug/L	Z
Aliph	nC27	37.7300	1024446		ug/L	Z
Aliph	nC28	38.9260	1238990		ug/L	Z
Aliph	nC29	40.0740	1595190		ug/L	Z
Aliph	nC30	41.1930	1449392		ug/L	Z
Aliph	nC31	42.2750	1434723		ug/L	Z
Aliph	nC32	43.3560	1297174		ug/L	Z
Aliph	nC33	44.5840	1200269		ug/L	Z
Aliph	nC34	46.0130	925750		ug/L	Z
Aliph	nC35	47.7140	827626		ug/L	Z
Aliph	nC36	49.7870	594578		ug/L	Z
Aliph	nC37	52.2630	652788		ug/L	Z
Aliph	nC38	55.2360	616656		ug/L	Z
Aliph	nC39	58.9110	646442		ug/L	Z
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007669 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007669_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	3822937		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960	119110		ug/L	Z
Aliph	nC24	33.8800	331118		ug/L	Z
Aliph	nC25	35.2120	1001068		ug/L	Z
Aliph	nC26	36.4960	2365183		ug/L	Z
Aliph	nC27	37.7300	4971982		ug/L	Z
Aliph	nC28	38.9260	6364119		ug/L	Z
Aliph	nC29	40.0740	7211144		ug/L	Z
Aliph	nC30	41.1930	6737023		ug/L	Z
Aliph	nC31	42.2750	6335363		ug/L	Z
Aliph	nC32	43.3560	5318369		ug/L	Z
Aliph	nC33	44.5840	4170051		ug/L	Z
Aliph	nC34	46.0130	3060755		ug/L	Z
Aliph	nC35	47.7140	2093988		ug/L	Z
Aliph	nC36	49.7870	1364596		ug/L	Z
Aliph	nC37	52.2630	1177174		ug/L	Z
Aliph	nC38	55.2360	1188197		ug/L	Z
Aliph	nC39	58.9110	1092114		ug/L	Z
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007829**

Beach W13c: St Mary Bay Sth Visit: 3

Comments:

Location: Mid Intertidal

Local Date Time: 9/10/2016 10:07:26 AM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

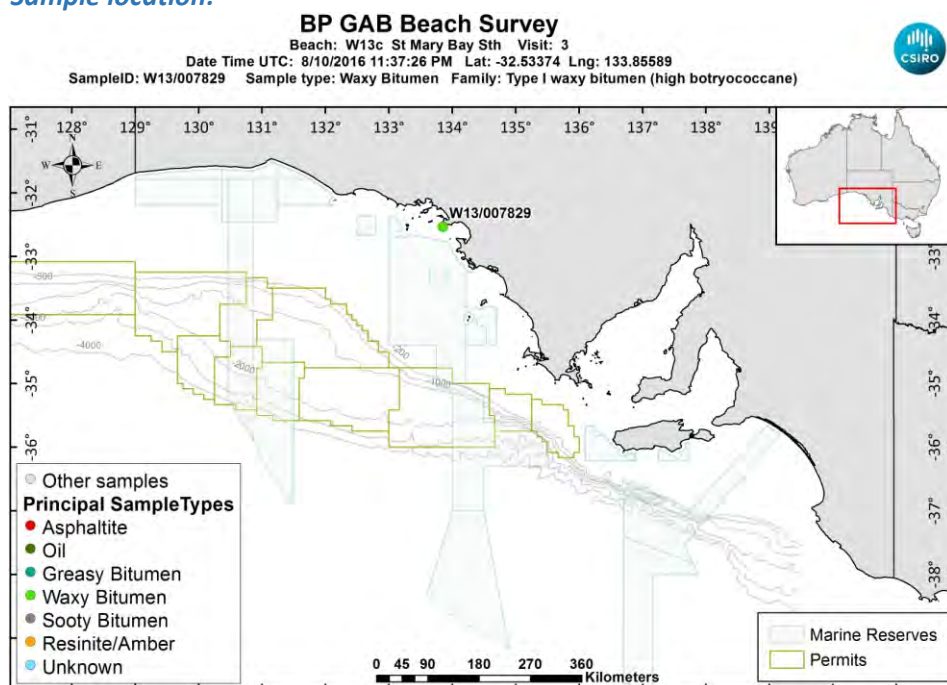
Size (cm): 2.6

Latitude (Y): -32.533737

Weight (gm): 3.17373

Longitude (X): 133.855887

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007829_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007829_146A6562.JPG](#)

Sample - laboratory image:

[LinkedFiles\GAB_BCH1\Samples\W13_007829_Photo02.JPG](#)**Analyses Requested**

Split: Analysis: Sent:
1 Bitumen Determination YES

Analyses Completed:

Analysis: Instrument/Type:
Elemental CHNS Elemental Analyser Run: 1
Whole Oils GCMS with Full Scan Run: 3

Sample Analyses Completed:**Results for: Elemental Analyser****Unique ID:** W13/007829_SPE_ELEM-AN/01**Instrument / Type:** Elemental Analyser Run: 1**for Analysis:** Elemental CHNS**Analysis Date:** 30/10/2017**Linked Image:** [None available](#)**Preparation:** Solid Phase Extract**Method ID/s:****Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:****Data Sheet:**

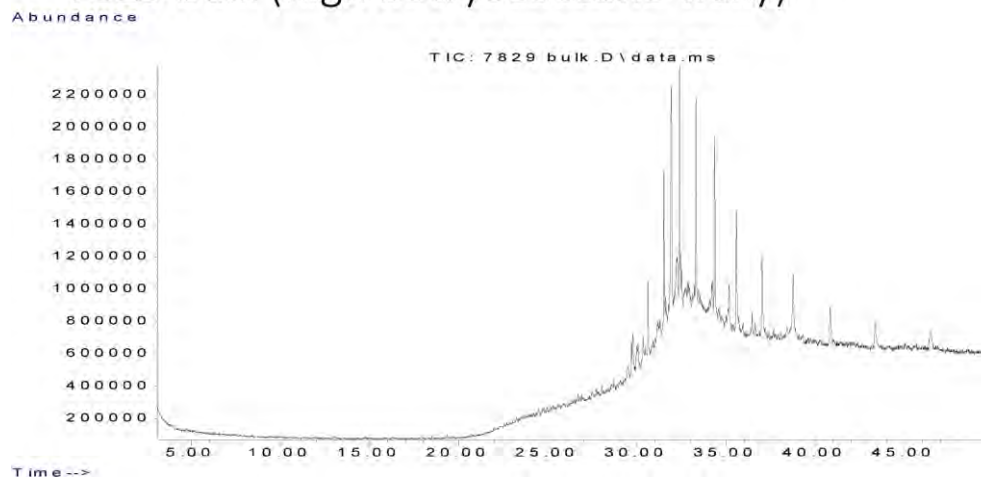
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			83.1151425475158	percent	Y
Inorg	Hydrogen			8.98302584493042	percent	Y
Inorg	Nitrogen			0.16	percent	Y
Inorg	Sulphur			1.99012405661308	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007829 DISS GCMS-Scan/03**Instrument / Type:** GCMS with Full Scan Run: 3**for Analysis:** Whole Oils**Analysis Date:** 30/10/2017**Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007829_bulk_WholeOil.jpg](#)**Preparation:** Dissolved in solvent**Method ID/s:****Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Bulk

Results for: GCMS with Full Scan

7829 bulk (high botryococcane waxy)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	11928270			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100	278388			Z
Aliph	nC26	29.6680	655993			Z
Aliph	nC27	30.6080	2402390			Z
Aliph	nC28	31.5080	5363129			Z
Aliph	nC29	32.3700	7212671			Z
Aliph	nC30	33.2910	7468297			Z
Aliph	nC31	34.3470	7456756			Z
Aliph	nC32	35.5720	6049388			Z
Aliph	nC33	37.0130	4596896			Z
Aliph	nC34	38.7280	3922255			Z
Aliph	nC35	40.8080	2638747			Z
Aliph	nC36	43.3510	2146433			Z
Aliph	nC37	46.4710	2075637			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007514**

Beach E4: The Granites Visit: 1

Comments:

Location: Upper Intertidal

Local Date Time: 23/11/2014 1:58:51 PM

Type: Waxy Bitumen

Family: Type II waxy bitumen (low botryococcane)

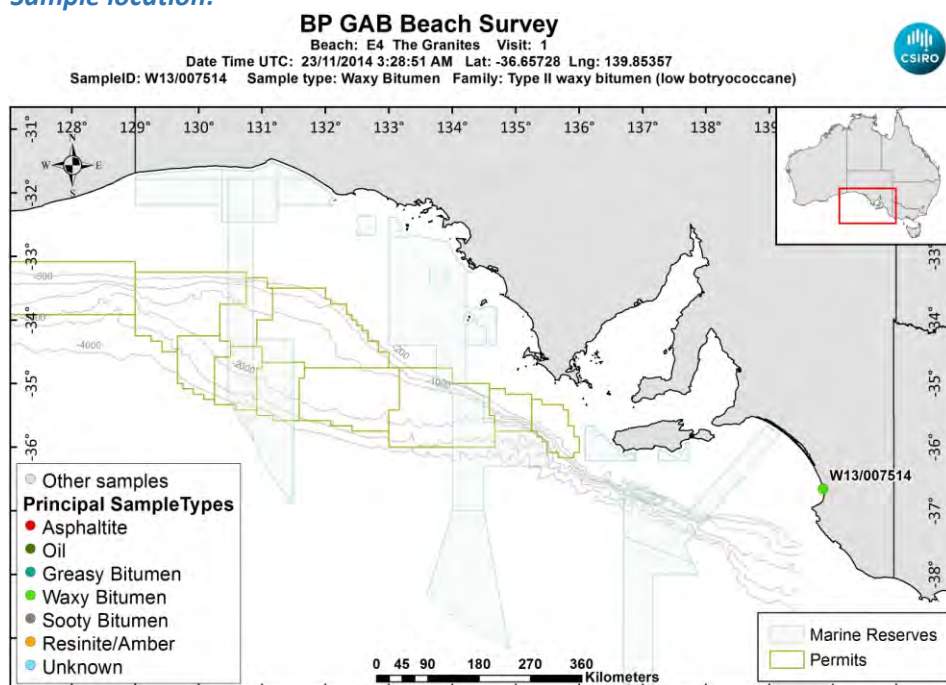
Size (cm): 5

Latitude (Y): -36.657277

Weight (gm): 15.60242

Longitude (X): 139.853566

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007514_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007514_146A0586.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007514_photo01.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
3	Elemental CHNS	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007514 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			28.388813259	ratio	Y
BiomRatio	% C27 abb 20(R+S)			23.0366810693485	ratio	Y
BiomRatio	% C28 aaa 20R			25.3796080210899	ratio	Y
BiomRatio	% C28 abb 20(R+S)			28.9344164537364	ratio	Y
BiomRatio	% C29 aaa 20R			46.2315787199101	ratio	Y
BiomRatio	% C29 abb 20(R+S)			48.0289024769151	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.145886598423513	ratio	Y
BiomRatio	25-Nor/C30H			3.62385211444003E-02	ratio	Y
BiomRatio	C19t/C23t			0.212225978523899	ratio	Y
BiomRatio	C22t/C21t			0.532943255647202	ratio	Y
BiomRatio	C22t/C24t			0.408805885163162	ratio	Y
BiomRatio	C23t/C30H			0.130065603592115	ratio	Y
BiomRatio	C24t/C23t			0.53328964909081	ratio	Y
BiomRatio	C24Tet/C23t			0.987429185461232	ratio	Y
BiomRatio	C24Tet/C26t			1.58686074813374	ratio	Y
BiomRatio	C24Tet/C30H			0.128430573011486	ratio	Y
BiomRatio	C26t/C25t			1.29011364489115	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.349862913234796	ratio	Y
BiomRatio	C27 Dia/Ster			0.277697326942641	ratio	Y
BiomRatio	C28BNH/C30H			1.80052675827232E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			2.08488811093626	ratio	Y
BiomRatio	C29H/C30H			1.13559632701076	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.11961954195104	ratio	Y
BiomRatio	C30DiaH/C30H			6.15200202442256E-02	ratio	Y
BiomRatio	C30Ts/C30H			0.127985422592402	ratio	Y
BiomRatio	C35 Homohopane Index			6.52606047388871E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.874444552401169	ratio	Y
BiomRatio	Gam/C30H			7.58260334309738E-02	ratio	Y
BiomRatio	Gam/C31HR			0.240326154862133	ratio	Y
BiomRatio	Ole/C30H			5.36132048207327E-02	ratio	Y
BiomRatio	Sterane/hopane			0.151768712219064	ratio	Y
BiomRatio	Steranes/Terpanes			0.132409296403939	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.14620888669377	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007514 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			36.5348235537618	ratio	Y
BiomRatio	% C27 abb 20(R+S)			30.173079266215	ratio	Y
BiomRatio	% C28 aaa 20R			25.7013349891338	ratio	Y
BiomRatio	% C28 abb 20(R+S)			26.6124911973467	ratio	Y
BiomRatio	% C29 aaa 20R			37.7638414571044	ratio	Y
BiomRatio	% C29 abb 20(R+S)			43.2144295364383	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.123193322489734	ratio	Y
BiomRatio	25-Nor/C30H			4.68186853642197E-02	ratio	Y
BiomRatio	C19t/C23t			0.190605746225996	ratio	Y
BiomRatio	C22t/C21t			0.537934732849389	ratio	Y
BiomRatio	C22t/C24t			0.370733140790579	ratio	Y
BiomRatio	C23t/C30H			0.144122747382783	ratio	Y
BiomRatio	C24t/C23t			0.489334335499989	ratio	Y
BiomRatio	C24Tet/C23t			1.04051011694297	ratio	Y
BiomRatio	C24Tet/C26t			1.97101953031653	ratio	Y
BiomRatio	C24Tet/C30H			0.149961176733401	ratio	Y
BiomRatio	C26t/C25t			1.27047581033828	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.339451366801275	ratio	Y
BiomRatio	C27 Dia/Ster			0.27732404294996	ratio	Y
BiomRatio	C28BNH/C30H			2.15852785122787E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			1.43221807609228	ratio	Y
BiomRatio	C29H/C30H			1.13826435650324	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.131728534648921	ratio	Y
BiomRatio	C30DiaH/C30H			5.70010994098126E-02	ratio	Y
BiomRatio	C30Ts/C30H			0.10337935970281	ratio	Y
BiomRatio	C35 Homohopane Index			7.77892007609166E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.920253100423898	ratio	Y
BiomRatio	Gam/C30H			9.41442918482329E-02	ratio	Y
BiomRatio	Gam/C31HR			0.256229365071401	ratio	Y
BiomRatio	Ole/C30H			4.38727705546851E-02	ratio	Y
BiomRatio	Sterane/hopane			0.172070510136463	ratio	Y
BiomRatio	Steranes/Terpanes			0.149250738603264	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.152895535035563	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007514 UNK ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Preparation: Unknown

Analysis Date:

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Hydrogren value averaged from 12, 4 and 5. So there is quite a large variance. This averaged value may not be representative. Hydrogren value averaged from 12, 4 and 5. So there is quite a large variance. This averaged value may not be representative.

Results for: Elemental Analyser

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Inorg	Carbon			84.0366666666667	percent	Y
Inorg	delta13 Carbon			-26.7437594158252	per mille	Y
Inorg	delta34 Sulphur			-4.2849187830545	per mille	Y
Inorg	Hydrogen			7.24333333333334	percent	Y
Inorg	Nitrogen			0.136666666666667	percent	Y
Inorg	Sulphur			2.35666666666667	percent	Y

Results for: GCMS with Full Scan

Unique ID: W13/007514_DISS_GCMS-Scan/01

Instrument / Type: GCMS with Full Scan Run: 1

for Analysis: Whole Oils

Preparation: Dissolved in solvent

Analysis Date: 18/11/2016

Method ID/s:

Linked Image: [LinkedFiles\GAB_BCH1\GCMS\W13_007514_ext_WholeOil.jpg](#)

Sample Volume:

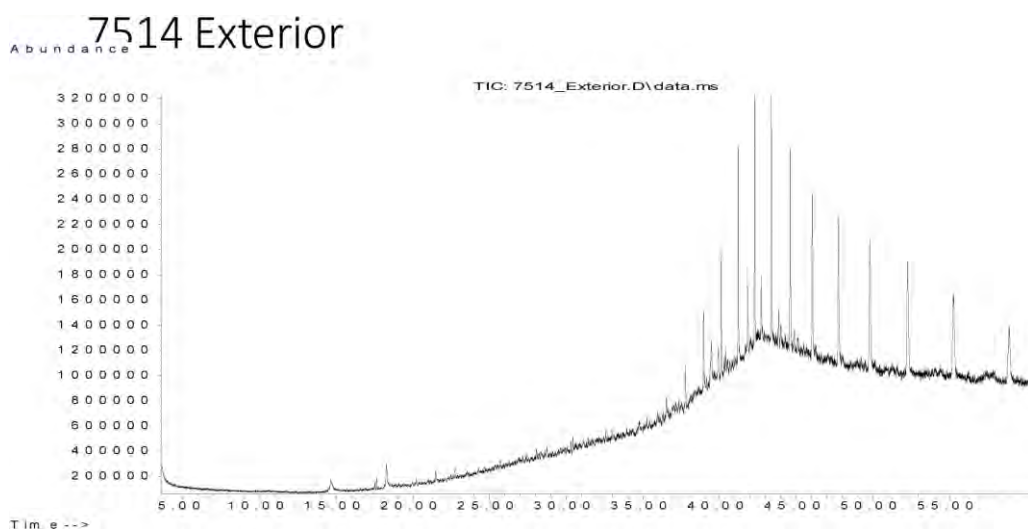
Volume Units:

Extract Volume:

Dilution Factor:

Comment: Exterior

Results for: GCMS with Full Scan



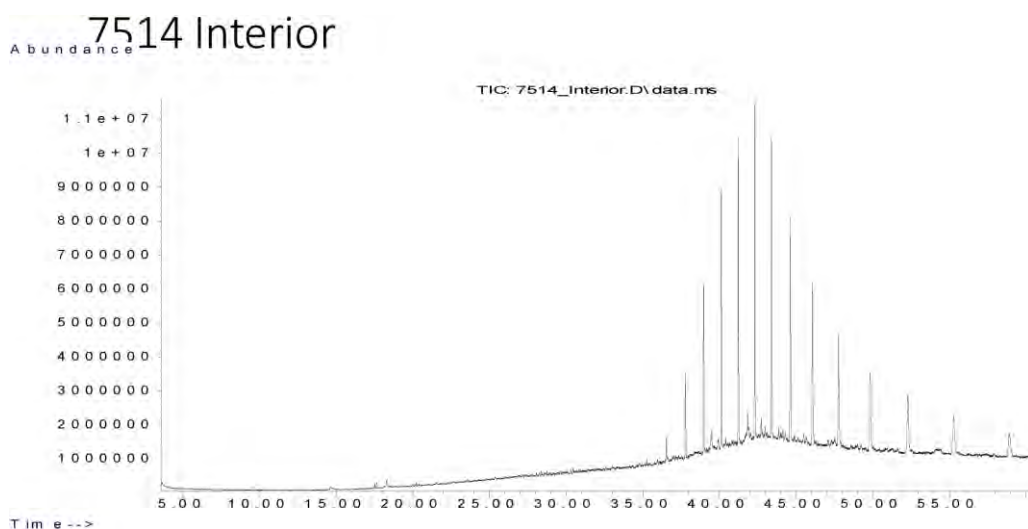
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780	2005760		ug/L	Z
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520			ug/L	U
Aliph	nC25	35.2810			ug/L	U
Aliph	nC26	36.5600	700165		ug/L	Z
Aliph	nC27	37.7930	1700775		ug/L	Z
Aliph	nC28	38.9870	3123780		ug/L	Z
Aliph	nC29	40.1370	5295821		ug/L	Z
Aliph	nC30	41.2480	8615164		ug/L	Z
Aliph	nC31	42.3270	10910295		ug/L	Z
Aliph	nC32	43.4130	11737272		ug/L	Z
Aliph	nC33	44.6430	10696722		ug/L	Z
Aliph	nC34	46.0860	10525382		ug/L	Z
Aliph	nC35	47.8060	11465846		ug/L	Z
Aliph	nC36	49.8090	3221174		ug/L	Z
Aliph	nC37	52.2960	12101374		ug/L	Z
Aliph	nC38	55.2370	9758388		ug/L	Z
Aliph	nC39	58.8850	2525223		ug/L	Z
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007514 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007514_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retention Time:	Target Response:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780	3837826		ug/L	Z
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520			ug/L	U
Aliph	nC25	35.2810			ug/L	U
Aliph	nC26	36.5600	3822333		ug/L	Z
Aliph	nC27	37.7930	13331333		ug/L	Z
Aliph	nC28	38.9870	26606460		ug/L	Z
Aliph	nC29	40.1370	40801711		ug/L	Z
Aliph	nC30	41.2480	48992930		ug/L	Z
Aliph	nC31	42.3270	53448503		ug/L	Z
Aliph	nC32	43.4130	51915998		ug/L	Z
Aliph	nC33	44.6430	45195550		ug/L	Z
Aliph	nC34	46.0860	40124511		ug/L	Z
Aliph	nC35	47.8060	32166549		ug/L	Z
Aliph	nC36	49.8090	24759101		ug/L	Z
Aliph	nC37	52.2960	22511384		ug/L	Z
Aliph	nC38	55.2370	17001493		ug/L	Z
Aliph	nC39	58.8850	8752520		ug/L	Z
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007515**

Beach E4: The Granites Visit: 1

Comments:

Location: Upper Intertidal

Local Date Time: 23/11/2014 2:06:51 PM

Type: Waxy Bitumen

Family: Unclassified high wax bitumen

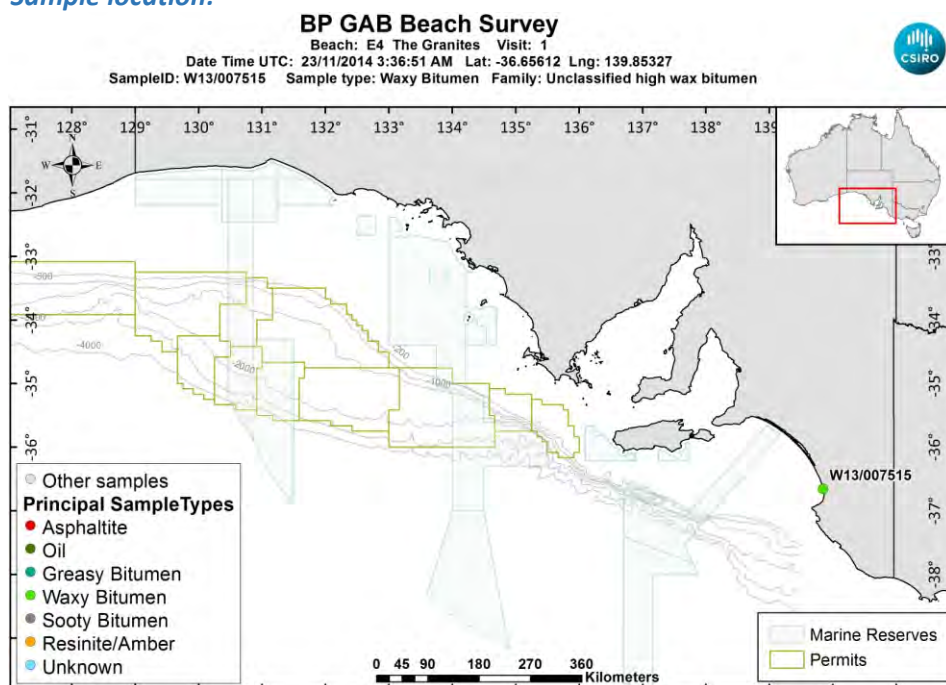
Size (cm): 3

Latitude (Y): -36.656118

Weight (gm): 1.51806

Longitude (X): 139.853275

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007515_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007515_146A0588.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB BCH1\Samples\W13_007515_Photo01.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
3	Elemental CHNS	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007515 UNK ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Preparation: Unknown

Analysis Date:

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			84.21	percent	Y
Inorg	delta13 Carbon			-27.8972203361879	per mille	Y
Inorg	delta34 Sulphur			-8.36185190109161	per mille	Y
Inorg	Hydrogen			9.1	percent	Y
Inorg	Nitrogen			0.295	percent	Y
Inorg	Sulphur			3.635	percent	Y

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007516**

Beach E4: The Granites Visit: 1

Comments:

collected by stn owner approx 750m N from here.
Was stored in plastic bag

Location: Upper Intertidal

Local Date Time: 23/11/2014 2:36:39 PM

Type: Asphaltite

Family: Asphaltite

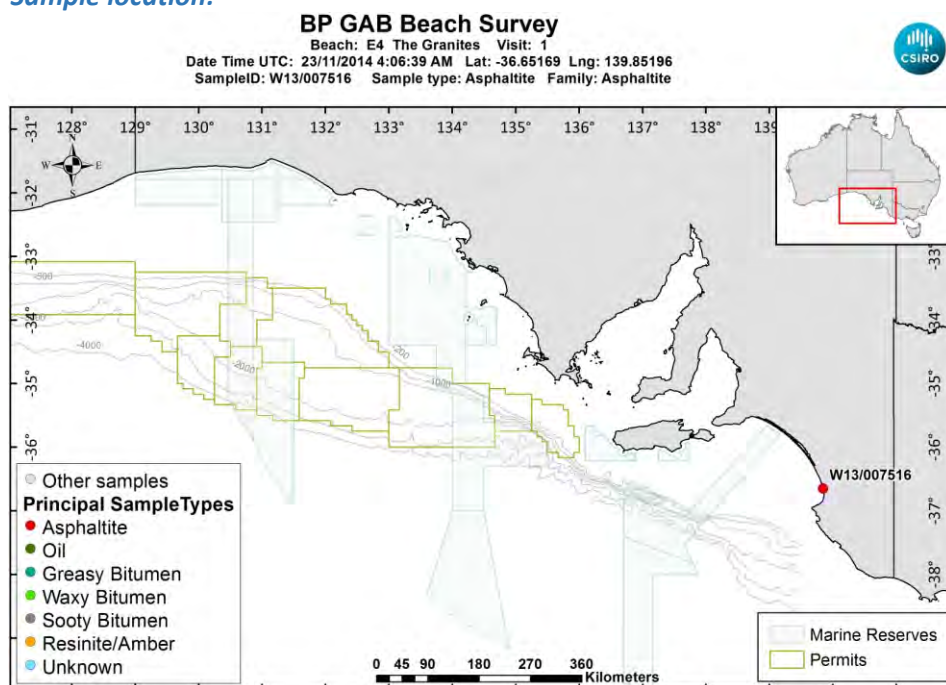
Size (cm): 10

Latitude (Y): -36.651693

Weight (gm): 169.6639

Longitude (X): 139.851957

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007516_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007516_146A0592.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007516_Photo01.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
3	Elemental CHNS	YES
4	Biomarkers	YES
5	CSIA	YES
6	CSIA	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
CSIA	Compound Specific Isotope Analysis d13C Run: 4
CSIA	Compound Specific Isotope Analysis d13C Run: 3
CSIA	Compound Specific Isotope Analysis d2H Run: 2
CSIA	Compound Specific Isotope Analysis d2H Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007516 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			37.3716185181853	ratio	Y
BiomRatio	% C27 abb 20(R+S)			37.8985038578647	ratio	Y
BiomRatio	% C28 aaa 20R			24.5655509098571	ratio	Y
BiomRatio	% C28 abb 20(R+S)			26.2773743529829	ratio	Y
BiomRatio	% C29 aaa 20R			38.0628305719576	ratio	Y
BiomRatio	% C29 abb 20(R+S)			35.8241217891525	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.100600189681833	ratio	Y
BiomRatio	25-Nor/C30H			0.02987875168785	ratio	Y
BiomRatio	C19t/C23t			0.28400442157147	ratio	Y
BiomRatio	C22t/C21t			0.358785493949221	ratio	Y
BiomRatio	C22t/C24t			0.298453820215478	ratio	Y
BiomRatio	C23t/C30H			6.79096379963679E-02	ratio	Y
BiomRatio	C24t/C23t			0.550839011307625	ratio	Y
BiomRatio	C24Tet/C23t			0.99883118295158	ratio	Y
BiomRatio	C24Tet/C26t			1.75262124500195	ratio	Y
BiomRatio	C24Tet/C30H			6.78302640537257E-02	ratio	Y
BiomRatio	C26t/C25t			1.00970382855767	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.438058149246078	ratio	Y
BiomRatio	C27 Dia/Ster			0.426747508885332	ratio	Y
BiomRatio	C28BNH/C30H			0.04237860939929	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.945264803157086	ratio	Y
BiomRatio	C29H/C30H			0.669419527282024	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.199044554335175	ratio	Y
BiomRatio	C30DiaH/C30H			9.17295120625319E-02	ratio	Y
BiomRatio	C30Ts/C30H			3.66421499632203E-02	ratio	Y
BiomRatio	C35 Homohopane Index			7.57929211031541E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.826209885943416	ratio	Y
BiomRatio	Gam/C30H			0.077942750467091	ratio	Y
BiomRatio	Gam/C31HR			0.233087562860996	ratio	Y
BiomRatio	Ole/C30H			1.03269191188754E-02	ratio	Y
BiomRatio	Sterane/hopane			0.288178374618947	ratio	Y
BiomRatio	Steranes/Terpanes			0.262953796556027	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			9.59277956557112E-02	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007516 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			43.5457950041814	ratio	Y
BiomRatio	% C27 abb 20(R+S)			38.2796374303341	ratio	Y
BiomRatio	% C28 aaa 20R			19.3829764025743	ratio	Y
BiomRatio	% C28 abb 20(R+S)			24.9568179801055	ratio	Y
BiomRatio	% C29 aaa 20R			37.0712285932444	ratio	Y
BiomRatio	% C29 abb 20(R+S)			36.7635445895603	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			9.82357797164856E-02	ratio	Y
BiomRatio	25-Nor/C30H			3.08816629087899E-02	ratio	Y
BiomRatio	C19t/C23t			0.282055969808167	ratio	Y
BiomRatio	C22t/C21t			0.340976433773642	ratio	Y
BiomRatio	C22t/C24t			0.284884662548298	ratio	Y
BiomRatio	C23t/C30H			6.72876682477281E-02	ratio	Y
BiomRatio	C24t/C23t			0.564412290896745	ratio	Y
BiomRatio	C24Tet/C23t			1.09654334852501	ratio	Y
BiomRatio	C24Tet/C26t			2.1162861031302	ratio	Y
BiomRatio	C24Tet/C30H			7.37838450548041E-02	ratio	Y
BiomRatio	C26t/C25t			0.845453964330613	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.419607728280077	ratio	Y
BiomRatio	C27 Dia/Ster			0.41271325838942	ratio	Y
BiomRatio	C28BNH/C30H			4.23187300426869E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.960394273756302	ratio	Y
BiomRatio	C29H/C30H			0.664396417041722	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.174505627435289	ratio	Y
BiomRatio	C30DiaH/C30H			0.077001618552371	ratio	Y
BiomRatio	C30Ts/C30H			4.46244202823416E-02	ratio	Y
BiomRatio	C35 Homohopane Index			7.98092490156125E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.913403092160709	ratio	Y
BiomRatio	Gam/C30H			8.35215200684677E-02	ratio	Y
BiomRatio	Gam/C31HR			0.253323383614946	ratio	Y
BiomRatio	Ole/C30H			1.00917882631228E-02	ratio	Y
BiomRatio	Sterane/hopane			0.303925858071037	ratio	Y
BiomRatio	Steranes/Terpanes			0.278401363330985	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			9.16823625957129E-02	ratio	Y

Results for: Compound Specific Isotope Analysis d13C

Unique ID: W13/007516_PTE_CSIA-C13/03

Instrument / Type: Compound Specific Isotope Analysis d13C Run: 3

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d13C

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Final d13C

Results for: Compound Specific Isotope Analysis d13C

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	nC13			-30.386	value	Y
Aliph	nC14			-31.434	value	Y
Aliph	nC15			-31.981	value	Y
Aliph	nC16			-31.897	value	Y
Aliph	nC17			-31.933	value	Y
Aliph	nC18			-32.319	value	Y
Aliph	nC19			-31.864	value	Y
Aliph	nC20			-31.793	value	Y
Aliph	nC21			-31.936	value	Y
Aliph	nC22			-31.968	value	Y
Aliph	nC23			-33.304	value	Y
Aliph	nC24			-32.769	value	Y
Aliph	nC25			-32.723	value	Y
Aliph	nC26			-32.524	value	Y
Aliph	nC27			-32.557	value	Y
Aliph	nC28			-32.372	value	Y
Aliph	nC29			-32.429	value	Y
Aliph	nC30			-32.082	value	Y
Aliph	nC31			-32.136	value	Y
Aliph	nC32			-32.105	value	Y
Aliph	nC33			-31.918	value	Y
Aliph	nC34			-30.51	value	Y
Aliph	nC35			-30.7	value	Y
Aliph	nC36			-32.489	value	Y
Aliph	nC37			-33.057	value	Y
Aliph	nC38				value	U
Aliph	nC39				value	U

Results for: Compound Specific Isotope Analysis d13C

Unique ID: W13/007516_PTE_CSIA-C13/04

Instrument / Type: Compound Specific Isotope Analysis d13C Run: 4

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d13C

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Final d13C

Results for: Compound Specific Isotope Analysis d13C

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	nC13			-30.49	value	Y
Aliph	nC14			-31.373	value	Y
Aliph	nC15			-31.776	value	Y
Aliph	nC16			-31.734	value	Y
Aliph	nC17			-32.476	value	Y
Aliph	nC18			-33.81	value	Y
Aliph	nC19			-32.556	value	Y
Aliph	nC20			-32.521	value	Y
Aliph	nC21			-32.838	value	Y
Aliph	nC22			-32.78	value	Y
Aliph	nC23			-33.854	value	Y
Aliph	nC24			-32.851	value	Y
Aliph	nC25			-32.854	value	Y
Aliph	nC26			-32.698	value	Y
Aliph	nC27			-32.797	value	Y
Aliph	nC28			-32.44	value	Y
Aliph	nC29			-32.741	value	Y
Aliph	nC30			-32.678	value	Y
Aliph	nC31			-32.725	value	Y
Aliph	nC32			-32.484	value	Y
Aliph	nC33			-32.332	value	Y
Aliph	nC34			-31.127	value	Y
Aliph	nC35			-31.806	value	Y
Aliph	nC36			-31.998	value	Y
Aliph	nC37			-32.411	value	Y
Aliph	nC38			-37.968	value	Y
Aliph	nC39				value	U

Results for: Compound Specific Isotope Analysis d2H

Unique ID: W13/007516_PTE_CSIA/01

Instrument / Type: Compound Specific Isotope Analysis d2H Run: 1

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d 2H/1H

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External 2H analysis

Results for: Compound Specific Isotope Analysis d2H

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	nC13			-105.7795	value	Y
Aliph	nC14			-118.78	value	Y
Aliph	nC15			-121.7335	value	Y
Aliph	nC16			-120.9685	value	Y
Aliph	nC17			-123.17	value	Y
Aliph	nC18			-119.191	value	Y
Aliph	nC19			-123.274	value	Y
Aliph	nC20			-122.1745	value	Y
Aliph	nC21			-121.119	value	Y
Aliph	nC22			-119.2085	value	Y
Aliph	nC23			-118.952	value	Y
Aliph	nC24			-115.488	value	Y
Aliph	nC25			-118.97	value	Y
Aliph	nC26			-114.6745	value	Y
Aliph	nC27			-115.366	value	Y
Aliph	nC28			-113.15	value	Y
Aliph	nC29			-111.5905	value	Y
Aliph	nC30			-107.945	value	Y
Aliph	nC31			-111.18	value	Y
Aliph	nC32			-86.6665	value	Y
Aliph	nC33			-92.9525	value	Y
Aliph	nC34			-97.7395	value	Y
Aliph	nC35				value	U
Aliph	nC36				value	U
Aliph	nC37				value	U
Aliph	nC38				value	U
Aliph	nC39				value	U

Results for: Compound Specific Isotope Analysis d2H

Unique ID: W13/007516_PTE_CSIA/02

Instrument / Type: Compound Specific Isotope Analysis d2H Run: 2

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d 2H/1H

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal 2H analysis

Results for: Compound Specific Isotope Analysis d2H

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	nC13			-110.5515	value	Y
Aliph	nC14			-122.8345	value	Y
Aliph	nC15			-124.3695	value	Y
Aliph	nC16			-125.059	value	Y
Aliph	nC17			-127.714	value	Y
Aliph	nC18			-126.0555	value	Y
Aliph	nC19			-128.074	value	Y
Aliph	nC20			-128.1395	value	Y
Aliph	nC21			-127.0165	value	Y
Aliph	nC22			-123.496	value	Y
Aliph	nC23			-121.8315	value	Y
Aliph	nC24			-119.0075	value	Y
Aliph	nC25			-121.927	value	Y
Aliph	nC26			-116.5145	value	Y
Aliph	nC27			-117.123	value	Y
Aliph	nC28			-115.7265	value	Y
Aliph	nC29			-112.355	value	Y
Aliph	nC30			-108.778	value	Y
Aliph	nC31			-108.9815	value	Y
Aliph	nC32			-87.7565	value	Y
Aliph	nC33			-97.6085	value	Y
Aliph	nC34			-86.111	value	Y
Aliph	nC35			-80.1365	value	Y
Aliph	nC36				value	U
Aliph	nC37				value	U
Aliph	nC38				value	U
Aliph	nC39				value	U

Results for: Elemental Analyser

Unique ID: W13/007516_UNK_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Preparation: Unknown

Analysis Date:

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Data Sheet:

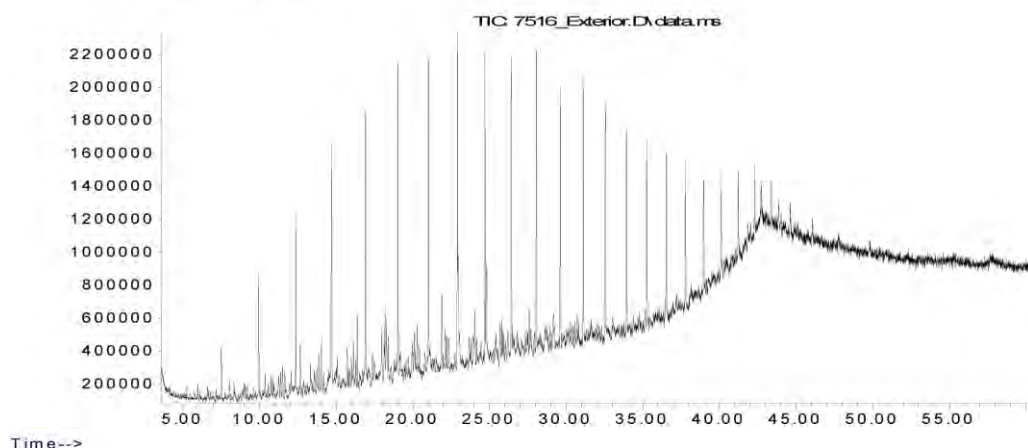
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			83.31	percent	Y
Inorg	delta13 Carbon			-29.6662464985327	per mille	Y
Inorg	delta34 Sulphur			-6.15029549933019	per mille	Y
Inorg	Hydrogen			5.92	percent	Y
Inorg	Nitrogen			0.55	percent	Y
Inorg	Sulphur			3.97	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007516 DISS GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB BCH1\GCMS\W13 007516_ext WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7516 Exterior - Asphaltite



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Ratio	nC17/nC29			5.39825020378312	ug/L	Y
Ratio	nC17/Pristane			4.55367550557107	ug/L	Y
Ratio	nC18/Phytane			2.89403843409023	ug/L	Y
Ratio	Pristane/Phytane			0.96895078104303	ug/L	Y
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100	2138953		ug/L	Z
Aliph	nC11	9.9450	4963062		ug/L	Z
Aliph	nC12	12.3690	7769524		ug/L	Z
Aliph	nC13	14.7030	10001873		ug/L	Z
Aliph	nC14	16.9230	11291236		ug/L	Z
Aliph	nC15	19.0270	11931649		ug/L	Z
Aliph	nC16	21.0200	11779916		ug/L	Z
Aliph	nC17	22.9150	16755035		ug/L	Z
Aliph	nC18	24.7150	10989700		ug/L	Z
Aliph	nC19	26.4300	10159210		ug/L	Z
Aliph	nC20	28.0680	9681693		ug/L	Z
Aliph	nC21	29.6330	9143467		ug/L	Z
Aliph	nC22	31.1340	8046152		ug/L	Z
Aliph	nC23	32.5720	7466302		ug/L	Z
Aliph	nC24	33.9520	6585021		ug/L	Z
Aliph	nC25	35.2810	5888386		ug/L	Z
Aliph	nC26	36.5600	5585093		ug/L	Z
Aliph	nC27	37.7930	4452578		ug/L	Z
Aliph	nC28	38.9870	3452936		ug/L	Z
Aliph	nC29	40.1370	3103790		ug/L	Z
Aliph	nC30	41.2480	2839731		ug/L	Z
Aliph	nC31	42.3270	2120933		ug/L	Z
Aliph	nC32	43.4130	1482142		ug/L	Z
Aliph	nC33	44.6430	1169639		ug/L	Z
Aliph	nC34	46.0860	767440		ug/L	Z
Aliph	nC35	47.8060			ug/L	U
Aliph	nC36	49.8090			ug/L	U
Aliph	nC37	52.2960			ug/L	U
Aliph	nC38	55.2370			ug/L	U

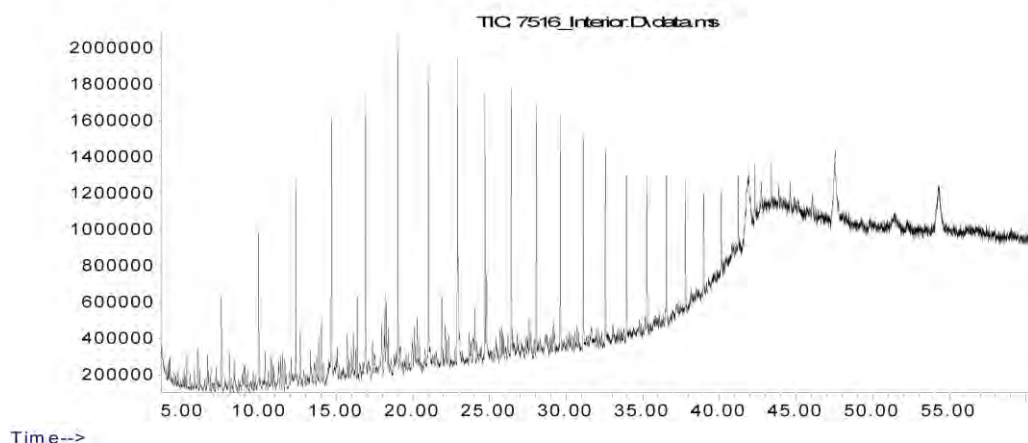
Results for: GCMS with Full Scan

Aliph	nC39	58.8850		ug/L	U
Aliph	Norpristane	21.9070	4562257	ug/L	Z
Aliph	Phytane	24.8210	3797358	ug/L	Z
Aliph	Pristane	22.9640	3679453	ug/L	Z

Results for: GCMS with Full Scan**Unique ID:** W13/007516 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007516_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7516 Interior - Asphaltite



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
Ratio	nC17/nC29		4.64146440596609		ug/L	Y
Ratio	nC17/Pristane		4.25166599281577		ug/L	Y
Ratio	nC18/Phytane		9.6588025921013		ug/L	Y
Ratio	Pristane/Phytane		2.92904139224553		ug/L	Y
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100	3365734		ug/L	Z
Aliph	nC11	9.9450	5941633		ug/L	Z
Aliph	nC12	12.3690	7923167		ug/L	Z
Aliph	nC13	14.7030	9134121		ug/L	Z
Aliph	nC14	16.9230	10824946		ug/L	Z
Aliph	nC15	19.0270	10924346		ug/L	Z
Aliph	nC16	21.0200	10299884		ug/L	Z
Aliph	nC17	22.9150	11294015		ug/L	Z
Aliph	nC18	24.7150	8759655		ug/L	Z
Aliph	nC19	26.4300	8015679		ug/L	Z
Aliph	nC20	28.0680	7567708		ug/L	Z
Aliph	nC21	29.6330	6924141		ug/L	Z
Aliph	nC22	31.1340	6179194		ug/L	Z
Aliph	nC23	32.5720	5851555		ug/L	Z
Aliph	nC24	33.9520	5076759		ug/L	Z
Aliph	nC25	35.2810	4413557		ug/L	Z
Aliph	nC26	36.5600	4566799		ug/L	Z
Aliph	nC27	37.7930	3598720		ug/L	Z
Aliph	nC28	38.9870	2682878		ug/L	Z
Aliph	nC29	40.1370	2433287		ug/L	Z
Aliph	nC30	41.2480	2274223		ug/L	Z
Aliph	nC31	42.3270	1730078		ug/L	Z
Aliph	nC32	43.4130	1403443		ug/L	Z
Aliph	nC33	44.6430	874137		ug/L	Z
Aliph	nC34	46.0860	934771		ug/L	Z
Aliph	nC35	47.8060			ug/L	U
Aliph	nC36	49.8090			ug/L	U
Aliph	nC37	52.2960			ug/L	U
Aliph	nC38	55.2370			ug/L	U

Results for: GCMS with Full Scan

Aliph	nC39	58.8850		ug/L	U
Aliph	Norpristane	21.9070	3977434	ug/L	Z
Aliph	Phytane	24.8210	906909	ug/L	Z
Aliph	Pristane	22.9640	2656374	ug/L	Z

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007594**

Beach E4: The Granites Visit: 2

Comments:

Location: Shore Upper

Local Date Time: 8/09/2015 2:12:22 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

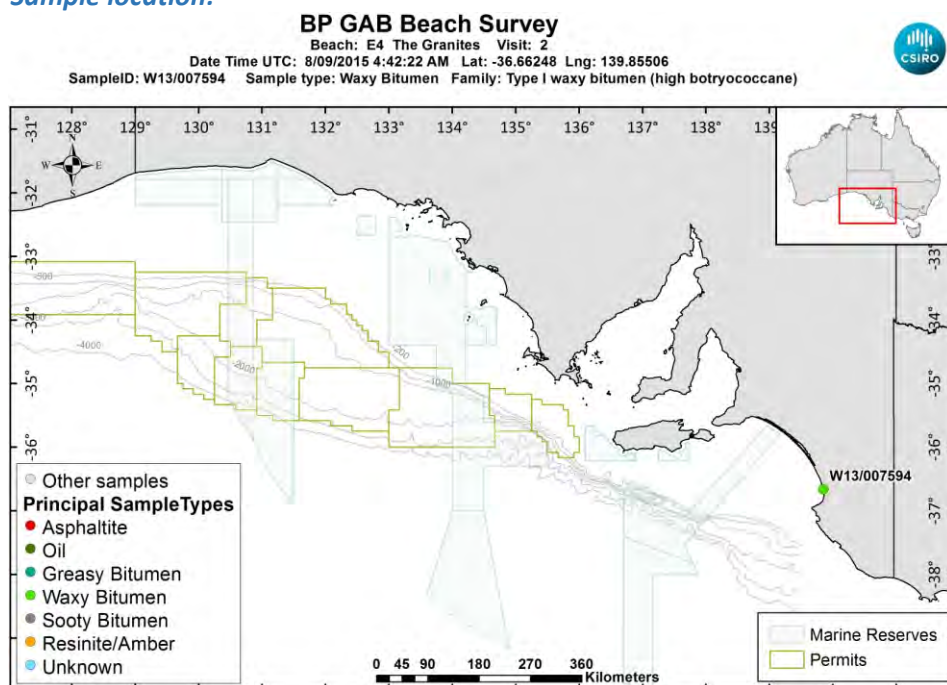
Size (cm): 6.8

Latitude (Y): -36.662483

Weight (gm): 24.5

Longitude (X): 139.855058

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007594_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007594_146A1496.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB BCH1\Samples\W13_007594_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007594_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume: Volume Units: Extract Volume: Dilution Factor:

Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			86.18	percent	Y
Inorg	Hydrogen			13.1577688270378	percent	Y
Inorg	Nitrogen			1.20885655526992	percent	Y
Inorg	Sulphur			3.21155277564043	percent	Y

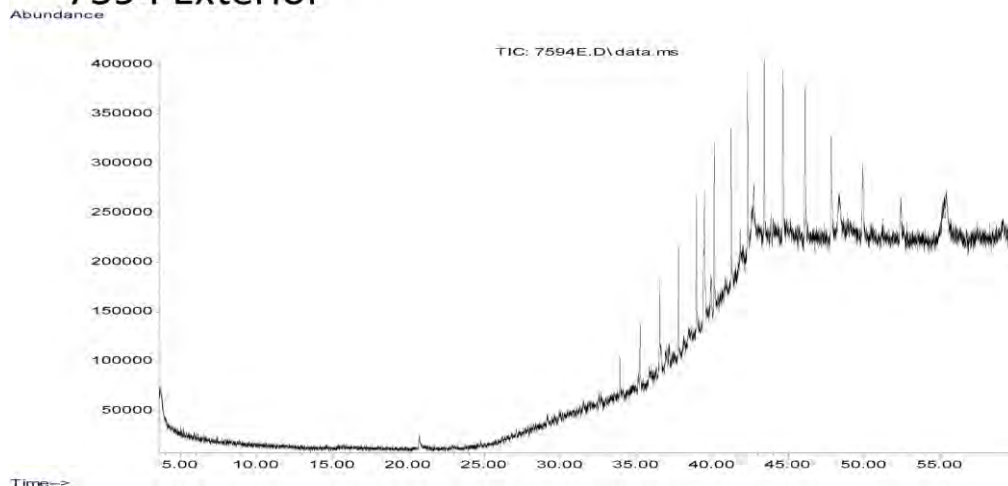
Results for: GCMS with Full Scan

Unique ID: W13/007594_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007594_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7594 Exterior



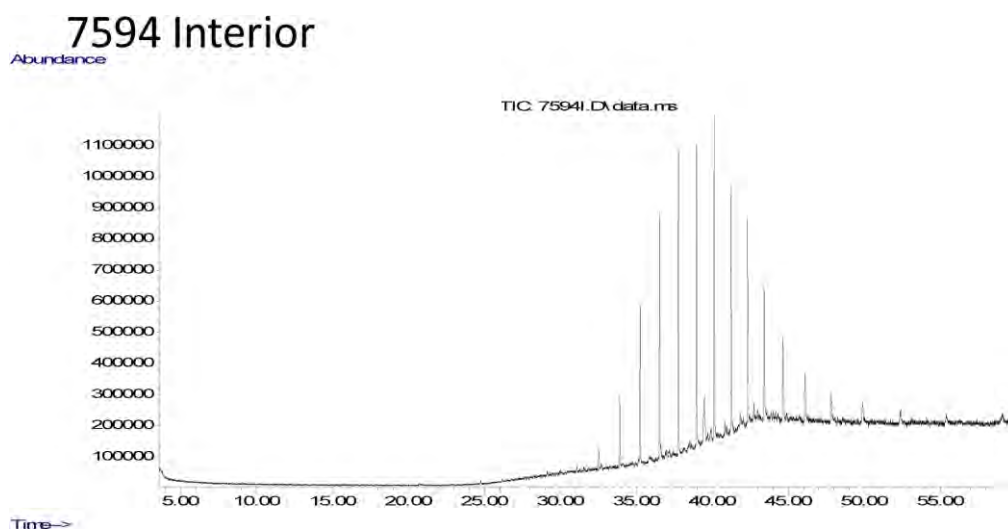
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	1081966		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960			ug/L	U
Aliph	nC24	33.8800	159314		ug/L	Z
Aliph	nC25	35.2120	281873		ug/L	Z
Aliph	nC26	36.4960	365487		ug/L	Z
Aliph	nC27	37.7300	523483		ug/L	Z
Aliph	nC28	38.9260	665140		ug/L	Z
Aliph	nC29	40.0740	730163		ug/L	Z
Aliph	nC30	41.1930	829590		ug/L	Z
Aliph	nC31	42.2750	887551		ug/L	Z
Aliph	nC32	43.3560	968493		ug/L	Z
Aliph	nC33	44.5840	1185490		ug/L	Z
Aliph	nC34	46.0130	1082355		ug/L	Z
Aliph	nC35	47.7140	953605		ug/L	Z
Aliph	nC36	49.7870	672337		ug/L	Z
Aliph	nC37	52.2630	459344		ug/L	Z
Aliph	nC38	55.2360			ug/L	U
Aliph	nC39	58.9110			ug/L	U
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007594 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007594_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	1343193		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960	373735		ug/L	Z
Aliph	nC24	33.8800	1071155		ug/L	Z
Aliph	nC25	35.2120	2399362		ug/L	Z
Aliph	nC26	36.4960	3837448		ug/L	Z
Aliph	nC27	37.7300	5073872		ug/L	Z
Aliph	nC28	38.9260	5132882		ug/L	Z
Aliph	nC29	40.0740	4979246		ug/L	Z
Aliph	nC30	41.1930	3951871		ug/L	Z
Aliph	nC31	42.2750	3135186		ug/L	Z
Aliph	nC32	43.3560	2492386		ug/L	Z
Aliph	nC33	44.5840	1835052		ug/L	Z
Aliph	nC34	46.0130	1300382		ug/L	Z
Aliph	nC35	47.7140	834848		ug/L	Z
Aliph	nC36	49.7870	709877		ug/L	Z
Aliph	nC37	52.2630	423389		ug/L	Z
Aliph	nC38	55.2360	382785		ug/L	Z
Aliph	nC39	58.9110	377160		ug/L	Z
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007595**

Beach E4: The Granites Visit: 2

Comments:

Location: Shore Upper

Local Date Time: 8/09/2015 2:33:24 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

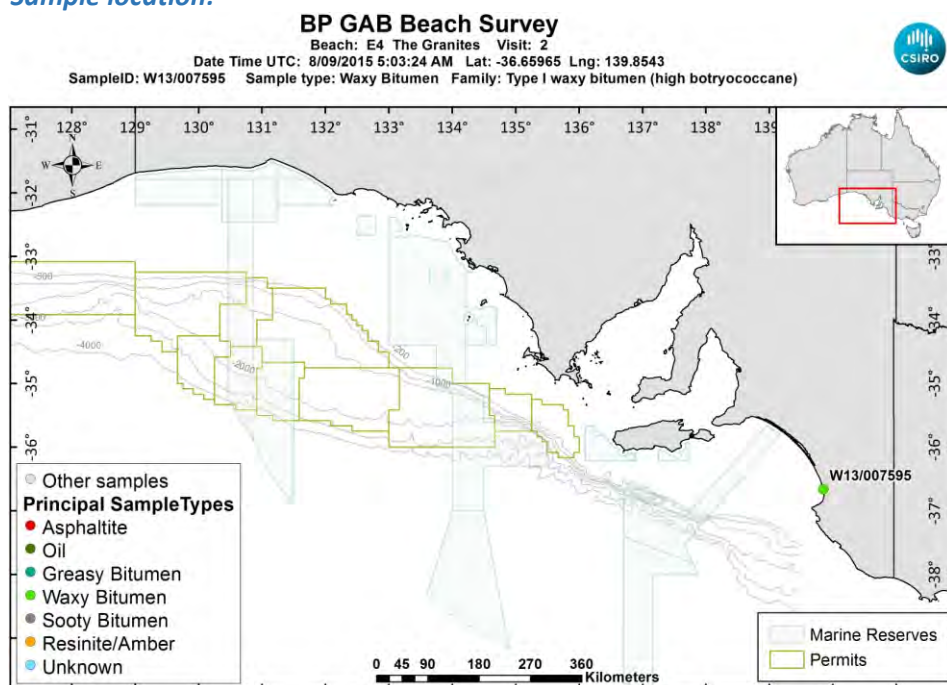
Size (cm): 3.3

Latitude (Y): -36.659653

Weight (gm): 14.8

Longitude (X): 139.854300

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007595_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007595_146A1498.JPG](#)

Sample - laboratory image:



LinkedFiles\GAB BCH1\Samples\W13_007595_Photo03.JPG

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007595_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			83.01	percent	Y
Inorg	Hydrogen			7.65175347912525	percent	Y
Inorg	Nitrogen			0.852680377035133	percent	Y
Inorg	Sulphur			1.46572417551012	percent	Y

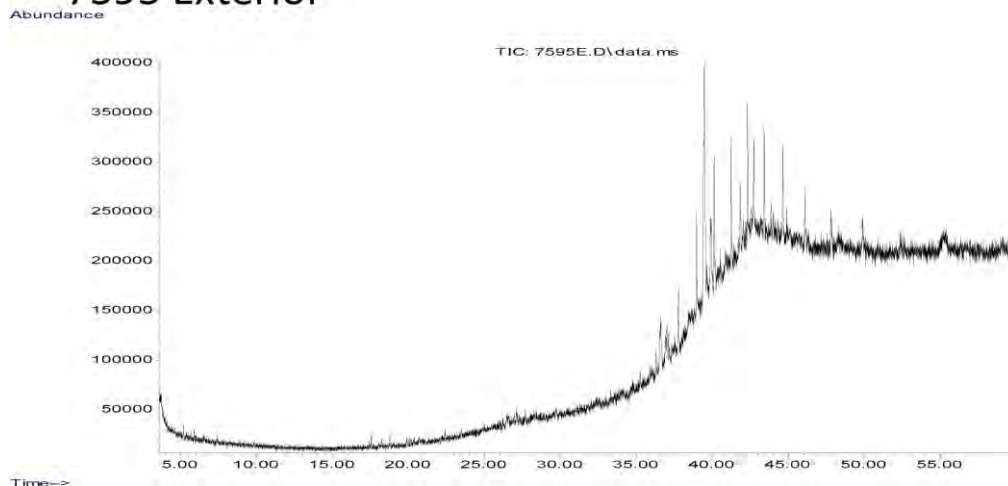
Results for: GCMS with Full Scan

Unique ID: W13/007595_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007595_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7595 Exterior



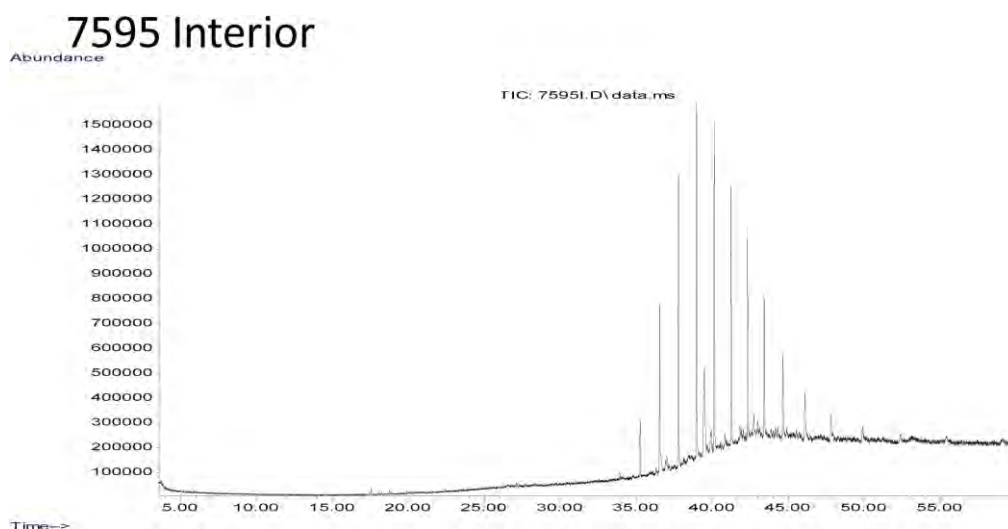
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	2117523		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960			ug/L	U
Aliph	nC24	33.8800			ug/L	U
Aliph	nC25	35.2120			ug/L	U
Aliph	nC26	36.4960			ug/L	U
Aliph	nC27	37.7300	282237		ug/L	Z
Aliph	nC28	38.9260	420959		ug/L	Z
Aliph	nC29	40.0740	584656		ug/L	Z
Aliph	nC30	41.1930	605063		ug/L	Z
Aliph	nC31	42.2750	611797		ug/L	Z
Aliph	nC32	43.3560	572112		ug/L	Z
Aliph	nC33	44.5840	483331		ug/L	Z
Aliph	nC34	46.0130	375875		ug/L	Z
Aliph	nC35	47.7140	287593		ug/L	Z
Aliph	nC36	49.7870	267213		ug/L	Z
Aliph	nC37	52.2630	226985		ug/L	Z
Aliph	nC38	55.2360			ug/L	U
Aliph	nC39	58.9110			ug/L	U
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007595 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007595_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	3118665		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960			ug/L	U
Aliph	nC24	33.8800			ug/L	U
Aliph	nC25	35.2120	1102088		ug/L	Z
Aliph	nC26	36.4960	3311723		ug/L	Z
Aliph	nC27	37.7300	5672205		ug/L	Z
Aliph	nC28	38.9260	6475911		ug/L	Z
Aliph	nC29	40.0740	6633955		ug/L	Z
Aliph	nC30	41.1930	5388960		ug/L	Z
Aliph	nC31	42.2750	4539206		ug/L	Z
Aliph	nC32	43.3560	3290719		ug/L	Z
Aliph	nC33	44.5840	2183677		ug/L	Z
Aliph	nC34	46.0130	1469589		ug/L	Z
Aliph	nC35	47.7140	961342		ug/L	Z
Aliph	nC36	49.7870	726382		ug/L	Z
Aliph	nC37	52.2630	480058		ug/L	Z
Aliph	nC38	55.2360	416148		ug/L	Z
Aliph	nC39	58.9110	307027		ug/L	Z
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007596**

Beach E4: The Granites Visit: 2

Comments:

Location: Shore Upper

Local Date Time: 8/09/2015 2:41:44 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

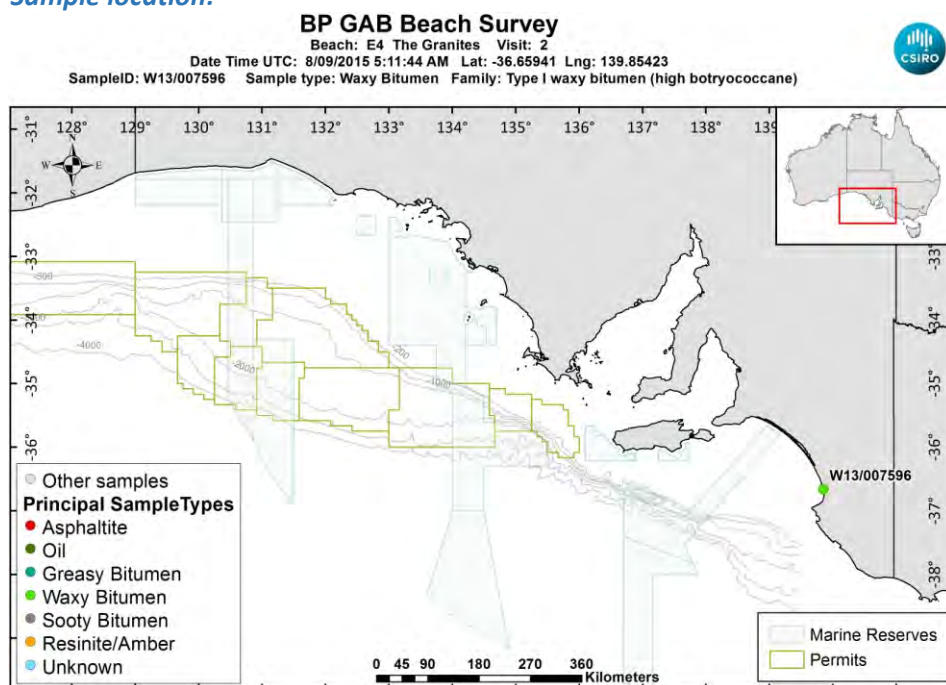
Size (cm): 1.9

Latitude (Y): -36.659410

Weight (gm): 1.2

Longitude (X): 139.854225

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007596_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007596_146A1500.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007596_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 3

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007596_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume: **Volume Units:** **Extract Volume:** **Dilution Factor:**

Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Inorg	Carbon			85.61	percent	Y
Inorg	Hydrogen			6.12742306163022	percent	Y
Inorg	Nitrogen			0.817924935732648	percent	Y
Inorg	Sulphur			0.880272101051252	percent	Y

Results for: GCMS with Full Scan

Unique ID: W13/007596 DISS GCMS-Scan/03

Instrument / Type: GCMS with Full Scan Run: 3

for Analysis: Whole Oils

Analysis Date: 18/11/2016

Linked Image: [LinkedFiles\GAB_BCH1\GCMS\W13_007596_bulk_WholeOil.jpg](#)

Preparation: Dissolved in solvent

Method ID/s:

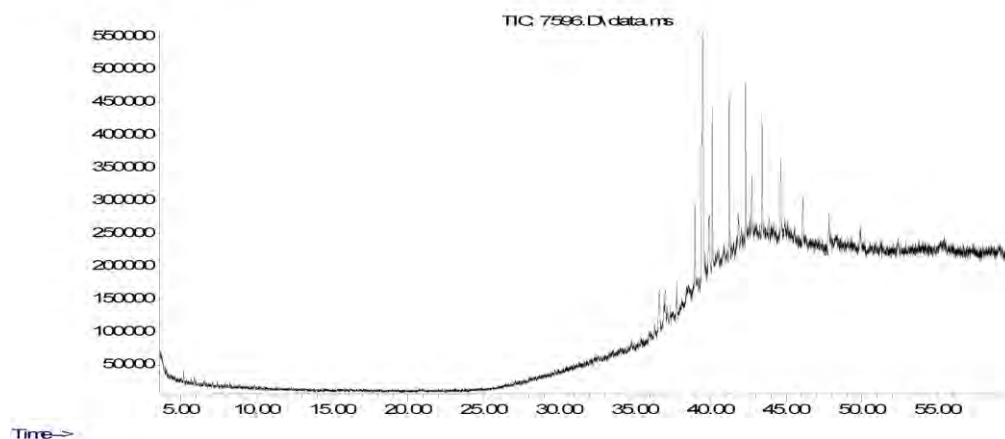
Sample Volume: **Volume Units:** **Extract Volume:** **Dilution Factor:**

Comment: Bulk

Results for: GCMS with Full Scan

7596 Bulk

Abundance



Time-->

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	3162884		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960			ug/L	U
Aliph	nC24	33.8800			ug/L	U
Aliph	nC25	35.2120			ug/L	U
Aliph	nC26	36.4960			ug/L	U
Aliph	nC27	37.7300	280491		ug/L	Z
Aliph	nC28	38.9260	748936		ug/L	Z
Aliph	nC29	40.0740	1187157		ug/L	Z
Aliph	nC30	41.1930	1204847		ug/L	Z
Aliph	nC31	42.2750	1246970		ug/L	Z
Aliph	nC32	43.3560	993706		ug/L	Z
Aliph	nC33	44.5840	802281		ug/L	Z
Aliph	nC34	46.0130	567653		ug/L	Z
Aliph	nC35	47.7140	434609		ug/L	Z
Aliph	nC36	49.7870	297672		ug/L	Z
Aliph	nC37	52.2630	227795		ug/L	Z
Aliph	nC38	55.2360			ug/L	U
Aliph	nC39	58.9110			ug/L	U
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007597**

Beach E4: The Granites Visit: 2

Comments:

Location: Shore Upper

Local Date Time: 8/09/2015 3:21:24 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

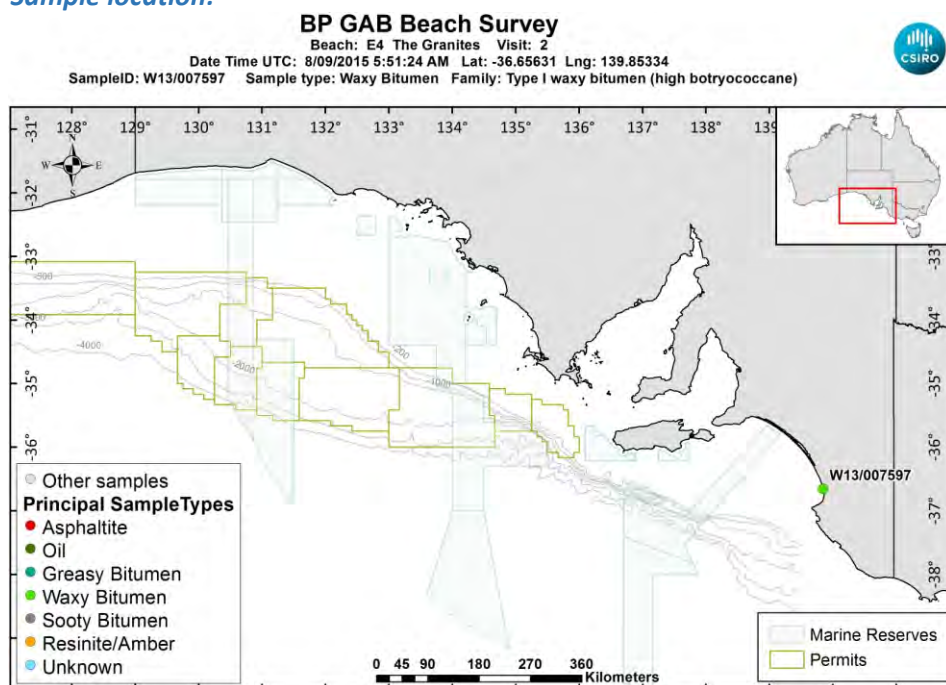
Size (cm): 2.9

Latitude (Y): -36.656307

Weight (gm): 5

Longitude (X): 139.853342

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007597_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007597_146A1507.JPG](#)

Sample - laboratory image:



LinkedFiles\GAB BCH1\Samples\W13_007597_Photo02.JPG

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007597_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			84.95	percent	Y
Inorg	Hydrogen			5.67792858846919	percent	Y
Inorg	Nitrogen			0.859206940874036	percent	Y
Inorg	Sulphur			0.802128270248162	percent	Y

Results for: GCMS with Full Scan

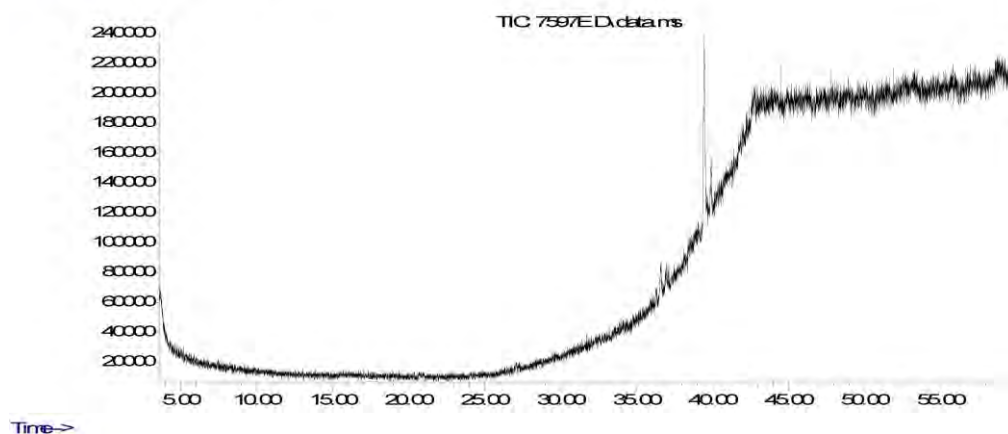
Unique ID: W13/007597_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007597_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7597 Exterior

Abundance



Time-->

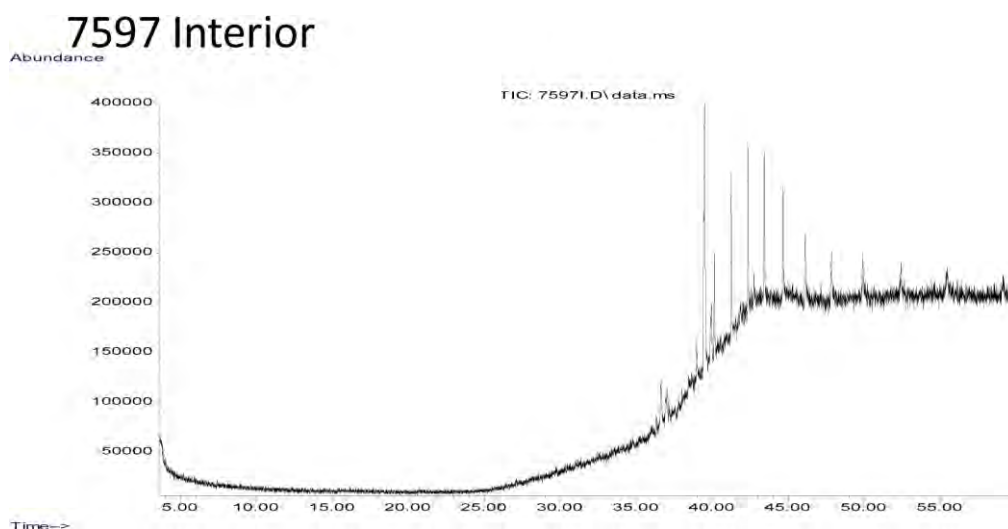
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	1089538		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960			ug/L	U
Aliph	nC24	33.8800			ug/L	U
Aliph	nC25	35.2120			ug/L	U
Aliph	nC26	36.4960			ug/L	U
Aliph	nC27	37.7300			ug/L	U
Aliph	nC28	38.9260			ug/L	U
Aliph	nC29	40.0740			ug/L	U
Aliph	nC30	41.1930			ug/L	U
Aliph	nC31	42.2750			ug/L	U
Aliph	nC32	43.3560			ug/L	U
Aliph	nC33	44.5840			ug/L	U
Aliph	nC34	46.0130			ug/L	U
Aliph	nC35	47.7140			ug/L	U
Aliph	nC36	49.7870			ug/L	U
Aliph	nC37	52.2630			ug/L	U
Aliph	nC38	55.2360			ug/L	U
Aliph	nC39	58.9110			ug/L	U
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007597 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007597_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	2471373		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960			ug/L	U
Aliph	nC24	33.8800			ug/L	U
Aliph	nC25	35.2120			ug/L	U
Aliph	nC26	36.4960			ug/L	U
Aliph	nC27	37.7300			ug/L	U
Aliph	nC28	38.9260	154351		ug/L	Z
Aliph	nC29	40.0740	529839		ug/L	Z
Aliph	nC30	41.1930	750610		ug/L	Z
Aliph	nC31	42.2750	935236		ug/L	Z
Aliph	nC32	43.3560	856467		ug/L	Z
Aliph	nC33	44.5840	759028		ug/L	Z
Aliph	nC34	46.0130	551679		ug/L	Z
Aliph	nC35	47.7140	473153		ug/L	Z
Aliph	nC36	49.7870	367604		ug/L	Z
Aliph	nC37	52.2630	286361		ug/L	Z
Aliph	nC38	55.2360	303583		ug/L	Z
Aliph	nC39	58.9110	301228		ug/L	Z
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007598**

Beach E4: The Granites Visit: 2

Comments:

Location: Shore Upper

Local Date Time: 8/09/2015 3:27:25 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

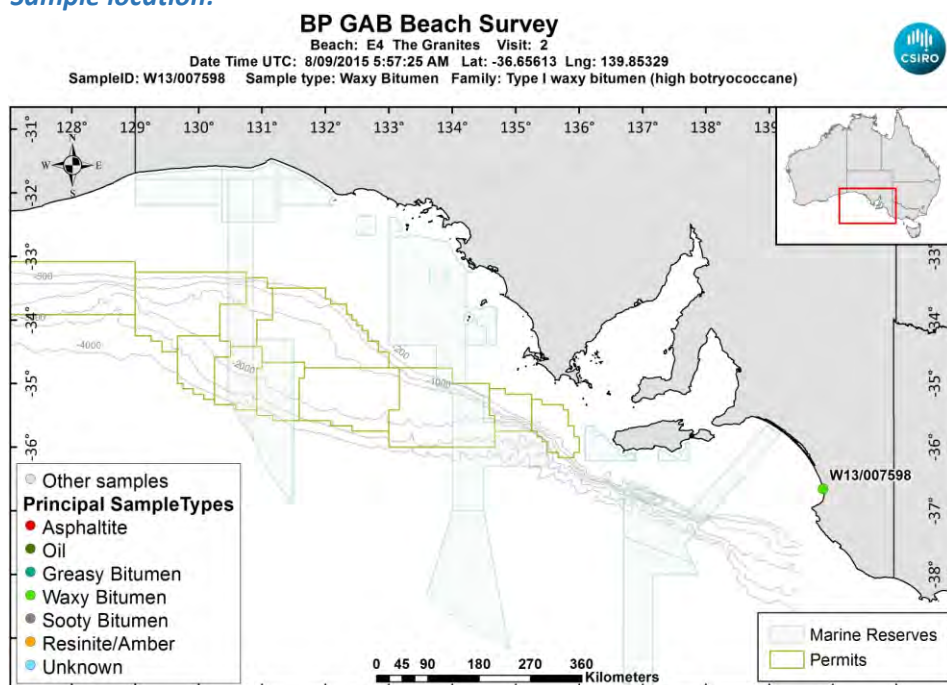
Size (cm): 2.6

Latitude (Y): -36.656130

Weight (gm): 3.3

Longitude (X): 139.853287

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007598_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007598_146A1509.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007598_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007598_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			84.83	percent	Y
Inorg	Hydrogen			9.87409980119284	percent	Y
Inorg	Nitrogen			1.06115749785776	percent	Y
Inorg	Sulphur			2.97818322556511	percent	Y

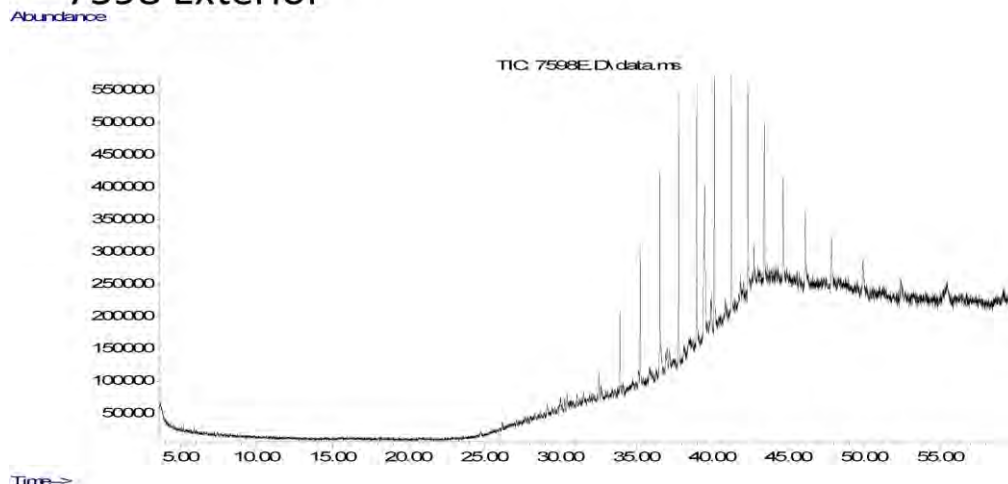
Results for: GCMS with Full Scan

Unique ID: W13/007598_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007598_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7598 Exterior



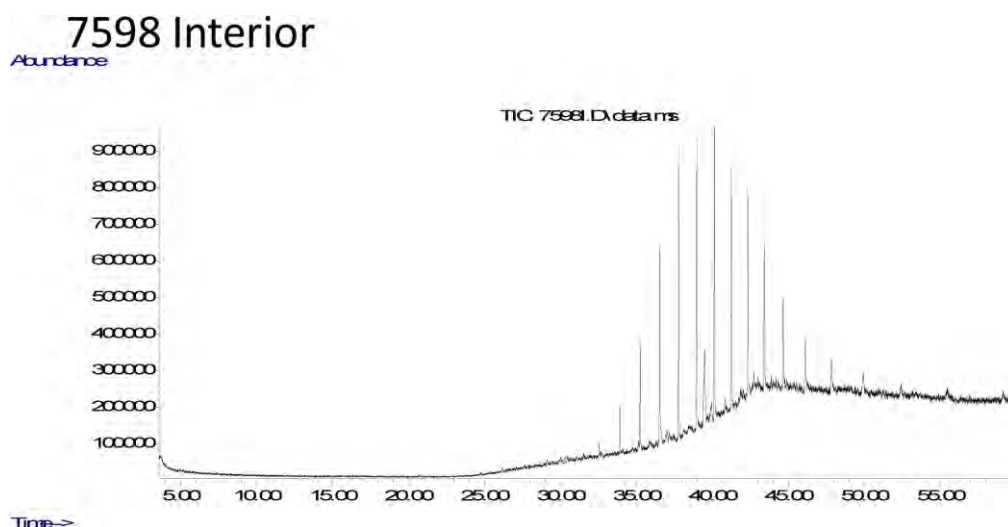
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	1981856		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540	53098		ug/L	Z
Aliph	nC23	32.4960	237585		ug/L	Z
Aliph	nC24	33.8800	576821		ug/L	Z
Aliph	nC25	35.2120	982070		ug/L	Z
Aliph	nC26	36.4960	1416525		ug/L	Z
Aliph	nC27	37.7300	1901732		ug/L	Z
Aliph	nC28	38.9260	2002224		ug/L	Z
Aliph	nC29	40.0740	2041902		ug/L	Z
Aliph	nC30	41.1930	1809788		ug/L	Z
Aliph	nC31	42.2750	1636896		ug/L	Z
Aliph	nC32	43.3560	1254981		ug/L	Z
Aliph	nC33	44.5840	1024336		ug/L	Z
Aliph	nC34	46.0130	788575		ug/L	Z
Aliph	nC35	47.7140	605022		ug/L	Z
Aliph	nC36	49.7870	443846		ug/L	Z
Aliph	nC37	52.2630	355843		ug/L	Z
Aliph	nC38	55.2360	213488		ug/L	Z
Aliph	nC39	58.9110	205697		ug/L	Z
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007598 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007598_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	1654545		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540	55024		ug/L	Z
Aliph	nC23	32.4960	193952		ug/L	Z
Aliph	nC24	33.8800	673128		ug/L	Z
Aliph	nC25	35.2120	1451904		ug/L	Z
Aliph	nC26	36.4960	2498336		ug/L	Z
Aliph	nC27	37.7300	3828450		ug/L	Z
Aliph	nC28	38.9260	3939985		ug/L	Z
Aliph	nC29	40.0740	3933986		ug/L	Z
Aliph	nC30	41.1930	3354968		ug/L	Z
Aliph	nC31	42.2750	2940642		ug/L	Z
Aliph	nC32	43.3560	2233833		ug/L	Z
Aliph	nC33	44.5840	1648242		ug/L	Z
Aliph	nC34	46.0130	1165514		ug/L	Z
Aliph	nC35	47.7140	705550		ug/L	Z
Aliph	nC36	49.7870	612200		ug/L	Z
Aliph	nC37	52.2630	456894		ug/L	Z
Aliph	nC38	55.2360	358745		ug/L	Z
Aliph	nC39	58.9110	370911		ug/L	Z
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007599**

Beach E4: The Granites Visit: 2

Comments:

Location: Shore Upper

Local Date Time: 8/09/2015 3:31:52 PM

Type: Unknown

Family: Not bitumen (false sample)

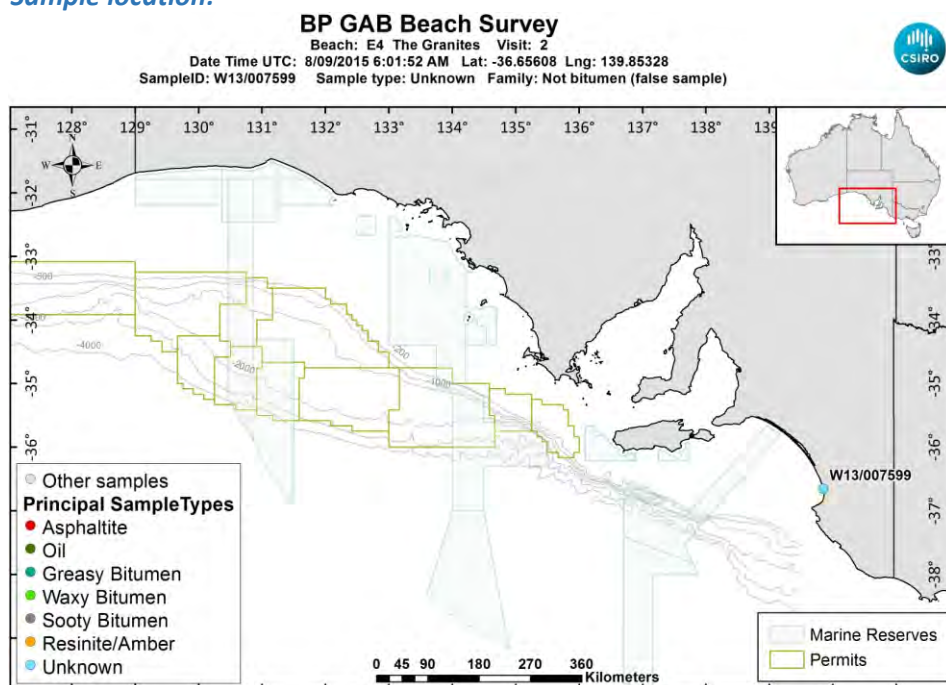
Size (cm): 3.1

Latitude (Y): -36.656082

Weight (gm): 2.2

Longitude (X): 139.853280

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007599_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007599_146A1511.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007599_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES

Analyses Completed:

Sample Analyses Completed:

No results to date

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007600**

Beach E4: The Granites Visit: 2

Comments:

Location: Shore Upper

Local Date Time: 8/09/2015 3:34:45 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

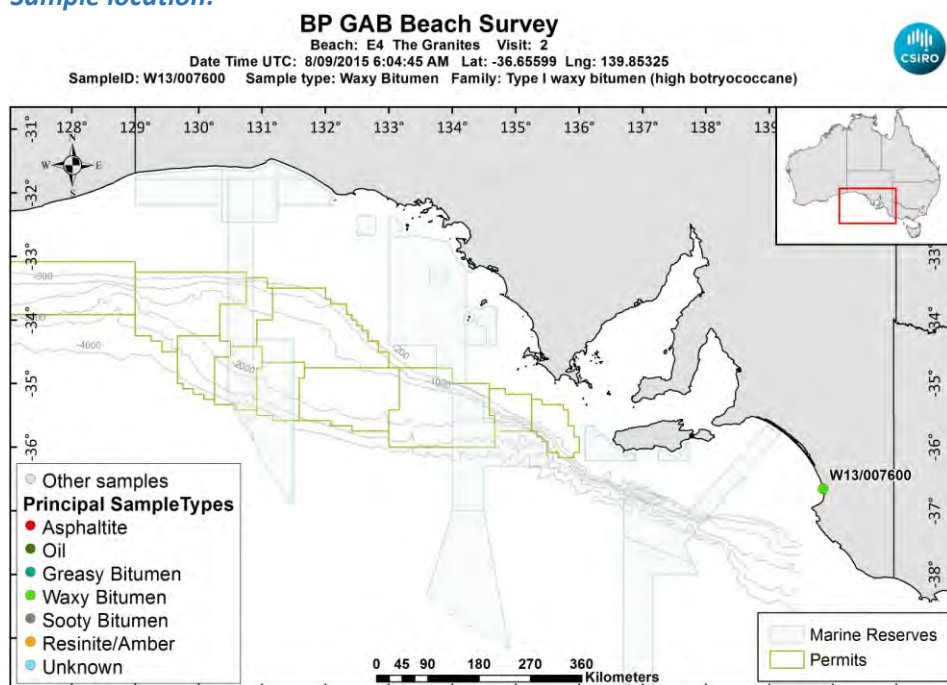
Size (cm): 2.5

Latitude (Y): -36.655993

Weight (gm): 3.8

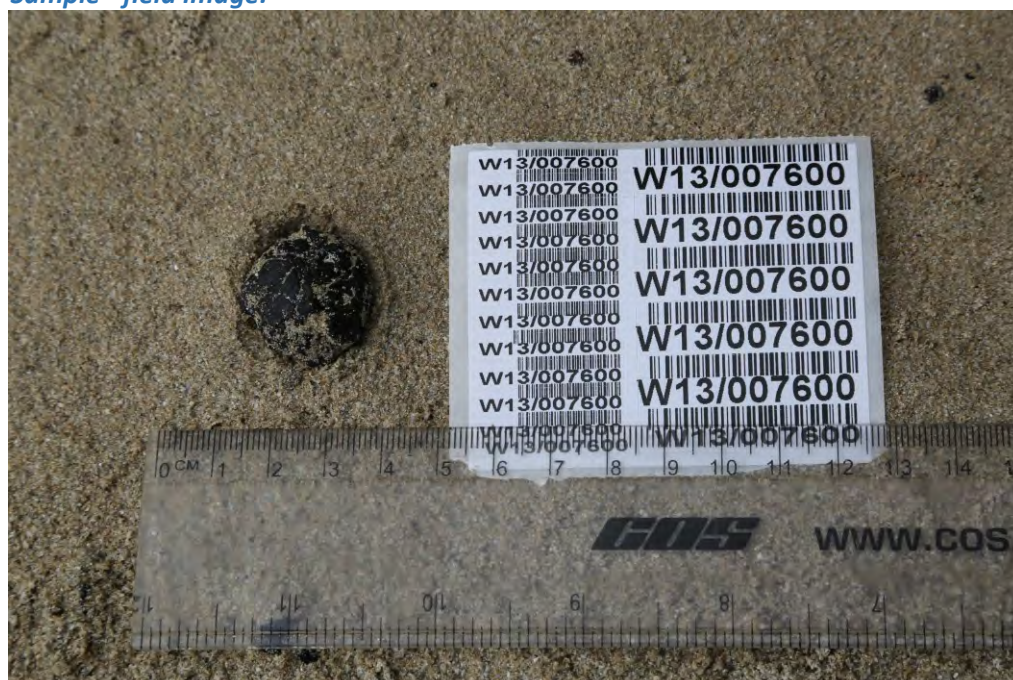
Longitude (X): 139.853252

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007600_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007600_146A1513.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007600_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007600_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Data Sheet:

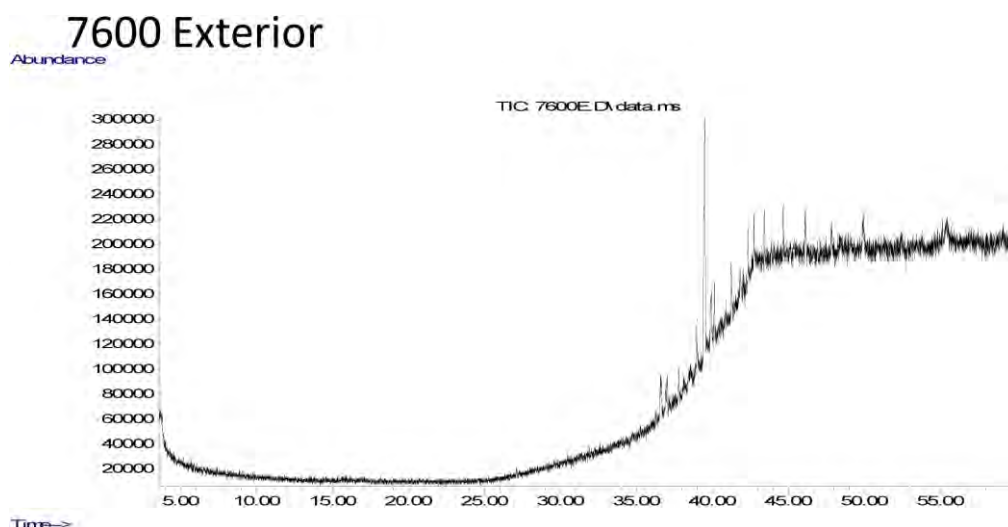
Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			85.83	percent	Y
Inorg	Hydrogen			9.32990755467197	percent	Y
Inorg	Nitrogen			0.953203598971722	percent	Y
Inorg	Sulphur			2.12160080178706	percent	Y

Results for: GCMS with Full Scan

Unique ID: W13/007600_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007600_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan



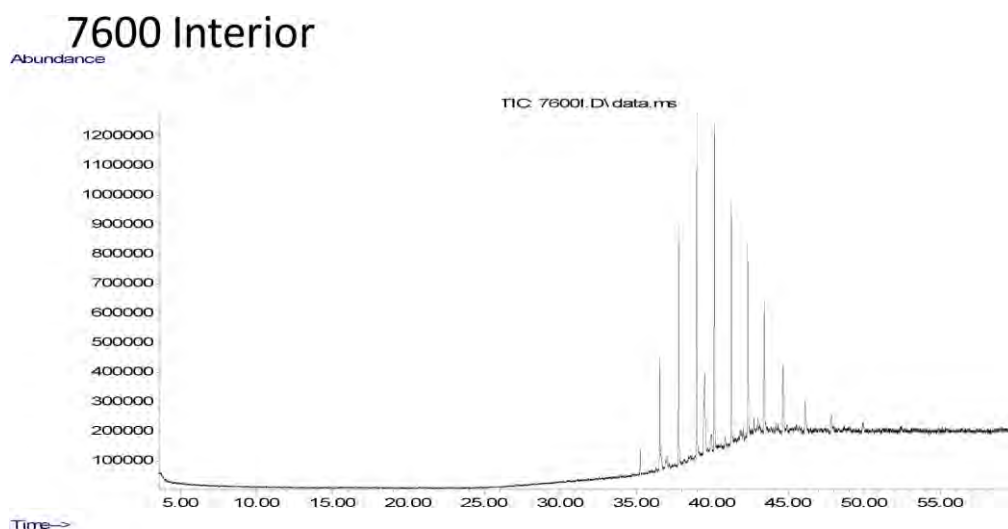
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	1718805		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960			ug/L	U
Aliph	nC24	33.8800			ug/L	U
Aliph	nC25	35.2120			ug/L	U
Aliph	nC26	36.4960			ug/L	U
Aliph	nC27	37.7300	144211		ug/L	Z
Aliph	nC28	38.9260	185818		ug/L	Z
Aliph	nC29	40.0740	177632		ug/L	Z
Aliph	nC30	41.1930	201297		ug/L	Z
Aliph	nC31	42.2750	231702		ug/L	Z
Aliph	nC32	43.3560	255528		ug/L	Z
Aliph	nC33	44.5840	257100		ug/L	Z
Aliph	nC34	46.0130	282383		ug/L	Z
Aliph	nC35	47.7140	352105		ug/L	Z
Aliph	nC36	49.7870	263687		ug/L	Z
Aliph	nC37	52.2630			ug/L	U
Aliph	nC38	55.2360			ug/L	U
Aliph	nC39	58.9110			ug/L	U
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007600 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007600_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	2471777		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960			ug/L	U
Aliph	nC24	33.8800			ug/L	U
Aliph	nC25	35.2120	396820		ug/L	Z
Aliph	nC26	36.4960	1628103		ug/L	Z
Aliph	nC27	37.7300	4210412		ug/L	Z
Aliph	nC28	38.9260	5384186		ug/L	Z
Aliph	nC29	40.0740	5408100		ug/L	Z
Aliph	nC30	41.1930	4190232		ug/L	Z
Aliph	nC31	42.2750	3534269		ug/L	Z
Aliph	nC32	43.3560	2326510		ug/L	Z
Aliph	nC33	44.5840	1544942		ug/L	Z
Aliph	nC34	46.0130	912596		ug/L	Z
Aliph	nC35	47.7140	591635		ug/L	Z
Aliph	nC36	49.7870	364849		ug/L	Z
Aliph	nC37	52.2630	263419		ug/L	Z
Aliph	nC38	55.2360			ug/L	U
Aliph	nC39	58.9110			ug/L	U
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007601**

Beach E4: The Granites Visit: 2

Comments:

Location: Shore Upper

Local Date Time: 8/09/2015 3:43:33 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

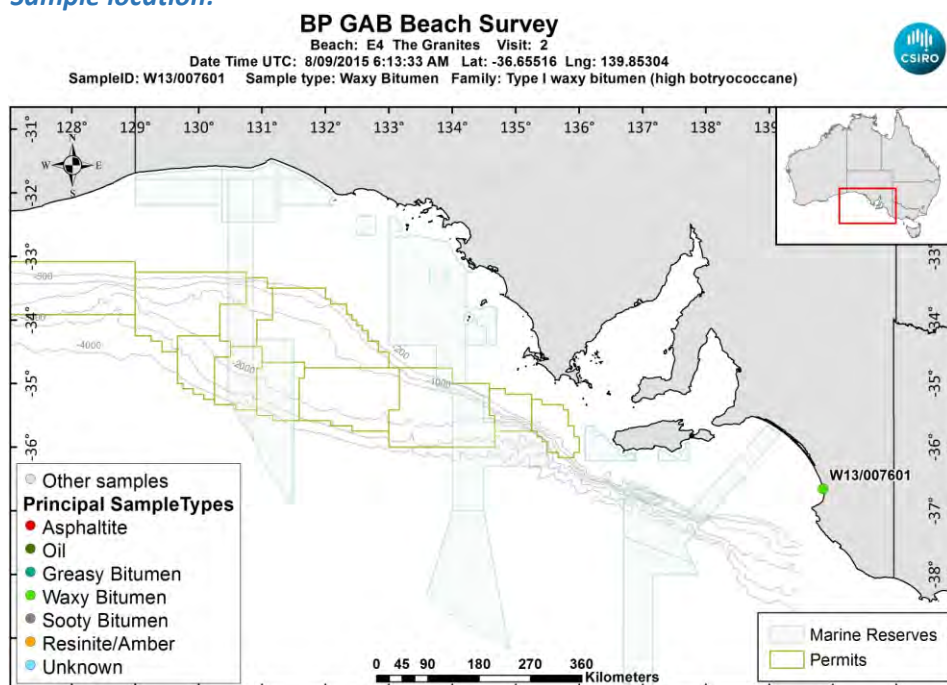
Size (cm): 6.3

Latitude (Y): -36.655155

Weight (gm): 25

Longitude (X): 139.853045

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007601_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007601_146A1515.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007601_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
4	Biomarkers	YES
5	CSIA	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
CSIA	Compound Specific Isotope Analysis d13C Run: 3
CSIA	Compound Specific Isotope Analysis d2H Run: 2
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007601_DISS_GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			48.7228176048278	ratio	Y
BiomRatio	% C27 abb 20(R+S)			50.0317209868021	ratio	Y
BiomRatio	% C28 aaa 20R			14.7279159296639	ratio	Y
BiomRatio	% C28 abb 20(R+S)			19.0828854592969	ratio	Y
BiomRatio	% C29 aaa 20R			36.5492664655083	ratio	Y
BiomRatio	% C29 abb 20(R+S)			30.885393553901	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			7.69203728255193E-02	ratio	Y
BiomRatio	25-Nor/C30H			0.067324554249854	ratio	Y
BiomRatio	C19t/C23t			0.367409297800463	ratio	Y
BiomRatio	C22t/C21t			0.379718321292313	ratio	Y
BiomRatio	C22t/C24t			0.322388522594133	ratio	Y
BiomRatio	C23t/C30H			7.66934343599094E-02	ratio	Y
BiomRatio	C24t/C23t			0.85124399270569	ratio	Y
BiomRatio	C24Tet/C23t			0.379401886155967	ratio	Y
BiomRatio	C24Tet/C26t			0.345439411002746	ratio	Y
BiomRatio	C24Tet/C30H			2.90976336519285E-02	ratio	Y
BiomRatio	C26t/C25t			1.81590604135344	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.721669938816001	ratio	Y
BiomRatio	C27 Dia/Ster			1.36019228911763	ratio	Y
BiomRatio	C28BNH/C30H			3.23075821300245E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.617316233476124	ratio	Y
BiomRatio	C29H/C30H			0.597054541377814	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.312508419020251	ratio	Y
BiomRatio	C30DiaH/C30H			0.176387812469418	ratio	Y
BiomRatio	C30Ts/C30H			1.17595624481397E-02	ratio	Y
BiomRatio	C35 Homohopane Index			4.05521336347419E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.438706120198493	ratio	Y
BiomRatio	Gam/C30H			4.01474154121771E-02	ratio	Y
BiomRatio	Gam/C31HR			0.248883702875526	ratio	Y
BiomRatio	Ole/C30H			0.113564535112397	ratio	Y
BiomRatio	Sterane/hopane			7.04552813985381E-02	ratio	Y
BiomRatio	Steranes/Terpanes			6.10907143869181E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.153289531896935	ratio	Y

Results for: Compound Specific Isotope Analysis d13C

Unique ID: W13/007601_PTE_CSIA-C13/03

Instrument / Type: Compound Specific Isotope Analysis d13C Run: 3

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d13C

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Final d13C

Results for: Compound Specific Isotope Analysis d13C

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	nC13			-27.668	value	Y
Aliph	nC14				value	U
Aliph	nC15			-38.456	value	Y
Aliph	nC16				value	U
Aliph	nC17			-26.041	value	Y
Aliph	nC18			-26.939	value	Y
Aliph	nC19			-26.739	value	Y
Aliph	nC20			-26.999	value	Y
Aliph	nC21			-27.372	value	Y
Aliph	nC22			-27.69	value	Y
Aliph	nC23			-28.448	value	Y
Aliph	nC24			-27.913	value	Y
Aliph	nC25			-28.027	value	Y
Aliph	nC26			-27.965	value	Y
Aliph	nC27			-28.299	value	Y
Aliph	nC28			-28.211	value	Y
Aliph	nC29			-28.26	value	Y
Aliph	nC30			-28.456	value	Y
Aliph	nC31			-27.999	value	Y
Aliph	nC32			-28.062	value	Y
Aliph	nC33			-27.423	value	Y
Aliph	nC34			-27.367	value	Y
Aliph	nC35			-27.936	value	Y
Aliph	nC36			-27.3	value	Y
Aliph	nC37			-26.713	value	Y
Aliph	nC38			-26.148	value	Y
Aliph	nC39			-25.429	value	Y

Results for: Compound Specific Isotope Analysis d2H

Unique ID: W13/007601_PTE_CSIA/02

Instrument / Type: Compound Specific Isotope Analysis d2H Run: 2

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d 2H/1H

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal 2H analysis

Results for: Compound Specific Isotope Analysis d2H

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
Aliph	nC13			-62.644	value	Y
Aliph	nC14				value	U
Aliph	nC15				value	U
Aliph	nC16				value	U
Aliph	nC17				value	U
Aliph	nC18			-118.2575	value	Y
Aliph	nC19			-125.7395	value	Y
Aliph	nC20			-127.7675	value	Y
Aliph	nC21			-134.522	value	Y
Aliph	nC22			-136.1115	value	Y
Aliph	nC23			-137.2405	value	Y
Aliph	nC24			-137.0995	value	Y
Aliph	nC25			-132.842	value	Y
Aliph	nC26			-131.486	value	Y
Aliph	nC27			-128.9935	value	Y
Aliph	nC28			-128.1665	value	Y
Aliph	nC29			-126.3665	value	Y
Aliph	nC30			-127.1195	value	Y
Aliph	nC31			-123.473	value	Y
Aliph	nC32			-122.117	value	Y
Aliph	nC33			-112.5995	value	Y
Aliph	nC34			-108.2045	value	Y
Aliph	nC35			-107.2445	value	Y
Aliph	nC36				value	U
Aliph	nC37				value	U
Aliph	nC38				value	U
Aliph	nC39				value	U

Results for: Elemental Analyser

Unique ID: W13/007601_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Data Sheet:

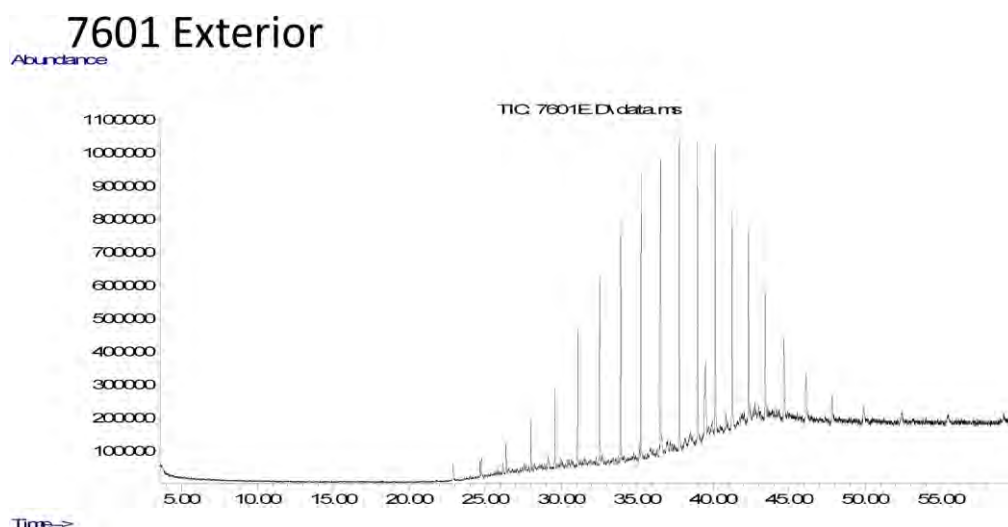
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
Inorg	Carbon			85.76	percent	Y
Inorg	Hydrogen			7.17231960238569	percent	Y
Inorg	Nitrogen			0.666778834618681	percent	Y
Inorg	Sulphur			1.16133791877999	percent	Y

Results for: GCMS with Full Scan

Results for: GCMS with Full Scan**Unique ID:** W13/007601 DISS GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB BCH1\GCMS\W13 007601 ext WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

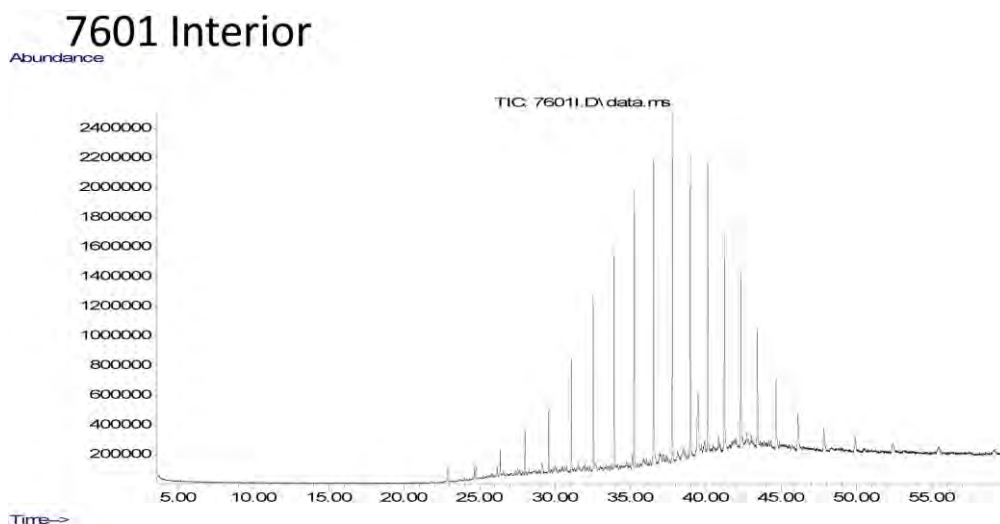
Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Ratio	nC17/nC29		1.47961837275859E-02		ug/L	Y
Ratio	nC17/nC35		8.34380690062151E-02		ug/L	Y
Ratio	nC17/Pristane		0.189867307400128		ug/L	Y
Ratio	nC18/Phytane		0.694584413755698		ug/L	Y
Ratio	Pristane/Phytane		0.950055432415507		ug/L	Y
Aliph	Botryococcane	39.4290	1954344		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190	62784		ug/L	Z
Aliph	nC18	24.6230	241753		ug/L	Z
Aliph	nC19	26.3410	476261		ug/L	Z
Aliph	nC20	27.9810	783278		ug/L	Z
Aliph	nC21	29.5510	1113258		ug/L	Z
Aliph	nC22	31.0540	1850267		ug/L	Z
Aliph	nC23	32.4960	2637658		ug/L	Z
Aliph	nC24	33.8800	3453302		ug/L	Z
Aliph	nC25	35.2120	3999826		ug/L	Z
Aliph	nC26	36.4960	4282665		ug/L	Z
Aliph	nC27	37.7300	4943036		ug/L	Z
Aliph	nC28	38.9260	4500776		ug/L	Z
Aliph	nC29	40.0740	4243231		ug/L	Z
Aliph	nC30	41.1930	3446029		ug/L	Z
Aliph	nC31	42.2750	2831219		ug/L	Z
Aliph	nC32	43.3560	2205901		ug/L	Z
Aliph	nC33	44.5840	1708941		ug/L	Z
Aliph	nC34	46.0130	1111774		ug/L	Z
Aliph	nC35	47.7140	752458		ug/L	Z
Aliph	nC36	49.7870	547056		ug/L	Z
Aliph	nC37	52.2630	396358		ug/L	Z

Results for: GCMS with Full Scan

Aliph	nC38	55.2360	297556	ug/L	Z
Aliph	nC39	58.9110	264243	ug/L	Z
Aliph	Norpristane	21.8010		ug/L	U
Aliph	Phytane	24.7190	348054	ug/L	Z
Aliph	Pristane	22.8660	330671	ug/L	Z

Results for: GCMS with Full Scan**Unique ID:** W13/007601 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007601_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Ratio	nC17/nC29		4.67851840125677E-03		ug/L	Y
Ratio	nC17/nC35		3.45972269242073E-02		ug/L	Y
Ratio	nC17/Pristane		6.92991850376494E-02		ug/L	Y
Ratio	nC18/Phytane		0.746009663361288		ug/L	Y
Ratio	Pristane/Phytane		1.00818638227415		ug/L	Y
Aliph	Botryococcane	39.4290	3740657		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190	44639		ug/L	Z
Aliph	nC18	24.6230	476635		ug/L	Z
Aliph	nC19	26.3410	943988		ug/L	Z
Aliph	nC20	27.9810	1477193		ug/L	Z
Aliph	nC21	29.5510	2185607		ug/L	Z
Aliph	nC22	31.0540	3602110		ug/L	Z
Aliph	nC23	32.4960	5610590		ug/L	Z
Aliph	nC24	33.8800	7249419		ug/L	Z
Aliph	nC25	35.2120	8696934		ug/L	Z
Aliph	nC26	36.4960	9596815		ug/L	Z
Aliph	nC27	37.7300	11265908		ug/L	Z
Aliph	nC28	38.9260	10329429		ug/L	Z
Aliph	nC29	40.0740	9541174		ug/L	Z
Aliph	nC30	41.1930	7486689		ug/L	Z
Aliph	nC31	42.2750	6042717		ug/L	Z
Aliph	nC32	43.3560	4512288		ug/L	Z
Aliph	nC33	44.5840	3085266		ug/L	Z
Aliph	nC34	46.0130	1997428		ug/L	Z
Aliph	nC35	47.7140	1290235		ug/L	Z
Aliph	nC36	49.7870	960759		ug/L	Z
Aliph	nC37	52.2630	749394		ug/L	Z

Results for: GCMS with Full Scan

<i>Aliph</i>	nC38	55.2360	620517	ug/L	Z
<i>Aliph</i>	nC39	58.9110	535381	ug/L	Z
<i>Aliph</i>	Norpristane	21.8010	89175	ug/L	Z
<i>Aliph</i>	Phytane	24.7190	638912	ug/L	Z
<i>Aliph</i>	Pristane	22.8660	644143	ug/L	Z

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007602**

Beach E4: The Granites Visit: 2

Comments:

Location: Shore Upper

Local Date Time: 8/09/2015 3:46:04 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

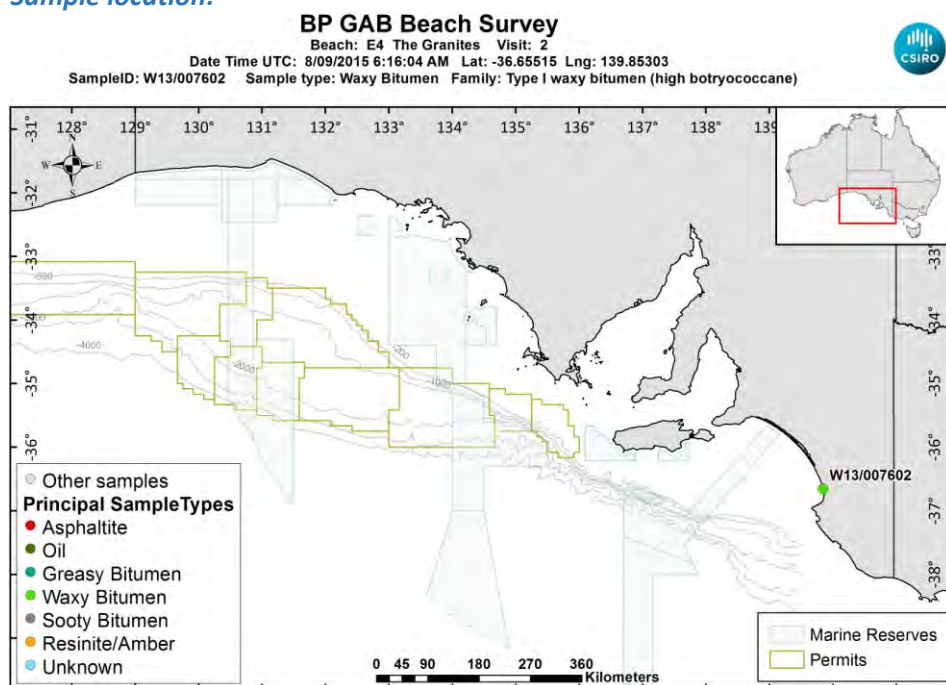
Size (cm): 3

Latitude (Y): -36.655152

Weight (gm): 3.8

Longitude (X): 139.853032

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007602_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007602_146A1517.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007602_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007602_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume: Volume Units: Extract Volume: Dilution Factor:

Comment:

Data Sheet:

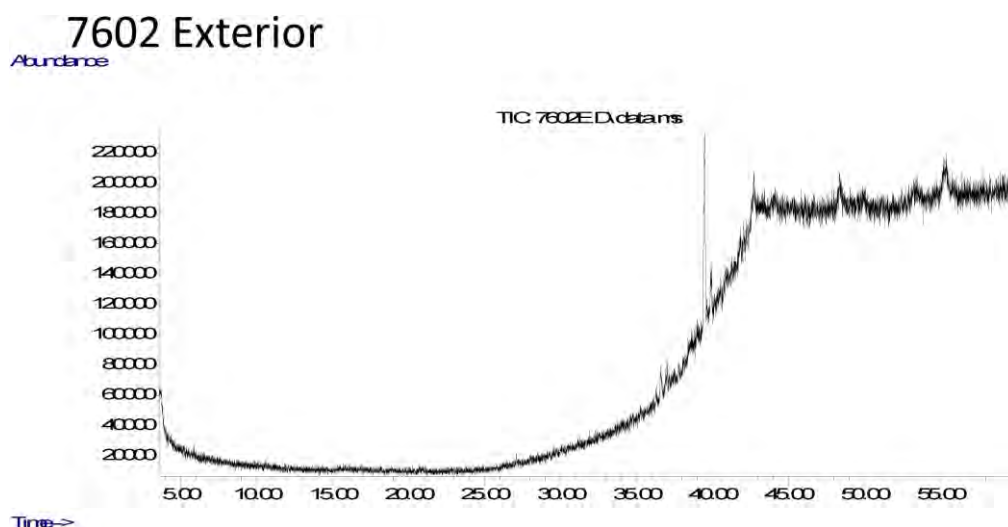
Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			84.7	percent	Y
Inorg	Hydrogen			5.91614552683897	percent	Y
Inorg	Nitrogen			0.608174807197944	percent	Y
Inorg	Sulphur			0.972593122439136	percent	Y

Results for: GCMS with Full Scan

Unique ID: W13/007602_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB BCH1\GCMS\W13_007602_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan



Data Sheet:

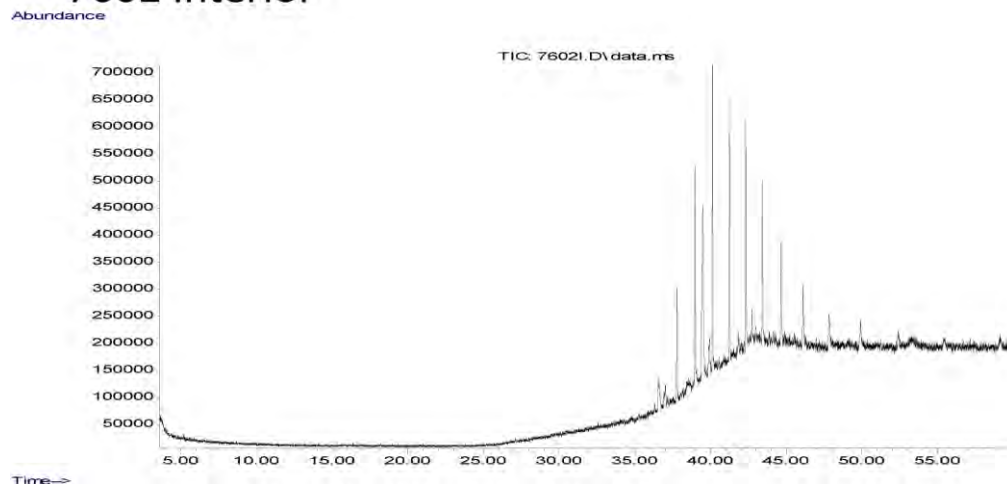
(default units ppb)

Type:	Compound / Variable:	Retention Time:	Target Response:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	1107027		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960			ug/L	U
Aliph	nC24	33.8800			ug/L	U
Aliph	nC25	35.2120			ug/L	U
Aliph	nC26	36.4960			ug/L	U
Aliph	nC27	37.7300			ug/L	U
Aliph	nC28	38.9260			ug/L	U
Aliph	nC29	40.0740			ug/L	U
Aliph	nC30	41.1930			ug/L	U
Aliph	nC31	42.2750			ug/L	U
Aliph	nC32	43.3560			ug/L	U
Aliph	nC33	44.5840			ug/L	U
Aliph	nC34	46.0130			ug/L	U
Aliph	nC35	47.7140			ug/L	U
Aliph	nC36	49.7870			ug/L	U
Aliph	nC37	52.2630			ug/L	U
Aliph	nC38	55.2360			ug/L	U
Aliph	nC39	58.9110			ug/L	U
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007602 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007602_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7602 Interior



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	2798225		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960			ug/L	U
Aliph	nC24	33.8800			ug/L	U
Aliph	nC25	35.2120			ug/L	U
Aliph	nC26	36.4960	245621		ug/L	Z
Aliph	nC27	37.7300	1043536		ug/L	Z
Aliph	nC28	38.9260	2117307		ug/L	Z
Aliph	nC29	40.0740	2613482		ug/L	Z
Aliph	nC30	41.1930	2518977		ug/L	Z
Aliph	nC31	42.2750	2052829		ug/L	Z
Aliph	nC32	43.3560	1577486		ug/L	Z
Aliph	nC33	44.5840	1181176		ug/L	Z
Aliph	nC34	46.0130	859008		ug/L	Z
Aliph	nC35	47.7140	555832		ug/L	Z
Aliph	nC36	49.7870	413267		ug/L	Z
Aliph	nC37	52.2630	369999		ug/L	Z
Aliph	nC38	55.2360	309855		ug/L	Z
Aliph	nC39	58.9110	314553		ug/L	Z
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007603**

Beach E4: The Granites Visit: 2

Comments:

Location: Shore Upper

Local Date Time: 8/09/2015 3:53:12 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

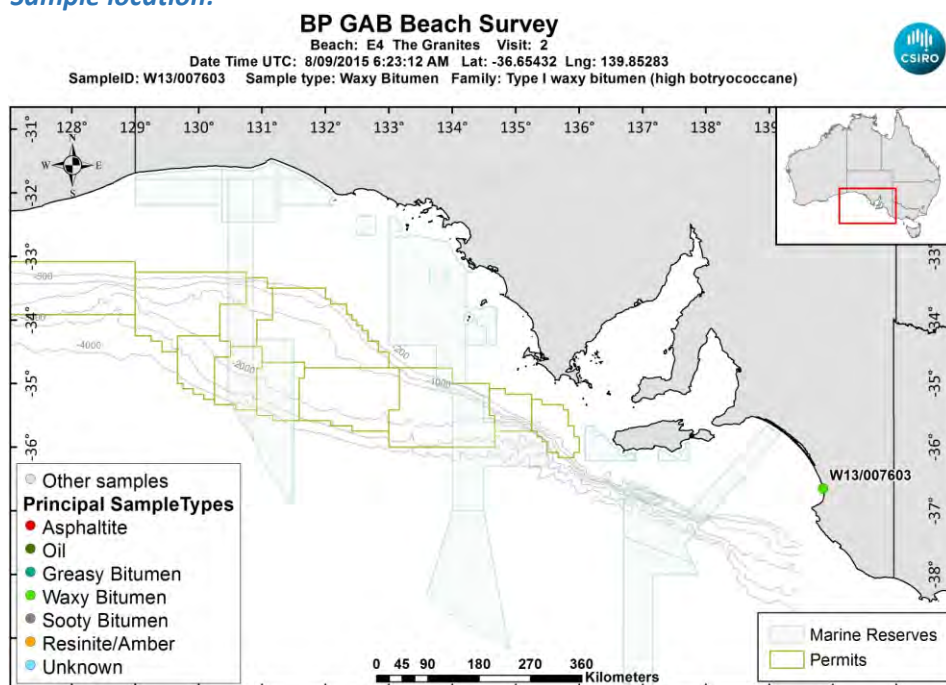
Size (cm): 1.9

Latitude (Y): -36.654322

Weight (gm): 1.8

Longitude (X): 139.852833

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007603_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007603_146A1519.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007603_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007603_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			85.61	percent	Y
Inorg	Hydrogen			10.9212706163022	percent	Y
Inorg	Nitrogen			0.904512082262211	percent	Y
Inorg	Sulphur			2.5567229595859	percent	Y

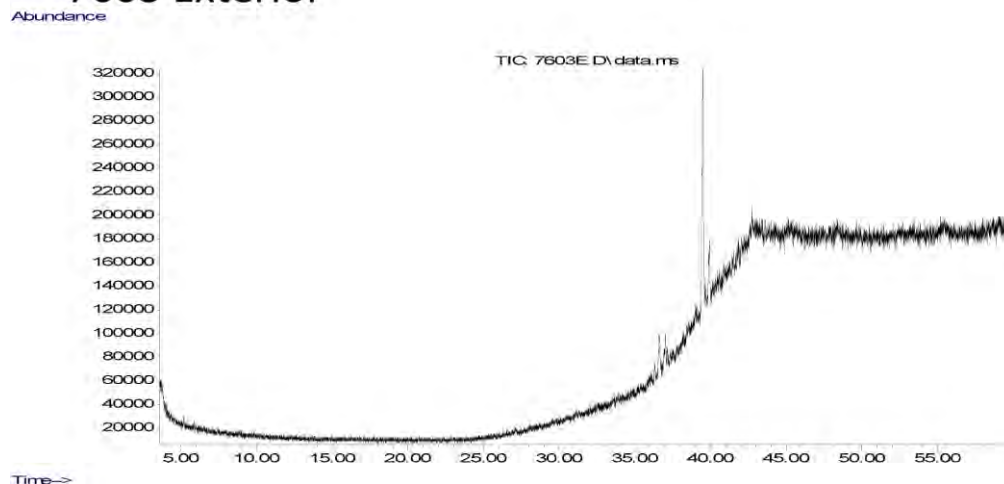
Results for: GCMS with Full Scan

Unique ID: W13/007603_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB BCH1\GCMS\W13_007603_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7603 Exterior



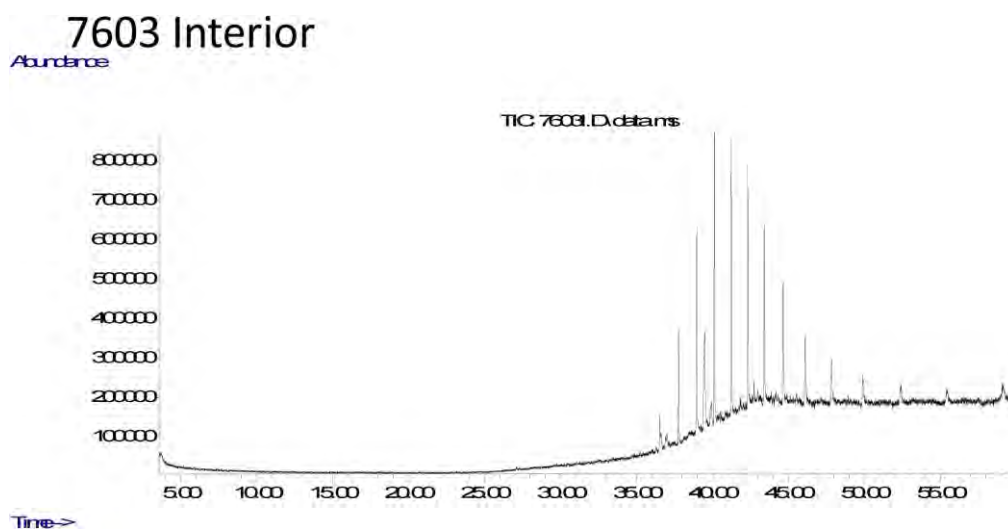
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	1800723		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960			ug/L	U
Aliph	nC24	33.8800			ug/L	U
Aliph	nC25	35.2120			ug/L	U
Aliph	nC26	36.4960			ug/L	U
Aliph	nC27	37.7300			ug/L	U
Aliph	nC28	38.9260			ug/L	U
Aliph	nC29	40.0740			ug/L	U
Aliph	nC30	41.1930			ug/L	U
Aliph	nC31	42.2750			ug/L	U
Aliph	nC32	43.3560			ug/L	U
Aliph	nC33	44.5840			ug/L	U
Aliph	nC34	46.0130			ug/L	U
Aliph	nC35	47.7140			ug/L	U
Aliph	nC36	49.7870			ug/L	U
Aliph	nC37	52.2630			ug/L	U
Aliph	nC38	55.2360			ug/L	U
Aliph	nC39	58.9110			ug/L	U
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007603 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007603_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	2243648		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960			ug/L	U
Aliph	nC24	33.8800			ug/L	U
Aliph	nC25	35.2120			ug/L	U
Aliph	nC26	36.4960	418335		ug/L	Z
Aliph	nC27	37.7300	1483731		ug/L	Z
Aliph	nC28	38.9260	2572189		ug/L	Z
Aliph	nC29	40.0740	3706367		ug/L	Z
Aliph	nC30	41.1930	3521712		ug/L	Z
Aliph	nC31	42.2750	3319558		ug/L	Z
Aliph	nC32	43.3560	2576296		ug/L	Z
Aliph	nC33	44.5840	2029666		ug/L	Z
Aliph	nC34	46.0130	1401309		ug/L	Z
Aliph	nC35	47.7140	946576		ug/L	Z
Aliph	nC36	49.7870	682319		ug/L	Z
Aliph	nC37	52.2630	576864		ug/L	Z
Aliph	nC38	55.2360	539839		ug/L	Z
Aliph	nC39	58.9110	667344		ug/L	Z
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007604**

Beach E4: The Granites Visit: 2

Comments:

Location: Shore Upper

Local Date Time: 8/09/2015 3:56:24 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

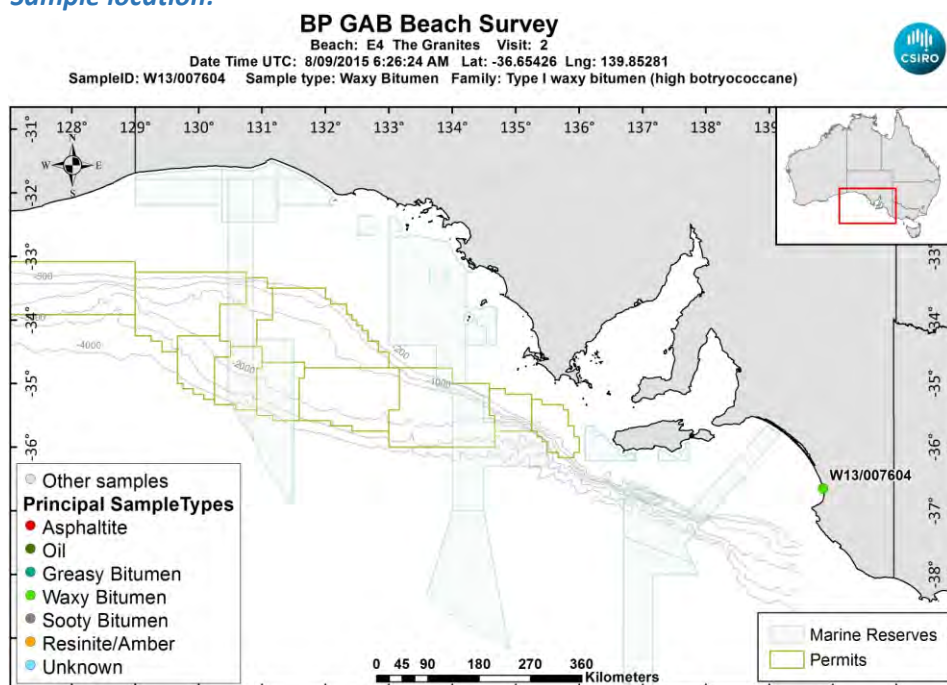
Size (cm): 2

Latitude (Y): -36.654258

Weight (gm): 2.2

Longitude (X): 139.852807

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007604_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007604_146A1521.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007604_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007604_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume: Volume Units: Extract Volume: Dilution Factor:

Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			77.82	percent	Y
Inorg	Hydrogen			6.41760906560636	percent	Y
Inorg	Nitrogen			0.52986735218509	percent	Y
Inorg	Sulphur			1.05927482095581	percent	Y

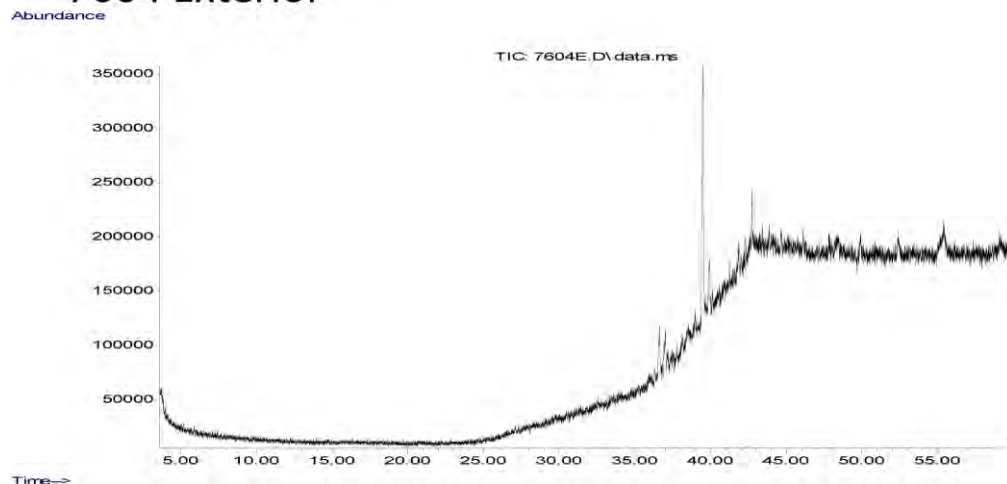
Results for: GCMS with Full Scan

Unique ID: W13/007604_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007604_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7604 Exterior



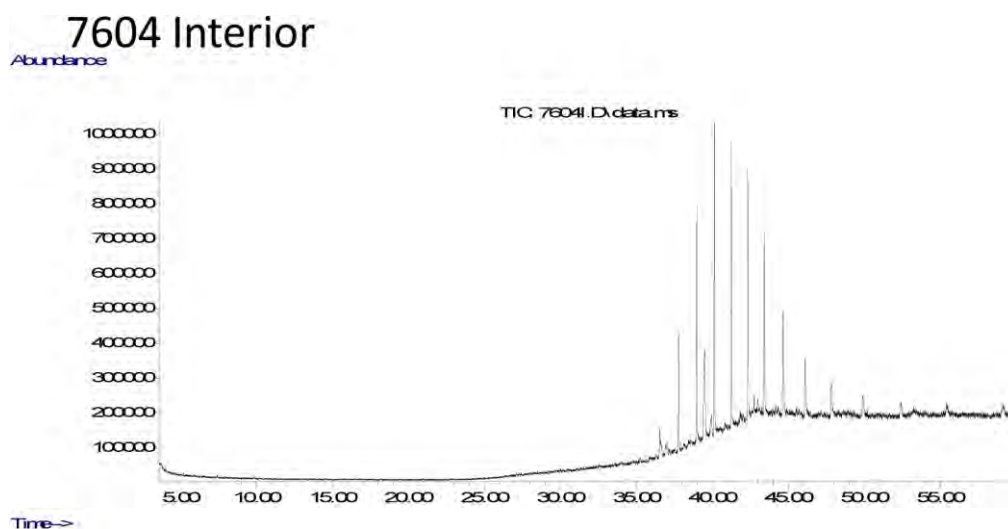
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	2165038		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960			ug/L	U
Aliph	nC24	33.8800			ug/L	U
Aliph	nC25	35.2120			ug/L	U
Aliph	nC26	36.4960			ug/L	U
Aliph	nC27	37.7300	85879		ug/L	Z
Aliph	nC28	38.9260	27575		ug/L	Z
Aliph	nC29	40.0740	103878		ug/L	Z
Aliph	nC30	41.1930	88172		ug/L	Z
Aliph	nC31	42.2750	82751		ug/L	Z
Aliph	nC32	43.3560	98002		ug/L	Z
Aliph	nC33	44.5840	104255		ug/L	Z
Aliph	nC34	46.0130	70498		ug/L	Z
Aliph	nC35	47.7140	132452		ug/L	Z
Aliph	nC36	49.7870	137468		ug/L	Z
Aliph	nC37	52.2630	245931		ug/L	Z
Aliph	nC38	55.2360			ug/L	U
Aliph	nC39	58.9110			ug/L	U
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007604 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007604_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	2293660		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960			ug/L	U
Aliph	nC24	33.8800			ug/L	U
Aliph	nC25	35.2120			ug/L	U
Aliph	nC26	36.4960	364644		ug/L	Z
Aliph	nC27	37.7300	1698338		ug/L	Z
Aliph	nC28	38.9260	3377435		ug/L	Z
Aliph	nC29	40.0740	4509238		ug/L	Z
Aliph	nC30	41.1930	4096931		ug/L	Z
Aliph	nC31	42.2750	3661922		ug/L	Z
Aliph	nC32	43.3560	2822291		ug/L	Z
Aliph	nC33	44.5840	1970436		ug/L	Z
Aliph	nC34	46.0130	1327550		ug/L	Z
Aliph	nC35	47.7140	992868		ug/L	Z
Aliph	nC36	49.7870	618429		ug/L	Z
Aliph	nC37	52.2630	540964		ug/L	Z
Aliph	nC38	55.2360	378391		ug/L	Z
Aliph	nC39	58.9110	439992		ug/L	Z
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007605**

Beach E4: The Granites Visit: 2

Comments:

Location: Shore Upper

Local Date Time: 8/09/2015 4:03:16 PM

Type: Waxy Bitumen

Family: Type III waxy bitumen (no botryococcane, low

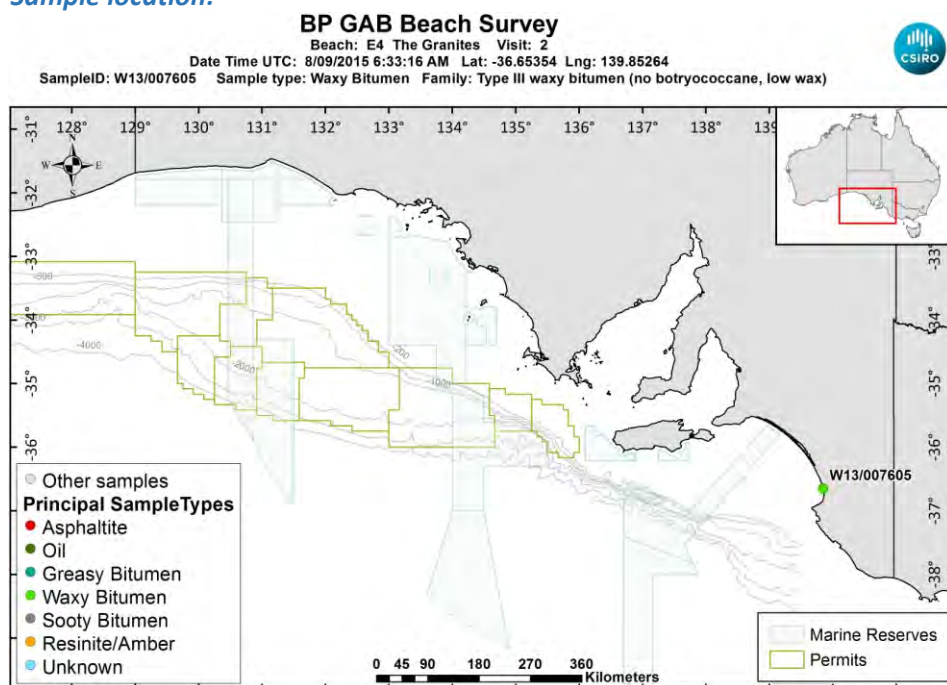
Size (cm): 8.3

Latitude (Y): -36.653542

Weight (gm): 91

Longitude (X): 139.852643

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007605_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007605_146A1523.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007605_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007605_DISS_GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retention Time:	Target Response:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			28.4906714578381	ratio	Y
BiomRatio	% C27 abb 20(R+S)			36.2631949895081	ratio	Y
BiomRatio	% C28 aaa 20R			25.1667963058316	ratio	Y
BiomRatio	% C28 abb 20(R+S)			29.2584375850967	ratio	Y
BiomRatio	% C29 aaa 20R			46.3425322363304	ratio	Y
BiomRatio	% C29 abb 20(R+S)			34.4783674253952	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.208708153862143	ratio	Y
BiomRatio	25-Nor/C30H			8.54409884908953E-02	ratio	Y
BiomRatio	C19t/C23t			0.295437938138498	ratio	Y
BiomRatio	C22t/C21t			0.32937707187837	ratio	Y
BiomRatio	C22t/C24t			0.346503175748069	ratio	Y
BiomRatio	C23t/C30H			0.167838835345544	ratio	Y
BiomRatio	C24t/C23t			0.673211734922379	ratio	Y
BiomRatio	C24Tet/C23t			0.552314974141873	ratio	Y
BiomRatio	C24Tet/C26t			0.816191249159645	ratio	Y
BiomRatio	C24Tet/C30H			9.26999020038763E-02	ratio	Y
BiomRatio	C26t/C25t			1.6303916947314	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.723702857428252	ratio	Y
BiomRatio	C27 Dia/Ster			1.09487217266796	ratio	Y
BiomRatio	C28BNH/C30H			3.77203973175094E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.950781293136768	ratio	Y
BiomRatio	C29H/C30H			0.482599456966171	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.394356162424794	ratio	Y
BiomRatio	C30DiaH/C30H			0.340545431311522	ratio	Y
BiomRatio	C30Ts/C30H			0	ratio	U
BiomRatio	C35 Homohopane Index			0.041076093290488	ratio	Y
BiomRatio	C35HS/C34HS			0.431814187597978	ratio	Y
BiomRatio	Gam/C30H			9.95920718485266E-02	ratio	Y
BiomRatio	Gam/C31HR			0.727575941501199	ratio	Y
BiomRatio	Ole/C30H			9.83237005425195E-02	ratio	Y
BiomRatio	Sterane/hopane			6.21232125731563E-02	ratio	Y
BiomRatio	Steranes/Terpanes			4.89806772511182E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.268320816689771	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007605_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

(default units ppb)

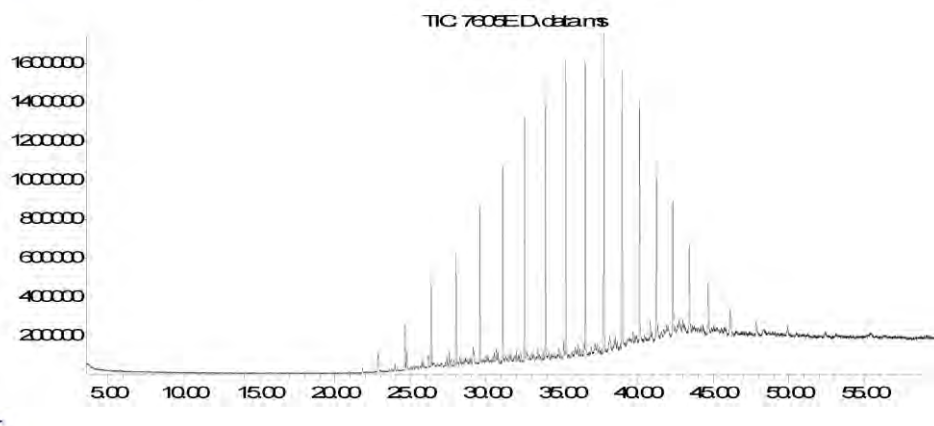
Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			86.3	percent	Y
Inorg	Hydrogen			7.78386500994036	percent	Y
Inorg	Nitrogen			0.513638560411312	percent	Y
Inorg	Sulphur			1.47592586384612	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007605_DISS_GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007605_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7605 Exterior

Abundance



Time-->

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Ratio	nC17/nC29		7.62579267577651E-02		ug/L	Y
Ratio	nC17/nC35		0.550025791181718		ug/L	Y
Ratio	nC17/Pristane		0.750844438609491		ug/L	Y
Ratio	nC18/Phytane		2.51702729486809		ug/L	Y
Ratio	Pristane/Phytane		1.16016223286131		ug/L	Y
Aliph	Botryococcane	39.4290			ug/L	U
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190	456272		ug/L	Z
Aliph	nC18	24.6230	1318388		ug/L	Z
Aliph	nC19	26.3410	2151809		ug/L	Z
Aliph	nC20	27.9810	2856896		ug/L	Z
Aliph	nC21	29.5510	3827544		ug/L	Z
Aliph	nC22	31.0540	4727489		ug/L	Z
Aliph	nC23	32.4960	6007165		ug/L	Z
Aliph	nC24	33.8800	6662807		ug/L	Z
Aliph	nC25	35.2120	7321074		ug/L	Z
Aliph	nC26	36.4960	7271528		ug/L	Z
Aliph	nC27	37.7300	7882125		ug/L	Z
Aliph	nC28	38.9260	7089918		ug/L	Z
Aliph	nC29	40.0740	5983277		ug/L	Z
Aliph	nC30	41.1930	4451176		ug/L	Z
Aliph	nC31	42.2750	3576868		ug/L	Z
Aliph	nC32	43.3560	2575272		ug/L	Z
Aliph	nC33	44.5840	1757762		ug/L	Z
Aliph	nC34	46.0130	1268357		ug/L	Z
Aliph	nC35	47.7140	829547		ug/L	Z
Aliph	nC36	49.7870	499947		ug/L	Z
Aliph	nC37	52.2630	397980		ug/L	Z

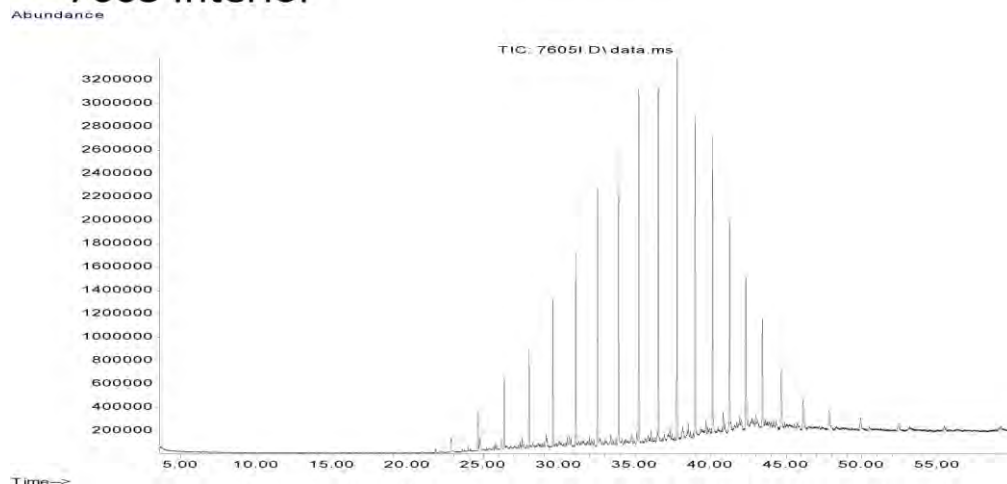
Results for: GCMS with Full Scan

Aliph	nC38	55.2360		ug/L	U
Aliph	nC39	58.9110		ug/L	U
Aliph	Norpristane	21.8010	170431	ug/L	Z
Aliph	Phytane	24.7190	523788	ug/L	Z
Aliph	Pristane	22.8660	607679	ug/L	Z

Results for: GCMS with Full Scan**Unique ID:** W13/007605 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007605_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7605 Interior



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Ratio	nC17/nC29		5.67342748299746E-02		ug/L	Y
Ratio	nC17/nC35		0.474469362722658		ug/L	Y
Ratio	nC17/Pristane		0.907137045466975		ug/L	Y
Ratio	nC18/Phytane		2.72663577923682		ug/L	Y
Ratio	Pristane/Phytane		1.1664956905419		ug/L	Y
Aliph	Botryococcane	39.4290			ug/L	U
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240	60843		ug/L	Z
Aliph	nC17	22.8190	679387		ug/L	Z
Aliph	nC18	24.6230	1750606		ug/L	Z
Aliph	nC19	26.3410	2972391		ug/L	Z
Aliph	nC20	27.9810	4113134		ug/L	Z
Aliph	nC21	29.5510	5981920		ug/L	Z
Aliph	nC22	31.0540	7774836		ug/L	Z
Aliph	nC23	32.4960	10296569		ug/L	Z
Aliph	nC24	33.8800	12261723		ug/L	Z
Aliph	nC25	35.2120	14146324		ug/L	Z
Aliph	nC26	36.4960	14827993		ug/L	Z
Aliph	nC27	37.7300	15885967		ug/L	Z
Aliph	nC28	38.9260	13551825		ug/L	Z
Aliph	nC29	40.0740	11974901		ug/L	Z
Aliph	nC30	41.1930	8769189		ug/L	Z
Aliph	nC31	42.2750	6864080		ug/L	Z
Aliph	nC32	43.3560	5056954		ug/L	Z
Aliph	nC33	44.5840	3414156		ug/L	Z
Aliph	nC34	46.0130	2164848		ug/L	Z
Aliph	nC35	47.7140	1431889		ug/L	Z
Aliph	nC36	49.7870	983282		ug/L	Z
Aliph	nC37	52.2630	820638		ug/L	Z

Results for: GCMS with Full Scan

Aliph	nC38	55.2360	532753	ug/L	Z
Aliph	nC39	58.9110	660781	ug/L	Z
Aliph	Norpristane	21.8010	241880	ug/L	Z
Aliph	Phytane	24.7190	642039	ug/L	Z
Aliph	Pristane	22.8660	748936	ug/L	Z

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007606**

Beach E4: The Granites Visit: 2

Comments:

Location: Shore Upper

Local Date Time: 8/09/2015 4:10:44 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

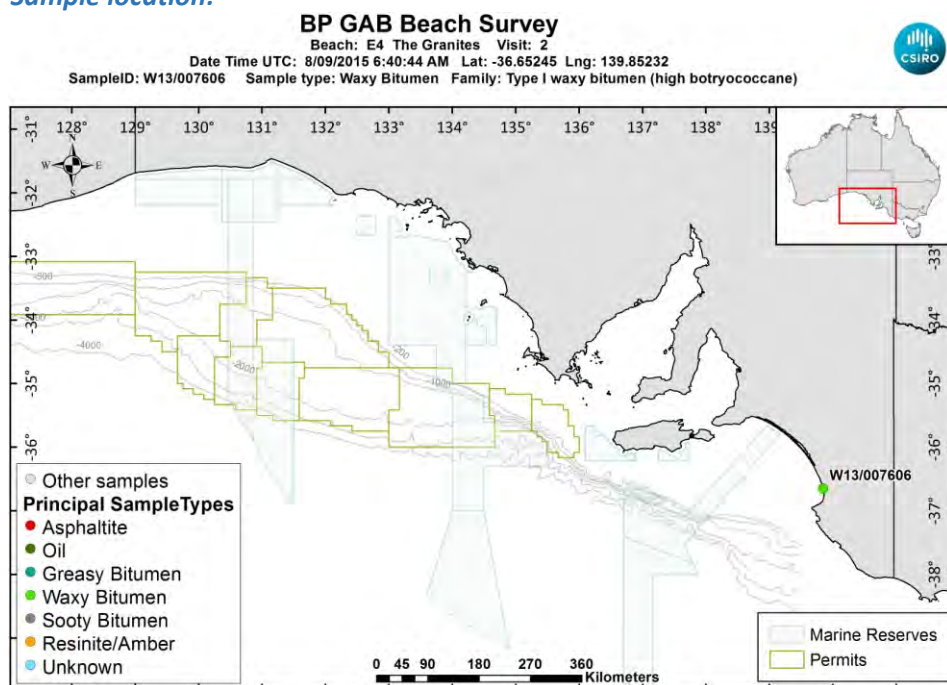
Size (cm): 3

Latitude (Y): -36.652452

Weight (gm): 2.9

Longitude (X): 139.852320

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007606_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007606_146A1525.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007606_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007606_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume: **Volume Units:** **Extract Volume:** **Dilution Factor:**

Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			82.55	percent	Y
Inorg	Hydrogen			6.54765805168986	percent	Y
Inorg	Nitrogen			0.504831191088261	percent	Y
Inorg	Sulphur			1.07806327333771	percent	Y

(default units ppb)

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007607**

Beach E4: The Granites Visit: 2

Comments:

Location: Shore Upper

Local Date Time: 8/09/2015 4:12:39 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

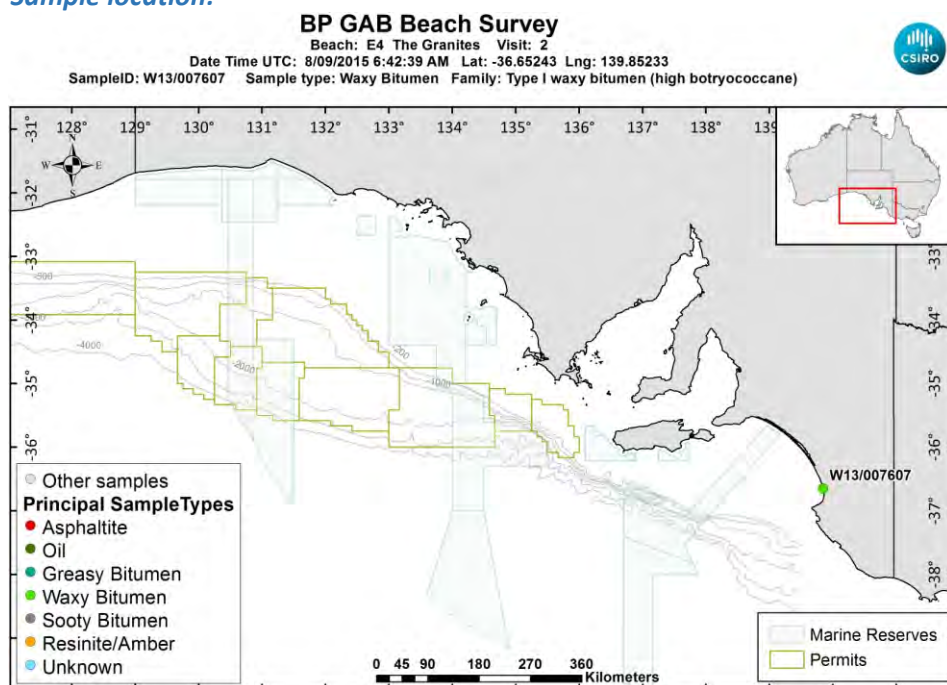
Size (cm): 2.6

Latitude (Y): -36.652432

Weight (gm): 3.8

Longitude (X): 139.852332

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007607_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007607_146A1527.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007607_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007607_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Data Sheet:

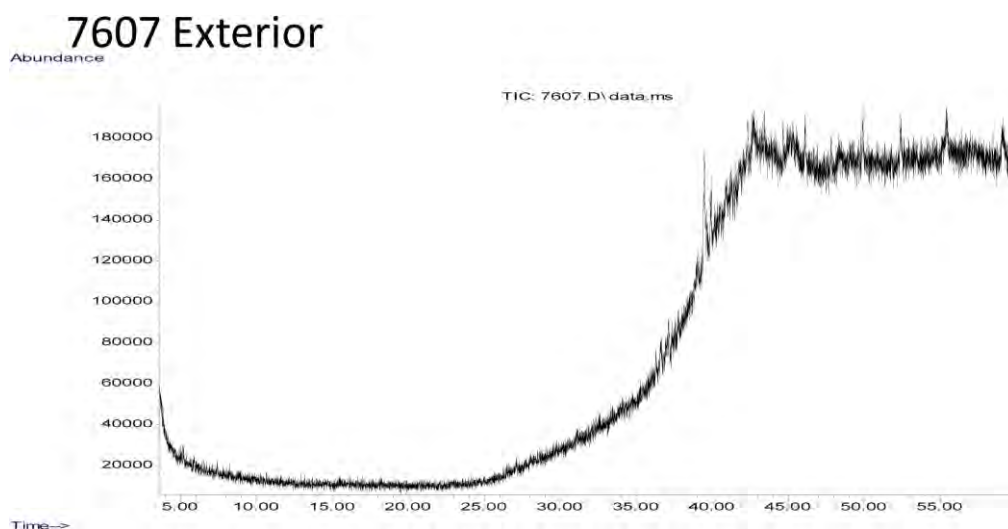
Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			85.16	percent	Y
Inorg	Hydrogen			11.7875340357853	percent	Y
Inorg	Nitrogen			0.728284490145673	percent	Y
Inorg	Sulphur			2.8002537982522	percent	Y

Results for: GCMS with Full Scan

Unique ID: W13/007607_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007607_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan



Data Sheet:

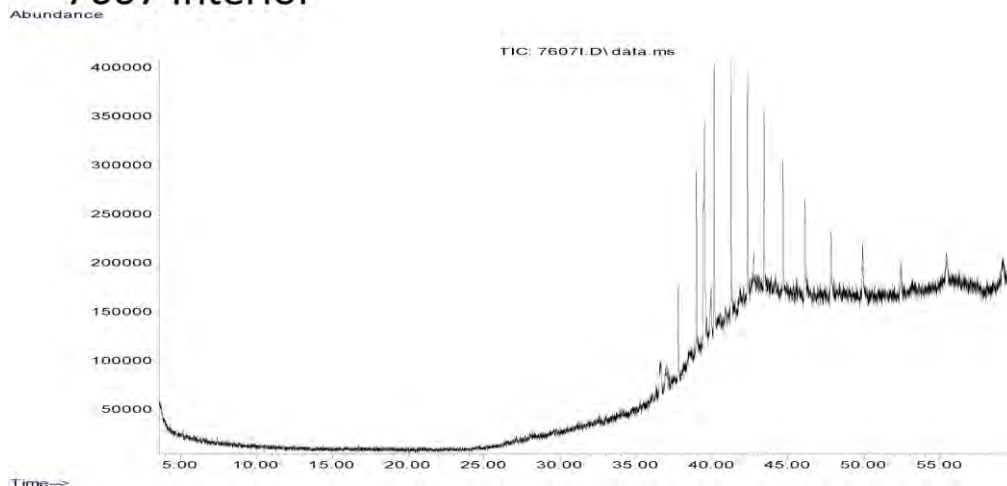
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	461313		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960			ug/L	U
Aliph	nC24	33.8800			ug/L	U
Aliph	nC25	35.2120			ug/L	U
Aliph	nC26	36.4960			ug/L	U
Aliph	nC27	37.7300			ug/L	U
Aliph	nC28	38.9260			ug/L	U
Aliph	nC29	40.0740			ug/L	U
Aliph	nC30	41.1930			ug/L	U
Aliph	nC31	42.2750			ug/L	U
Aliph	nC32	43.3560			ug/L	U
Aliph	nC33	44.5840			ug/L	U
Aliph	nC34	46.0130			ug/L	U
Aliph	nC35	47.7140			ug/L	U
Aliph	nC36	49.7870			ug/L	U
Aliph	nC37	52.2630			ug/L	U
Aliph	nC38	55.2360			ug/L	U
Aliph	nC39	58.9110			ug/L	U
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007607 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007607_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7607 Interior



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	2064364		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960			ug/L	U
Aliph	nC24	33.8800			ug/L	U
Aliph	nC25	35.2120			ug/L	U
Aliph	nC26	36.4960	112789		ug/L	Z
Aliph	nC27	37.7300	463955		ug/L	Z
Aliph	nC28	38.9260	938198		ug/L	Z
Aliph	nC29	40.0740	1371269		ug/L	Z
Aliph	nC30	41.1930	1297955		ug/L	Z
Aliph	nC31	42.2750	1261840		ug/L	Z
Aliph	nC32	43.3560	1050984		ug/L	Z
Aliph	nC33	44.5840	915692		ug/L	Z
Aliph	nC34	46.0130	832086		ug/L	Z
Aliph	nC35	47.7140	551625		ug/L	Z
Aliph	nC36	49.7870	517029		ug/L	Z
Aliph	nC37	52.2630	346144		ug/L	Z
Aliph	nC38	55.2360	330387		ug/L	Z
Aliph	nC39	58.9110	455761		ug/L	Z
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007608**

Beach E4: The Granites Visit: 2

Comments:

Location: Shore Upper

Local Date Time: 8/09/2015 4:18:36 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

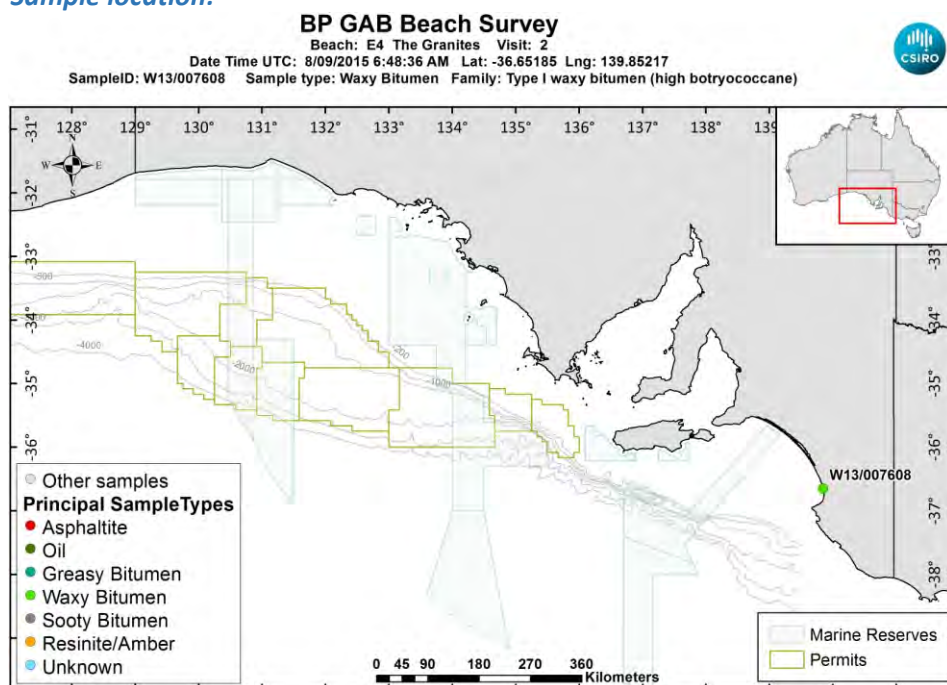
Size (cm): 2.9

Latitude (Y): -36.651853

Weight (gm): 5.6

Longitude (X): 139.852167

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007608_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007608_146A1529.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007608_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007608_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			85.7	percent	Y
Inorg	Hydrogen			6.98318767395626	percent	Y
Inorg	Nitrogen			0.432350385604113	percent	Y
Inorg	Sulphur			1.19050268053323	percent	Y

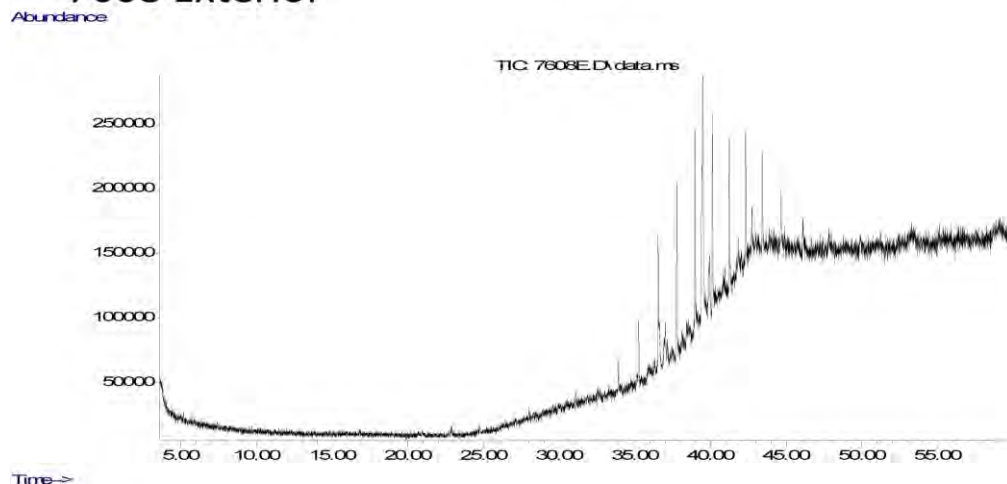
Results for: GCMS with Full Scan

Unique ID: W13/007608_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB BCH1\GCMS\W13_007608_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7608 Exterior



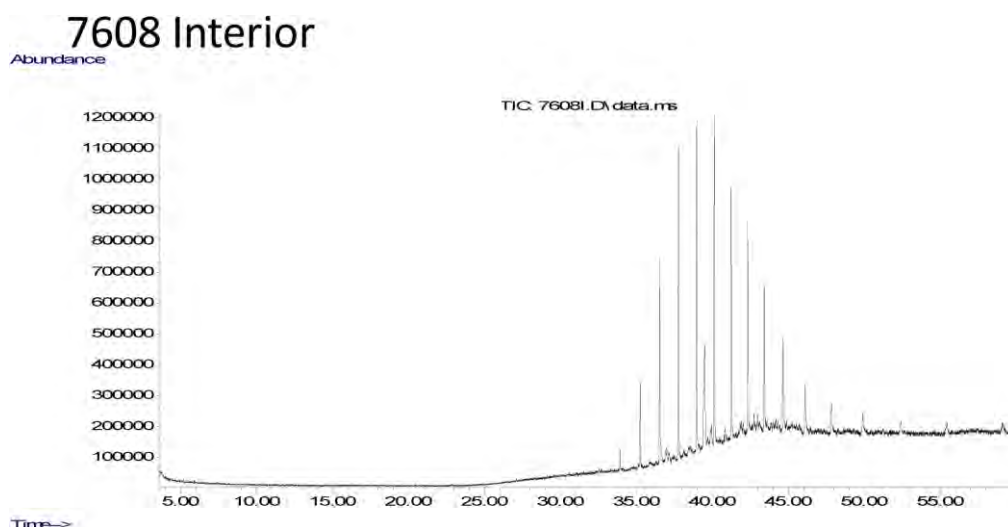
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	1711035		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960			ug/L	U
Aliph	nC24	33.8800	104640		ug/L	Z
Aliph	nC25	35.2120	233248		ug/L	Z
Aliph	nC26	36.4960	527207		ug/L	Z
Aliph	nC27	37.7300	717100		ug/L	Z
Aliph	nC28	38.9260	745039		ug/L	Z
Aliph	nC29	40.0740	690906		ug/L	Z
Aliph	nC30	41.1930	602918		ug/L	Z
Aliph	nC31	42.2750	477393		ug/L	Z
Aliph	nC32	43.3560	387512		ug/L	Z
Aliph	nC33	44.5840	257170		ug/L	Z
Aliph	nC34	46.0130	222921		ug/L	Z
Aliph	nC35	47.7140	127027		ug/L	Z
Aliph	nC36	49.7870			ug/L	U
Aliph	nC37	52.2630			ug/L	U
Aliph	nC38	55.2360			ug/L	U
Aliph	nC39	58.9110			ug/L	U
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007608 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007608_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290	2838294		ug/L	Z
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960	50007		ug/L	Z
Aliph	nC24	33.8800	317781		ug/L	Z
Aliph	nC25	35.2120	1311382		ug/L	Z
Aliph	nC26	36.4960	3131162		ug/L	Z
Aliph	nC27	37.7300	5091057		ug/L	Z
Aliph	nC28	38.9260	5468842		ug/L	Z
Aliph	nC29	40.0740	5369953		ug/L	Z
Aliph	nC30	41.1930	4103672		ug/L	Z
Aliph	nC31	42.2750	3609694		ug/L	Z
Aliph	nC32	43.3560	2515357		ug/L	Z
Aliph	nC33	44.5840	1856363		ug/L	Z
Aliph	nC34	46.0130	1266113		ug/L	Z
Aliph	nC35	47.7140	830751		ug/L	Z
Aliph	nC36	49.7870	633584		ug/L	Z
Aliph	nC37	52.2630	444057		ug/L	Z
Aliph	nC38	55.2360	367162		ug/L	Z
Aliph	nC39	58.9110	368297		ug/L	Z
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : COA/000956

Beach E4: The Granites Visit: 3

Comments:

Found behind dunes on walk back to car. No field photo

Location: Shore Upper

Local Date Time: 20/10/2016 2:42:22 PM

Type: Asphaltite

Family: Asphaltite

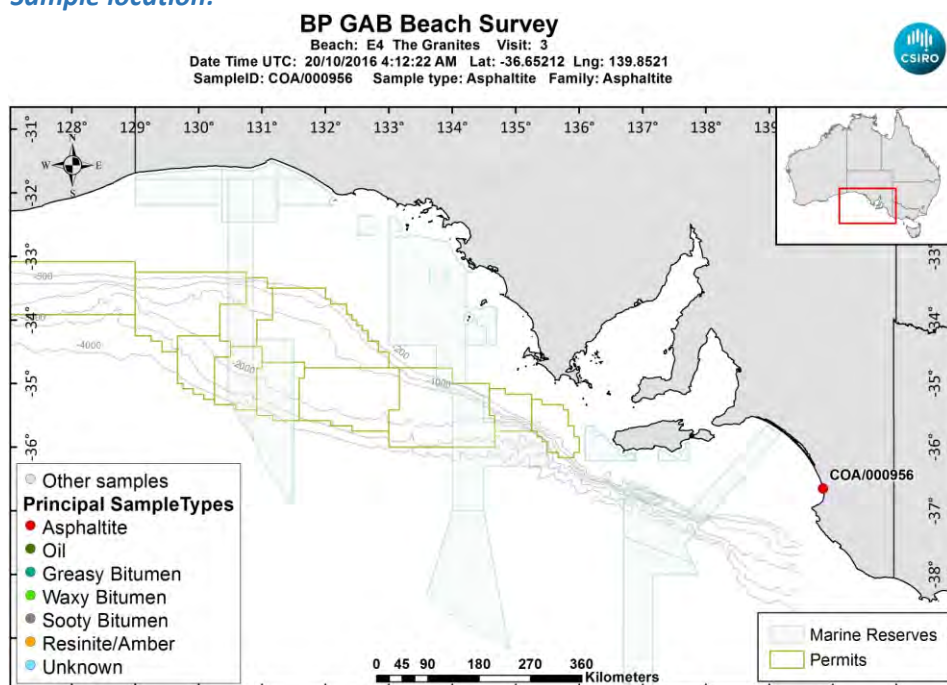
Size (cm): 3

Latitude (Y): -36.652120

Weight (gm): 6.39661

Longitude (X): 139.852100

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\COA_000956_Location.jpg](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\COA_000956_Photo02.JPG](#)

Sample ID : COA/000956

Beach E4: The Granites Visit: 3

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: COA/000956_DISS_GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			40.3537755653057	ratio	Y
BiomRatio	% C27 abb 20(R+S)			38.3045659128628	ratio	Y
BiomRatio	% C28 aaa 20R			19.8282800631064	ratio	Y
BiomRatio	% C28 abb 20(R+S)			25.7399136728369	ratio	Y
BiomRatio	% C29 aaa 20R			39.8179443715879	ratio	Y
BiomRatio	% C29 abb 20(R+S)			35.9555204143003	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.107856782712972	ratio	Y
BiomRatio	25-Nor/C30H			3.22742721251291E-02	ratio	Y
BiomRatio	C19t/C23t			0.208492242396867	ratio	Y
BiomRatio	C22t/C21t			0.360530684547824	ratio	Y
BiomRatio	C22t/C24t			0.299912819405012	ratio	Y
BiomRatio	C23t/C30H			8.28006566244177E-02	ratio	Y
BiomRatio	C24t/C23t			0.552326002565272	ratio	Y
BiomRatio	C24Tet/C23t			0.745827172278021	ratio	Y
BiomRatio	C24Tet/C26t			1.36453505369638	ratio	Y
BiomRatio	C24Tet/C30H			6.17549795929528E-02	ratio	Y
BiomRatio	C26t/C25t			0.991489427488144	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.45661583810951	ratio	Y
BiomRatio	C27 Dia/Ster			0.463417753014606	ratio	Y
BiomRatio	C28BNH/C30H			4.58204585609481E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.938674530239912	ratio	Y
BiomRatio	C29H/C30H			0.676468165094643	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.174674162111157	ratio	Y
BiomRatio	C30DiaH/C30H			8.36954441167987E-02	ratio	Y
BiomRatio	C30Ts/C30H			4.59010811721504E-02	ratio	Y
BiomRatio	C35 Homohopane Index			7.87938071447267E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.848674311329102	ratio	Y
BiomRatio	Gam/C30H			6.60419149369706E-02	ratio	Y
BiomRatio	Gam/C31HR			0.196650721724869	ratio	Y
BiomRatio	Ole/C30H			2.81667529640277E-03	ratio	Y
BiomRatio	Sterane/hopane			0.345089015390036	ratio	Y
BiomRatio	Steranes/Terpanes			0.311428502685657	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.108084238963683	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: COA/000956 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			38.346420668083	ratio	Y
BiomRatio	% C27 abb 20(R+S)			38.2251263550355	ratio	Y
BiomRatio	% C28 aaa 20R			27.5960540338064	ratio	Y
BiomRatio	% C28 abb 20(R+S)			25.482479842256	ratio	Y
BiomRatio	% C29 aaa 20R			34.0575252981106	ratio	Y
BiomRatio	% C29 abb 20(R+S)			36.2923938027084	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.111327037728797	ratio	Y
BiomRatio	25-Nor/C30H			3.35508902300964E-02	ratio	Y
BiomRatio	C19t/C23t			0.247518365649564	ratio	Y
BiomRatio	C22t/C21t			0.323164510681268	ratio	Y
BiomRatio	C22t/C24t			0.266072641890788	ratio	Y
BiomRatio	C23t/C30H			7.96345857707385E-02	ratio	Y
BiomRatio	C24t/C23t			0.571077969897853	ratio	Y
BiomRatio	C24Tet/C23t			0.787502026074556	ratio	Y
BiomRatio	C24Tet/C26t			1.3865751884576	ratio	Y
BiomRatio	C24Tet/C30H			6.27123976400646E-02	ratio	Y
BiomRatio	C26t/C25t			1.03811669928597	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.4406601371309	ratio	Y
BiomRatio	C27 Dia/Ster			0.439582381981341	ratio	Y
BiomRatio	C28BNH/C30H			5.02971953504824E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.949438164458219	ratio	Y
BiomRatio	C29H/C30H			0.661378920193051	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.161905638341163	ratio	Y
BiomRatio	C30DiaH/C30H			8.37881106474933E-02	ratio	Y
BiomRatio	C30Ts/C30H			4.45748044523826E-02	ratio	Y
BiomRatio	C35 Homohopane Index			7.97290525425325E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.870935224562987	ratio	Y
BiomRatio	Gam/C30H			6.85012824857159E-02	ratio	Y
BiomRatio	Gam/C31HR			0.20721184752815	ratio	Y
BiomRatio	Ole/C30H			0	ratio	U
BiomRatio	Sterane/hopane			0.356948582442322	ratio	Y
BiomRatio	Steranes/Terpanes			0.322138771328622	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.108058433854859	ratio	Y

Results for: Elemental Analyser

Unique ID: COA/000956_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

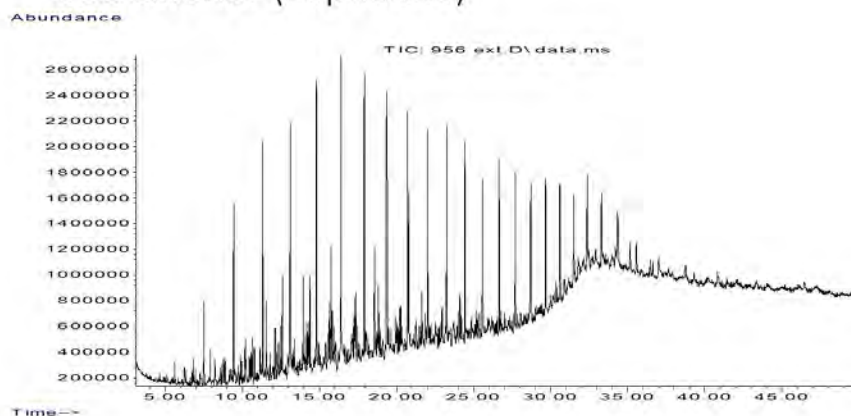
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			84.2756980326776	percent	Y
Inorg	Hydrogen			7.32292564612326	percent	Y
Inorg	Nitrogen			0.652244644387318	percent	Y
Inorg	Sulphur			5.05606375670171	percent	Y

Results for: GCMS with Full Scan**Unique ID:** COA/000956_DISS_GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\COA_000956_ext_WholeOil.JPG](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

956 exterior (Asphaltite)



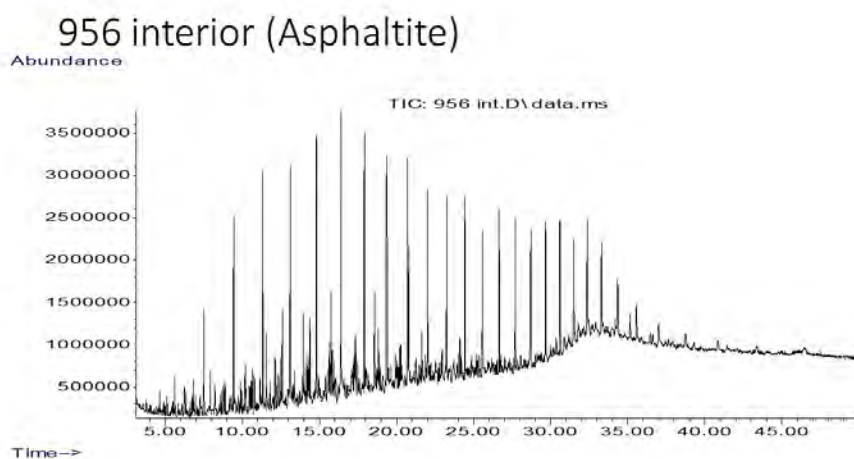
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110	3841772			Z
Aliph	nC11	9.4450	7754407			Z
Aliph	nC12	11.3220	9955601			Z
Aliph	nC13	13.1110	10620521			Z
Aliph	nC14	14.8030	13420687			Z
Aliph	nC15	16.4030	11809722			Z
Aliph	nC16	17.9160	9513347			Z
Aliph	nC17	19.3500	9559452			Z
Aliph	nC18	20.7170	8712906			Z
Aliph	nC19	22.0170	7647419			Z
Aliph	nC20	23.2570	7661259			Z
Aliph	nC21	24.4410	6918084			Z
Aliph	nC22	25.5760	6065427			Z
Aliph	nC23	26.6620	5844240			Z
Aliph	nC24	27.7060	5377598			Z
Aliph	nC25	28.7100	4838084			Z
Aliph	nC26	29.6680	4885768			Z
Aliph	nC27	30.6080	4764882			Z
Aliph	nC28	31.5080	4389141			Z
Aliph	nC29	32.3700	3352295			Z
Aliph	nC30	33.2910	2807518			Z
Aliph	nC31	34.3470	2930349			Z
Aliph	nC32	35.5720	2246080			Z
Aliph	nC33	37.0130	1193277			Z
Aliph	nC34	38.7280	1211720			Z
Aliph	nC35	40.8080	1330068			Z
Aliph	nC36	43.3510	1056069			Z
Aliph	nC37	46.4710	672501			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200	941316			Z
Aliph	Norpristane	18.5830	6986119			Z
Aliph	Phytane	20.7870	6744099			Z
Aliph	Pristane	19.3870	7996222			Z

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** COA/000956 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\COA_000956_int_WholeOil.JPG](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110	7385791			Z
Aliph	nC11	9.4450	12467818			Z
Aliph	nC12	11.3220	14921765			Z
Aliph	nC13	13.1110	15361919			Z
Aliph	nC14	14.8030	18858875			Z
Aliph	nC15	16.4030	15882061			Z
Aliph	nC16	17.9160	13040198			Z
Aliph	nC17	19.3500	13789207			Z
Aliph	nC18	20.7170	11969590			Z
Aliph	nC19	22.0170	10550046			Z
Aliph	nC20	23.2570	10528828			Z
Aliph	nC21	24.4410	9439307			Z
Aliph	nC22	25.5760	8431610			Z
Aliph	nC23	26.6620	8035554			Z
Aliph	nC24	27.7060	8350412			Z
Aliph	nC25	28.7100	8326101			Z
Aliph	nC26	29.6680	8597798			Z
Aliph	nC27	30.6080	7893274			Z
Aliph	nC28	31.5080	7261956			Z
Aliph	nC29	32.3700	6324826			Z
Aliph	nC30	33.2910	6011238			Z
Aliph	nC31	34.3470	4993434			Z
Aliph	nC32	35.5720	3285647			Z
Aliph	nC33	37.0130	2639205			Z
Aliph	nC34	38.7280	2088449			Z
Aliph	nC35	40.8080	2157762			Z
Aliph	nC36	43.3510	1273482			Z
Aliph	nC37	46.4710	954103			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200	2462771			Z
Aliph	Norpristane	18.5830	9648729			Z
Aliph	Phytane	20.7870	8913299			Z
Aliph	Pristane	19.3870	10283805			Z

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007989**

Beach E4: The Granites Visit: 3

Comments:

Location: Shore Upper

Local Date Time: 20/10/2016 12:56:04 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

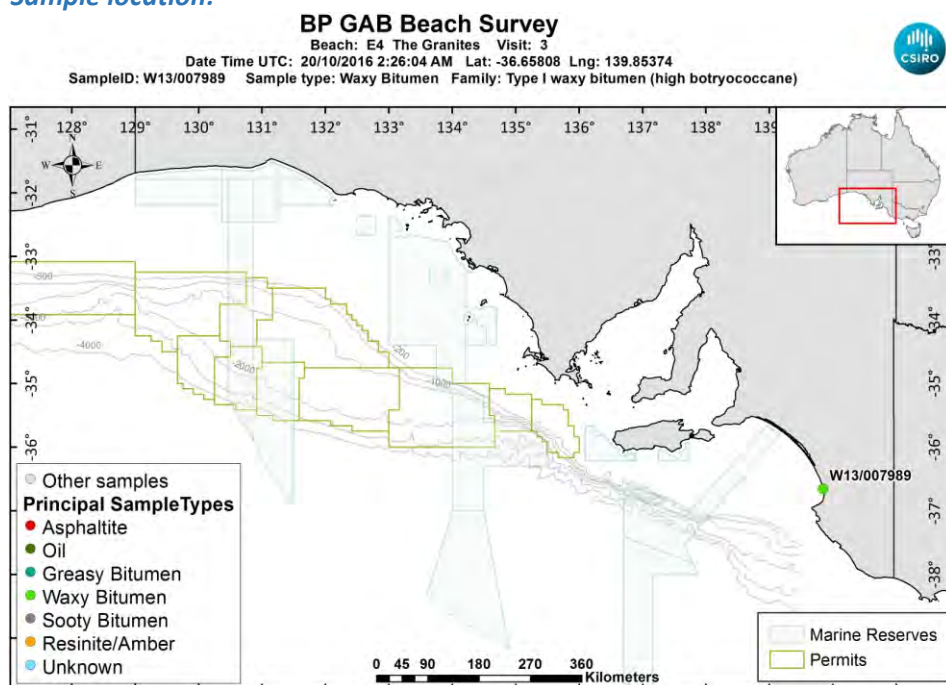
Size (cm): 2.5

Latitude (Y): -36.658082

Weight (gm): 2.58254

Longitude (X): 139.853735

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007989_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007989_146A6902.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007989_Photo02.JPG](#)

Analyses Requested

Split: Analysis: Sent:
1 Bitumen Determination YES

Analyses Completed:

Analysis: Instrument/Type:
Elemental CHNS Elemental Analyser Run: 1
Whole Oils GCMS with Full Scan Run: 3

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007989_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume: Volume Units: Extract Volume: Dilution Factor:
Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Inorg	Carbon			84.44	percent	Y
Inorg	Hydrogen			7.25714115308151	percent	Y
Inorg	Nitrogen			0.27	percent	Y
Inorg	Sulphur			2.60135064856812	percent	Y

Results for: GCMS with Full Scan

Unique ID: W13/007989 DISS GCMS-Scan/03

Instrument / Type: GCMS with Full Scan Run: 3

for Analysis: Whole Oils

Analysis Date: 30/10/2017

Linked Image: [LinkedFiles\GAB_BCH1\GCMS\W13_007989_bulk_WholeOil.jpg](#)

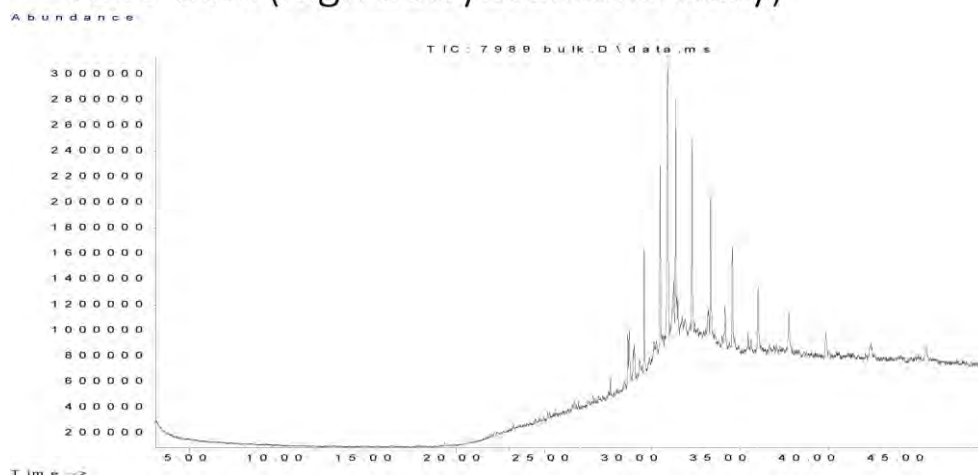
Preparation: Dissolved in solvent

Method ID/s:

Sample Volume: Volume Units: Extract Volume: Dilution Factor:
Comment: Bulk

Results for: GCMS with Full Scan

7989 bulk (high botryococcane waxy)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	18126470			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060	280142			Z
Aliph	nC25	28.7100	649165			Z
Aliph	nC26	29.6680	1914706			Z
Aliph	nC27	30.6080	4994842			Z
Aliph	nC28	31.5080	7901306			Z
Aliph	nC29	32.3700	9615618			Z
Aliph	nC30	33.2910	9072152			Z
Aliph	nC31	34.3470	8464737			Z
Aliph	nC32	35.5720	6628597			Z
Aliph	nC33	37.0130	4968552			Z
Aliph	nC34	38.7280	3684255			Z
Aliph	nC35	40.8080	2789621			Z
Aliph	nC36	43.3510	2066181			Z
Aliph	nC37	46.4710	1458531			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007990**

Beach E4: The Granites Visit: 3

Comments:

Location: Shore Upper

Local Date Time: 20/10/2016 1:00:34 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

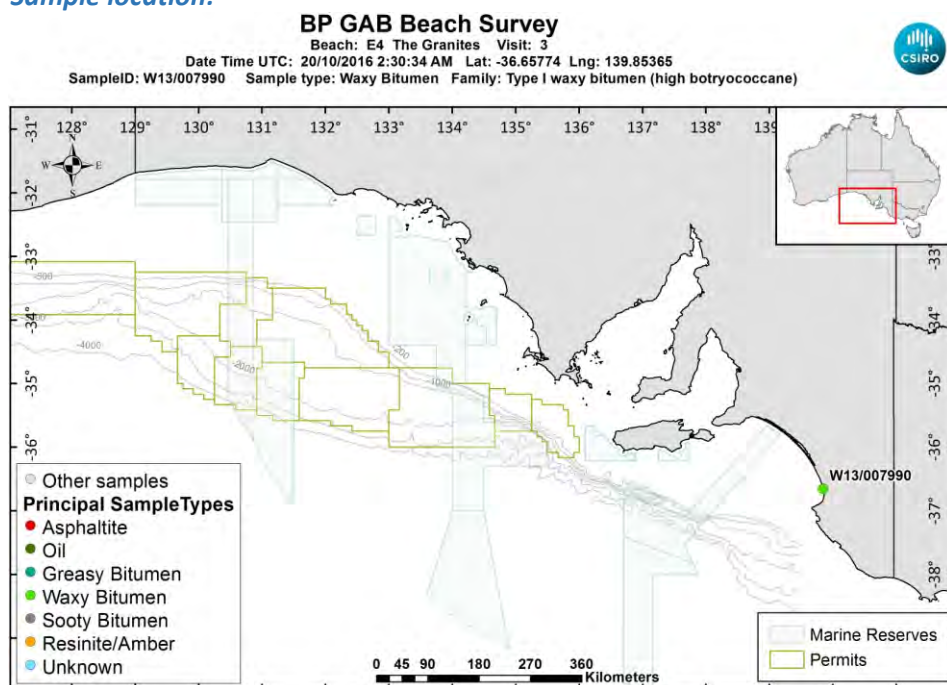
Size (cm): 1.2

Latitude (Y): -36.657742

Weight (gm): 0.68728

Longitude (X): 139.853650

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007990_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007990_146A6904.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007990_Photo02.JPG](#)

Analyses Requested

Split: Analysis: Sent:
1 Bitumen Determination YES

Analyses Completed:

Analysis: Instrument/Type:
Elemental CHNS Elemental Analyser Run: 1
Whole Oils GCMS with Full Scan Run: 3

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007990_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume: Volume Units: Extract Volume: Dilution Factor:
Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Inorg	Carbon			85.46	percent	Y
Inorg	Hydrogen			9.56038349900597	percent	Y
Inorg	Nitrogen			0.27	percent	Y
Inorg	Sulphur			3.32095456878467	percent	Y

Results for: GCMS with Full Scan

Unique ID: W13/007990 DISS GCMS-Scan/03

Instrument / Type: GCMS with Full Scan Run: 3

for Analysis: Whole Oils

Analysis Date: 30/10/2017

Linked Image: [LinkedFiles\GAB_BCH1\GCMS\W13_007990_bulk_WholeOil.jpg](#)

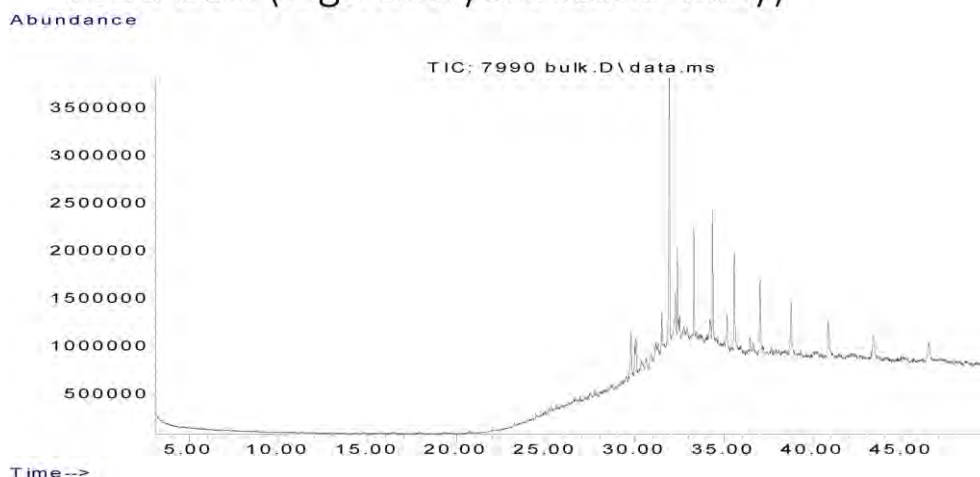
Preparation: Dissolved in solvent

Method ID/s:

Sample Volume: Volume Units: Extract Volume: Dilution Factor:
Comment: Bulk

Results for: GCMS with Full Scan

7990 bulk (high botryococcane waxy)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	23242925			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100				U
Aliph	nC26	29.6680				U
Aliph	nC27	30.6080	547145			Z
Aliph	nC28	31.5080	2486209			Z
Aliph	nC29	32.3700	4644541			Z
Aliph	nC30	33.2910	6938760			Z
Aliph	nC31	34.3470	9349470			Z
Aliph	nC32	35.5720	8795612			Z
Aliph	nC33	37.0130	7511164			Z
Aliph	nC34	38.7280	5968199			Z
Aliph	nC35	40.8080	4804603			Z
Aliph	nC36	43.3510	4551860			Z
Aliph	nC37	46.4710	3025524			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007991**

Beach E4: The Granites Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 20/10/2016 1:04:45 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

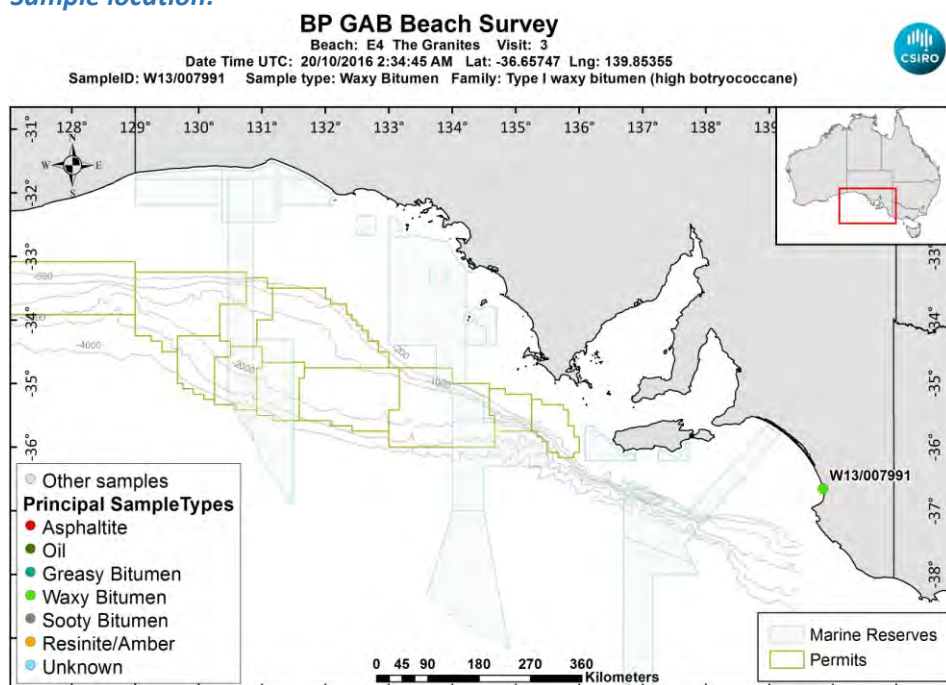
Size (cm): 3.8

Latitude (Y): -36.657467

Weight (gm): 5.04307

Longitude (X): 139.853552

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007991_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007991_146A6906.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007991_Photo02.JPG](#)

Analyses Requested

Split: Analysis: Sent:
1 Bitumen Determination YES

Analyses Completed:

Analysis: Instrument/Type:
Elemental CHNS Elemental Analyser Run: 1
Whole Oils GCMS with Full Scan Run: 3

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007991_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume: Volume Units: Extract Volume: Dilution Factor:
Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Inorg	Carbon			85.9	percent	Y
Inorg	Hydrogen			8.15871172962227	percent	Y
Inorg	Nitrogen			0.24	percent	Y
Inorg	Sulphur			3.04392059074171	percent	Y

Results for: GCMS with Full Scan

Unique ID: W13/007991 DISS GCMS-Scan/03

Instrument / Type: GCMS with Full Scan Run: 3

for Analysis: Whole Oils

Analysis Date: 30/10/2017

Linked Image: [LinkedFiles\GAB_BCH1\GCMS\W13_007991_bulk_WholeOil.jpg](#)

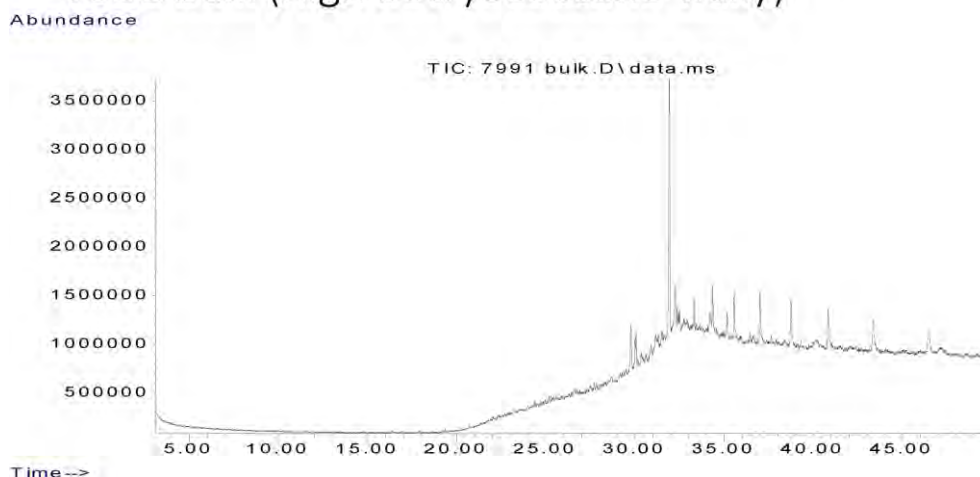
Preparation: Dissolved in solvent

Method ID/s:

Sample Volume: Volume Units: Extract Volume: Dilution Factor:
Comment: Bulk

Results for: GCMS with Full Scan

7991 bulk (high botryococcane waxy)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	22723976			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100				U
Aliph	nC26	29.6680				U
Aliph	nC27	30.6080	368812			Z
Aliph	nC28	31.5080	975471			Z
Aliph	nC29	32.3700	724181			Z
Aliph	nC30	33.2910	1654862			Z
Aliph	nC31	34.3470	3514628			Z
Aliph	nC32	35.5720	4303035			Z
Aliph	nC33	37.0130	5151521			Z
Aliph	nC34	38.7280	5424165			Z
Aliph	nC35	40.8080	4971143			Z
Aliph	nC36	43.3510	4885533			Z
Aliph	nC37	46.4710	4075957			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007992**

Beach E4: The Granites Visit: 3

Comments:

Location: Mid Intertidal

Local Date Time: 20/10/2016 1:06:49 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

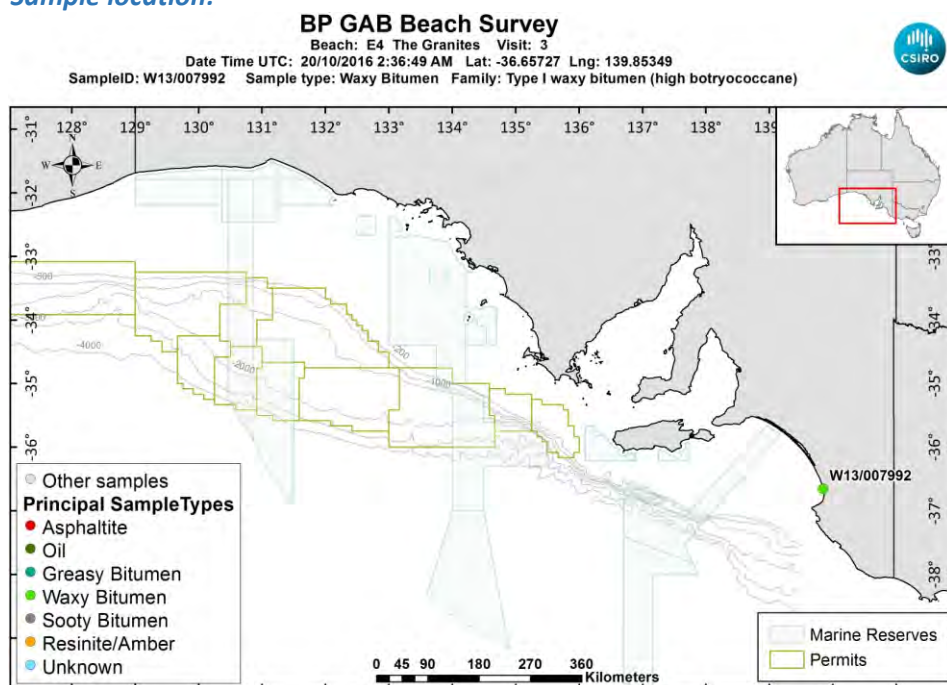
Size (cm): 1.8

Latitude (Y): -36.657268

Weight (gm): 0.37896

Longitude (X): 139.853493

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007992_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007992_146A6908.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007992_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES

Analyses Completed:

Analysis:	Instrument/Type:
Whole Oils	GCMS with Full Scan Run: 3

Sample Analyses Completed:**Results for: GCMS with Full Scan**

Unique ID: W13/007992 DISS GCMS-Scan/03

Instrument / Type: GCMS with Full Scan Run: 3

for Analysis: Whole Oils

Analysis Date: 30/10/2017

Linked Image: [LinkedFiles\GAB_BCH1\GCMS\W13_007992_bulk_WholeOil.jpg](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

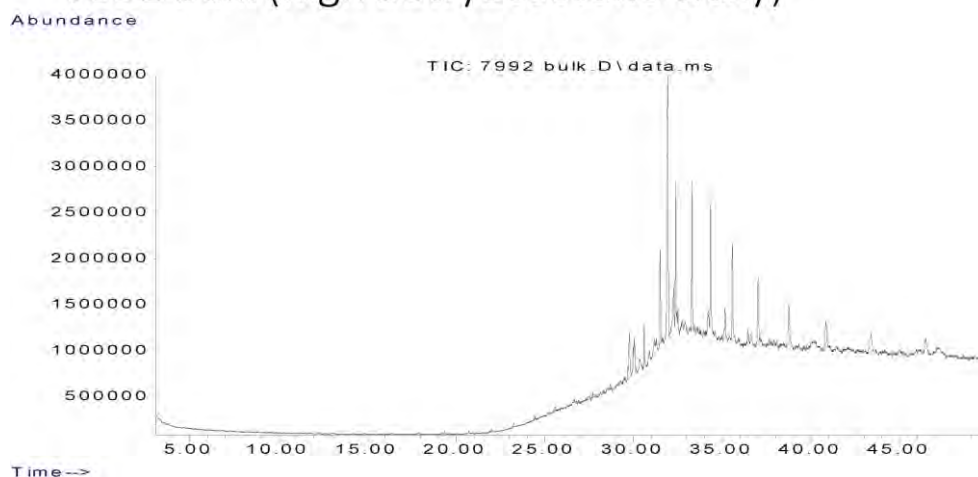
Extract Volume:

Dilution Factor:

Comment: Bulk

Results for: GCMS with Full Scan

7992 bulk (high botryococcane waxy)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	24457796			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100	377590			Z
Aliph	nC26	29.6680	340487			Z
Aliph	nC27	30.6080	2344707			Z
Aliph	nC28	31.5080	5831423			Z
Aliph	nC29	32.3700	8216669			Z
Aliph	nC30	33.2910	9468200			Z
Aliph	nC31	34.3470	11304479			Z
Aliph	nC32	35.5720	8595525			Z
Aliph	nC33	37.0130	6740971			Z
Aliph	nC34	38.7280	5300879			Z
Aliph	nC35	40.8080	4209523			Z
Aliph	nC36	43.3510	3574517			Z
Aliph	nC37	46.4710	2935140			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007993**

Beach E4: The Granites Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 20/10/2016 1:09:56 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

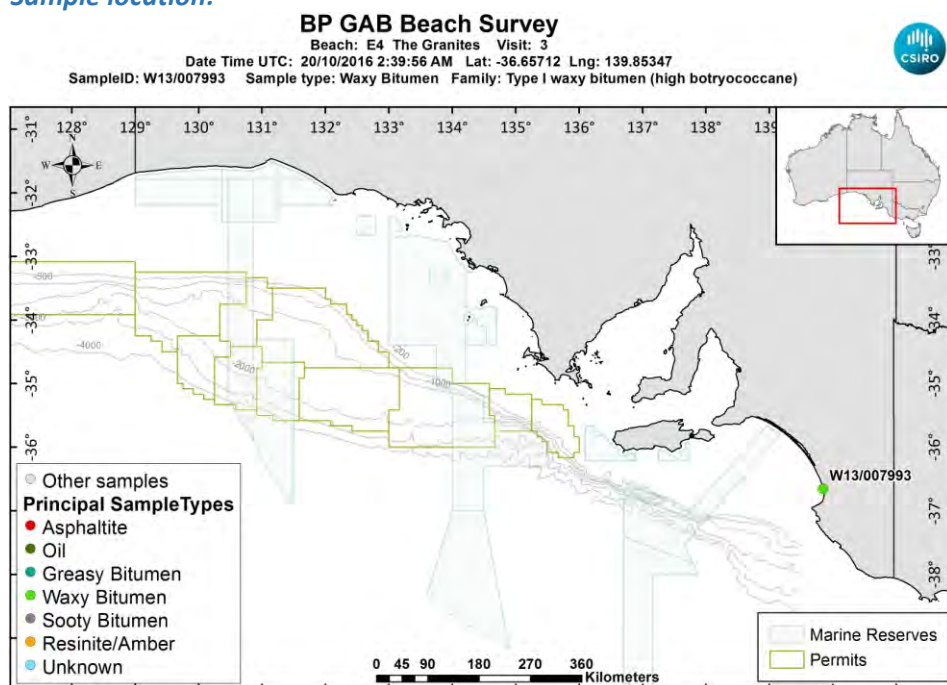
Size (cm): 2.2

Latitude (Y): -36.657125

Weight (gm): 2.45795

Longitude (X): 139.853467

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007993_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007993_146A6910.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007993_Photo02.JPG](#)

Analyses Requested

Split: Analysis: Sent:
1 Bitumen Determination YES

Analyses Completed:

Analysis: Instrument/Type:
Elemental CHNS Elemental Analyser Run: 1
Whole Oils GCMS with Full Scan Run: 3

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007993_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume: Volume Units: Extract Volume: Dilution Factor:
Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Inorg	Carbon			77.19	percent	Y
Inorg	Hydrogen			6.66583439363817	percent	Y
Inorg	Nitrogen			0.22	percent	Y
Inorg	Sulphur			1.49498884911456	percent	Y

Results for: GCMS with Full Scan

Unique ID: W13/007993 DISS GCMS-Scan/03

Instrument / Type: GCMS with Full Scan Run: 3

for Analysis: Whole Oils

Analysis Date: 30/10/2017

Linked Image: [LinkedFiles\GAB_BCH1\GCMS\W13_007993_bulk_WholeOil.jpg](#)

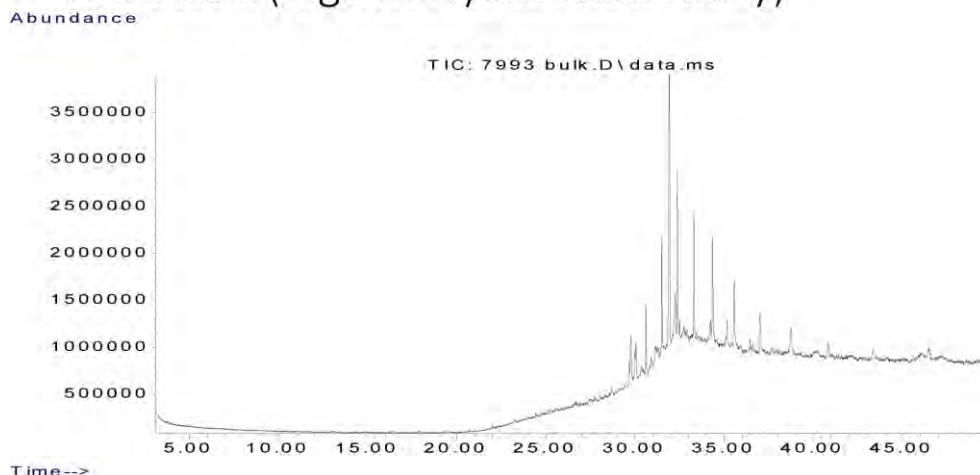
Preparation: Dissolved in solvent

Method ID/s:

Sample Volume: Volume Units: Extract Volume: Dilution Factor:
Comment: Bulk

Results for: GCMS with Full Scan

7993 bulk (high botryococcane waxy)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	23726583			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100	418319			Z
Aliph	nC26	29.6680	1122032			Z
Aliph	nC27	30.6080	3624929			Z
Aliph	nC28	31.5080	6531735			Z
Aliph	nC29	32.3700	8233718			Z
Aliph	nC30	33.2910	8232200			Z
Aliph	nC31	34.3470	7752791			Z
Aliph	nC32	35.5720	6026743			Z
Aliph	nC33	37.0130	4374742			Z
Aliph	nC34	38.7280	3334345			Z
Aliph	nC35	40.8080	2111641			Z
Aliph	nC36	43.3510	1608216			Z
Aliph	nC37	46.4710	2087126			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007994**

Beach E4: The Granites Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 20/10/2016 1:13:04 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

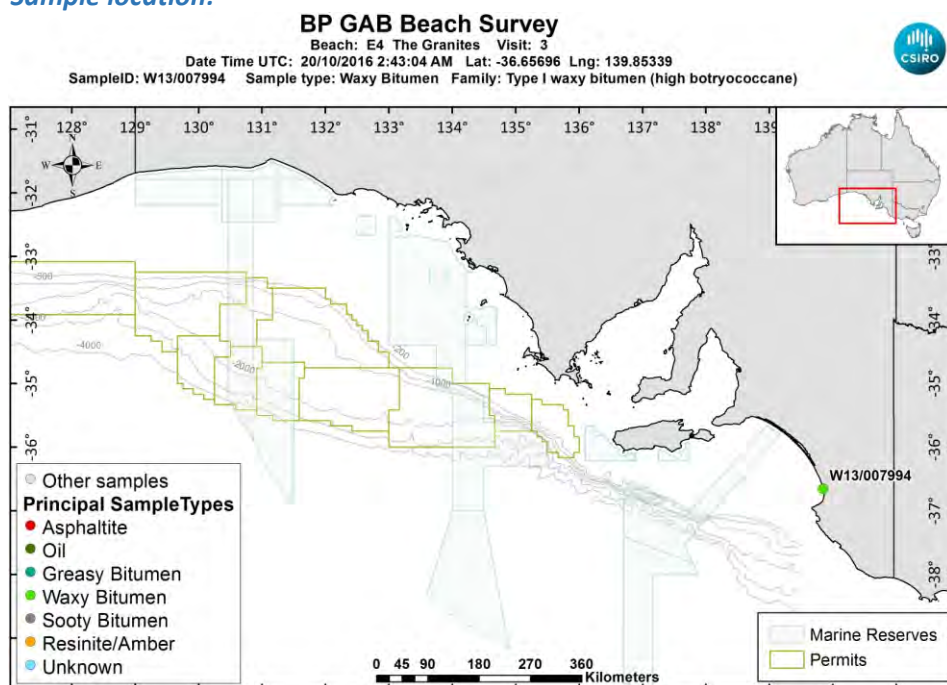
Size (cm): 1.4

Latitude (Y): -36.656962

Weight (gm): 0.54727

Longitude (X): 139.853393

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007994_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007994_146A6912.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007994_Photo02.JPG](#)

Analyses Requested

Split: Analysis: Sent:
1 Bitumen Determination YES

Analyses Completed:

Analysis: Instrument/Type:
Elemental CHNS Elemental Analyser Run: 1
Whole Oils GCMS with Full Scan Run: 3

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007994_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume: Volume Units: Extract Volume: Dilution Factor:
Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			84.6838936312104	percent	Y
Inorg	Hydrogen			11.3325312127237	percent	Y
Inorg	Nitrogen			0.24	percent	Y
Inorg	Sulphur			2.09770095592259	percent	Y

Results for: GCMS with Full Scan

Unique ID: W13/007994 DISS GCMS-Scan/03

Instrument / Type: GCMS with Full Scan Run: 3

for Analysis: Whole Oils

Analysis Date: 30/10/2017

Linked Image: [LinkedFiles\GAB_BCH1\GCMS\W13_007994_bulk_WholeOil.jpg](#)

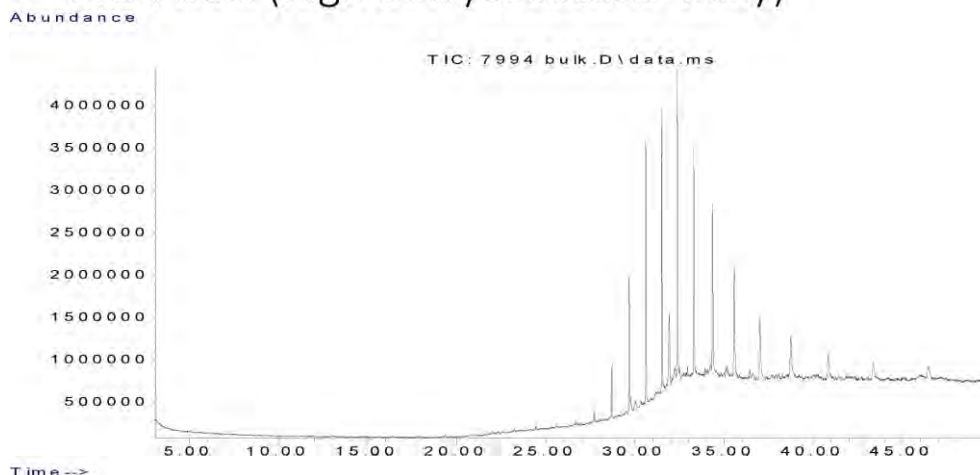
Preparation: Dissolved in solvent

Method ID/s:

Sample Volume: Volume Units: Extract Volume: Dilution Factor:
Comment: Bulk

Results for: GCMS with Full Scan

7994 bulk (high botryococcane waxy)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	6780890			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410	250368			Z
Aliph	nC22	25.5760	252728			Z
Aliph	nC23	26.6620	300052			Z
Aliph	nC24	27.7060	713289			Z
Aliph	nC25	28.7100	3290629			Z
Aliph	nC26	29.6680	8416316			Z
Aliph	nC27	30.6080	15086197			Z
Aliph	nC28	31.5080	18403152			Z
Aliph	nC29	32.3700	18556008			Z
Aliph	nC30	33.2910	15450785			Z
Aliph	nC31	34.3470	13843191			Z
Aliph	nC32	35.5720	10181316			Z
Aliph	nC33	37.0130	8096081			Z
Aliph	nC34	38.7280	5745244			Z
Aliph	nC35	40.8080	3934107			Z
Aliph	nC36	43.3510	3215176			Z
Aliph	nC37	46.4710	2480432			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007995**

Beach E4: The Granites Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 20/10/2016 1:21:48 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

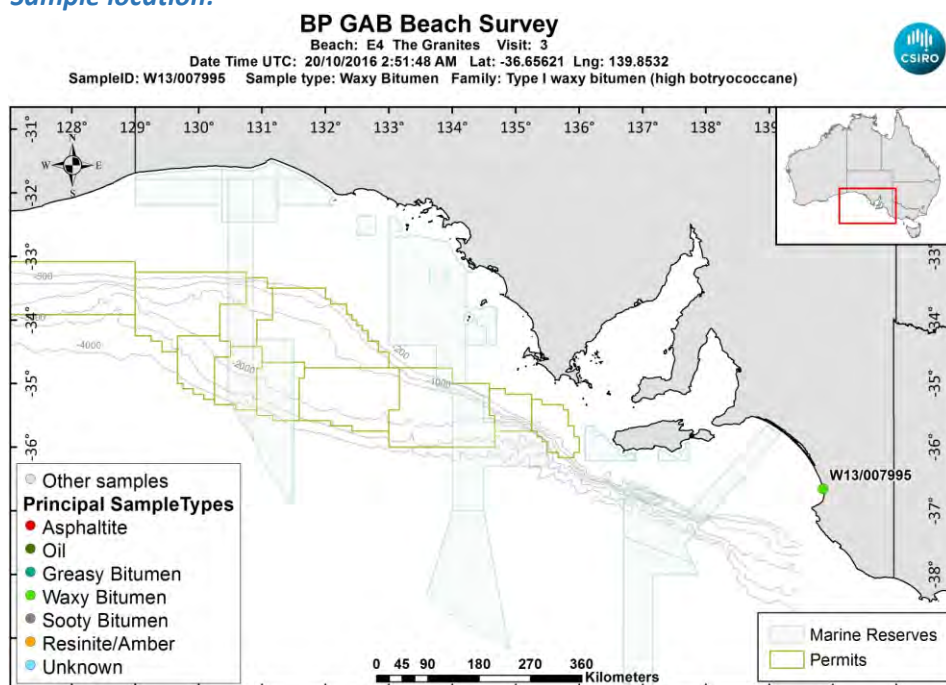
Size (cm): 3.5

Latitude (Y): -36.656213

Weight (gm): 4.44218

Longitude (X): 139.853205

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007995_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007995_146A6914.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007995_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007995_DISS_GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retention Time:	Target Response:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			39.4872710005051	ratio	Y
BiomRatio	% C27 abb 20(R+S)			45.7490249315836	ratio	Y
BiomRatio	% C28 aaa 20R			16.9401402806217	ratio	Y
BiomRatio	% C28 abb 20(R+S)			19.3239166505053	ratio	Y
BiomRatio	% C29 aaa 20R			43.5725887188732	ratio	Y
BiomRatio	% C29 abb 20(R+S)			34.9270584179111	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			7.77335585423135E-02	ratio	Y
BiomRatio	25-Nor/C30H			5.31079329677903E-02	ratio	Y
BiomRatio	C19t/C23t			0.218339292869255	ratio	Y
BiomRatio	C22t/C21t			0.118969247102618	ratio	Y
BiomRatio	C22t/C24t			6.45574959925757E-02	ratio	Y
BiomRatio	C23t/C30H			0.080455365817252	ratio	Y
BiomRatio	C24t/C23t			0.787788616558458	ratio	Y
BiomRatio	C24Tet/C23t			0.718841564962106	ratio	Y
BiomRatio	C24Tet/C26t			0.871491158398313	ratio	Y
BiomRatio	C24Tet/C30H			5.78346610736722E-02	ratio	Y
BiomRatio	C26t/C25t			1.86026004505392	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.668812656826134	ratio	Y
BiomRatio	C27 Dia/Ster			1.02228468432131	ratio	Y
BiomRatio	C28BNH/C30H			2.82668668704455E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.763449242254748	ratio	Y
BiomRatio	C29H/C30H			0.542284568954572	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.318407329657137	ratio	Y
BiomRatio	C30DiaH/C30H			0.16383709242512	ratio	Y
BiomRatio	C30Ts/C30H			4.21048225063026E-02	ratio	Y
BiomRatio	C35 Homohopane Index			0.059426517634365	ratio	Y
BiomRatio	C35HS/C34HS			0.678082416075515	ratio	Y
BiomRatio	Gam/C30H			4.96043668379796E-02	ratio	Y
BiomRatio	Gam/C31HR			0.251570587323725	ratio	Y
BiomRatio	Ole/C30H			9.09280218219675E-02	ratio	Y
BiomRatio	Sterane/hopane			7.92755598511053E-02	ratio	Y
BiomRatio	Steranes/Terpanes			6.97735841292441E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.136182995906594	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007995_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

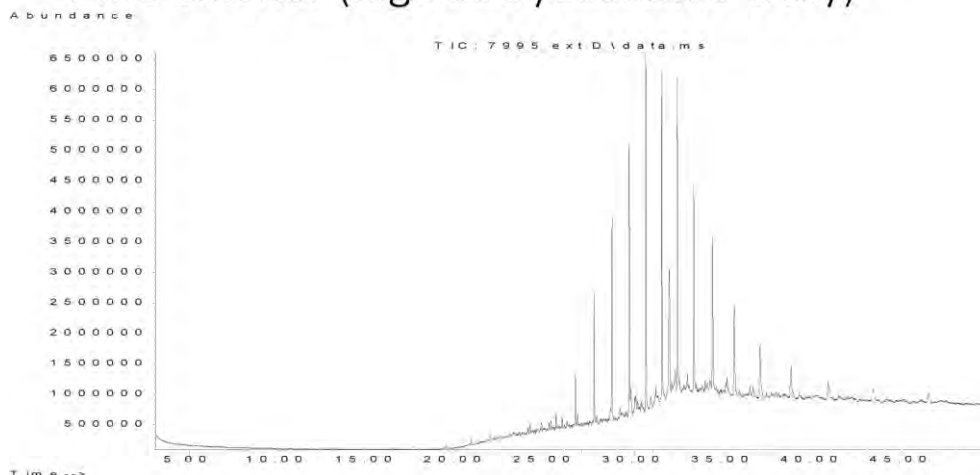
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			84.599649483161	percent	Y
Inorg	Hydrogen			9.11389781312127	percent	Y
Inorg	Nitrogen			0.21	percent	Y
Inorg	Sulphur			2.02339120003832	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007995_DISS_GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007995_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7995 exterior (high botryococcane waxy)



Data Sheet:

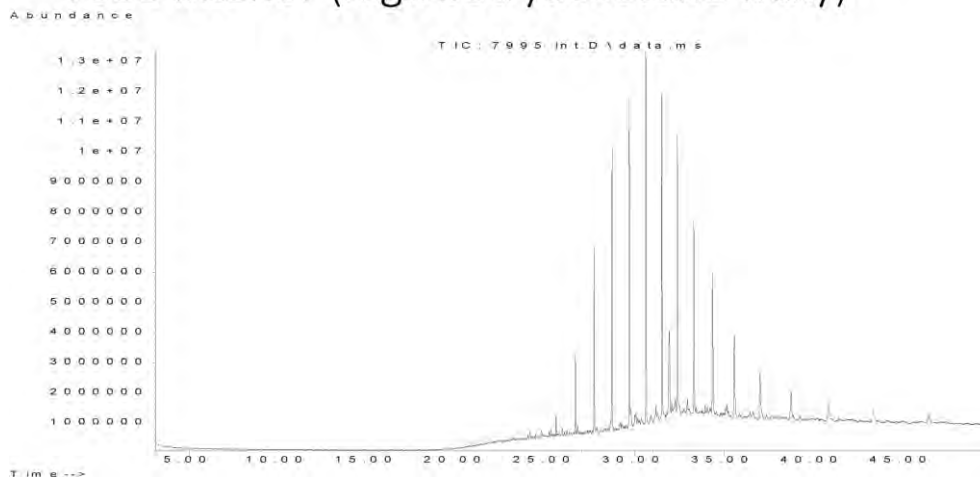
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	16788676			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410	346702			Z
Aliph	nC22	25.5760	1213575			Z
Aliph	nC23	26.6620	3726898			Z
Aliph	nC24	27.7060	9649327			Z
Aliph	nC25	28.7100	16113354			Z
Aliph	nC26	29.6680	19707841			Z
Aliph	nC27	30.6080	28070030			Z
Aliph	nC28	31.5080	27737441			Z
Aliph	nC29	32.3700	25960386			Z
Aliph	nC30	33.2910	20315021			Z
Aliph	nC31	34.3470	17511641			Z
Aliph	nC32	35.5720	11995805			Z
Aliph	nC33	37.0130	8557857			Z
Aliph	nC34	38.7280	5978102			Z
Aliph	nC35	40.8080	4227990			Z
Aliph	nC36	43.3510	3516768			Z
Aliph	nC37	46.4710	2315199			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870	737938			Z
Aliph	Pristane	19.3870	204793			Z

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007995 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007995_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7995 interior (high botryococcane waxy)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	22747269			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410	635286			Z
Aliph	nC22	25.5760	3605550			Z
Aliph	nC23	26.6620	11458755			Z
Aliph	nC24	27.7060	27494436			Z
Aliph	nC25	28.7100	42137121			Z
Aliph	nC26	29.6680	52317108			Z
Aliph	nC27	30.6080	60434227			Z
Aliph	nC28	31.5080	51132328			Z
Aliph	nC29	32.3700	47526643			Z
Aliph	nC30	33.2910	35918485			Z
Aliph	nC31	34.3470	30180447			Z
Aliph	nC32	35.5720	21630238			Z
Aliph	nC33	37.0130	15960465			Z
Aliph	nC34	38.7280	9967642			Z
Aliph	nC35	40.8080	8305804			Z
Aliph	nC36	43.3510	6897576			Z
Aliph	nC37	46.4710	5529450			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870	1271382			Z
Aliph	Pristane	19.3870	573619			Z

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007996**

Beach E4: The Granites Visit: 3

Comments:

Location: Shore Upper

Local Date Time: 20/10/2016 1:32:58 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

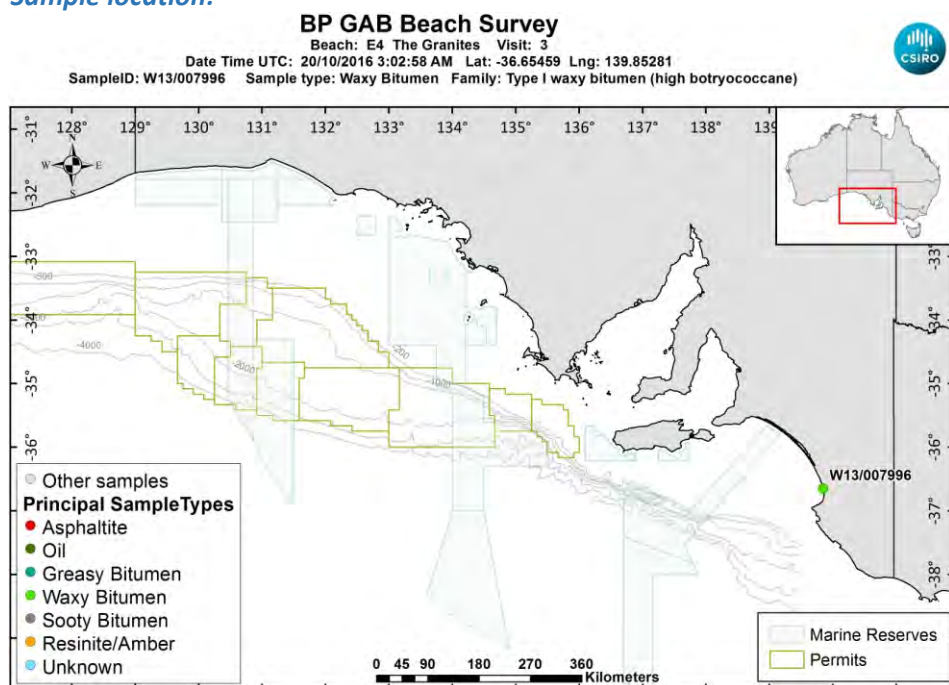
Size (cm): 4

Latitude (Y): -36.654592

Weight (gm): 10.2968

Longitude (X): 139.852812

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007996_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007996_146A6918.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007996_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007996_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			73.7051357452484	percent	Y
Inorg	Hydrogen			10.554726640159	percent	Y
Inorg	Nitrogen			0.37	percent	Y
Inorg	Sulphur			2.26151977525568	percent	Y

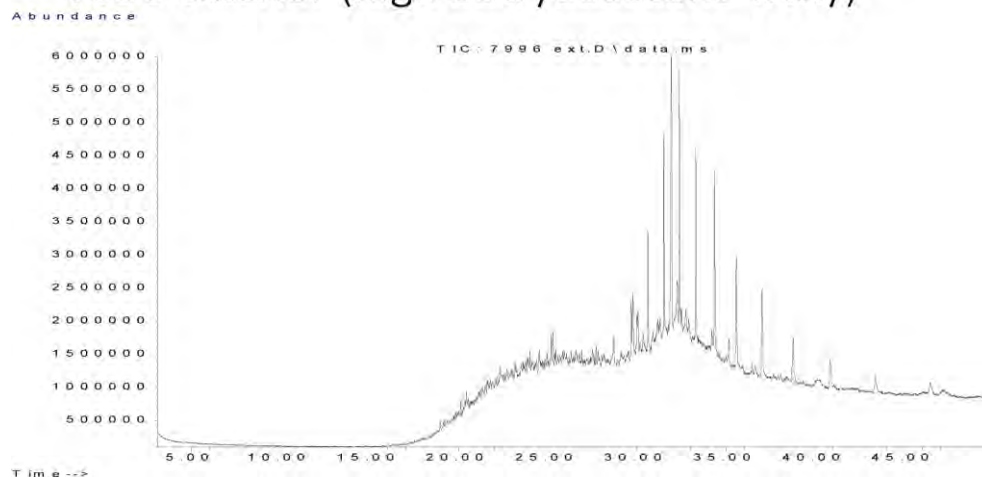
Results for: GCMS with Full Scan

Unique ID: W13/007996_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007996_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7996 exterior (high botryococcane waxy)



Data Sheet:

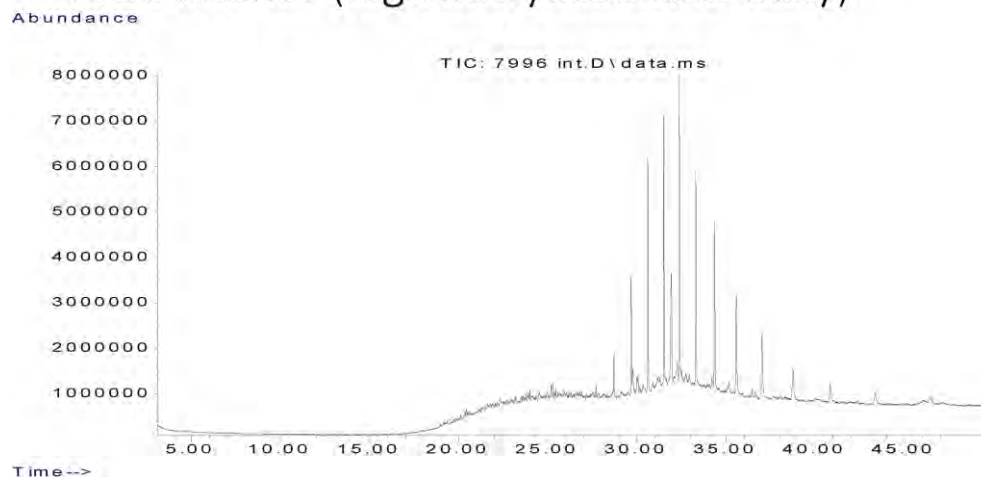
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	33241958			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100	1795468			Z
Aliph	nC26	29.6680	4339636			Z
Aliph	nC27	30.6080	8325410			Z
Aliph	nC28	31.5080	12507880			Z
Aliph	nC29	32.3700	16320357			Z
Aliph	nC30	33.2910	16203323			Z
Aliph	nC31	34.3470	18789241			Z
Aliph	nC32	35.5720	14009152			Z
Aliph	nC33	37.0130	12333398			Z
Aliph	nC34	38.7280	7843837			Z
Aliph	nC35	40.8080	5379801			Z
Aliph	nC36	43.3510	3436930			Z
Aliph	nC37	46.4710	2442444			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007996 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007996_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7996 interior (high botryococcane waxy)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	19207974			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060	826912			Z
Aliph	nC25	28.7100	4600136			Z
Aliph	nC26	29.6680	12566049			Z
Aliph	nC27	30.6080	24620084			Z
Aliph	nC28	31.5080	30133972			Z
Aliph	nC29	32.3700	32040063			Z
Aliph	nC30	33.2910	26276168			Z
Aliph	nC31	34.3470	25206645			Z
Aliph	nC32	35.5720	17572755			Z
Aliph	nC33	37.0130	13312249			Z
Aliph	nC34	38.7280	8214588			Z
Aliph	nC35	40.8080	5556986			Z
Aliph	nC36	43.3510	4123872			Z
Aliph	nC37	46.4710	3443701			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007997**

Beach E4: The Granites Visit: 3

Comments:

Location: Shore Upper

Local Date Time: 20/10/2016 1:43:33 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

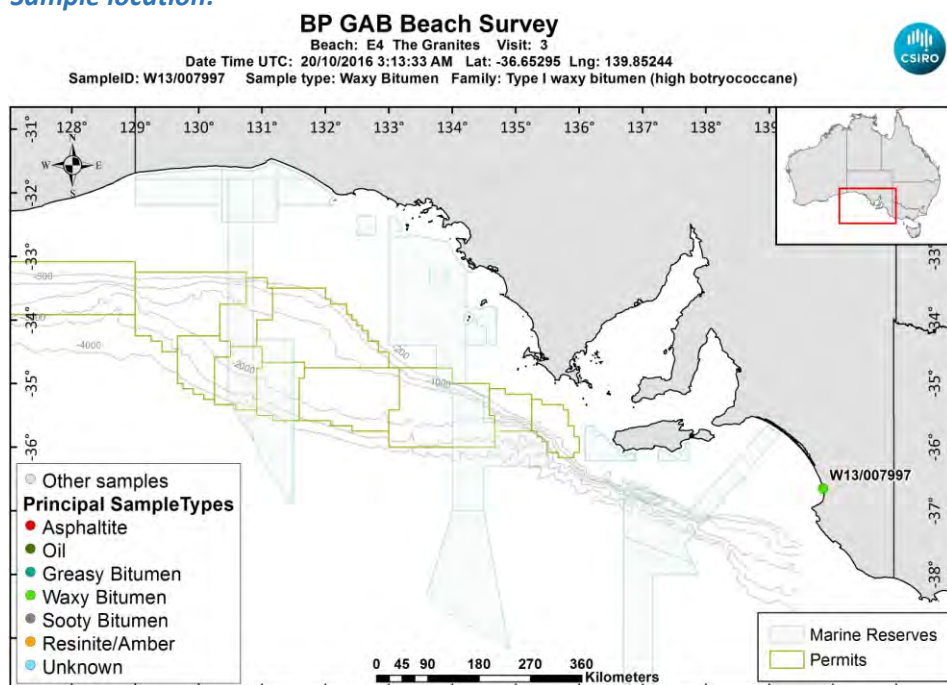
Size (cm): 2.2

Latitude (Y): -36.652948

Weight (gm): 1.85502

Longitude (X): 139.852435

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007997_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007997_146A6920.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB BCH1\Samples\W13_007997_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 3

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007997 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Bulk Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			52.3924938140182	ratio	Y
BiomRatio	% C27 abb 20(R+S)			55.9595590779083	ratio	Y
BiomRatio	% C28 aaa 20R			8.58370322494796	ratio	Y
BiomRatio	% C28 abb 20(R+S)			18.8486441470618	ratio	Y
BiomRatio	% C29 aaa 20R			39.0238029610339	ratio	Y
BiomRatio	% C29 abb 20(R+S)			25.1917967750299	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			8.77522253293544E-02	ratio	Y
BiomRatio	25-Nor/C30H			6.79239038955027E-02	ratio	Y
BiomRatio	C19t/C23t			0.124649723490331	ratio	Y
BiomRatio	C22t/C21t			0.424993386290674	ratio	Y
BiomRatio	C22t/C24t			0.238241883917203	ratio	Y
BiomRatio	C23t/C30H			0.077407635718971	ratio	Y
BiomRatio	C24t/C23t			0.86813249266971	ratio	Y
BiomRatio	C24Tet/C23t			0.504972302638904	ratio	Y
BiomRatio	C24Tet/C26t			0.521978548974566	ratio	Y
BiomRatio	C24Tet/C30H			3.90887120508423E-02	ratio	Y
BiomRatio	C26t/C25t			1.79187979745682	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.769524958860945	ratio	Y
BiomRatio	C27 Dia/Ster			1.49504232518318	ratio	Y
BiomRatio	C28BNH/C30H			0.030460330579848	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.450178614523342	ratio	Y
BiomRatio	C29H/C30H			0.51128843397893	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.391775245012858	ratio	Y
BiomRatio	C30DiaH/C30H			0.188222507089613	ratio	Y
BiomRatio	C30Ts/C30H			0	ratio	U
BiomRatio	C35 Homohopane Index			4.24145216880788E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.442723004087379	ratio	Y
BiomRatio	Gam/C30H			3.37889874831727E-02	ratio	Y
BiomRatio	Gam/C31HR			0.187092540578161	ratio	Y
BiomRatio	Ole/C30H			0.118303474031448	ratio	Y
BiomRatio	Sterane/hopane			6.25799152724886E-02	ratio	Y
BiomRatio	Steranes/Terpanes			5.43965107116582E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.150439880311597	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007997_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

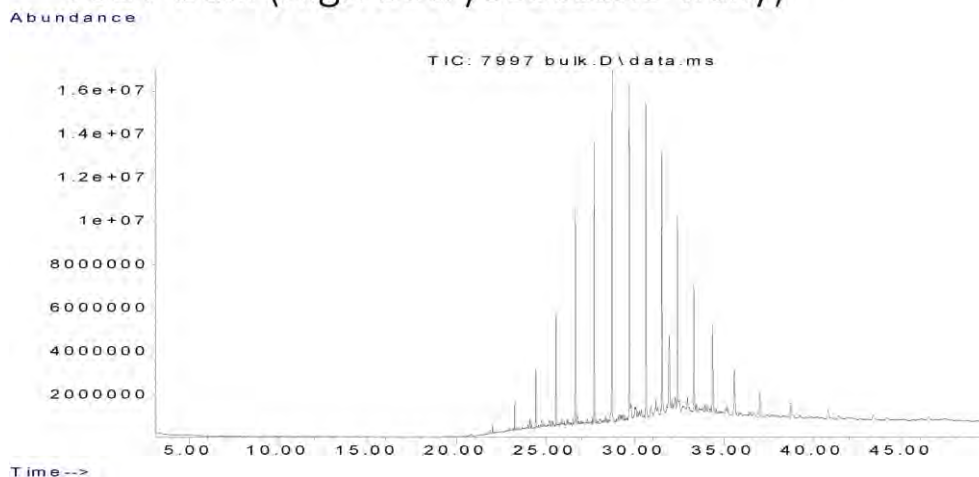
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			82.3819091697232	percent	Y
Inorg	Hydrogen			9.29811848906561	percent	Y
Inorg	Nitrogen			0.17	percent	Y
Inorg	Sulphur			1.63865438890294	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007997_DISS_GCMS-Scan/03**Instrument / Type:** GCMS with Full Scan Run: 3**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007997_bulk_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Bulk

Results for: GCMS with Full Scan

7997 bulk (high botryococcane waxy)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	28318109			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170	372578			Z
Aliph	nC19	22.0170	1854902			Z
Aliph	nC20	23.2570	6372231			Z
Aliph	nC21	24.4410	11994620			Z
Aliph	nC22	25.5760	26180055			Z
Aliph	nC23	26.6620	43188398			Z
Aliph	nC24	27.7060	58470952			Z
Aliph	nC25	28.7100	68225808			Z
Aliph	nC26	29.6680	68811358			Z
Aliph	nC27	30.6080	72865125			Z
Aliph	nC28	31.5080	58962033			Z
Aliph	nC29	32.3700	43694042			Z
Aliph	nC30	33.2910	33020780			Z
Aliph	nC31	34.3470	26125488			Z
Aliph	nC32	35.5720	17356992			Z
Aliph	nC33	37.0130	11711808			Z
Aliph	nC34	38.7280	7573761			Z
Aliph	nC35	40.8080	4495547			Z
Aliph	nC36	43.3510	3415512			Z
Aliph	nC37	46.4710	2788523			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870	713359			Z
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007998**

Beach E4: The Granites Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 20/10/2016 1:45:50 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

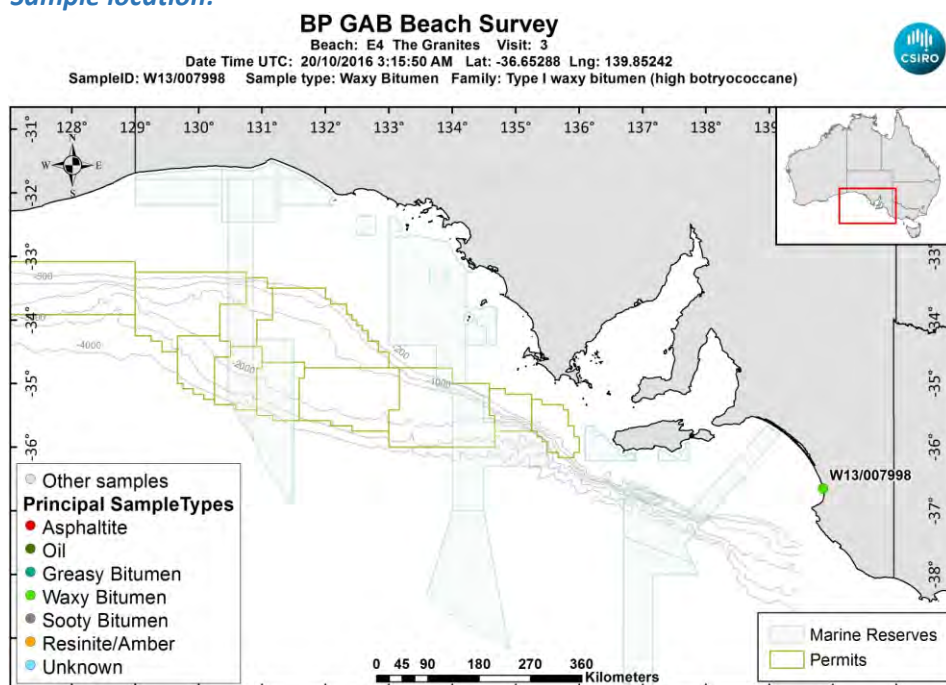
Size (cm): 2.3

Latitude (Y): -36.652877

Weight (gm): 1.20206

Longitude (X): 139.852420

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007998_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007998_146A6922.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007998_Photo02.JPG](#)

Analyses Requested

Split: Analysis: Sent:
1 Bitumen Determination YES

Analyses Completed:

Analysis: Instrument/Type:
Elemental CHNS Elemental Analyser Run: 1
Whole Oils GCMS with Full Scan Run: 3

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007998_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume: Volume Units: Extract Volume: Dilution Factor:
Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Inorg	Carbon			73.4553319439813	percent	Y
Inorg	Hydrogen			6.89098409542744	percent	Y
Inorg	Nitrogen			0.22	percent	Y
Inorg	Sulphur			1.69403956687119	percent	Y

Results for: GCMS with Full Scan

Unique ID: W13/007998 DISS GCMS-Scan/03

Instrument / Type: GCMS with Full Scan Run: 3

for Analysis: Whole Oils

Analysis Date: 30/10/2017

Linked Image: [LinkedFiles\GAB_BCH1\GCMS\W13_007998_bulk_WholeOil.jpg](#)

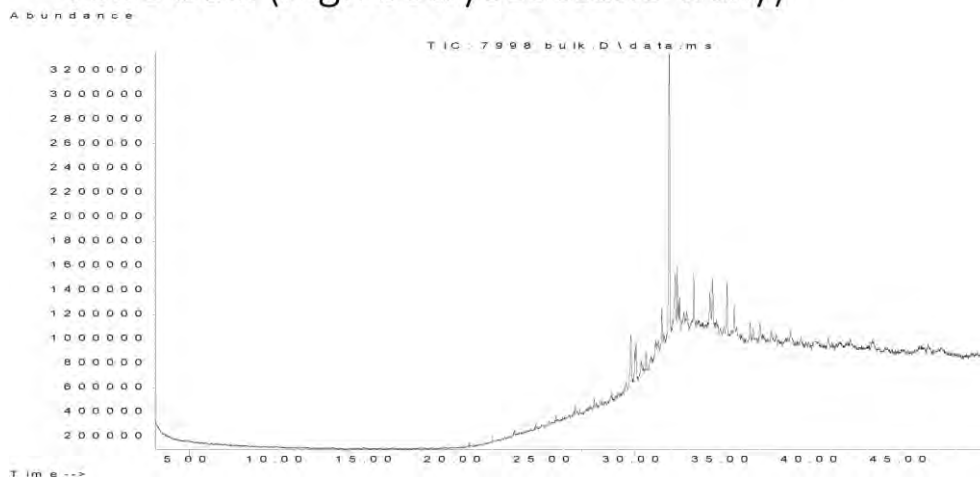
Preparation: Dissolved in solvent

Method ID/s:

Sample Volume: Volume Units: Extract Volume: Dilution Factor:
Comment: Bulk

Results for: GCMS with Full Scan

7998 bulk (high botryococcane waxy)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	19445709			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100	297864			Z
Aliph	nC26	29.6680	368545			Z
Aliph	nC27	30.6080	688936			Z
Aliph	nC28	31.5080	1720472			Z
Aliph	nC29	32.3700	2078666			Z
Aliph	nC30	33.2910	2324064			Z
Aliph	nC31	34.3470	2676694			Z
Aliph	nC32	35.5720	1946314			Z
Aliph	nC33	37.0130	1318633			Z
Aliph	nC34	38.7280	1040599			Z
Aliph	nC35	40.8080	636846			Z
Aliph	nC36	43.3510	652132			Z
Aliph	nC37	46.4710	154380			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007999**

Beach E4: The Granites Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 20/10/2016 2:01:08 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

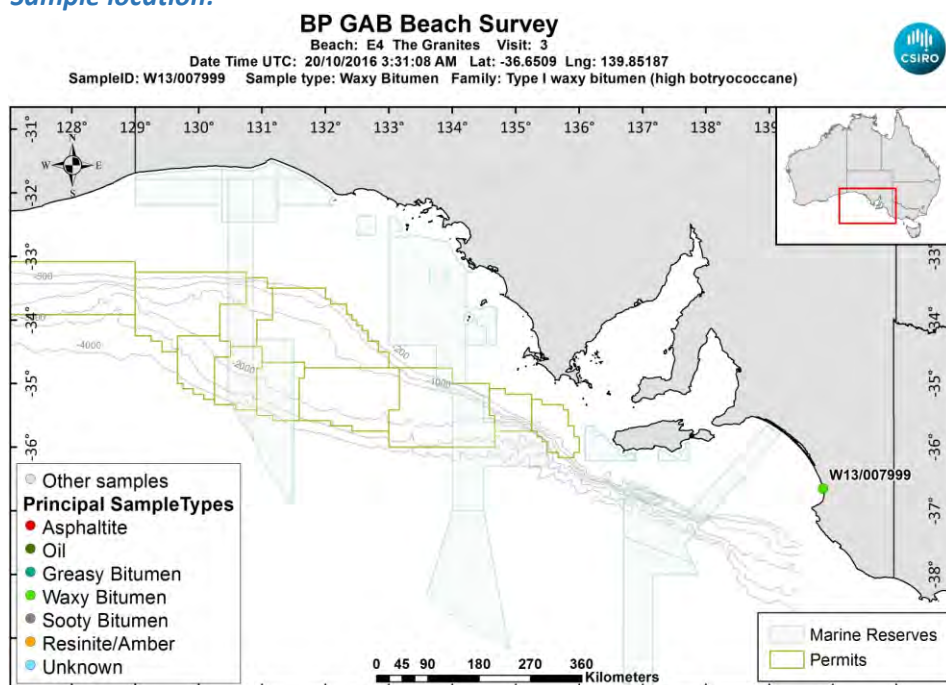
Size (cm): 1.7

Latitude (Y): -36.650897

Weight (gm): 0.68202

Longitude (X): 139.851872

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007999_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007999_146A6925.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB BCH1\Samples\W13_007999_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 3

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007999 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Bulk Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			36.8308311488866	ratio	Y
BiomRatio	% C27 abb 20(R+S)			45.9798576995497	ratio	Y
BiomRatio	% C28 aaa 20R			8.84528821457886	ratio	Y
BiomRatio	% C28 abb 20(R+S)			19.4519239120994	ratio	Y
BiomRatio	% C29 aaa 20R			54.3238806365345	ratio	Y
BiomRatio	% C29 abb 20(R+S)			34.568218388351	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			7.89336740450743E-02	ratio	Y
BiomRatio	25-Nor/C30H			5.90641968141192E-02	ratio	Y
BiomRatio	C19t/C23t			3.26200371743699E-02	ratio	Y
BiomRatio	C22t/C21t			0.188426126540659	ratio	Y
BiomRatio	C22t/C24t			7.30362176801014E-02	ratio	Y
BiomRatio	C23t/C30H			8.25212091670207E-02	ratio	Y
BiomRatio	C24t/C23t			0.779538708453862	ratio	Y
BiomRatio	C24Tet/C23t			0.793855025356592	ratio	Y
BiomRatio	C24Tet/C26t			0.959880527831956	ratio	Y
BiomRatio	C24Tet/C30H			6.55098765957418E-02	ratio	Y
BiomRatio	C26t/C25t			1.83264936199233	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.717312077997889	ratio	Y
BiomRatio	C27 Dia/Ster			1.02513335039454	ratio	Y
BiomRatio	C28BNH/C30H			0.033633914884412	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.751812209037992	ratio	Y
BiomRatio	C29H/C30H			0.54342084187043	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.346793424543376	ratio	Y
BiomRatio	C30DiaH/C30H			0.162213118461003	ratio	Y
BiomRatio	C30Ts/C30H			3.84315831848693E-02	ratio	Y
BiomRatio	C35 Homohopane Index			6.54863762261207E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.632211386917616	ratio	Y
BiomRatio	Gam/C30H			6.26110695132245E-02	ratio	Y
BiomRatio	Gam/C31HR			0.292875256680733	ratio	Y
BiomRatio	Ole/C30H			0.102274400650694	ratio	Y
BiomRatio	Sterane/hopane			0.080038101507734	ratio	Y
BiomRatio	Steranes/Terpanes			7.09385202475203E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.128274190502752	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007999_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

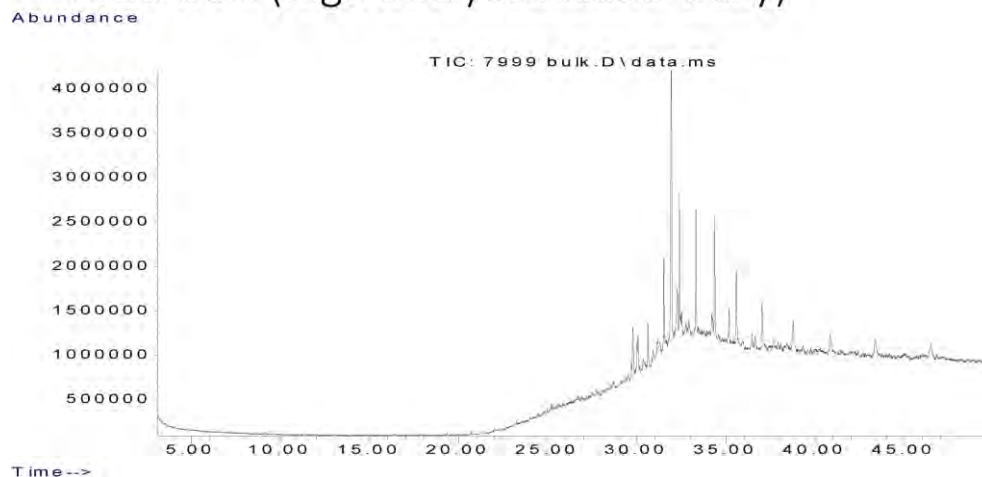
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			84.1923551517173	percent	Y
Inorg	Hydrogen			8.82588230616302	percent	Y
Inorg	Nitrogen			0.22951910882605	percent	Y
Inorg	Sulphur			2.67538301784164	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007999_DISS_GCMS-Scan/03**Instrument / Type:** GCMS with Full Scan Run: 3**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007999_bulk_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Bulk

Results for: GCMS with Full Scan

7999 bulk (high botryococcane waxy)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	25025520			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100				U
Aliph	nC26	29.6680	513094			Z
Aliph	nC27	30.6080	2251581			Z
Aliph	nC28	31.5080	5343858			Z
Aliph	nC29	32.3700	7916597			Z
Aliph	nC30	33.2910	8831195			Z
Aliph	nC31	34.3470	8830541			Z
Aliph	nC32	35.5720	7050918			Z
Aliph	nC33	37.0130	4990121			Z
Aliph	nC34	38.7280	4221655			Z
Aliph	nC35	40.8080	3118168			Z
Aliph	nC36	43.3510	2656674			Z
Aliph	nC37	46.4710	3365908			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/008000**

Beach E4: The Granites Visit: 3

Comments:

Location: Shore Upper

Local Date Time: 20/10/2016 2:08:04 PM

Type: Resinite/Amber

Family: Resin/Amber

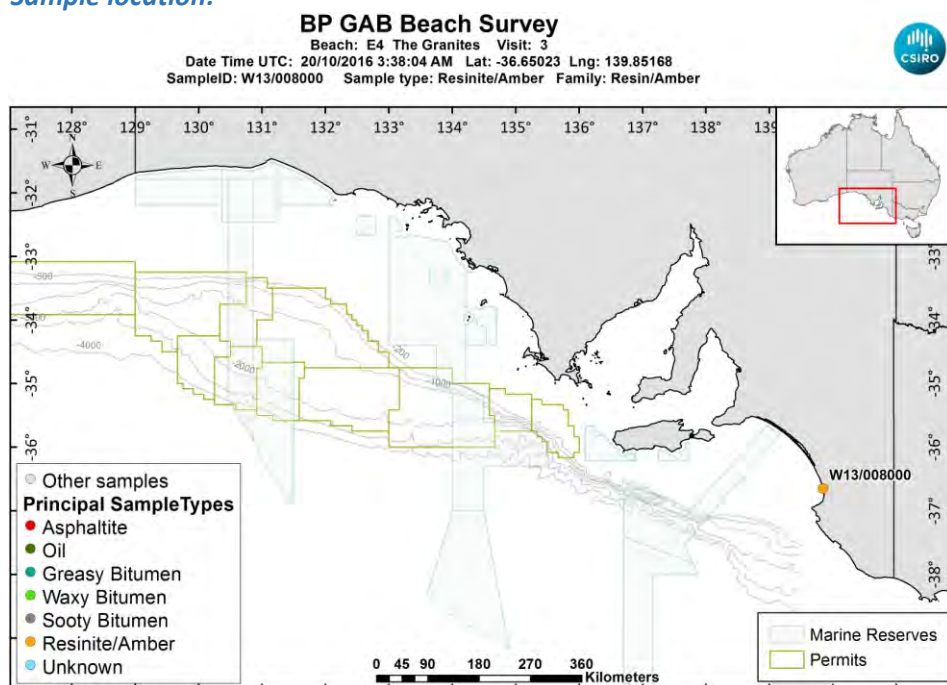
Size (cm): 3.5

Latitude (Y): -36.650233

Weight (gm): 11.53646

Longitude (X): 139.851685

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_008000_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_008000_146A6927.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB BCH1\Samples\W13 008000 Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES

Analyses Completed:

Analysis:	Instrument/Type:
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:**Results for: GCMS with Full Scan**

Unique ID: W13/008000 DISS GCMS-Scan/01

Instrument / Type: GCMS with Full Scan Run: 1

for Analysis: Whole Oils

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: GCMS with Full Scan

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100				U
Aliph	nC26	29.6680				U
Aliph	nC27	30.6080				U
Aliph	nC28	31.5080				U
Aliph	nC29	32.3700				U
Aliph	nC30	33.2910				U
Aliph	nC31	34.3470				U
Aliph	nC32	35.5720				U
Aliph	nC33	37.0130				U
Aliph	nC34	38.7280				U
Aliph	nC35	40.8080				U
Aliph	nC36	43.3510				U
Aliph	nC37	46.4710				U
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007659**

Beach W16b: Tractor Beach Visit: 2

Comments:

may have been "placed" on the rock

Location: Shore Upper

Local Date Time: 21/09/2015 12:39:44 PM

Type: Asphaltite

Family: Asphaltite

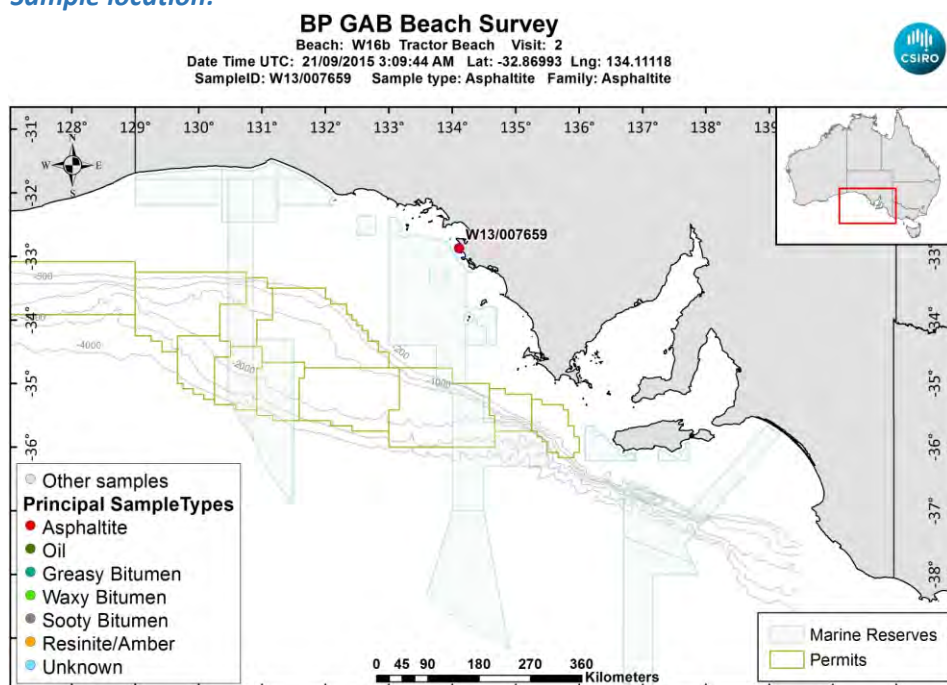
Size (cm): 3.3

Latitude (Y): -32.869927

Weight (gm): 8.50641

Longitude (X): 134.111182

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007659_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007659_146A1761.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007659_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007659 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			29.9918836185054	ratio	Y
BiomRatio	% C27 abb 20(R+S)			22.6865230896853	ratio	Y
BiomRatio	% C28 aaa 20R			23.6536900695866	ratio	Y
BiomRatio	% C28 abb 20(R+S)			20.8377477920193	ratio	Y
BiomRatio	% C29 aaa 20R			46.354426311908	ratio	Y
BiomRatio	% C29 abb 20(R+S)			56.4757291182955	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			2.54881537535964E-02	ratio	Y
BiomRatio	25-Nor/C30H			1.43907010069024E-02	ratio	Y
BiomRatio	C19t/C23t			0.157785006919607	ratio	Y
BiomRatio	C22t/C21t			0.465263884097965	ratio	Y
BiomRatio	C22t/C24t			0.321878579610538	ratio	Y
BiomRatio	C23t/C30H			1.62446836682229E-02	ratio	Y
BiomRatio	C24t/C23t			0.376570391272309	ratio	Y
BiomRatio	C24Tet/C23t			1.28907780513668	ratio	Y
BiomRatio	C24Tet/C26t			1.77844727119443	ratio	Y
BiomRatio	C24Tet/C30H			2.09406611681726E-02	ratio	Y
BiomRatio	C26t/C25t			1.96976653316401	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.2579903690338	ratio	Y
BiomRatio	C27 Dia/Ster			0.19593330167863	ratio	Y
BiomRatio	C28BNH/C30H			1.16371717976245E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			2.48939552768987	ratio	Y
BiomRatio	C29H/C30H			0.946346033747156	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			9.82125567844162E-02	ratio	Y
BiomRatio	C30DiaH/C30H			1.95596630598188E-02	ratio	Y
BiomRatio	C30Ts/C30H			0.138839652105263	ratio	Y
BiomRatio	C35 Homohopane Index			9.16050715842283E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.953448522061973	ratio	Y
BiomRatio	Gam/C30H			7.89075458262179E-02	ratio	Y
BiomRatio	Gam/C31HR			0.197927880819825	ratio	Y
BiomRatio	Ole/C30H			1.46777033621903E-02	ratio	Y
BiomRatio	Sterane/hopane			6.28918290092401E-02	ratio	Y
BiomRatio	Steranes/Terpanes			6.13893726809623E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			2.44742088518484E-02	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007659 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			23.3315660655535	ratio	Y
BiomRatio	% C27 abb 20(R+S)			20.7077758612652	ratio	Y
BiomRatio	% C28 aaa 20R			20.6447138115608	ratio	Y
BiomRatio	% C28 abb 20(R+S)			20.0153838981866	ratio	Y
BiomRatio	% C29 aaa 20R			56.0237201228856	ratio	Y
BiomRatio	% C29 abb 20(R+S)			59.2768402405482	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			1.44159378992873E-02	ratio	Y
BiomRatio	25-Nor/C30H			1.31400863971137E-02	ratio	Y
BiomRatio	C19t/C23t			0.261612903225806	ratio	Y
BiomRatio	C22t/C21t			0.429421932014596	ratio	Y
BiomRatio	C22t/C24t			0.328485382694285	ratio	Y
BiomRatio	C23t/C30H			7.62671182008095E-03	ratio	Y
BiomRatio	C24t/C23t			0.274475806451613	ratio	Y
BiomRatio	C24Tet/C23t			2.35588709677419	ratio	Y
BiomRatio	C24Tet/C26t			4.94925878864888	ratio	Y
BiomRatio	C24Tet/C30H			1.79676719677439E-02	ratio	Y
BiomRatio	C26t/C25t			1.36996634559592	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.184629056912303	ratio	Y
BiomRatio	C27 Dia/Ster			0.127845999944862	ratio	Y
BiomRatio	C28BNH/C30H			2.33506543749494E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			2.86254017030521	ratio	Y
BiomRatio	C29H/C30H			1.03138484172574	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			7.28449652156244E-02	ratio	Y
BiomRatio	C30DiaH/C30H			1.86159424724508E-02	ratio	Y
BiomRatio	C30Ts/C30H			0.154369567697677	ratio	Y
BiomRatio	C35 Homohopane Index			0.100272606714726	ratio	Y
BiomRatio	C35HS/C34HS			1.03635739845938	ratio	Y
BiomRatio	Gam/C30H			8.34974255234677E-02	ratio	Y
BiomRatio	Gam/C31HR			0.195356390449438	ratio	Y
BiomRatio	Ole/C30H			1.12736947021108E-02	ratio	Y
BiomRatio	Sterane/hopane			5.82282643175183E-02	ratio	Y
BiomRatio	Steranes/Terpanes			5.74068243778178E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			1.43090991115327E-02	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007659_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			85.01	percent	Y
Inorg	Hydrogen			9.11093200795229	percent	Y
Inorg	Nitrogen			0.549183547557841	percent	Y
Inorg	Sulphur			6.97896056481793	percent	Y

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007660**

Beach W16b: Tractor Beach Visit: 2

Comments:

Location: Upper Intertidal

Local Date Time: 21/09/2015 12:49:55 PM

Type: Asphaltite

Family: Asphaltite

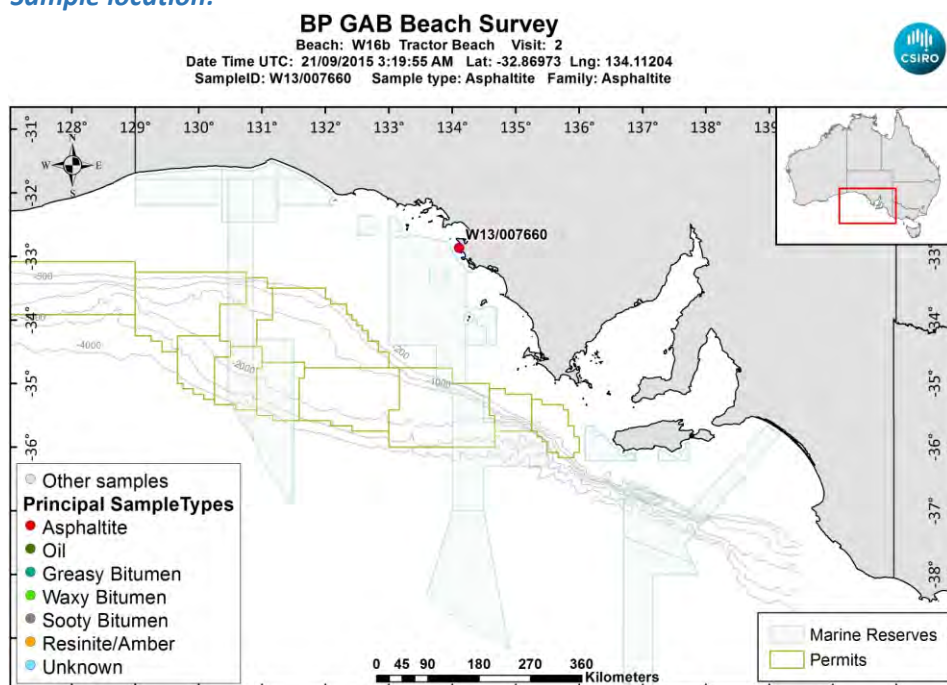
Size (cm): 2.8

Latitude (Y): -32.869725

Weight (gm): 3.83775

Longitude (X): 134.112040

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007660_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007660_146A1762.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007660_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007660 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			28.9713398945437	ratio	Y
BiomRatio	% C27 abb 20(R+S)			20.2565242116928	ratio	Y
BiomRatio	% C28 aaa 20R			24.2119624787991	ratio	Y
BiomRatio	% C28 abb 20(R+S)			22.2605328136673	ratio	Y
BiomRatio	% C29 aaa 20R			46.8166976266571	ratio	Y
BiomRatio	% C29 abb 20(R+S)			57.48294297464	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			1.64013147960356E-02	ratio	Y
BiomRatio	25-Nor/C30H			1.29135244240657E-02	ratio	Y
BiomRatio	C19t/C23t			0.327177920223189	ratio	Y
BiomRatio	C22t/C21t			0.427235316124205	ratio	Y
BiomRatio	C22t/C24t			0.331751718795391	ratio	Y
BiomRatio	C23t/C30H			5.98165115743132E-03	ratio	Y
BiomRatio	C24t/C23t			0.342987146700322	ratio	Y
BiomRatio	C24Tet/C23t			3.31658308147066	ratio	Y
BiomRatio	C24Tet/C26t			5.26293875830083	ratio	Y
BiomRatio	C24Tet/C30H			1.98386430279961E-02	ratio	Y
BiomRatio	C26t/C25t			1.3667074839732	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.18401323895125	ratio	Y
BiomRatio	C27 Dia/Ster			0.127940983092508	ratio	Y
BiomRatio	C28BNH/C30H			2.45462455995359E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			2.83774957509536	ratio	Y
BiomRatio	C29H/C30H			1.04356479310865	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.057556410571538	ratio	Y
BiomRatio	C30DiaH/C30H			1.12999547040266E-02	ratio	Y
BiomRatio	C30Ts/C30H			0.161157908120694	ratio	Y
BiomRatio	C35 Homohopane Index			9.49282623219632E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.99852211924539	ratio	Y
BiomRatio	Gam/C30H			8.77100898767473E-02	ratio	Y
BiomRatio	Gam/C31HR			0.21095308129473	ratio	Y
BiomRatio	Ole/C30H			9.80220758270488E-03	ratio	Y
BiomRatio	Sterane/hopane			5.67936695604874E-02	ratio	Y
BiomRatio	Steranes/Terpanes			5.59749216080777E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			1.46270495587713E-02	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007660 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			28.9233082181004	ratio	Y
BiomRatio	% C27 abb 20(R+S)			22.0846810476909	ratio	Y
BiomRatio	% C28 aaa 20R			21.7768298865444	ratio	Y
BiomRatio	% C28 abb 20(R+S)			15.9232957999951	ratio	Y
BiomRatio	% C29 aaa 20R			49.2998618953551	ratio	Y
BiomRatio	% C29 abb 20(R+S)			61.992023152314	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			1.33825429768571E-02	ratio	Y
BiomRatio	25-Nor/C30H			1.22955447247783E-02	ratio	Y
BiomRatio	C19t/C23t			5.75182843684145E-02	ratio	Y
BiomRatio	C22t/C21t			0.667808219178082	ratio	Y
BiomRatio	C22t/C24t			0.379623621025308	ratio	Y
BiomRatio	C23t/C30H			1.07160932686675E-02	ratio	Y
BiomRatio	C24t/C23t			0.191025164249411	ratio	Y
BiomRatio	C24Tet/C23t			1.57939754555597	ratio	Y
BiomRatio	C24Tet/C26t			4.85186595582635	ratio	Y
BiomRatio	C24Tet/C30H			1.69249714064823E-02	ratio	Y
BiomRatio	C26t/C25t			1.86638237384506	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.169291838678946	ratio	Y
BiomRatio	C27 Dia/Ster			0.118455084391748	ratio	Y
BiomRatio	C28BNH/C30H			0.020791904281788	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			2.8070146459641	ratio	Y
BiomRatio	C29H/C30H			0.995047775417678	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			6.49135837915775E-02	ratio	Y
BiomRatio	C30DiaH/C30H			1.78349161057555E-02	ratio	Y
BiomRatio	C30Ts/C30H			0.133655599879383	ratio	Y
BiomRatio	C35 Homohopane Index			0.093503957906359	ratio	Y
BiomRatio	C35HS/C34HS			1.00464020748608	ratio	Y
BiomRatio	Gam/C30H			9.89182949363238E-02	ratio	Y
BiomRatio	Gam/C31HR			0.234415087687266	ratio	Y
BiomRatio	Ole/C30H			1.56616759188781E-02	ratio	Y
BiomRatio	Sterane/hopane			5.57656680069541E-02	ratio	Y
BiomRatio	Steranes/Terpanes			5.50080926116535E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			1.37720716958667E-02	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007660_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			85.52	percent	Y
Inorg	Hydrogen			8.69812624254474	percent	Y
Inorg	Nitrogen			0.590699742930591	percent	Y
Inorg	Sulphur			6.79382375338309	percent	Y

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007661**

Beach W16b: Tractor Beach Visit: 2

Comments:

Location: Upper Intertidal

Local Date Time: 21/09/2015 12:53:33 PM

Type: Asphaltite

Family: Asphaltite

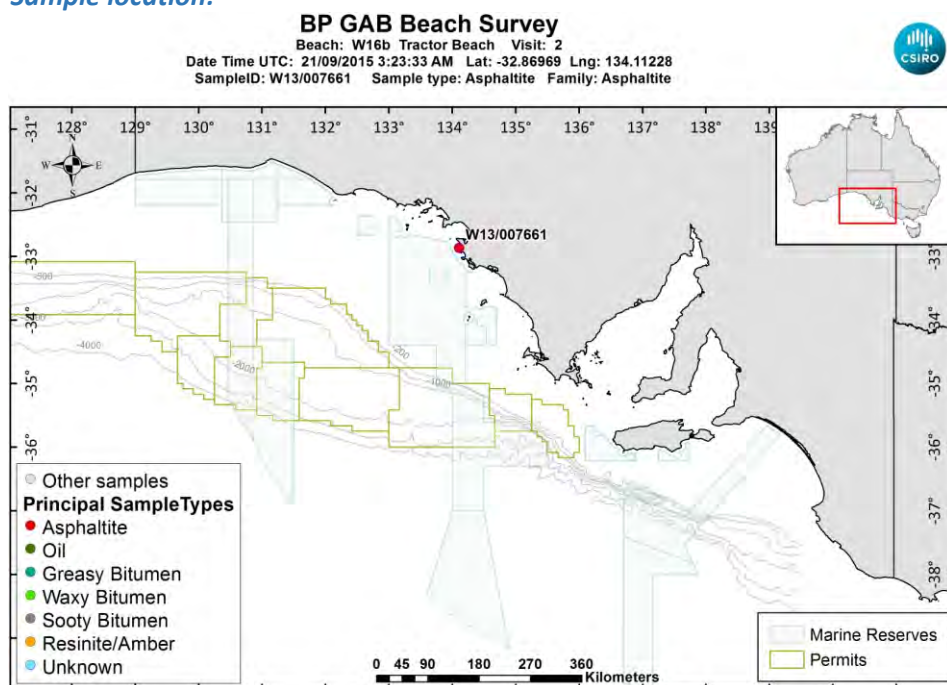
Size (cm): 4.8

Latitude (Y): -32.869687

Weight (gm): 19.93847

Longitude (X): 134.112277

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007661_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007661_146A1764.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007661_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007661 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			43.1322126093175	ratio	Y
BiomRatio	% C27 abb 20(R+S)			40.7794573506519	ratio	Y
BiomRatio	% C28 aaa 20R			25.8818785022625	ratio	Y
BiomRatio	% C28 abb 20(R+S)			23.3593034723147	ratio	Y
BiomRatio	% C29 aaa 20R			30.98590888842	ratio	Y
BiomRatio	% C29 abb 20(R+S)			35.8612391770334	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.146757528625305	ratio	Y
BiomRatio	25-Nor/C30H			2.24933024186078E-02	ratio	Y
BiomRatio	C19t/C23t			0.158321236844207	ratio	Y
BiomRatio	C22t/C21t			0.305522941996895	ratio	Y
BiomRatio	C22t/C24t			0.232130562590178	ratio	Y
BiomRatio	C23t/C30H			0.102070606241817	ratio	Y
BiomRatio	C24t/C23t			0.460073322627826	ratio	Y
BiomRatio	C24Tet/C23t			0.760043299463164	ratio	Y
BiomRatio	C24Tet/C26t			1.81366214679611	ratio	Y
BiomRatio	C24Tet/C30H			7.75780803462359E-02	ratio	Y
BiomRatio	C26t/C25t			0.782222199371726	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.452029186633575	ratio	Y
BiomRatio	C27 Dia/Ster			0.476238442029485	ratio	Y
BiomRatio	C28BNH/C30H			4.60091299090411E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.879394712604241	ratio	Y
BiomRatio	C29H/C30H			0.695434567532622	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.160630591377927	ratio	Y
BiomRatio	C30DiaH/C30H			6.44432580117243E-02	ratio	Y
BiomRatio	C30Ts/C30H			9.49961497165635E-03	ratio	Y
BiomRatio	C35 Homohopane Index			6.74776431379827E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.826944426684027	ratio	Y
BiomRatio	Gam/C30H			6.13166423054356E-02	ratio	Y
BiomRatio	Gam/C31HR			0.20377947311622	ratio	Y
BiomRatio	Ole/C30H			3.41675754685074E-03	ratio	Y
BiomRatio	Sterane/hopane			0.364423426995748	ratio	Y
BiomRatio	Steranes/Terpanes			0.325398376847593	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.119930070107367	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007661 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			44.84386396258	ratio	Y
BiomRatio	% C27 abb 20(R+S)			40.5825958766356	ratio	Y
BiomRatio	% C28 aaa 20R			24.1339612639461	ratio	Y
BiomRatio	% C28 abb 20(R+S)			24.0810741774935	ratio	Y
BiomRatio	% C29 aaa 20R			31.0221747734739	ratio	Y
BiomRatio	% C29 abb 20(R+S)			35.3363299458709	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.136939942226573	ratio	Y
BiomRatio	25-Nor/C30H			0.024964453508129	ratio	Y
BiomRatio	C19t/C23t			0.193124040973749	ratio	Y
BiomRatio	C22t/C21t			0.358730509786575	ratio	Y
BiomRatio	C22t/C24t			0.251882910163833	ratio	Y
BiomRatio	C23t/C30H			8.44049786791057E-02	ratio	Y
BiomRatio	C24t/C23t			0.534110230995728	ratio	Y
BiomRatio	C24Tet/C23t			0.82124165387965	ratio	Y
BiomRatio	C24Tet/C26t			1.99880894702842	ratio	Y
BiomRatio	C24Tet/C30H			6.93168842861053E-02	ratio	Y
BiomRatio	C26t/C25t			0.800135681922807	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.446955870692767	ratio	Y
BiomRatio	C27 Dia/Ster			0.473580209919422	ratio	Y
BiomRatio	C28BNH/C30H			3.94063753359502E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.870726211139563	ratio	Y
BiomRatio	C29H/C30H			0.637959592862278	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.138771868725507	ratio	Y
BiomRatio	C30DiaH/C30H			7.08836602350444E-02	ratio	Y
BiomRatio	C30Ts/C30H			5.70074019312369E-03	ratio	Y
BiomRatio	C35 Homohopane Index			6.90428284645243E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.785085084029923	ratio	Y
BiomRatio	Gam/C30H			5.04476652728101E-02	ratio	Y
BiomRatio	Gam/C31HR			0.173910525134487	ratio	Y
BiomRatio	Ole/C30H			4.33628696502617E-03	ratio	Y
BiomRatio	Sterane/hopane			0.36002230899935	ratio	Y
BiomRatio	Steranes/Terpanes			0.324274990883583	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.110237665933974	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007661_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			85.53	percent	Y
Inorg	Hydrogen			9.60427335984096	percent	Y
Inorg	Nitrogen			0.683159383033419	percent	Y
Inorg	Sulphur			5.65224901381025	percent	Y

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007662**

Beach W16b: Tractor Beach Visit: 2

Comments:

Location: Shore Upper

Local Date Time: 21/09/2015 12:56:44 PM

Type: Asphaltite

Family: Asphaltite

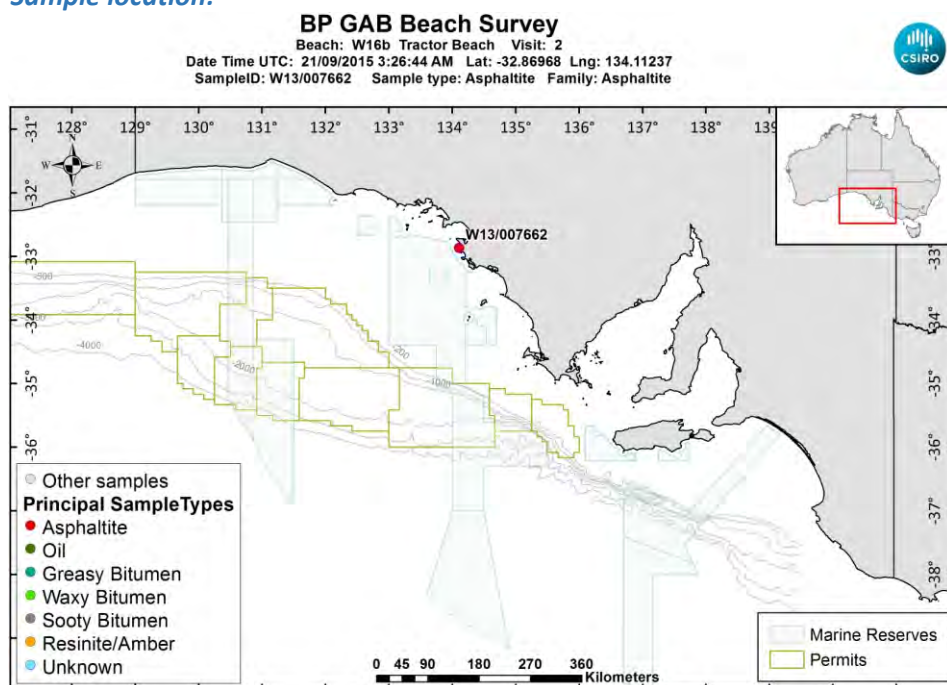
Size (cm): 1.4

Latitude (Y): -32.869683

Weight (gm): 0.8622

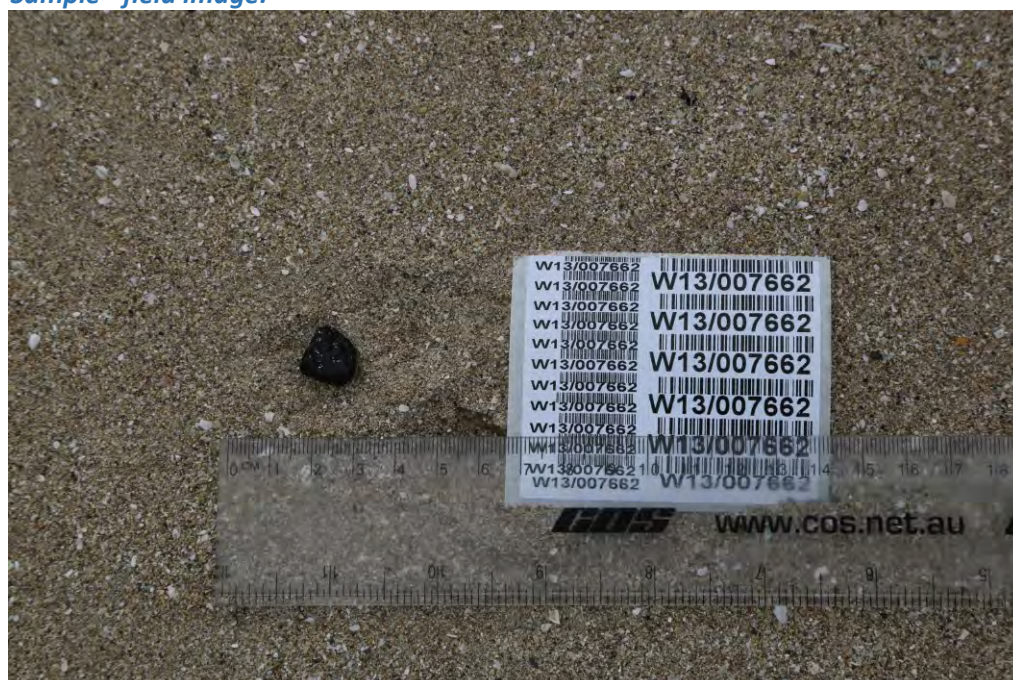
Longitude (X): 134.112370

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007662_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007662_146A1765.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB BCH1\Samples\W13_007662_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007662 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			30.9443538902759	ratio	Y
BiomRatio	% C27 abb 20(R+S)			22.5573321505924	ratio	Y
BiomRatio	% C28 aaa 20R			21.6939360802195	ratio	Y
BiomRatio	% C28 abb 20(R+S)			21.3296894246256	ratio	Y
BiomRatio	% C29 aaa 20R			47.3617100295046	ratio	Y
BiomRatio	% C29 abb 20(R+S)			56.112978424782	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			2.38140988688623E-02	ratio	Y
BiomRatio	25-Nor/C30H			1.35145864297438E-02	ratio	Y
BiomRatio	C19t/C23t			0.296049588306041	ratio	Y
BiomRatio	C22t/C21t			0.426080691642651	ratio	Y
BiomRatio	C22t/C24t			0.327681737588652	ratio	Y
BiomRatio	C23t/C30H			6.6785152799845E-03	ratio	Y
BiomRatio	C24t/C23t			0.417429919511518	ratio	Y
BiomRatio	C24Tet/C23t			2.58187621426589	ratio	Y
BiomRatio	C24Tet/C26t			2.55224290090996	ratio	Y
BiomRatio	C24Tet/C30H			1.72430997480033E-02	ratio	Y
BiomRatio	C26t/C25t			1.86071641283077	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.22710982375178	ratio	Y
BiomRatio	C27 Dia/Ster			0.168472115242793	ratio	Y
BiomRatio	C28BNH/C30H			2.21906629920107E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			2.48757158205468	ratio	Y
BiomRatio	C29H/C30H			0.961243727500018	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.053221137651796	ratio	Y
BiomRatio	C30DiaH/C30H			1.86231038073839E-02	ratio	Y
BiomRatio	C30Ts/C30H			0.156780138815989	ratio	Y
BiomRatio	C35 Homohopane Index			0.102188968110604	ratio	Y
BiomRatio	C35HS/C34HS			1.01036177760754	ratio	Y
BiomRatio	Gam/C30H			0.086958173859504	ratio	Y
BiomRatio	Gam/C31HR			0.206778886557708	ratio	Y
BiomRatio	Ole/C30H			9.56673062611158E-03	ratio	Y
BiomRatio	Sterane/hopane			6.04407284350617E-02	ratio	Y
BiomRatio	Steranes/Terpanes			5.95424725147977E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			1.50859694320006E-02	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007662 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			28.0463163073463	ratio	Y
BiomRatio	% C27 abb 20(R+S)			24.3067196000588	ratio	Y
BiomRatio	% C28 aaa 20R			23.4173211744241	ratio	Y
BiomRatio	% C28 abb 20(R+S)			21.2115865313924	ratio	Y
BiomRatio	% C29 aaa 20R			48.5363625182296	ratio	Y
BiomRatio	% C29 abb 20(R+S)			54.4816938685487	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			2.30984261516664E-02	ratio	Y
BiomRatio	25-Nor/C30H			1.95952830736832E-02	ratio	Y
BiomRatio	C19t/C23t			0.185623921794135	ratio	Y
BiomRatio	C22t/C21t			0.3998712998713	ratio	Y
BiomRatio	C22t/C24t			0.321818840954995	ratio	Y
BiomRatio	C23t/C30H			1.84835090394527E-02	ratio	Y
BiomRatio	C24t/C23t			0.740233850872149	ratio	Y
BiomRatio	C24Tet/C23t			1.25961280429366	ratio	Y
BiomRatio	C24Tet/C26t			1.50678712281024	ratio	Y
BiomRatio	C24Tet/C30H			2.32820646543722E-02	ratio	Y
BiomRatio	C26t/C25t			1.42887097831073	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.342483482891234	ratio	Y
BiomRatio	C27 Dia/Ster			0.284747145354784	ratio	Y
BiomRatio	C28BNH/C30H			1.49349020519281E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			2.24142520113726	ratio	Y
BiomRatio	C29H/C30H			0.916701977951586	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.147900812380537	ratio	Y
BiomRatio	C30DiaH/C30H			4.47352645653736E-02	ratio	Y
BiomRatio	C30Ts/C30H			0.119523857437832	ratio	Y
BiomRatio	C35 Homohopane Index			0.102328723916307	ratio	Y
BiomRatio	C35HS/C34HS			1.00177518258699	ratio	Y
BiomRatio	Gam/C30H			8.48682522968869E-02	ratio	Y
BiomRatio	Gam/C31HR			0.222710021960286	ratio	Y
BiomRatio	Ole/C30H			2.55438764563248E-02	ratio	Y
BiomRatio	Sterane/hopane			6.17417236758491E-02	ratio	Y
BiomRatio	Steranes/Terpanes			5.98641175258859E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			3.13644671894033E-02	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007662_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			85.56	percent	Y
Inorg	Hydrogen			9.65749960238569	percent	Y
Inorg	Nitrogen			0.402819537275064	percent	Y
Inorg	Sulphur			7.02352098554001	percent	Y

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007663**

Beach W16b: Tractor Beach Visit: 2

Comments:

Location: Upper Intertidal

Local Date Time: 21/09/2015 12:59:41 PM

Type: Asphaltite

Family: Asphaltite

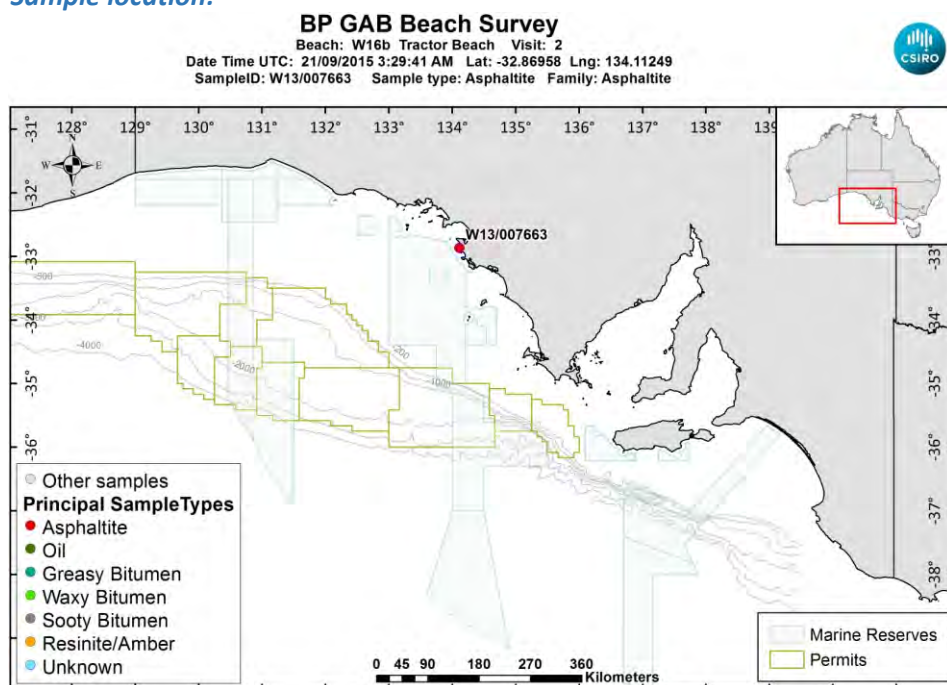
Size (cm): 1.9

Latitude (Y): -32.869583

Weight (gm): 1.00936

Longitude (X): 134.112488

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007663_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007663_146A1766.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007663_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007663 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			25.4542415542534	ratio	Y
BiomRatio	% C27 abb 20(R+S)			22.2894935830373	ratio	Y
BiomRatio	% C28 aaa 20R			23.3506705470563	ratio	Y
BiomRatio	% C28 abb 20(R+S)			21.9421454787776	ratio	Y
BiomRatio	% C29 aaa 20R			51.1950878986904	ratio	Y
BiomRatio	% C29 abb 20(R+S)			55.7683609381852	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			1.35168452525929E-02	ratio	Y
BiomRatio	25-Nor/C30H			1.23637424031327E-02	ratio	Y
BiomRatio	C19t/C23t			0.275380610554548	ratio	Y
BiomRatio	C22t/C21t			0.440721649484536	ratio	Y
BiomRatio	C22t/C24t			0.338491992082059	ratio	Y
BiomRatio	C23t/C30H			5.8678133519716E-03	ratio	Y
BiomRatio	C24t/C23t			0.438352922615761	ratio	Y
BiomRatio	C24Tet/C23t			2.98051589492782	ratio	Y
BiomRatio	C24Tet/C26t			3.91706406800746	ratio	Y
BiomRatio	C24Tet/C30H			1.74891109640211E-02	ratio	Y
BiomRatio	C26t/C25t			1.47786119197181	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.183318697110011	ratio	Y
BiomRatio	C27 Dia/Ster			0.124996767911554	ratio	Y
BiomRatio	C28BNH/C30H			2.28727614410094E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			2.50200215318602	ratio	Y
BiomRatio	C29H/C30H			0.948678735251779	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.073203885251239	ratio	Y
BiomRatio	C30DiaH/C30H			1.81098207301324E-02	ratio	Y
BiomRatio	C30Ts/C30H			0.145889475706225	ratio	Y
BiomRatio	C35 Homohopane Index			9.32168762607837E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.97950323461333	ratio	Y
BiomRatio	Gam/C30H			8.59625167212083E-02	ratio	Y
BiomRatio	Gam/C31HR			0.193581002552714	ratio	Y
BiomRatio	Ole/C30H			1.07497118629162E-02	ratio	Y
BiomRatio	Sterane/hopane			6.32851062400803E-02	ratio	Y
BiomRatio	Steranes/Terpanes			6.24114655674634E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.013998079754634	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007663 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			25.3121055651176	ratio	Y
BiomRatio	% C27 abb 20(R+S)			20.935179720846	ratio	Y
BiomRatio	% C28 aaa 20R			22.8043602983362	ratio	Y
BiomRatio	% C28 abb 20(R+S)			21.6878643089477	ratio	Y
BiomRatio	% C29 aaa 20R			51.8835341365462	ratio	Y
BiomRatio	% C29 abb 20(R+S)			57.3769559702063	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			1.29736136170033E-02	ratio	Y
BiomRatio	25-Nor/C30H			1.24127755033141E-02	ratio	Y
BiomRatio	C19t/C23t			0.241027837259101	ratio	Y
BiomRatio	C22t/C21t			0.484884177463683	ratio	Y
BiomRatio	C22t/C24t			0.372212176009644	ratio	Y
BiomRatio	C23t/C30H			5.93614688900143E-03	ratio	Y
BiomRatio	C24t/C23t			0.284197002141328	ratio	Y
BiomRatio	C24Tet/C23t			2.58749464668094	ratio	Y
BiomRatio	C24Tet/C26t			5.96426456071076	ratio	Y
BiomRatio	C24Tet/C30H			1.53597482972029E-02	ratio	Y
BiomRatio	C26t/C25t			1.37077131258457	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.164076960545543	ratio	Y
BiomRatio	C27 Dia/Ster			0.11138133019431	ratio	Y
BiomRatio	C28BNH/C30H			2.21424634577407E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			2.74069564891644	ratio	Y
BiomRatio	C29H/C30H			0.99347608559034	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			7.52893605884655E-02	ratio	Y
BiomRatio	C30DiaH/C30H			1.80397851496163E-02	ratio	Y
BiomRatio	C30Ts/C30H			0.150643391886368	ratio	Y
BiomRatio	C35 Homohopane Index			0.101588802689976	ratio	Y
BiomRatio	C35HS/C34HS			1.07642303574996	ratio	Y
BiomRatio	Gam/C30H			9.86620662163839E-02	ratio	Y
BiomRatio	Gam/C31HR			0.21373701903801	ratio	Y
BiomRatio	Ole/C30H			9.82375109570848E-03	ratio	Y
BiomRatio	Sterane/hopane			5.61896703211969E-02	ratio	Y
BiomRatio	Steranes/Terpanes			5.55303366738932E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			1.18733954590557E-02	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007663_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			85.19	percent	Y
Inorg	Hydrogen			9.69680497017893	percent	Y
Inorg	Nitrogen			0.422117309340188	percent	Y
Inorg	Sulphur			7.0646422906809	percent	Y

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007664**

Beach W16b: Tractor Beach Visit: 2

Comments:

Location: Mid Intertidal

Local Date Time: 21/09/2015 1:09:02 PM

Type: Asphaltite

Family: Asphaltite

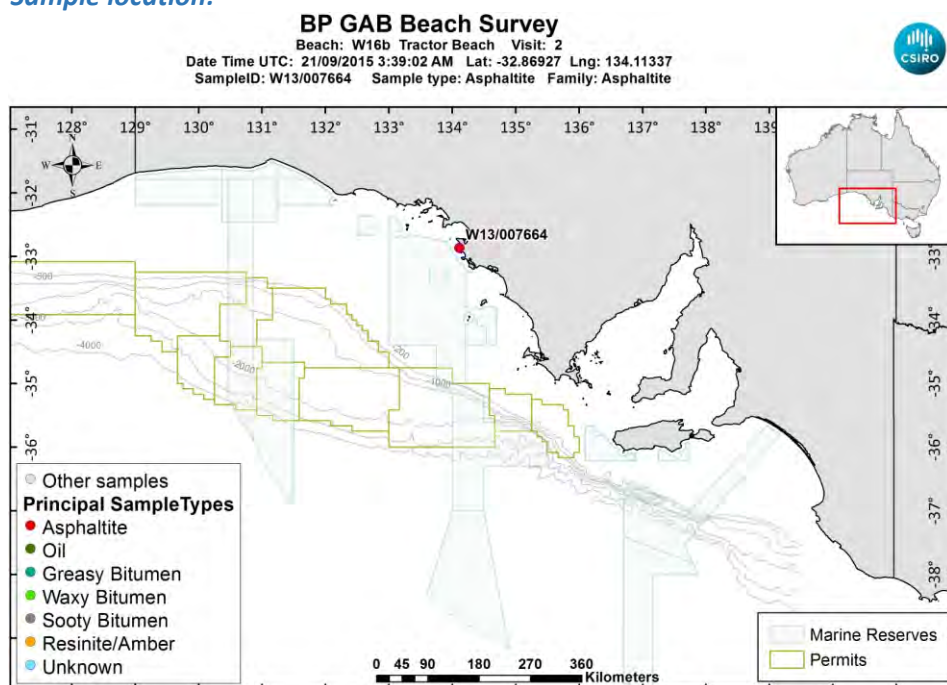
Size (cm): 6

Latitude (Y): -32.869267

Weight (gm): 31.53269

Longitude (X): 134.113373

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007664_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007664_146A1767.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB BCH1\Samples\W13_007664_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007664 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			24.2431825560004	ratio	Y
BiomRatio	% C27 abb 20(R+S)			21.0731241123298	ratio	Y
BiomRatio	% C28 aaa 20R			22.4028784763554	ratio	Y
BiomRatio	% C28 abb 20(R+S)			20.9954737116892	ratio	Y
BiomRatio	% C29 aaa 20R			53.3539389676442	ratio	Y
BiomRatio	% C29 abb 20(R+S)			57.931402175981	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.013875077688005	ratio	Y
BiomRatio	25-Nor/C30H			0.013027598764926	ratio	Y
BiomRatio	C19t/C23t			0.285138248847926	ratio	Y
BiomRatio	C22t/C21t			0.451782363977486	ratio	Y
BiomRatio	C22t/C24t			0.350611531741409	ratio	Y
BiomRatio	C23t/C30H			4.77652941114967E-03	ratio	Y
BiomRatio	C24t/C23t			0.395622119815668	ratio	Y
BiomRatio	C24Tet/C23t			3.60552995391705	ratio	Y
BiomRatio	C24Tet/C26t			6.15094339622642	ratio	Y
BiomRatio	C24Tet/C30H			1.72219198676659E-02	ratio	Y
BiomRatio	C26t/C25t			1.14080717488789	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.177640053817307	ratio	Y
BiomRatio	C27 Dia/Ster			0.119080743863662	ratio	Y
BiomRatio	C28BNH/C30H			2.06694955313586E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			2.74906567565298	ratio	Y
BiomRatio	C29H/C30H			1.03959071526327	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			5.74341483566651E-02	ratio	Y
BiomRatio	C30DiaH/C30H			1.91396854204144E-02	ratio	Y
BiomRatio	C30Ts/C30H			0.146408330531433	ratio	Y
BiomRatio	C35 Homohopane Index			0.100192083624497	ratio	Y
BiomRatio	C35HS/C34HS			1.00568941630022	ratio	Y
BiomRatio	Gam/C30H			0.120702568044908	ratio	Y
BiomRatio	Gam/C31HR			0.26229263153615	ratio	Y
BiomRatio	Ole/C30H			8.82447299967698E-03	ratio	Y
BiomRatio	Sterane/hopane			5.42099407923857E-02	ratio	Y
BiomRatio	Steranes/Terpanes			5.35688865203856E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			1.19669142601306E-02	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007664 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			24.8425371956556	ratio	Y
BiomRatio	% C27 abb 20(R+S)			19.9645307886861	ratio	Y
BiomRatio	% C28 aaa 20R			21.1753396748877	ratio	Y
BiomRatio	% C28 abb 20(R+S)			20.7308471297145	ratio	Y
BiomRatio	% C29 aaa 20R			53.9821231294567	ratio	Y
BiomRatio	% C29 abb 20(R+S)			59.3046220815993	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			1.20307510144464E-02	ratio	Y
BiomRatio	25-Nor/C30H			1.13123032910554E-02	ratio	Y
BiomRatio	C19t/C23t			0.194874163010852	ratio	Y
BiomRatio	C22t/C21t			0.451581027667984	ratio	Y
BiomRatio	C22t/C24t			0.33068017366136	ratio	Y
BiomRatio	C23t/C30H			4.84749040799058E-03	ratio	Y
BiomRatio	C24t/C23t			0.319094897252367	ratio	Y
BiomRatio	C24Tet/C23t			2.68829369660586	ratio	Y
BiomRatio	C24Tet/C26t			5.43050373134328	ratio	Y
BiomRatio	C24Tet/C30H			1.30314779081585E-02	ratio	Y
BiomRatio	C26t/C25t			1.26788882318155	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.166042938743352	ratio	Y
BiomRatio	C27 Dia/Ster			0.111961112439238	ratio	Y
BiomRatio	C28BNH/C30H			1.78453906869088E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			2.97049916721345	ratio	Y
BiomRatio	C29H/C30H			1.00612120181051	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			6.21761928310162E-02	ratio	Y
BiomRatio	C30DiaH/C30H			1.41921446255647E-02	ratio	Y
BiomRatio	C30Ts/C30H			0.143003765171492	ratio	Y
BiomRatio	C35 Homohopane Index			0.10187236794888	ratio	Y
BiomRatio	C35HS/C34HS			1.02882510494733	ratio	Y
BiomRatio	Gam/C30H			0.103682122822491	ratio	Y
BiomRatio	Gam/C31HR			0.233886014810551	ratio	Y
BiomRatio	Ole/C30H			8.56341471058322E-03	ratio	Y
BiomRatio	Sterane/hopane			5.09437369268588E-02	ratio	Y
BiomRatio	Steranes/Terpanes			5.04448461336777E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			9.88982683898008E-03	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007664_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			84.62	percent	Y
Inorg	Hydrogen			9.26854413518887	percent	Y
Inorg	Nitrogen			0.59452236503856	percent	Y
Inorg	Sulphur			6.87275361282	percent	Y

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007665**

Beach W16b: Tractor Beach Visit: 2

Comments:

Location: Mid Intertidal

Local Date Time: 21/09/2015 1:26:11 PM

Type: Asphaltite

Family: Asphaltite

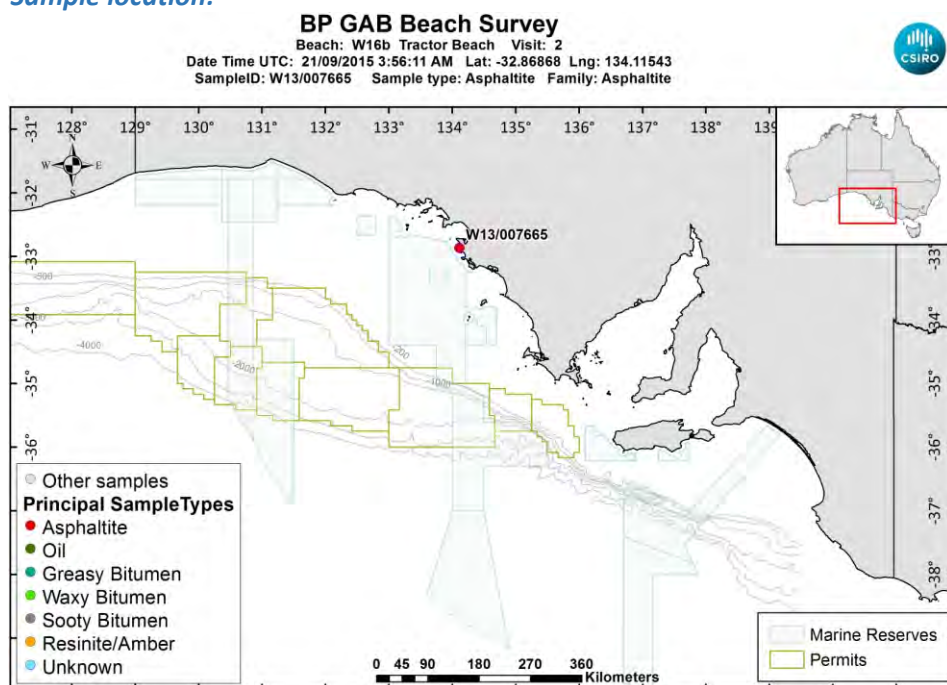
Size (cm): 4.2

Latitude (Y): -32.868685

Weight (gm): 16.81083

Longitude (X): 134.115428

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007665_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007665_146A1768.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007665_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007665 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			31.4810719818895	ratio	Y
BiomRatio	% C27 abb 20(R+S)			31.4213826349298	ratio	Y
BiomRatio	% C28 aaa 20R			28.0508999291003	ratio	Y
BiomRatio	% C28 abb 20(R+S)			30.3733801440826	ratio	Y
BiomRatio	% C29 aaa 20R			40.4680280890103	ratio	Y
BiomRatio	% C29 abb 20(R+S)			38.2052372209875	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			2.69836864426438E-02	ratio	Y
BiomRatio	25-Nor/C30H			4.17554873295397E-02	ratio	Y
BiomRatio	C19t/C23t			1.12740163777144E-02	ratio	Y
BiomRatio	C22t/C21t			0.470669590816589	ratio	Y
BiomRatio	C22t/C24t			7.40339029404407E-02	ratio	Y
BiomRatio	C23t/C30H			6.32191678192598E-02	ratio	Y
BiomRatio	C24t/C23t			0.689865391438951	ratio	Y
BiomRatio	C24Tet/C23t			1.94710635008946	ratio	Y
BiomRatio	C24Tet/C26t			2.04464676687481	ratio	Y
BiomRatio	C24Tet/C30H			0.123094443108252	ratio	Y
BiomRatio	C26t/C25t			0.830354088345425	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.41984246788293	ratio	Y
BiomRatio	C27 Dia/Ster			0.39173602985186	ratio	Y
BiomRatio	C28BNH/C30H			2.93871104877202E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			1.21589930223237	ratio	Y
BiomRatio	C29H/C30H			0.87896304497936	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			9.03355437424861E-02	ratio	Y
BiomRatio	C30DiaH/C30H			2.26806887597244E-02	ratio	Y
BiomRatio	C30Ts/C30H			9.01146575220945E-02	ratio	Y
BiomRatio	C35 Homohopane Index			7.59255383470902E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.904113410364057	ratio	Y
BiomRatio	Gam/C30H			6.05724899611049E-02	ratio	Y
BiomRatio	Gam/C31HR			0.169097181231214	ratio	Y
BiomRatio	Ole/C30H			8.35100936529813E-02	ratio	Y
BiomRatio	Sterane/hopane			0.378671766040414	ratio	Y
BiomRatio	Steranes/Terpanes			0.33184547445095	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.141108724375225	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007665 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			34.419526745603	ratio	Y
BiomRatio	% C27 abb 20(R+S)			30.5056298291694	ratio	Y
BiomRatio	% C28 aaa 20R			29.1100562012332	ratio	Y
BiomRatio	% C28 abb 20(R+S)			29.5535314804469	ratio	Y
BiomRatio	% C29 aaa 20R			36.4704170531638	ratio	Y
BiomRatio	% C29 abb 20(R+S)			39.9408386903837	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			1.95308222792832E-02	ratio	Y
BiomRatio	25-Nor/C30H			4.09338481807179E-02	ratio	Y
BiomRatio	C19t/C23t			8.98775753956405E-03	ratio	Y
BiomRatio	C22t/C21t			0.46583850931677	ratio	Y
BiomRatio	C22t/C24t			7.65543868992145E-02	ratio	Y
BiomRatio	C23t/C30H			4.48393868960272E-02	ratio	Y
BiomRatio	C24t/C23t			0.672827709764109	ratio	Y
BiomRatio	C24Tet/C23t			1.55715138847417	ratio	Y
BiomRatio	C24Tet/C26t			1.45785692320595	ratio	Y
BiomRatio	C24Tet/C30H			6.98217135634794E-02	ratio	Y
BiomRatio	C26t/C25t			1.02713489921323	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.348243680570279	ratio	Y
BiomRatio	C27 Dia/Ster			0.296482398369083	ratio	Y
BiomRatio	C28BNH/C30H			2.86964042801598E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			1.30929401930238	ratio	Y
BiomRatio	C29H/C30H			0.871256466833046	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.115021344826039	ratio	Y
BiomRatio	C30DiaH/C30H			3.34293762920277E-02	ratio	Y
BiomRatio	C30Ts/C30H			9.28037403198338E-02	ratio	Y
BiomRatio	C35 Homohopane Index			7.61239421720733E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.926268802739391	ratio	Y
BiomRatio	Gam/C30H			0.064569252685811	ratio	Y
BiomRatio	Gam/C31HR			0.183309576752761	ratio	Y
BiomRatio	Ole/C30H			8.33391351849273E-02	ratio	Y
BiomRatio	Sterane/hopane			0.341783529022656	ratio	Y
BiomRatio	Steranes/Terpanes			0.309010696992796	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.106057273579185	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007665_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			82.92	percent	Y
Inorg	Hydrogen			9.04606103379722	percent	Y
Inorg	Nitrogen			0.652523136246787	percent	Y
Inorg	Sulphur			4.90890985308421	percent	Y

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007666**

Beach W16b: Tractor Beach Visit: 2

Comments:

Location: Upper Intertidal

Local Date Time: 21/09/2015 1:31:21 PM

Type: Asphaltite

Family: Asphaltite

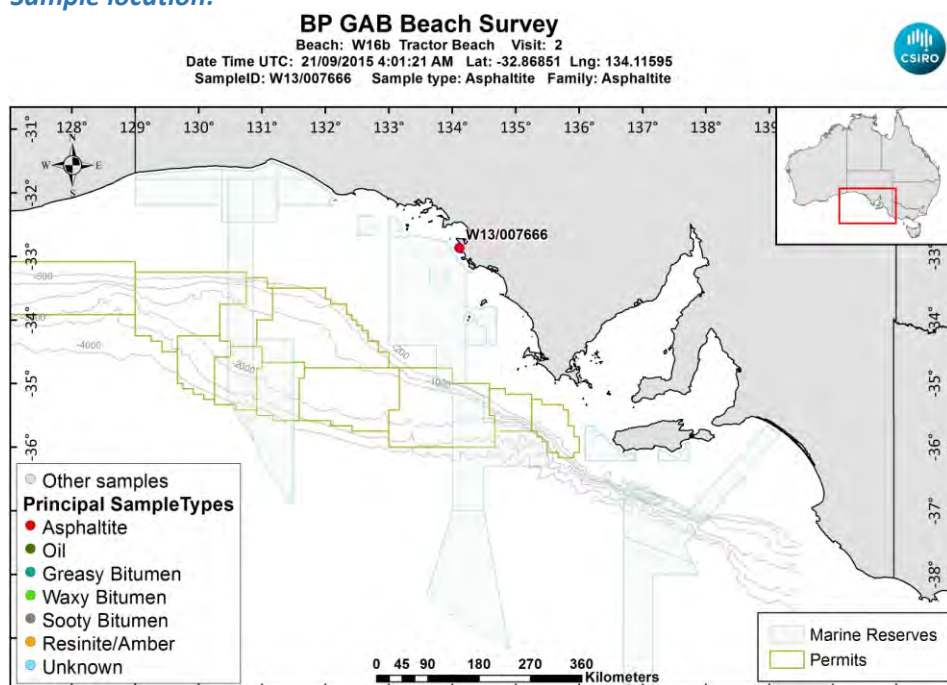
Size (cm): 4.6

Latitude (Y): -32.868510

Weight (gm): 12.6

Longitude (X): 134.115945

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007666_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007666_146A1769.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007666_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007666 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			27.955360923192	ratio	Y
BiomRatio	% C27 abb 20(R+S)			22.3419129497429	ratio	Y
BiomRatio	% C28 aaa 20R			22.8915886059715	ratio	Y
BiomRatio	% C28 abb 20(R+S)			23.5902286429904	ratio	Y
BiomRatio	% C29 aaa 20R			49.1530504708366	ratio	Y
BiomRatio	% C29 abb 20(R+S)			54.0678584072667	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			1.54364892157455E-02	ratio	Y
BiomRatio	25-Nor/C30H			0.012299496077219	ratio	Y
BiomRatio	C19t/C23t			0.205001246749546	ratio	Y
BiomRatio	C22t/C21t			0.466030989272944	ratio	Y
BiomRatio	C22t/C24t			0.241780892507472	ratio	Y
BiomRatio	C23t/C30H			8.99340383340114E-03	ratio	Y
BiomRatio	C24t/C23t			0.345634595518826	ratio	Y
BiomRatio	C24Tet/C23t			2.40209453923699	ratio	Y
BiomRatio	C24Tet/C26t			3.84809404245606	ratio	Y
BiomRatio	C24Tet/C30H			2.16030062373659E-02	ratio	Y
BiomRatio	C26t/C25t			1.29672931774456	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.207116955524581	ratio	Y
BiomRatio	C27 Dia/Ster			0.148048030167709	ratio	Y
BiomRatio	C28BNH/C30H			2.37160861249844E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			2.4200192046621	ratio	Y
BiomRatio	C29H/C30H			1.02177471800507	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			9.47037495593412E-02	ratio	Y
BiomRatio	C30DiaH/C30H			0.018701525864085	ratio	Y
BiomRatio	C30Ts/C30H			0.14867996578579	ratio	Y
BiomRatio	C35 Homohopane Index			0.104210989240855	ratio	Y
BiomRatio	C35HS/C34HS			1.01059754607003	ratio	Y
BiomRatio	Gam/C30H			0.102278384499809	ratio	Y
BiomRatio	Gam/C31HR			0.230348817242161	ratio	Y
BiomRatio	Ole/C30H			1.46640568186551E-02	ratio	Y
BiomRatio	Sterane/hopane			6.94049302576938E-02	ratio	Y
BiomRatio	Steranes/Terpanes			6.82723321124963E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			1.65894163880505E-02	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007666 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			25.014314701059	ratio	Y
BiomRatio	% C27 abb 20(R+S)			21.8581468286052	ratio	Y
BiomRatio	% C28 aaa 20R			22.8929593907218	ratio	Y
BiomRatio	% C28 abb 20(R+S)			22.7075244551456	ratio	Y
BiomRatio	% C29 aaa 20R			52.0927259082191	ratio	Y
BiomRatio	% C29 abb 20(R+S)			55.4343287162492	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			1.20674624463519E-02	ratio	Y
BiomRatio	25-Nor/C30H			1.21456524689252E-02	ratio	Y
BiomRatio	C19t/C23t			0.20353982300885	ratio	Y
BiomRatio	C22t/C21t			0.440366972477064	ratio	Y
BiomRatio	C22t/C24t			0.279340446168768	ratio	Y
BiomRatio	C23t/C30H			5.5260304151736E-03	ratio	Y
BiomRatio	C24t/C23t			0.342146017699115	ratio	Y
BiomRatio	C24Tet/C23t			2.96493362831858	ratio	Y
BiomRatio	C24Tet/C26t			4.33635334088335	ratio	Y
BiomRatio	C24Tet/C30H			1.63843134090595E-02	ratio	Y
BiomRatio	C26t/C25t			1.43543892243381	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.173346763803322	ratio	Y
BiomRatio	C27 Dia/Ster			0.122588607542513	ratio	Y
BiomRatio	C28BNH/C30H			0.022516128795631	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			2.53609462645313	ratio	Y
BiomRatio	C29H/C30H			0.986395817821937	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			8.07408584747708E-02	ratio	Y
BiomRatio	C30DiaH/C30H			1.74552874452746E-02	ratio	Y
BiomRatio	C30Ts/C30H			0.14666598202573	ratio	Y
BiomRatio	C35 Homohopane Index			0.107246462361892	ratio	Y
BiomRatio	C35HS/C34HS			1.0219574071626	ratio	Y
BiomRatio	Gam/C30H			0.101908192095576	ratio	Y
BiomRatio	Gam/C31HR			0.222276295070645	ratio	Y
BiomRatio	Ole/C30H			1.09084084910147E-02	ratio	Y
BiomRatio	Sterane/hopane			7.03366862654416E-02	ratio	Y
BiomRatio	Steranes/Terpanes			6.94675048234017E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			1.25120578931036E-02	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007666_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			83.38	percent	Y
Inorg	Hydrogen			8.41804413518887	percent	Y
Inorg	Nitrogen			0.552979520137104	percent	Y
Inorg	Sulphur			6.66391477031351	percent	Y

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007667**

Beach W16b: Tractor Beach Visit: 2

Comments:

Location: Upper Intertidal

Local Date Time: 21/09/2015 1:37:37 PM

Type: Asphaltite

Family: Asphaltite

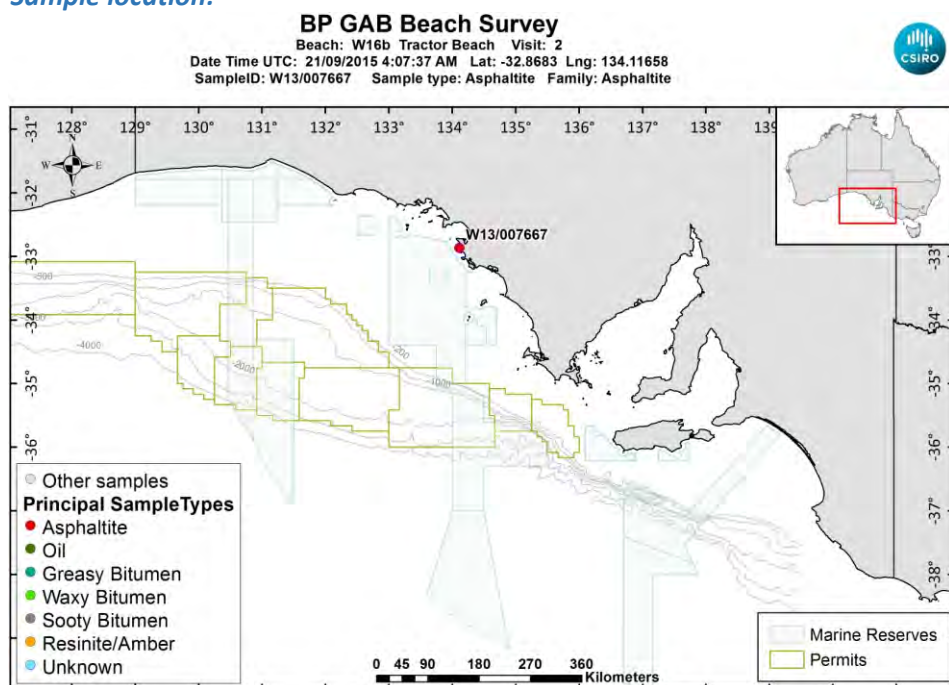
Size (cm): 2.5

Latitude (Y): -32.868305

Weight (gm): 4.4

Longitude (X): 134.116580

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007667_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007667_146A1770.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007667_Photo03.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007667_DISS_GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			20.4422442244224	ratio	Y
BiomRatio	% C27 abb 20(R+S)			17.5485079619965	ratio	Y
BiomRatio	% C28 aaa 20R			22.2838283828383	ratio	Y
BiomRatio	% C28 abb 20(R+S)			22.6067175163923	ratio	Y
BiomRatio	% C29 aaa 20R			57.2739273927393	ratio	Y
BiomRatio	% C29 abb 20(R+S)			59.8447745216111	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			1.13470811531753E-02	ratio	Y
BiomRatio	25-Nor/C30H			1.22344630607197E-02	ratio	Y
BiomRatio	C19t/C23t			3.93835616438356E-02	ratio	Y
BiomRatio	C22t/C21t			0.571428571428571	ratio	Y
BiomRatio	C22t/C24t			0.389380530973451	ratio	Y
BiomRatio	C23t/C30H			7.44651008594089E-03	ratio	Y
BiomRatio	C24t/C23t			0.193493150684932	ratio	Y
BiomRatio	C24Tet/C23t			1.81763698630137	ratio	Y
BiomRatio	C24Tet/C26t			6.03125	ratio	Y
BiomRatio	C24Tet/C30H			1.35350521510723E-02	ratio	Y
BiomRatio	C26t/C25t			1.25266903914591	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.16991057338243	ratio	Y
BiomRatio	C27 Dia/Ster			0.123852859224418	ratio	Y
BiomRatio	C28BNH/C30H			1.28975084793308E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			3.41024858929388	ratio	Y
BiomRatio	C29H/C30H			0.974613010991253	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			8.31724022118533E-02	ratio	Y
BiomRatio	C30DiaH/C30H			1.48993956085992E-02	ratio	Y
BiomRatio	C30Ts/C30H			0.159181903960421	ratio	Y
BiomRatio	C35 Homohopane Index			0.105525429895329	ratio	Y
BiomRatio	C35HS/C34HS			1.02788538498479	ratio	Y
BiomRatio	Gam/C30H			0.105519853109938	ratio	Y
BiomRatio	Gam/C31HR			0.224923557790311	ratio	Y
BiomRatio	Ole/C30H			1.04047127228215E-02	ratio	Y
BiomRatio	Sterane/hopane			5.84584833064416E-02	ratio	Y
BiomRatio	Steranes/Terpanes			5.80026094018346E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			7.85954130871594E-03	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007667 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retention Time:	Target Response:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			24.5458316644733	ratio	Y
BiomRatio	% C27 abb 20(R+S)			20.8177747256678	ratio	Y
BiomRatio	% C28 aaa 20R			22.3729759111976	ratio	Y
BiomRatio	% C28 abb 20(R+S)			22.6338755597522	ratio	Y
BiomRatio	% C29 aaa 20R			53.0811924243291	ratio	Y
BiomRatio	% C29 abb 20(R+S)			56.54834971458	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			1.07856981168684E-02	ratio	Y
BiomRatio	25-Nor/C30H			1.13177332957429E-02	ratio	Y
BiomRatio	C19t/C23t			0.133340554592721	ratio	Y
BiomRatio	C22t/C21t			0.480528052805281	ratio	Y
BiomRatio	C22t/C24t			0.382553862322648	ratio	Y
BiomRatio	C23t/C30H			6.94070106193027E-03	ratio	Y
BiomRatio	C24t/C23t			0.206130849220104	ratio	Y
BiomRatio	C24Tet/C23t			2.3400129982669	ratio	Y
BiomRatio	C24Tet/C26t			7.93352919573999	ratio	Y
BiomRatio	C24Tet/C30H			1.62413307020017E-02	ratio	Y
BiomRatio	C26t/C25t			1.05420054200542	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.164459646039915	ratio	Y
BiomRatio	C27 Dia/Ster			0.117303431142147	ratio	Y
BiomRatio	C28BNH/C30H			2.13897190113711E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			2.71634939179438	ratio	Y
BiomRatio	C29H/C30H			1.00481759233155	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			8.78564028647358E-02	ratio	Y
BiomRatio	C30DiaH/C30H			1.80073301381449E-02	ratio	Y
BiomRatio	C30Ts/C30H			0.151609059298938	ratio	Y
BiomRatio	C35 Homohopane Index			0.102779044164516	ratio	Y
BiomRatio	C35HS/C34HS			1.04236873922774	ratio	Y
BiomRatio	Gam/C30H			9.48053754346396E-02	ratio	Y
BiomRatio	Gam/C31HR			0.216576557390564	ratio	Y
BiomRatio	Ole/C30H			9.48783009115685E-03	ratio	Y
BiomRatio	Sterane/hopane			6.78039369140991E-02	ratio	Y
BiomRatio	Steranes/Terpanes			6.71134755059876E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			1.02879697840992E-02	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007667_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			84.45	percent	Y
Inorg	Hydrogen			8.51286282306163	percent	Y
Inorg	Nitrogen			0.553726049700086	percent	Y
Inorg	Sulphur			6.75594011170155	percent	Y

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007668**

Beach W16b: Tractor Beach Visit: 2

Comments:

Location: Mid Intertidal

Local Date Time: 21/09/2015 1:46:02 PM

Type: Asphaltite

Family: Asphaltite

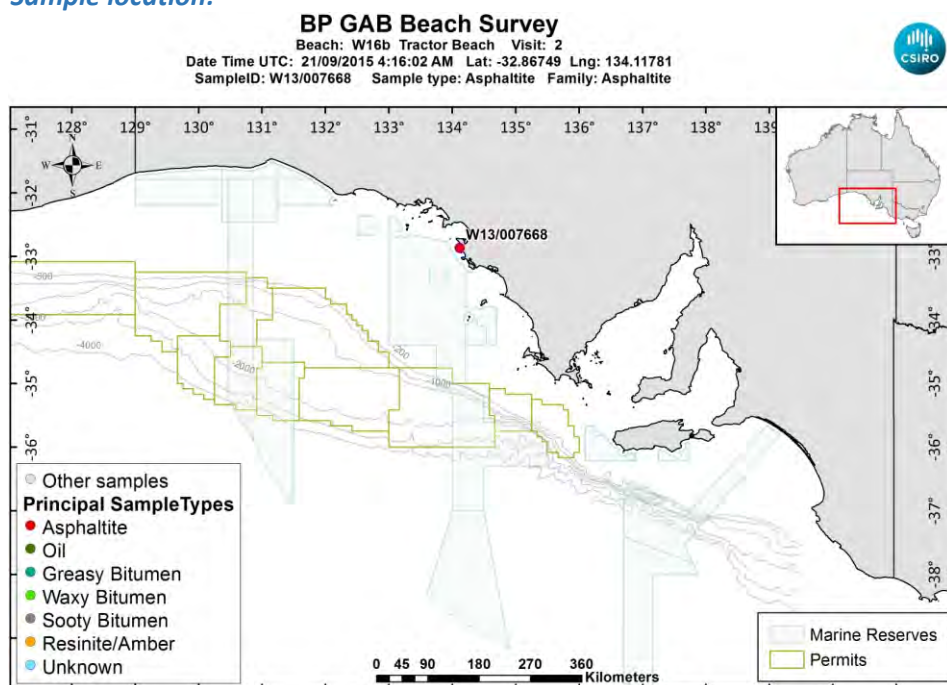
Size (cm): 5.4

Latitude (Y): -32.867492

Weight (gm): 24.5

Longitude (X): 134.117808

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007668_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007668_146A1771.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007668_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007668 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			37.4961921120005	ratio	Y
BiomRatio	% C27 abb 20(R+S)			37.265848155519	ratio	Y
BiomRatio	% C28 aaa 20R			26.9036430724216	ratio	Y
BiomRatio	% C28 abb 20(R+S)			25.9799557245296	ratio	Y
BiomRatio	% C29 aaa 20R			35.6001648155778	ratio	Y
BiomRatio	% C29 abb 20(R+S)			36.7541961199514	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.110057875926948	ratio	Y
BiomRatio	25-Nor/C30H			2.85909311730932E-02	ratio	Y
BiomRatio	C19t/C23t			0.234291359657409	ratio	Y
BiomRatio	C22t/C21t			0.345869398488003	ratio	Y
BiomRatio	C22t/C24t			0.284184940396258	ratio	Y
BiomRatio	C23t/C30H			8.67977050181717E-02	ratio	Y
BiomRatio	C24t/C23t			0.524659141003842	ratio	Y
BiomRatio	C24Tet/C23t			0.768829901127275	ratio	Y
BiomRatio	C24Tet/C26t			1.73990344360715	ratio	Y
BiomRatio	C24Tet/C30H			6.67326709671953E-02	ratio	Y
BiomRatio	C26t/C25t			0.757249333917912	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.457872200774769	ratio	Y
BiomRatio	C27 Dia/Ster			0.464355374316919	ratio	Y
BiomRatio	C28BNH/C30H			4.53697573214553E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.986270216273293	ratio	Y
BiomRatio	C29H/C30H			0.692042450467735	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.163412964039806	ratio	Y
BiomRatio	C30DiaH/C30H			8.32928493291271E-02	ratio	Y
BiomRatio	C30Ts/C30H			1.49941135916247E-02	ratio	Y
BiomRatio	C35 Homohopane Index			7.67116129243372E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.839677963823209	ratio	Y
BiomRatio	Gam/C30H			5.61870149179285E-02	ratio	Y
BiomRatio	Gam/C31HR			0.168641070679665	ratio	Y
BiomRatio	Ole/C30H			7.59561911828914E-03	ratio	Y
BiomRatio	Sterane/hopane			0.427400307754924	ratio	Y
BiomRatio	Steranes/Terpanes			0.384475243248178	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.111645847842114	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007668 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			37.407450947984	ratio	Y
BiomRatio	% C27 abb 20(R+S)			37.0315208009352	ratio	Y
BiomRatio	% C28 aaa 20R			26.6429530029483	ratio	Y
BiomRatio	% C28 abb 20(R+S)			25.9488716423252	ratio	Y
BiomRatio	% C29 aaa 20R			35.9495960490677	ratio	Y
BiomRatio	% C29 abb 20(R+S)			37.0196075567397	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.103062749719275	ratio	Y
BiomRatio	25-Nor/C30H			2.16707870530377E-02	ratio	Y
BiomRatio	C19t/C23t			0.208876428269149	ratio	Y
BiomRatio	C22t/C21t			0.340182210501079	ratio	Y
BiomRatio	C22t/C24t			0.286452602783975	ratio	Y
BiomRatio	C23t/C30H			7.14822122580045E-02	ratio	Y
BiomRatio	C24t/C23t			0.524053110452814	ratio	Y
BiomRatio	C24Tet/C23t			0.857479898434194	ratio	Y
BiomRatio	C24Tet/C26t			1.77805322159577	ratio	Y
BiomRatio	C24Tet/C30H			6.12945601068452E-02	ratio	Y
BiomRatio	C26t/C25t			0.828141890357451	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.450020692588605	ratio	Y
BiomRatio	C27 Dia/Ster			0.454442030453435	ratio	Y
BiomRatio	C28BNH/C30H			3.92403464603373E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.999678294492426	ratio	Y
BiomRatio	C29H/C30H			0.667337348094627	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.159830140129632	ratio	Y
BiomRatio	C30DiaH/C30H			5.81450925555496E-02	ratio	Y
BiomRatio	C30Ts/C30H			1.98633125788879E-02	ratio	Y
BiomRatio	C35 Homohopane Index			7.68340300372645E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.898619523929632	ratio	Y
BiomRatio	Gam/C30H			5.97850542280156E-02	ratio	Y
BiomRatio	Gam/C31HR			0.196087575018324	ratio	Y
BiomRatio	Ole/C30H			7.09452637740521E-03	ratio	Y
BiomRatio	Sterane/hopane			0.380579619382573	ratio	Y
BiomRatio	Steranes/Terpanes			0.346166183941741	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			9.94130479441156E-02	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007668_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			84.45	percent	Y
Inorg	Hydrogen			8.39776739562624	percent	Y
Inorg	Nitrogen			0.67533588688946	percent	Y
Inorg	Sulphur			5.38720490829937	percent	Y

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007830**

Beach W16b: Tractor Beach Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 9/10/2016 3:04:04 PM

Type: Asphaltite

Family: Asphaltite

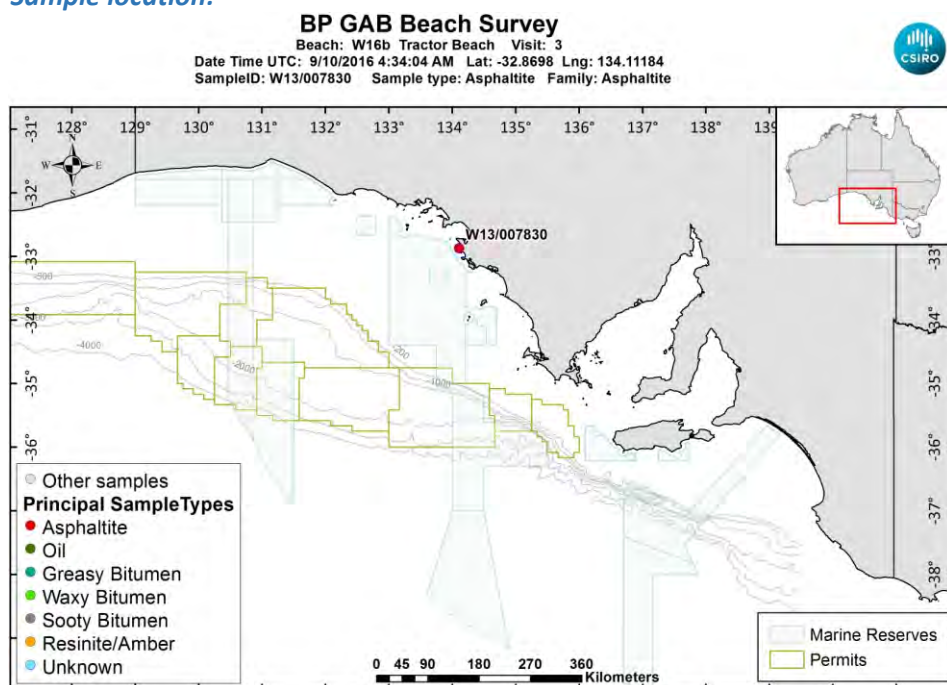
Size (cm): 5.1

Latitude (Y): -32.869802

Weight (gm): 19.39434

Longitude (X): 134.111842

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007830_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007830_146A6576.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007830_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007830 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			36.6454384141404	ratio	Y
BiomRatio	% C27 abb 20(R+S)			36.788090723318	ratio	Y
BiomRatio	% C28 aaa 20R			27.2699778146576	ratio	Y
BiomRatio	% C28 abb 20(R+S)			27.8945320576014	ratio	Y
BiomRatio	% C29 aaa 20R			36.0845837712019	ratio	Y
BiomRatio	% C29 abb 20(R+S)			35.3173772190806	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.117273639125946	ratio	Y
BiomRatio	25-Nor/C30H			2.84201919977188E-02	ratio	Y
BiomRatio	C19t/C23t			0.248430121161547	ratio	Y
BiomRatio	C22t/C21t			0.345222885779085	ratio	Y
BiomRatio	C22t/C24t			0.278925826495053	ratio	Y
BiomRatio	C23t/C30H			6.76625725574608E-02	ratio	Y
BiomRatio	C24t/C23t			0.5825940412201	ratio	Y
BiomRatio	C24Tet/C23t			0.934829632599402	ratio	Y
BiomRatio	C24Tet/C26t			1.46559253344637	ratio	Y
BiomRatio	C24Tet/C30H			6.32529778446215E-02	ratio	Y
BiomRatio	C26t/C25t			1.03803974675573	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.463539966441436	ratio	Y
BiomRatio	C27 Dia/Ster			0.472391565055903	ratio	Y
BiomRatio	C28BNH/C30H			5.40183632437357E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.960022021384622	ratio	Y
BiomRatio	C29H/C30H			0.695691911605598	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.170023149258812	ratio	Y
BiomRatio	C30DiaH/C30H			9.34173562556344E-02	ratio	Y
BiomRatio	C30Ts/C30H			3.91387608406414E-02	ratio	Y
BiomRatio	C35 Homohopane Index			7.89085388271476E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.868128687878837	ratio	Y
BiomRatio	Gam/C30H			8.08508235638496E-02	ratio	Y
BiomRatio	Gam/C31HR			0.241149991838325	ratio	Y
BiomRatio	Ole/C30H			3.60508301248547E-03	ratio	Y
BiomRatio	Sterane/hopane			0.277417180414272	ratio	Y
BiomRatio	Steranes/Terpanes			0.252718813488651	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			9.77306223651182E-02	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007830 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			37.4374469739591	ratio	Y
BiomRatio	% C27 abb 20(R+S)			38.2444513726642	ratio	Y
BiomRatio	% C28 aaa 20R			22.2399100858587	ratio	Y
BiomRatio	% C28 abb 20(R+S)			25.5454411160999	ratio	Y
BiomRatio	% C29 aaa 20R			40.3226429401821	ratio	Y
BiomRatio	% C29 abb 20(R+S)			36.2101075112359	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			6.46189081662547E-02	ratio	Y
BiomRatio	25-Nor/C30H			2.67916537328612E-02	ratio	Y
BiomRatio	C19t/C23t			0.262460560367749	ratio	Y
BiomRatio	C22t/C21t			0.381181989254643	ratio	Y
BiomRatio	C22t/C24t			0.290156903287952	ratio	Y
BiomRatio	C23t/C30H			7.54392249023702E-02	ratio	Y
BiomRatio	C24t/C23t			0.569228224005294	ratio	Y
BiomRatio	C24Tet/C23t			0.898297153256207	ratio	Y
BiomRatio	C24Tet/C26t			1.88455645741089	ratio	Y
BiomRatio	C24Tet/C30H			6.77668409736539E-02	ratio	Y
BiomRatio	C26t/C25t			0.784185109725182	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.442515327217324	ratio	Y
BiomRatio	C27 Dia/Ster			0.448464436649416	ratio	Y
BiomRatio	C28BNH/C30H			0.045689659629785	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.946806823253782	ratio	Y
BiomRatio	C29H/C30H			0.689070900194644	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.192830385867536	ratio	Y
BiomRatio	C30DiaH/C30H			9.09357216760358E-02	ratio	Y
BiomRatio	C30Ts/C30H			3.90419361964752E-02	ratio	Y
BiomRatio	C35 Homohopane Index			7.74439220295817E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.888356307501377	ratio	Y
BiomRatio	Gam/C30H			7.61493732846921E-02	ratio	Y
BiomRatio	Gam/C31HR			0.230013356024213	ratio	Y
BiomRatio	Ole/C30H			1.22399413623902E-03	ratio	Y
BiomRatio	Sterane/hopane			0.345414356548881	ratio	Y
BiomRatio	Steranes/Terpanes			0.313187145367052	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.10290081077261	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007830_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

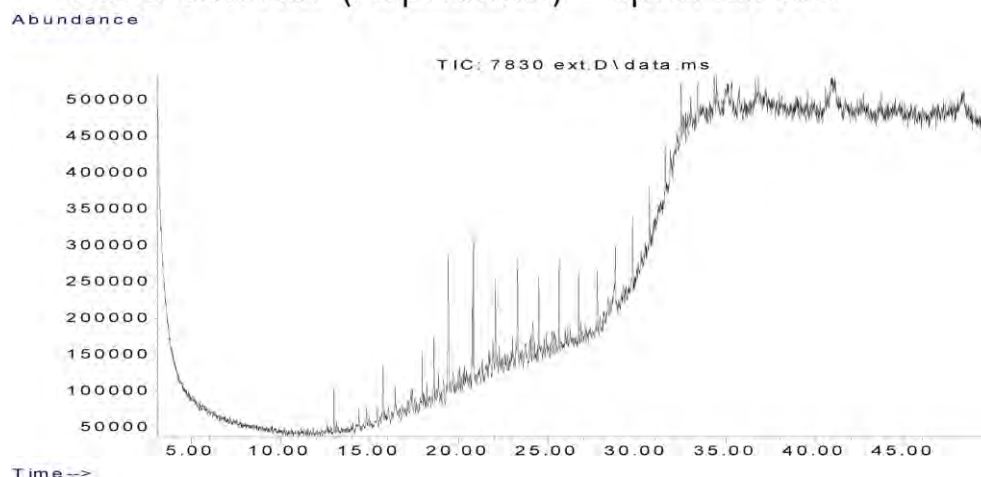
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			82.423207735912	percent	Y
Inorg	Hydrogen			7.10192445328032	percent	Y
Inorg	Nitrogen			0.71	percent	Y
Inorg	Sulphur			4.65882974946499	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007830_DISS_GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007830_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior (splitless)

Results for: GCMS with Full Scan

7830 exterior (Asphaltite) – splitless run



Data Sheet:

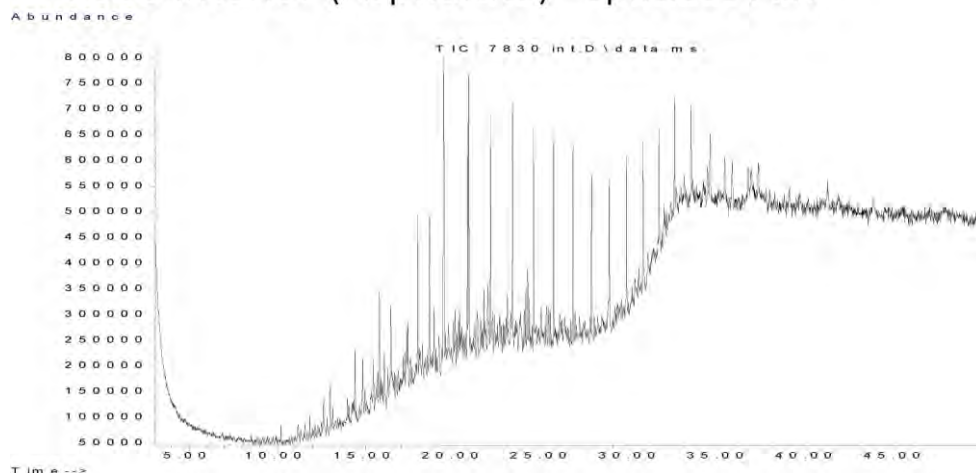
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane					U
Aliph	nC10					U
Aliph	nC11					U
Aliph	nC12		28941			Z
Aliph	nC13		75889			Z
Aliph	nC14		120728			Z
Aliph	nC15		178492			Z
Aliph	nC16	17.9470	304351			Z
Aliph	nC17	19.3870	142158			Z
Aliph	nC18	20.7560	460244			Z
Aliph	nC19	22.0580	550473			Z
Aliph	nC20	23.3040	600637			Z
Aliph	nC21	24.4890	573232			Z
Aliph	nC22	25.6290	472324			Z
Aliph	nC23	26.7230	403115			Z
Aliph	nC24	27.7690	349102			Z
Aliph	nC25	28.7780	425002			Z
Aliph	nC26	29.7510	332705			Z
Aliph	nC27	30.6850	277838			Z
Aliph	nC28	31.5900	300477			Z
Aliph	nC29	32.4650	275256			Z
Aliph	nC30	33.4020	378463			Z
Aliph	nC31	34.4700	420027			Z
Aliph	nC32	35.7230				U
Aliph	nC33	37.1970				U
Aliph	nC34	38.9660				U
Aliph	nC35	41.0780				U
Aliph	nC36	43.6950				U
Aliph	nC37	46.8640				U
Aliph	nC8					U
Aliph	nC9					U
Aliph	Norpristane	18.6080	581769			Z
Aliph	Phytane	20.7570	1059580			Z
Aliph	Pristane	19.4110	936609			Z

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007830 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007830_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior (splitless)

Results for: GCMS with Full Scan

7830 interior (Asphaltite) –splitless run



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Aliph	Botryococcane					U
Aliph	nC10					U
Aliph	nC11					U
Aliph	nC12		88981			Z
Aliph	nC13		197873			Z
Aliph	nC14		514840			Z
Aliph	nC15		734472			Z
Aliph	nC16	17.9470	1129222			Z
Aliph	nC17	19.3870	1061071			Z
Aliph	nC18	20.7560	1696012			Z
Aliph	nC19	22.0580	1842792			Z
Aliph	nC20	23.3040	2065422			Z
Aliph	nC21	24.4890	1815033			Z
Aliph	nC22	25.6290	1625788			Z
Aliph	nC23	26.7230	1471215			Z
Aliph	nC24	27.7690	1329425			Z
Aliph	nC25	28.7780	1158076			Z
Aliph	nC26	29.7510	1296890			Z
Aliph	nC27	30.6850	1091058			Z
Aliph	nC28	31.5900	962868			Z
Aliph	nC29	32.4650	941195			Z
Aliph	nC30	33.4020	947835			Z
Aliph	nC31	34.4700	734879			Z
Aliph	nC32	35.7230	588701			Z
Aliph	nC33	37.1970	718018			Z
Aliph	nC34	38.9660	592645			Z
Aliph	nC35	41.0780	470440			Z
Aliph	nC36	43.6950	528109			Z
Aliph	nC37	46.8640				U
Aliph	nC8					U
Aliph	nC9					U
Aliph	Norpristane	18.6080	2079660			Z
Aliph	Phytane	20.7570	2857587			Z
Aliph	Pristane	19.4110	2170682			Z

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007831**

Beach W16b: Tractor Beach Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 9/10/2016 3:09:03 PM

Type: Asphaltite

Family: Unknown

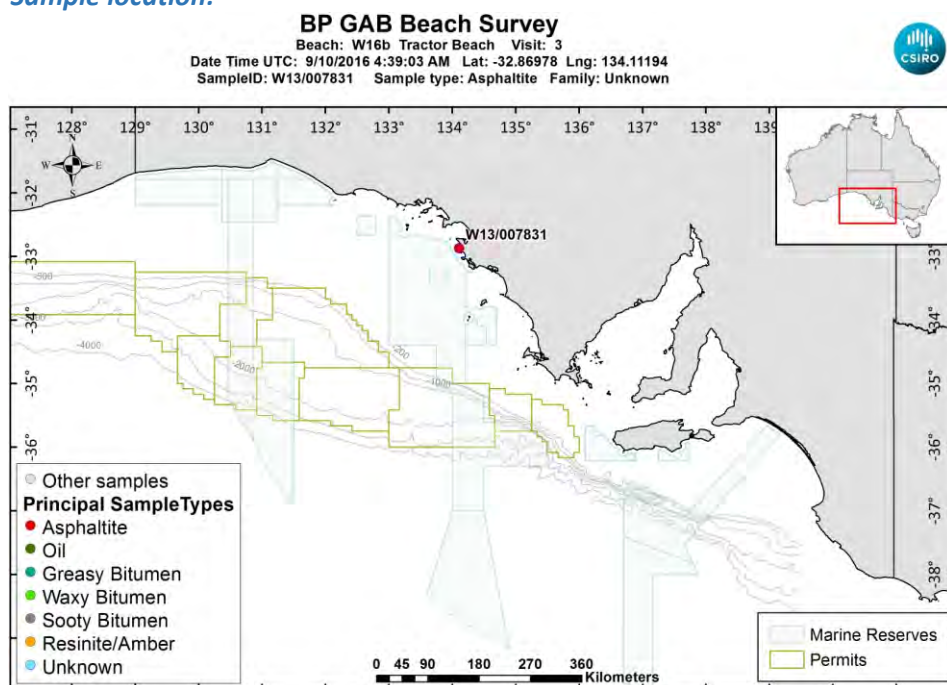
Size (cm): 2.5

Latitude (Y): -32.869777

Weight (gm): 5.27933

Longitude (X): 134.111945

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007831_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007831_146A6578.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007831_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007831 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			28.4991379734207	ratio	Y
BiomRatio	% C27 abb 20(R+S)			22.7597367879686	ratio	Y
BiomRatio	% C28 aaa 20R			24.6678382403555	ratio	Y
BiomRatio	% C28 abb 20(R+S)			22.2057333238525	ratio	Y
BiomRatio	% C29 aaa 20R			46.8330237862238	ratio	Y
BiomRatio	% C29 abb 20(R+S)			55.0345298881789	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.023488455596384	ratio	Y
BiomRatio	25-Nor/C30H			1.76953407082536E-02	ratio	Y
BiomRatio	C19t/C23t			0.364162066764297	ratio	Y
BiomRatio	C22t/C21t			0.38430465517803	ratio	Y
BiomRatio	C22t/C24t			0.301513060369064	ratio	Y
BiomRatio	C23t/C30H			6.83812199302759E-03	ratio	Y
BiomRatio	C24t/C23t			0.489730013893583	ratio	Y
BiomRatio	C24Tet/C23t			3.54967268721916	ratio	Y
BiomRatio	C24Tet/C26t			4.09758705389395	ratio	Y
BiomRatio	C24Tet/C30H			2.42730948705226E-02	ratio	Y
BiomRatio	C26t/C25t			1.51859572133845	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.194885963544886	ratio	Y
BiomRatio	C27 Dia/Ster			0.139994744791271	ratio	Y
BiomRatio	C28BNH/C30H			3.29338772698627E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			2.41806530545079	ratio	Y
BiomRatio	C29H/C30H			1.06402052951559	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.05861008325064	ratio	Y
BiomRatio	C30DiaH/C30H			2.07398982716694E-02	ratio	Y
BiomRatio	C30Ts/C30H			0.173423719714801	ratio	Y
BiomRatio	C35 Homohopane Index			9.60085039949949E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.950179645676411	ratio	Y
BiomRatio	Gam/C30H			8.36471456128063E-02	ratio	Y
BiomRatio	Gam/C31HR			0.20298631898767	ratio	Y
BiomRatio	Ole/C30H			4.08534415842689E-03	ratio	Y
BiomRatio	Sterane/hopane			7.76409015144786E-02	ratio	Y
BiomRatio	Steranes/Terpanes			7.62806916276409E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			1.78316407181714E-02	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007831 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only